

HUT PROCUREMENT MANUAL

PART E

CONSTRUCTION DETAILS

FOR BACKCOUNTRY HUTS

QD code VC1414

March 2009 Version 4.0



Department of Conservation
Te Papa Atawhai

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Section E: Construction Details

Purpose

Section E contains the standard construction details or guidance for the design and documentation of details that will form part of the Tender and Building Consent documentation. These are located in five separate sections:

- Section E1: Standard Construction Details
- Section E2: Fixtures and Fittings
- Section E3: Water Supply
- Section E4: Alpine Huts
- Section E5: Harsh Environments

The appendices of sections E1 to E3 contain standard drawings. Within each of these sections, a table is provided to guide the selection of the appropriate details sheets to reflect hut specific matters.

It is expected that these sheets will be selected and included in the Tender & Building Consent drawings unaltered, except that where alternative details are available on the same sheet, an overprint 'not in this contract' can be added.

Section E1 contains Standard Construction Detail sheets, related to the hut size and cladding selected. These are selected as required, added to the Developed Design Drawings, the selected sheets from Sections E2, E3, F1 and F2 and any specific sheets derived from sections E4 and E5 to form the Tender and Building Consent drawings. Section E1 also contains details that take account of snowfall on gutters and / or where keas may also be present in the South Island.

Section E2 contains the Fixture and Fittings sheets. These are selected as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E3, F1 and F2 and any specific sheets derived from sections E4 and E5 to form the Tender and Building Consent drawings.

Section E3 contains the Water Supply sheets. These are selected as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E2, F1 and F2 and any specific sheets derived from sections E4 and E5 to form the Tender and Building Consent drawings.

Section E4 contains guidance on the issues and details that need to be taken into account when the hut is located in an alpine environment. An Alpine environment is where design is dictated by extremes of wind and snow loading. Generally these huts are sited at altitudes above 1,200m and/or are subject to snow loads of 2kPa or more. Snowfall may remain on or around the hut for extended periods of time. Occasionally it would be extended to include huts below 1,200m where similar conditions are experienced. Typical details that may be applicable are provided. These details may be selected or amended as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E2, E3, F1 and F2 and any specific sheets derived from section E5 to form the Tender and Building Consent drawings.

Section E5 contains guidance on the issues that need to be taken into account when the hut is located in a harsh environment. A Harsh environment is where design is dictated by a higher risk of corrosion and will either be coastal or geothermal. Generally these huts are sited within 500m of the coast, within 100 metres from tidal estuaries and sheltered inlets or within 50 metres from a geothermal hot spot within the Central volcanic plateau of the North Island. Figure 4.1 of NZS 3604 identifies these areas as the sea spray zone and zone 4 respectively. The relevant details need to be amended as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E2, E3, F1 and F2 and any specific sheets derived from section E4 to form the Tender and Building Consent drawings.

Section E1 Standard Construction Details

E1.1 Contents

Section E1 contains the Standard Construction Details.

These drawings are located in five separate appendices, related to hut size and cladding options:

- Appendix E1.1: 4 and 6 bunk hut Colorsteel cladding
- Appendix E1.2: 4 and 6 bunk hut ply and batten cladding
- Appendix E1.3: 10 and 12 bunk hut Colorsteel cladding
- Appendix E1.4: 10 and 12 bunk hut ply and batten cladding
- Appendix E1.5: all huts common details

E1.2 Use of section

Below is a table that is used to guide the selection of the appropriate details sheets to reflect the hut specific combination of cladding, design selection, the need for structural tie-downs, and specific environment details for presence of snow and/or keas.

These sheets are added to the Developed Design Drawings, the selected sheets from Sections E2, E3, F1 and F2 and any specific sheets derived from sections E4 and E5 to form the Tender and Building Consent drawings.

It is expected that these sheets will be selected and included in the Tender & Building Consent drawings unaltered, with two exceptions:

- where alternative details are available on the same sheet, add an overprint 'not in this contract' to the redundant details
- in the case of the presence of snow and/or keas, add an overprint 'refer alternative sheet' to the details that are required to be replaced.

If specific design is required for any aspect of the hut, the relevant detail sheet may be amended or replaced as considered appropriate.

E1.3 Selection of detail sheets

Use the following chart to select the required drawings from the appendices. Refer to additional notes with the drawing register for sheets identified as “sheet if required”.

Legend		Sheet Number	4 bunk hut - Colorsteel cladding	4 bunk hut - ply cladding	6 bunk hut - Colorsteel cladding	6 bunk hut - ply cladding	10/12 bunk hut - Colorsteel cladding	10/12 bunk hut - ply cladding
● = sheet required	○ = sheet if required							
Appendix								
E1.1 - 4 and 6 bunk hut Colorsteel cladding	C20	●			●			
	C21	●			●			
	C22	●			●			
	C31	○			○			
E1.2 - 4 and 6 bunk hut ply cladding	P20		●		●			
	P21		●		●			
	P22		●		●			
	P31		○		○			
E1.3 - 10 and 12 bunk hut Colorsteel cladding	C20					●		
	C21					●		
	C22					●		
	C23					●		
	C24					●		
	C29					●		
	C31					○		
E1.4 - 10 and 12 bunk hut ply cladding	P20						●	
	P21						●	
	P22						●	
	P23						●	
	P24						●	
	P29						●	
	P31							○
E1.5 - All huts common details	C24	●			●		●	
	P24		●			●		●
	26	○	○	○	○	○	○	○
	27	○	○	○	○	○	○	○
	C29	●			●		●	
	P29		●			●		●
	30						●	●
	32	○	○	○	○	○	○	○
	C33	○		○			○	
	P33		○			○		○
	C34	○		○			○	
P34		○			○		○	

Appendix E1.1: 4 and 6 bunk hut Colorsteel cladding Standard Construction Details

This appendix contains:

- Current Drawing Register
- Amendment Register
- Standard Construction Details

ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
C20	verandah eave, typical ridge, cove ceiling & typical eave	4.0	March 2009
C21	floor, floor to deck connection, boundary joist & verge	4.0	March 2009
C22	floor to deck connection, post connection, door sill, webforge insert & external corner detail	4.0	March 2009
C31	structural tie down bracket	4.0	March 2009

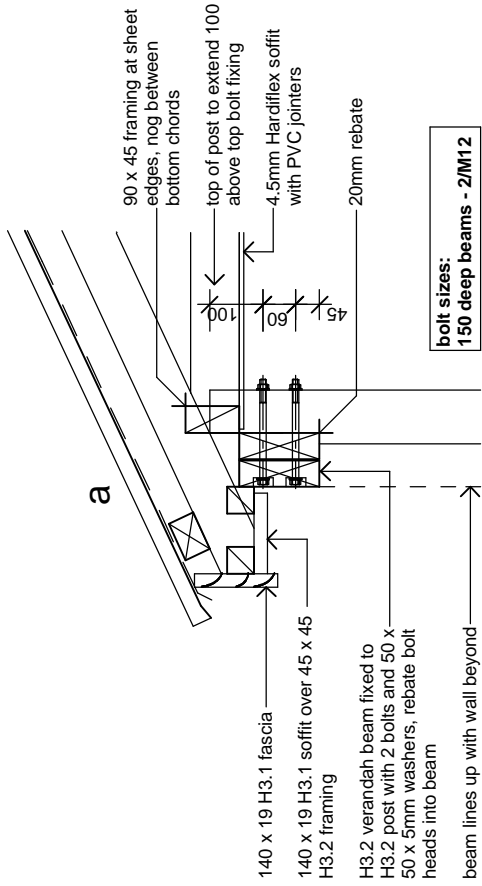
Note: Sheet C31 used only if required by Structural Engineer.

AMENDMENT REGISTER

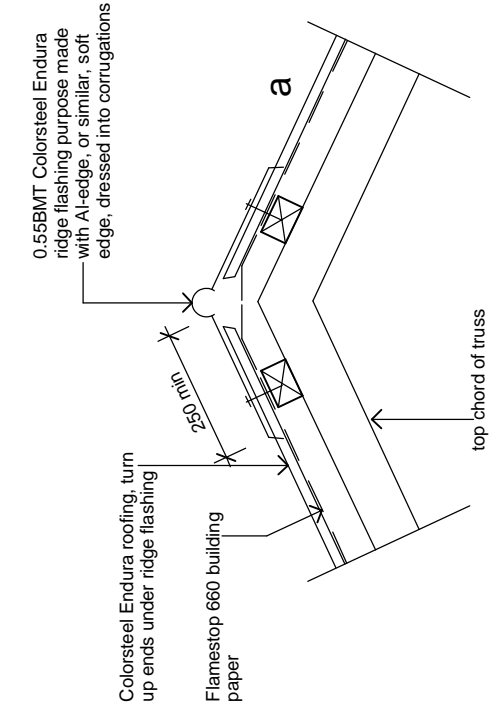
Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

Material Note:

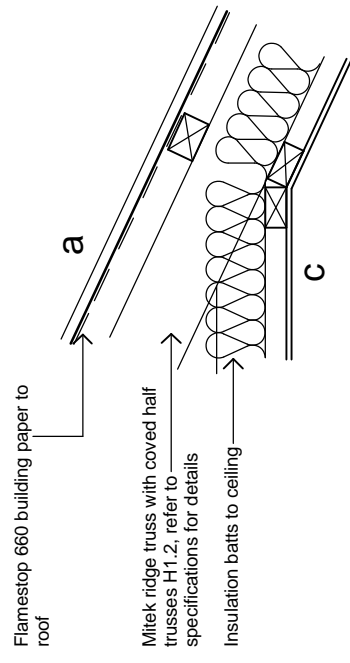
- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



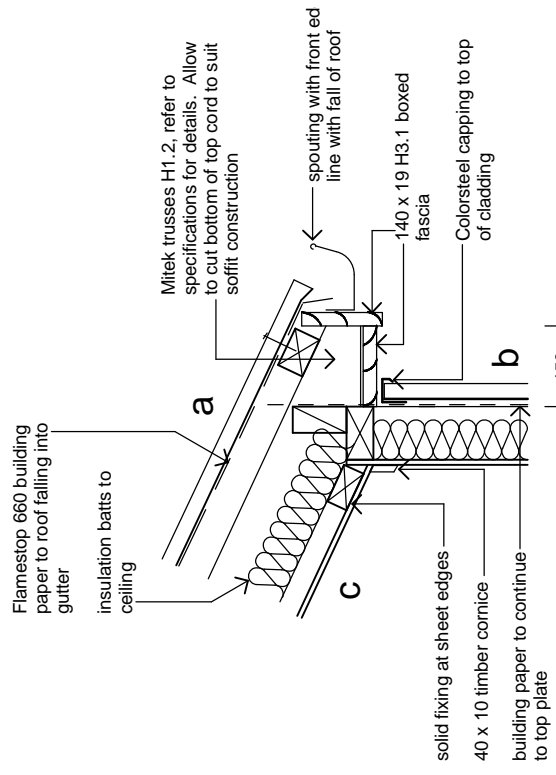
1 verandah eave
1:10



2 typical ridge flashing
1:10



3 cove ceiling
1:10



4 typical eave
1:10

REV NO	DESCRIPTION	DATE	DWN	CHK
4.0	First Issue	Mar 09	-	-

V4.0 Standard Construction Details Appendix E1.1
Capitche House
111 Dixon St
P.O.Box 2115
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Fax: 04-384 5177
www.pjc-architects.co.nz

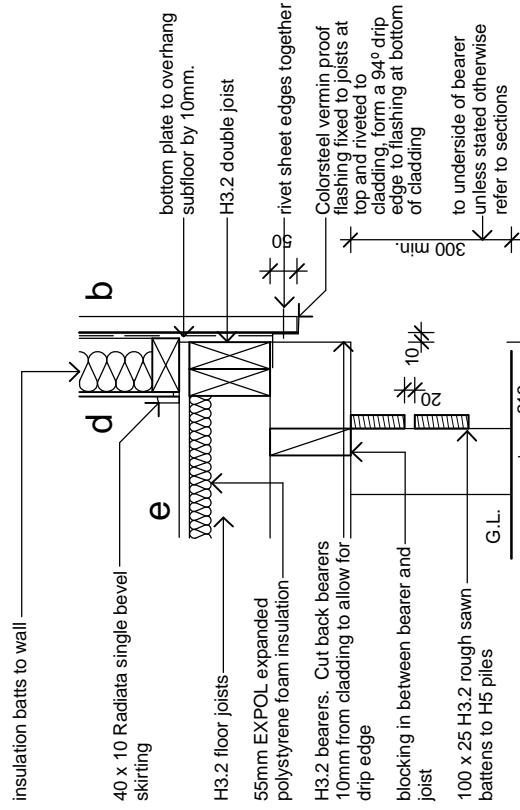
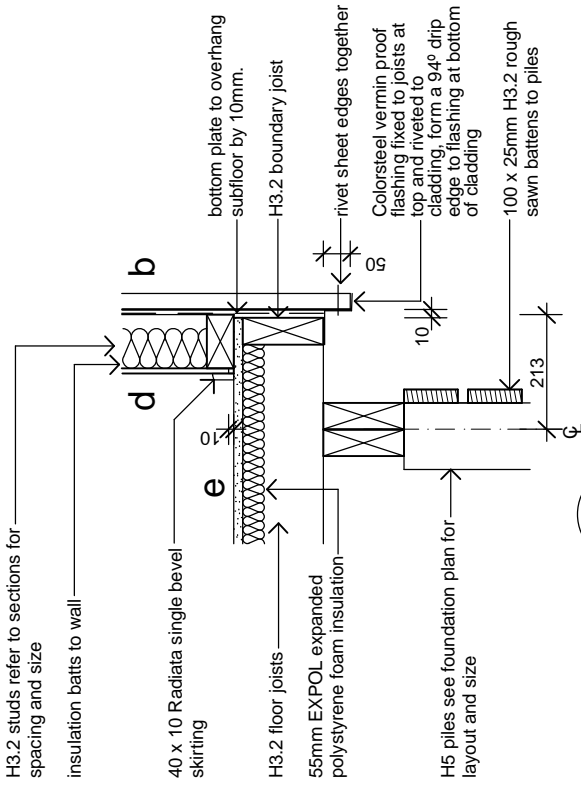
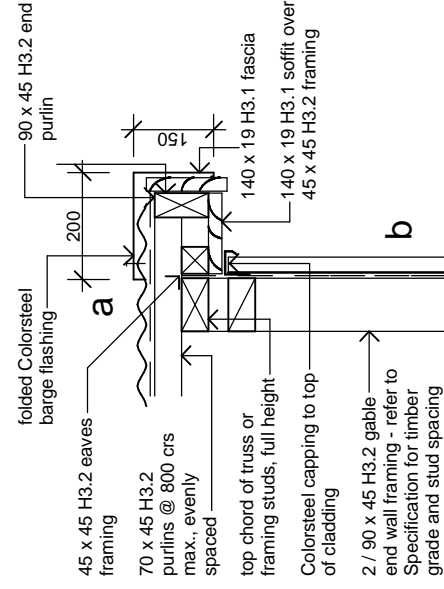
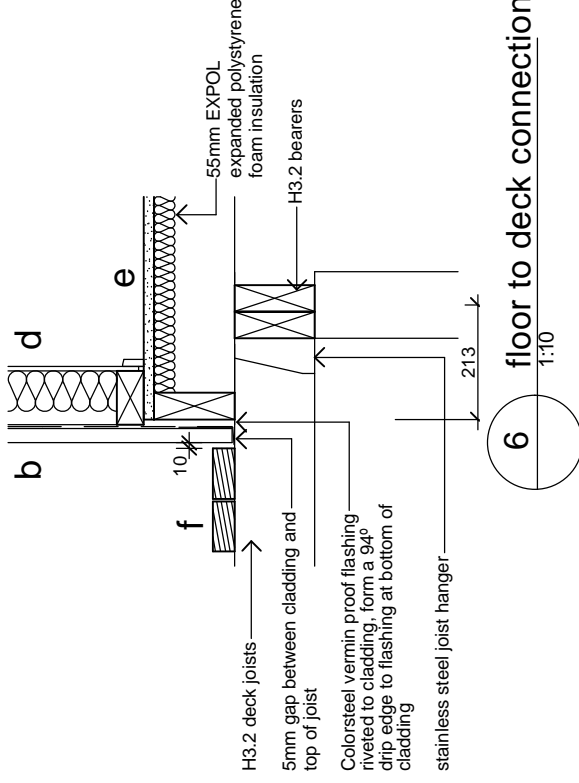


PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNK HUTS**

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
verandah eave, typical ridge, cove ceiling & typical eave	1:10, 1:50
DESIGN	BY A.3 SHEET SIZE
RP	GR
CHECKED	PROJECT NO.
DATE	REV. NO.
	xyz
	C20

Material Note:

- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm EXPOL CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm EXPOLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm EXPOLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



REV	NO	DESCRIPTION	DATE	DWN	CHKD
4.0		First Issue	Mar 09		

V4.0 Standard Construction Details Appendix E1.1
Capitla House
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P.O.Box 2115
Wellington 6140
Phone: 04 - 473 7577
Fax: 04 - 384 5177
www.pjc-architects.co.nz

Contractor shall check all Dimensions on site prior to construction



PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNK HUTS**

CLIENT		DEPARTMENT OF CONSERVATION	
SHEET CONTENTS		SCALES	
floor, floor to deck connection, boundary joist & verge		1:50, 1:10	
DESIGN	CHECKED	PROJECT NO.	@ A3 SHEET SIZE
RP	GR	RP	SHEET NO.
DATE	xyz	xyz	C21

Material Note:

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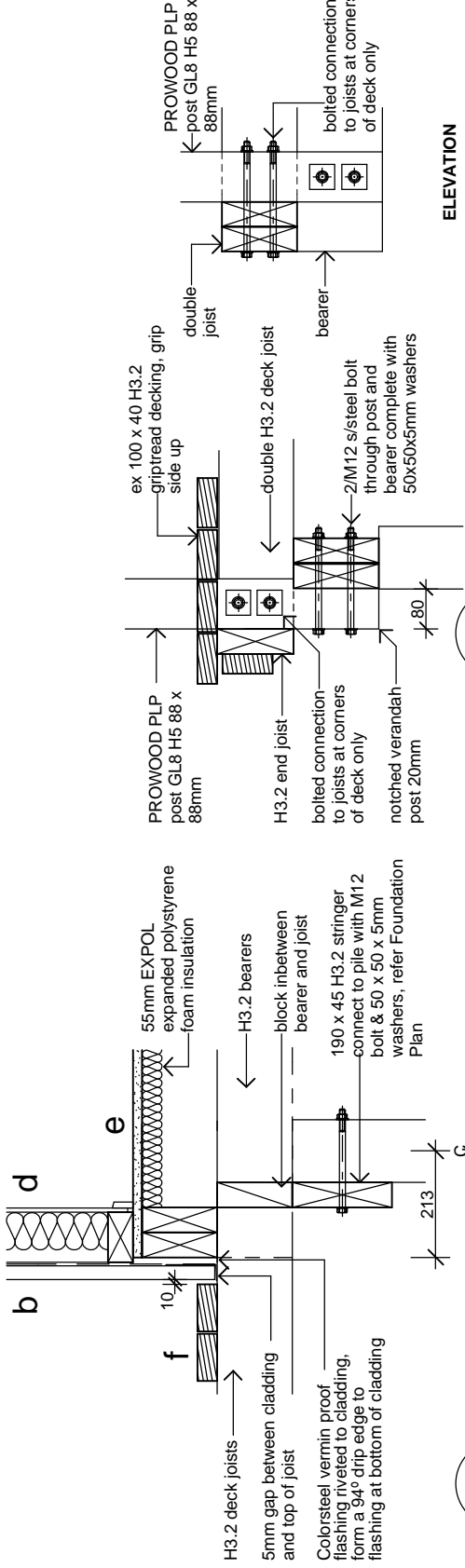
b COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.

c CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

d CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

e CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

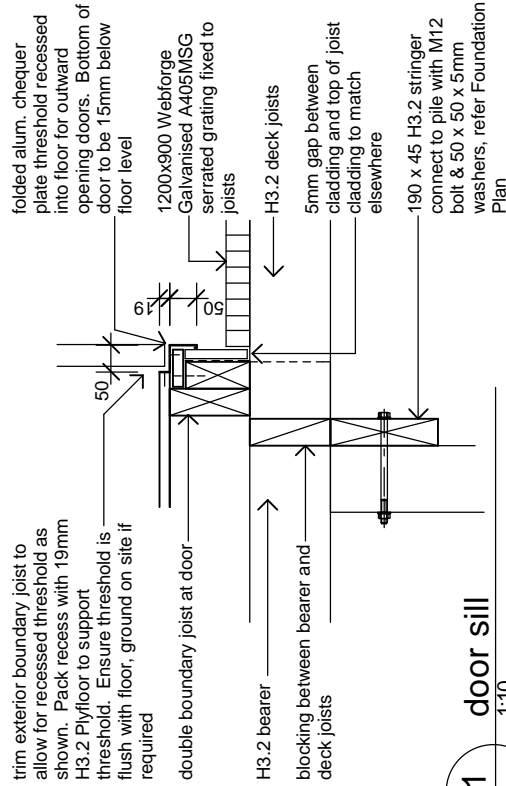
f 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



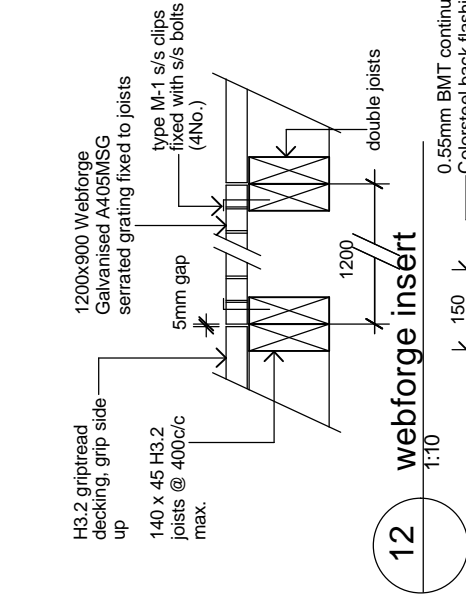
ELEVATION

10 post connection
1:10

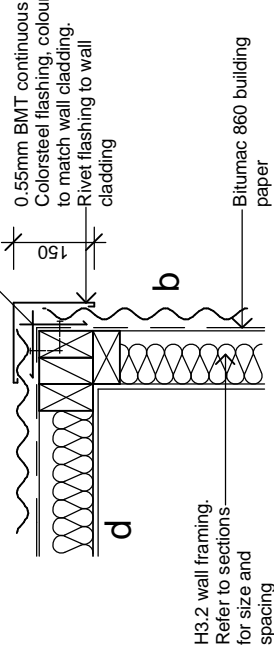
9 floor to deck connection
1:10



11 door sill
1:10



12 webforge insert
1:10



13 external corner
1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWH CKD
		V4.0 Standard Construction Details Appendix E1.1	

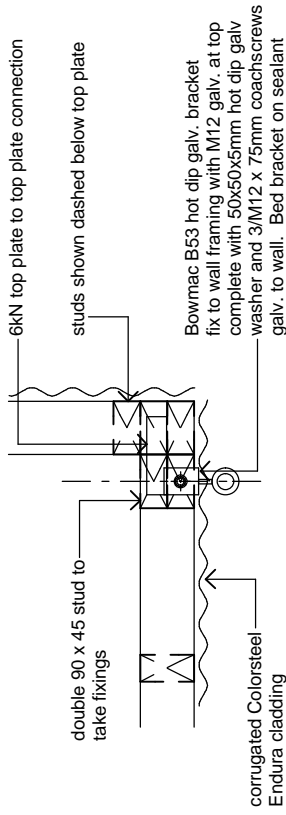
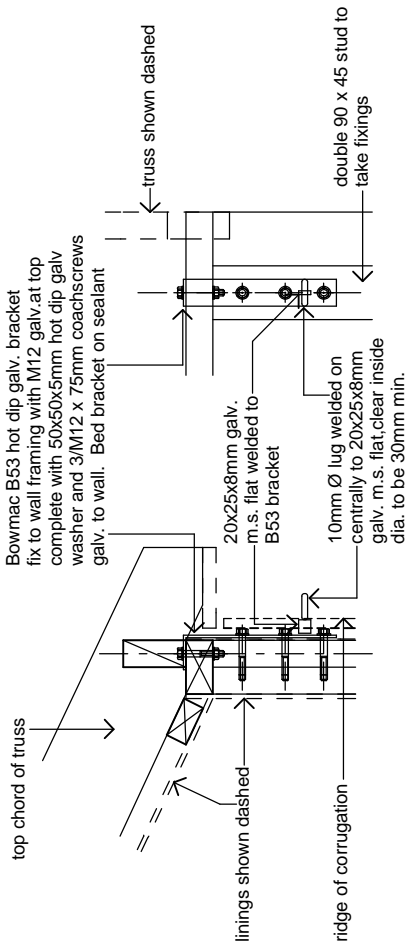
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Fax: 04-384 5177
www.pjc-architects.co.nz

PYNEBURG & COLLINS ARCHITECTS LTD

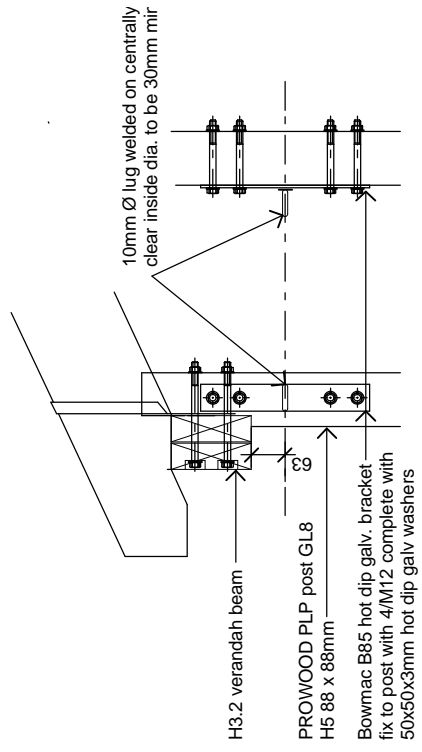
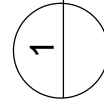


HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNKHUTS

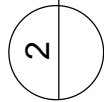
CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
floor to deck connection, post connection, door sill, webforge insert & external corner detail	1:10, 1:50
DESIGN	@ A3 SHEET SIZE
DRAWN	CHECKED
GR	RP
DATE	xyz
	C22



1 typical tie down bracket at corners



2 tie down bracket at post



4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	BY
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.1			

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PROJECT
HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNKHUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	STRUCTURAL tie down bracket
SCALES	1:10
DESIGN	xyz
DRAWN	xyz
CHECKED	xyz
PROJECT NO.	xyz
DATE	xyz
BY	xyz
REV. NO.	xyz
AT A3 SHEET SIZE	C31

Appendix E1.2: 4 and 6 bunk hut ply and batten cladding Standard Construction Details

This appendix contains:

- Current Drawing Register
- Amendment Register
- Standard Construction Details

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CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
P20	verandah eave, typical ridge, cove ceiling & typical eave	4.0	March 2009
P21	floor, floor to deck connection, boundary joist & verge	4.0	March 2009
P22	floor to deck connection, post connection, door sill, webforge insert & external corner detail	4.0	March 2009
P31	structural tie down bracket	4.0	March 2009

Note: Sheet P31 used only if required by Structural Engineer.

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

Material Note:

- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWH (C/K)

V4.0 Standard Construction Details Appendix E1.2

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HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNKHUTS

PROJECT

CLIENT: DEPARTMENT OF CONSERVATION

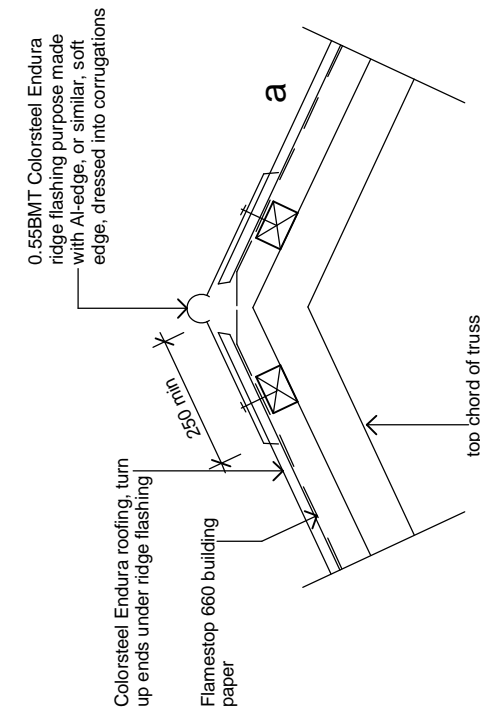
SHEET CONTENTS

verandah eave, typical ridge, cove ceiling & typical eave

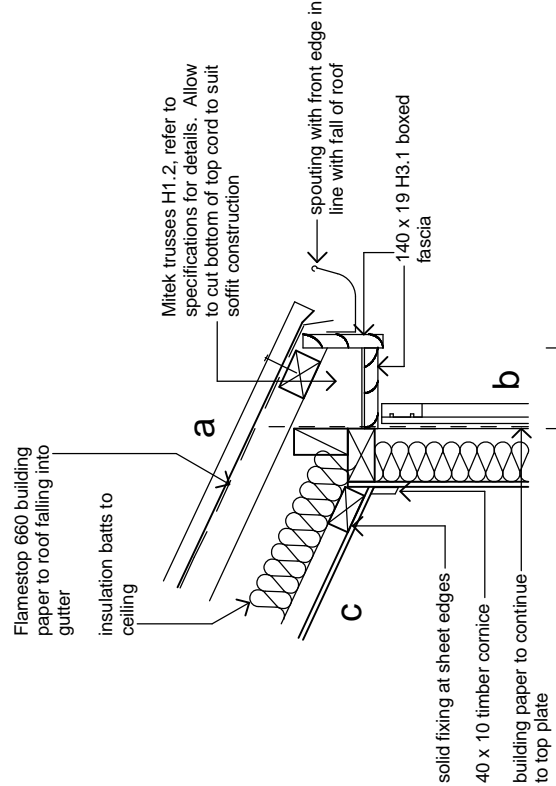
DESIGN: @ A3 SHEET SIZE
DRAWN: GR
CHECKED: RP
DATE: xyz

SCALES
1:10
1:50

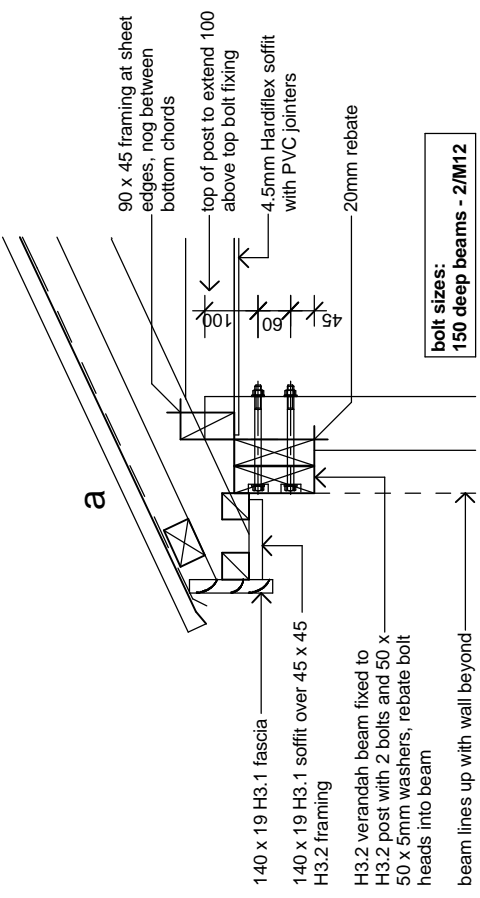
SHT No. REV No.
P20



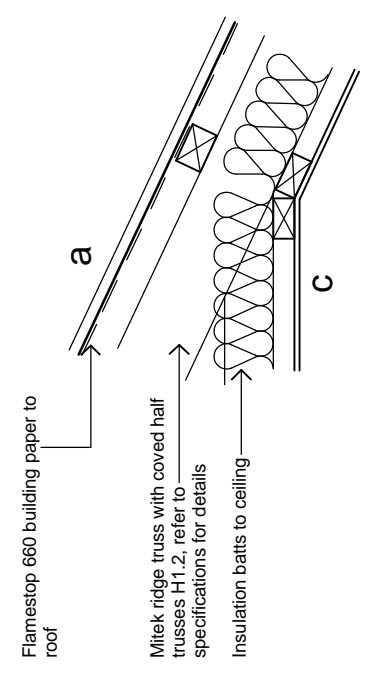
2 typical ridge flashing
1:10



4 typical eave
1:10

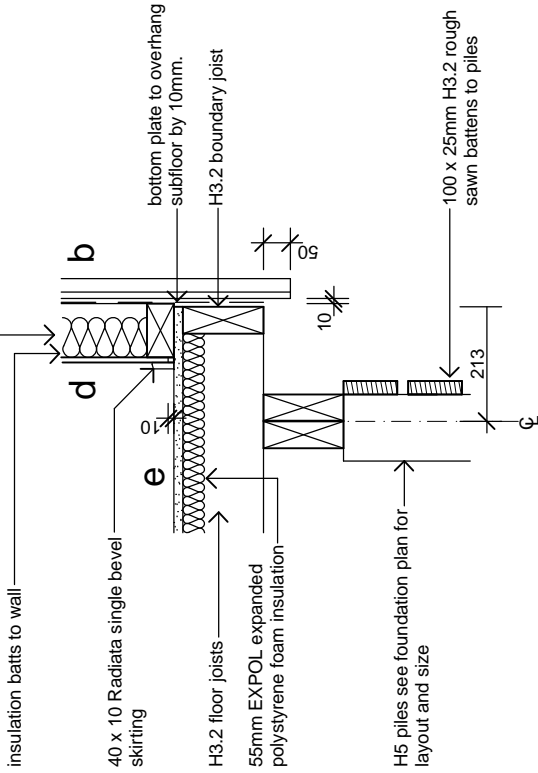


1 verandah eave
1:10

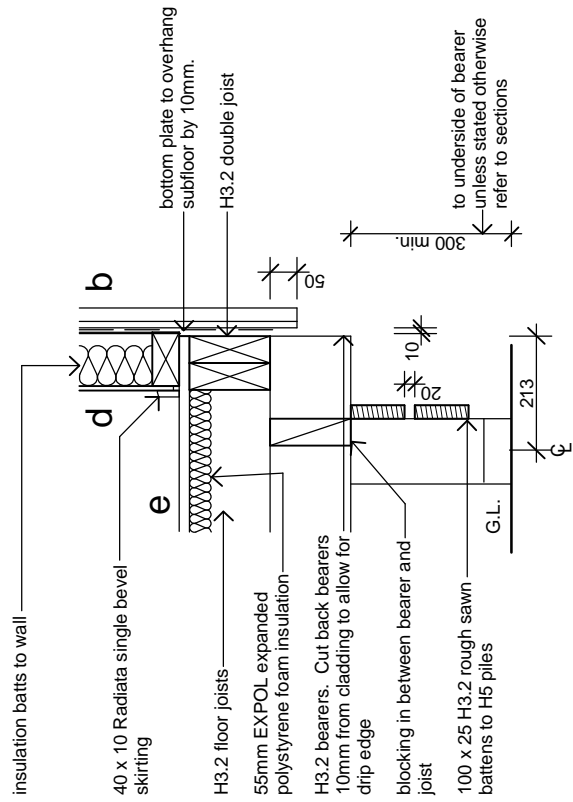


3 cove ceiling
1:10

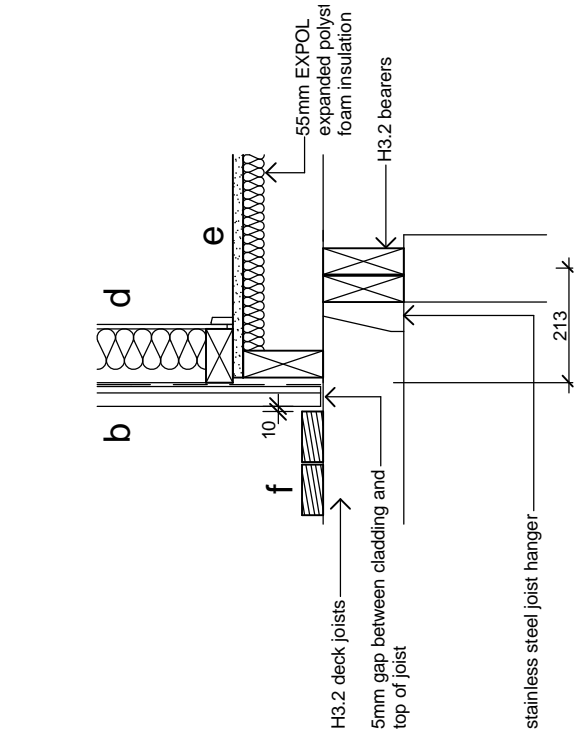
H3.2 studs refer to sections for spacing and size



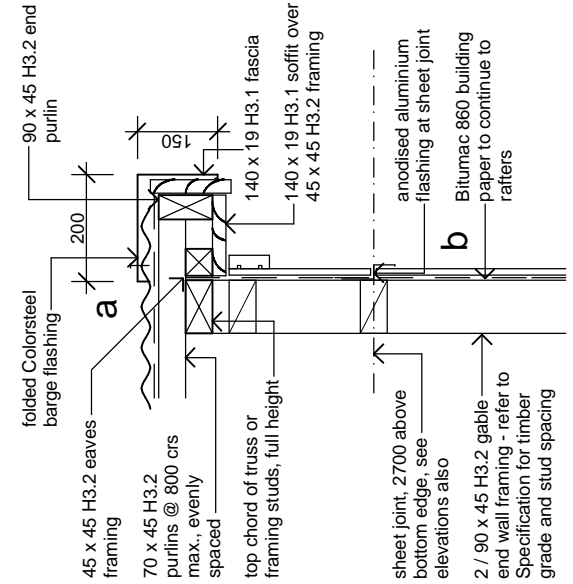
5 typical floor
1:10



7 boundary joist
1:10



6 floor to deck connection
1:10



8 typical verge
1:10

Material Note:

- a COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purfins on flat @ 800c/c max. evenly spaced.
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4.0	First Issue	Mar 09	
REV	NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN
		V4.0 Standard Construction Details Appendix E1.2	CKD

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Contractor shall check all Dimensions on site prior to construction

Department of Conservation
Te Papa Atātahi

HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNK-HUTS

PROJECT

CLIENT: DEPARTMENT OF CONSERVATION

SHEET CONTENTS

floor, floor to deck connection,
boundary joist & verge

1:10,
1:50

DESIGN: DRAWN: CHECKED: PROJECT NO: SHEET NO. REV. NO.

RP GR RP RP

DATE: xyz

P21

Material Note:

a COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

b CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.

c CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

d CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

e CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

f 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.

4.0	First Issue	Mar 09	-
REV	NO	DESCRIPTION	DATE
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.2			

Caplita House
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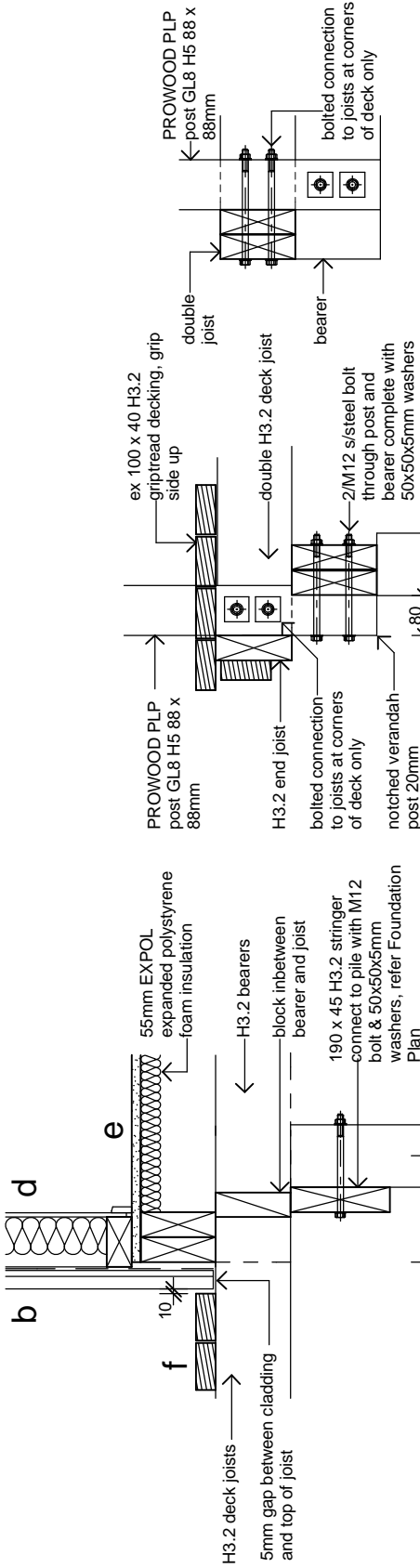
Contractor shall check all dimensions on site prior to construction



PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNKHUTS**

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS		SCALES
floor to deck connection, post connection, door sill, webforge insert & external corner detail	DESIGN	1:10, 1:50
RP	DRAWN	@ A3 SHEET SIZE
GR	CHECKED	SHT No.
DATE	REV No.	P22
		xyz



9 floor to deck connection
1:10

trim exterior boundary joist to allow for recessed threshold as shown. Pack recess with 19mm H3.2 Plyfloor to support threshold. Ensure threshold is flush with floor, ground on site if required

double boundary joist at door

H3.2 bearer

blocking between bearer and deck joists

folded alum. chequer plate threshold recessed into floor for outward opening doors. Bottom of door to be 15mm below floor level

1200x900 Webforge Galvanised A405MSG serrated grating fixed to joists

H3.2 deck joists

5mm gap between cladding and top of joist cladding to match elsewhere

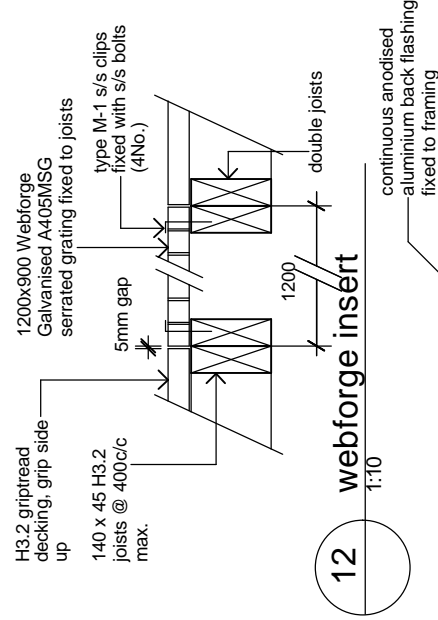
190 x 45 H3.2 stringer connect to pile with M12 bolt & 50 x 50 x 5mm washers, refer Foundation Plan

11 door sill
1:10

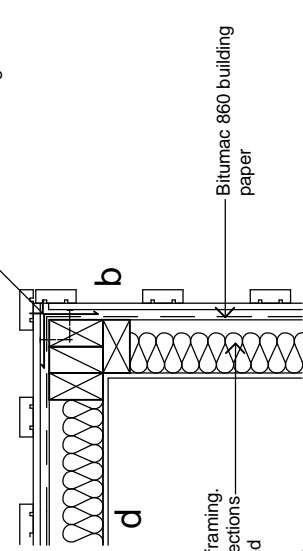
ELEVATION



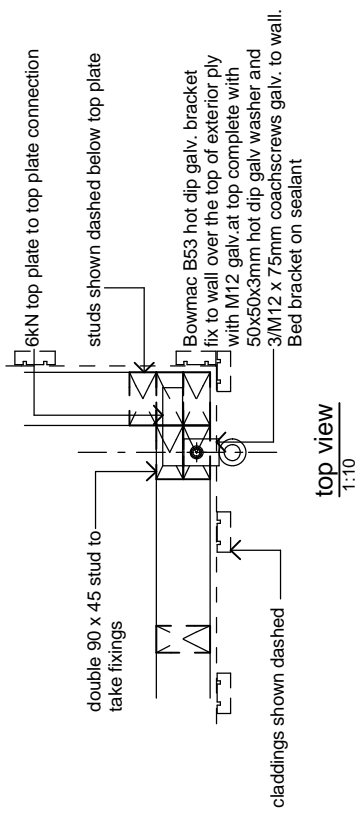
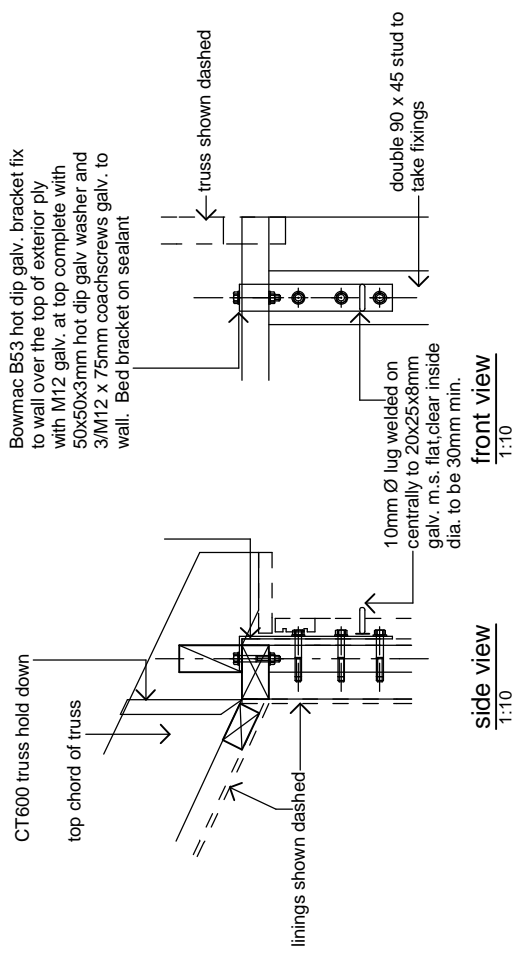
10 post connection
1:10



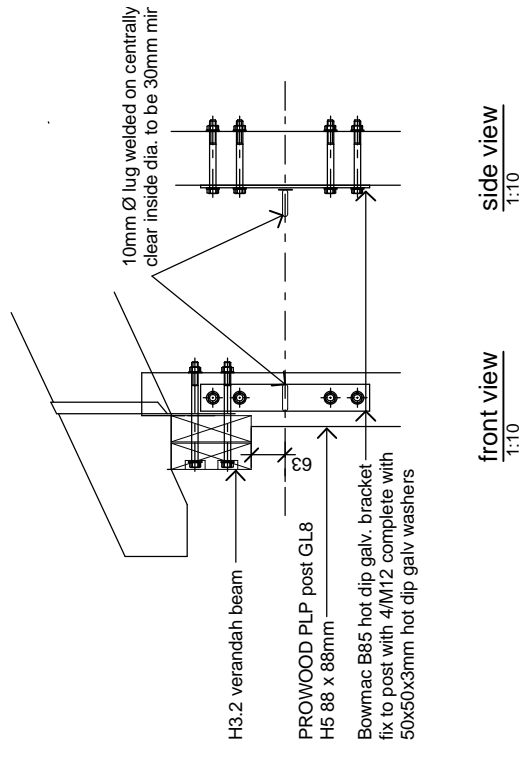
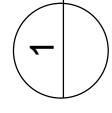
12 webforge insert
1:10



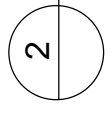
13 external corner
1:10



typical tie down bracket at corners



2 tie down bracket at post



4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	DWN CKO
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.2			



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Contractor shall check all Dimensions on site prior to construction



PROJECT
HUT DESIGN MANUAL
STANDARD DETAILS FOR
4 & 6 BUNKHUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	structural tie down bracket
SCALES	1:10
DESIGN	BY: xyz
DRAWN	BY: xyz
CHECKED	BY: xyz
PROJECT NO.	xyz
SHEET NO.	xyz
REV. NO.	xyz
DATE	xyz
	P31

Appendix E1.3: 10 and 12 bunk hut Colorsteel cladding Standard Construction Details

This appendix contains:

- Current Drawing Register
- Amendment Register
- Standard Construction Details

ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
C20	verandah eave, verandah roof connection, cove ceiling & typical eave	4.0	March 2009
C21	floor, floor to deck connection, boundary joist & verge	4.0	March 2009
C22	floor to deck connection, post connection, door sill, webforge insert & external corner detail	4.0	March 2009
C23	typical ridge flashing, verandah roof – wall connection & verge	4.0	March 2009
C31	structural tie down bracket	4.0	March 2009

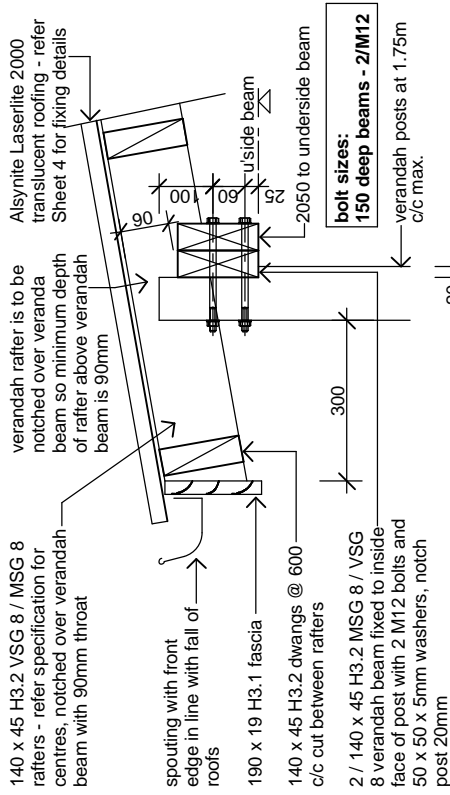
Note: Sheet C31 used only if required by Structural Engineer.

AMENDMENT REGISTER

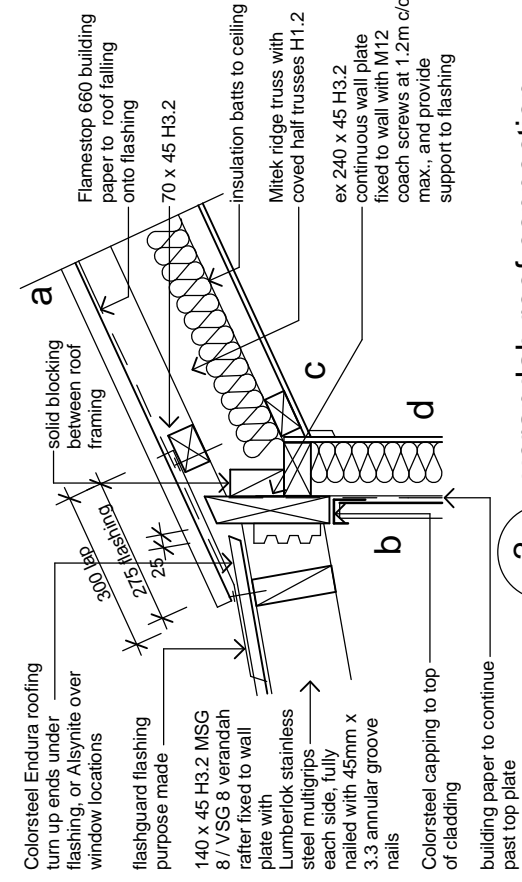
Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

Material Note:

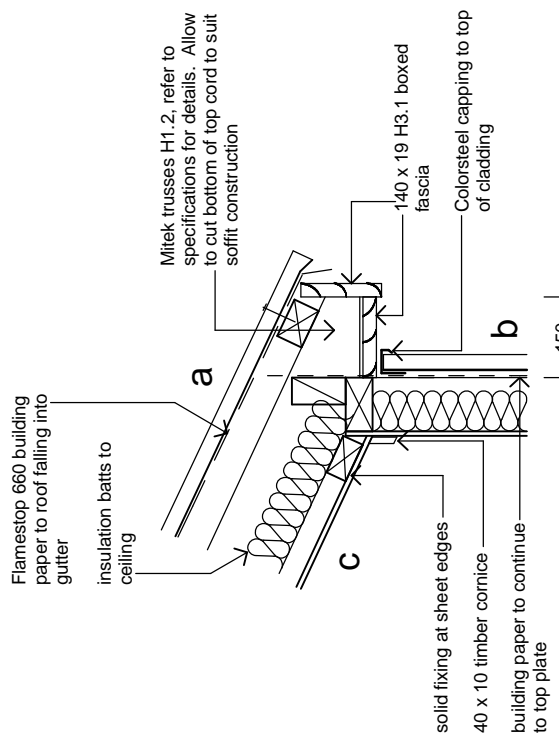
- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



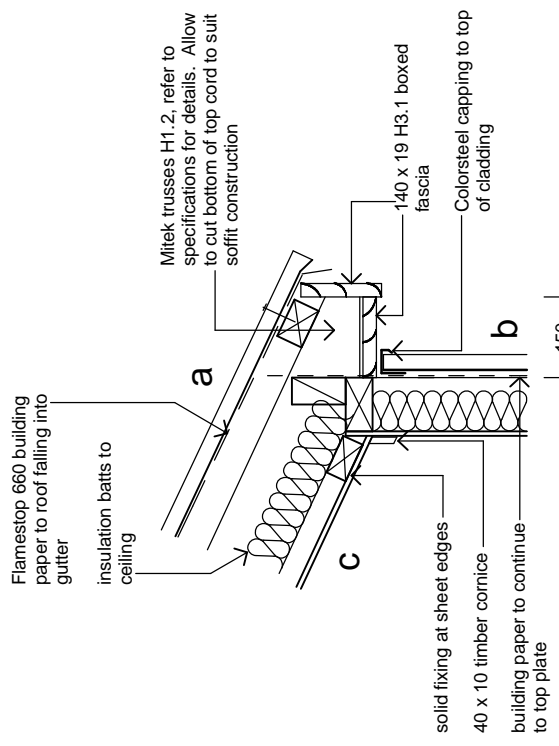
1 verandah eave
1:10



2 verandah roof connection
1:10



3 cove ceiling
1:10



4 typical eave
1:10

REV	NO	DESCRIPTION	DATE	BY	CHK
4.0		First Issue	Mar 09		
		Drawing Issue and Amendments			

V4.0 Standard Construction Details Appendix E1.3

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PYENBURG & COLLINS ARCHITECTS LTD



PROJECT: HUT DESIGN MANUAL STANDARD DETAILS FOR 10 & 12 BUNK-HUTS

CLIENT: DEPARTMENT OF CONSERVATION

SHEET CONTENTS		SCALES	
verandah eave, verandah roof connection, cove ceiling & typical eave		1:10,	1:50
DESIGN	CHECKED	PROJECT NO.	SHEET NO.
RP	GR		
DATE			

xyx

C20

Material Note:

a COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

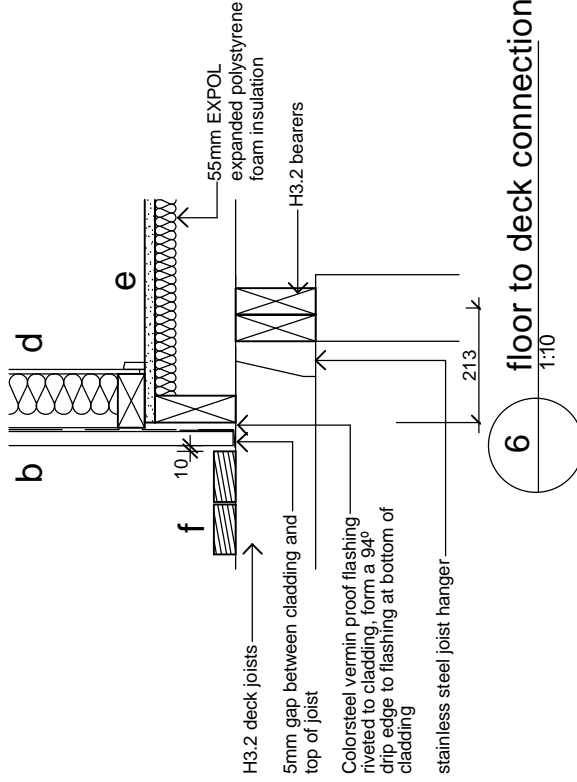
b COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.

c CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

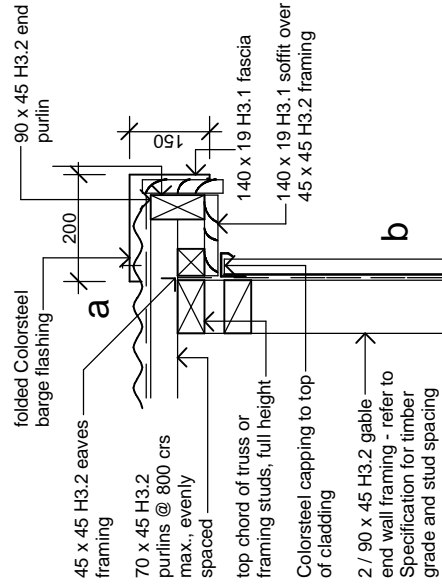
d CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

e CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

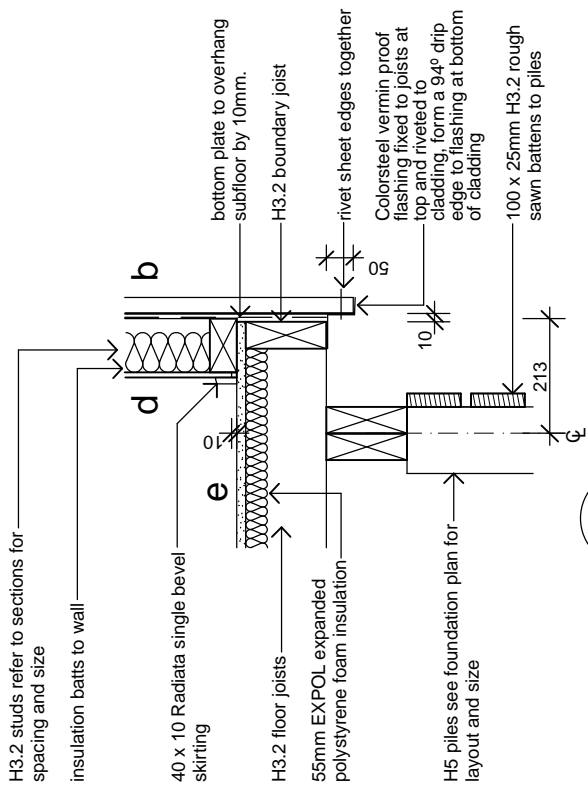
f 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



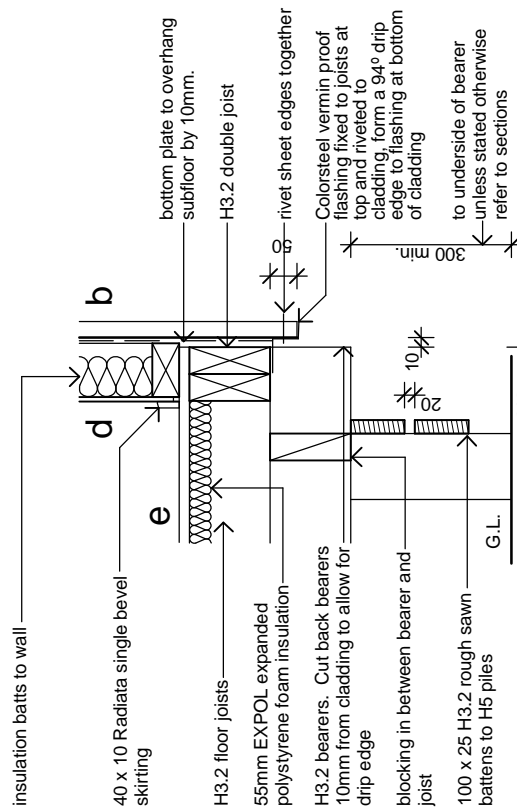
6 floor to deck connection
1:10



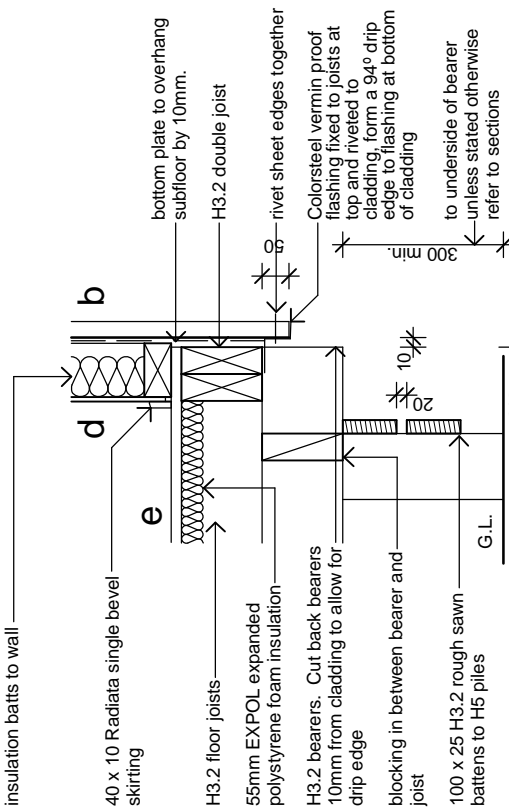
8 typical verge
1:10



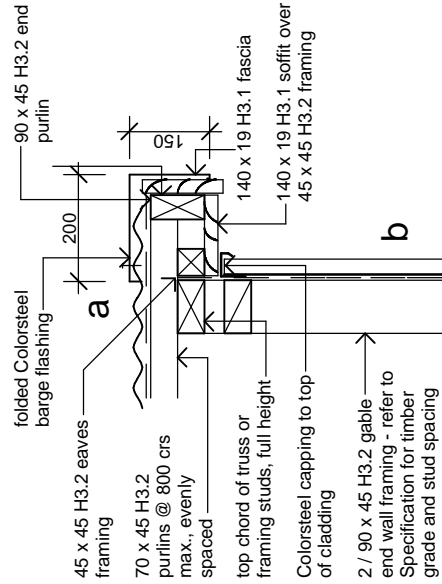
5 typical floor
1:10



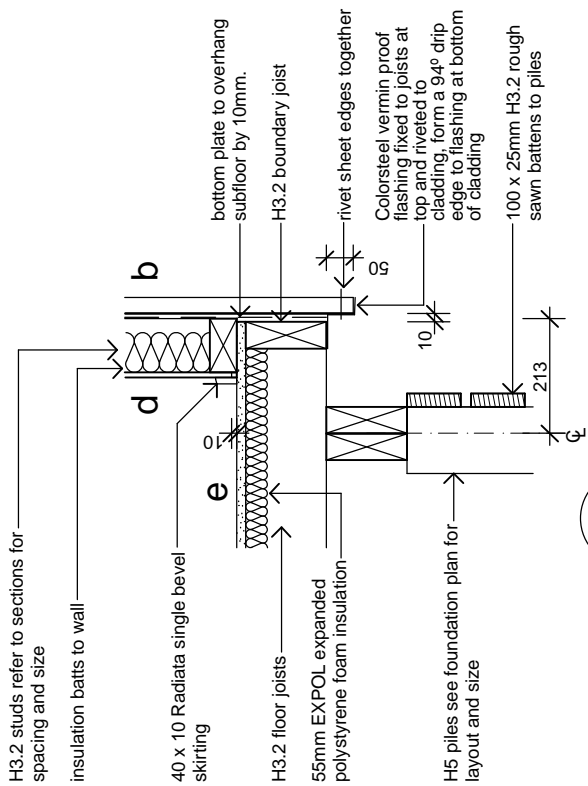
7 boundary joist
1:10



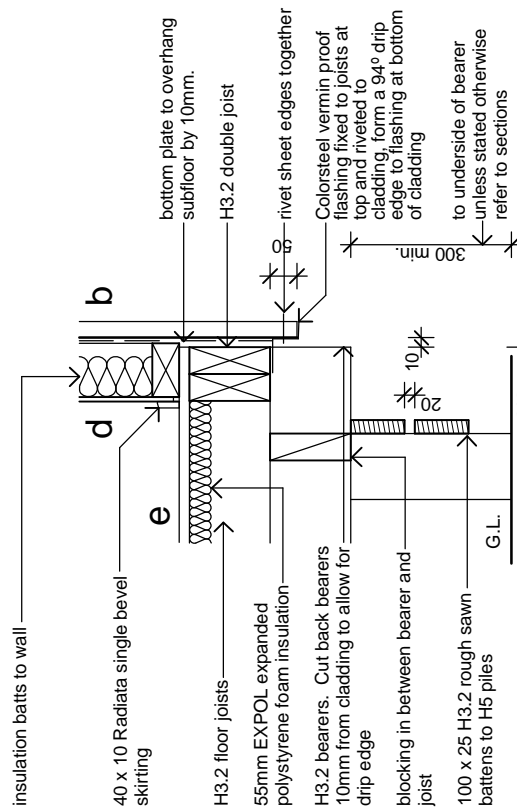
6 floor to deck connection
1:10



8 typical verge
1:10



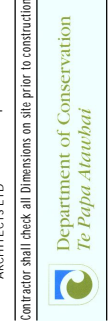
5 typical floor
1:10



7 boundary joist
1:10

REV	NO	DESCRIPTION	DATE	DWN	CHKD
4.0		First Issue	Mar 09	-	-

V4.0 Standard Construction Details Appendix E1.3
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PROJECT
HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK HUTS

CLIENT		DEPARTMENT OF CONSERVATION	
SHEET CONTENTS			
floor, floor to deck connection, boundary joist & verge		SCALES	1:10, 1:50
DESIGN	DRAWN	CHECKED	PROJECT NO.
RP	GR	RP	BY
DATE			NO.
	xyz		C21

Material Note:

a COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purfins on flat @ 800c/c max. evenly spaced.

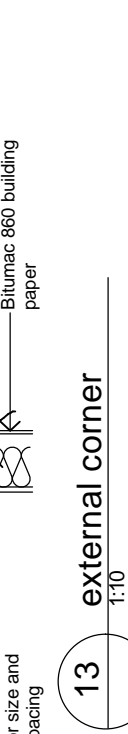
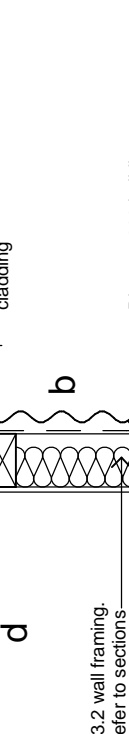
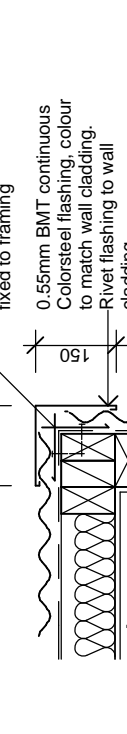
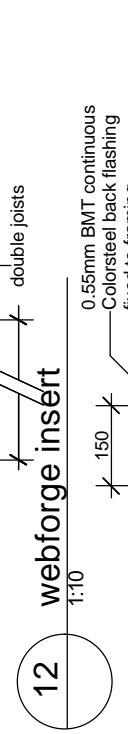
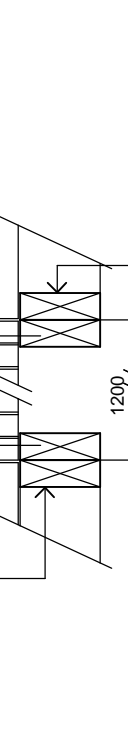
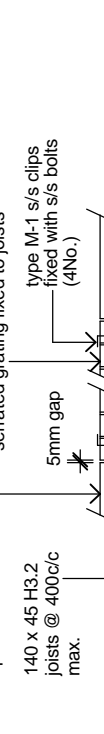
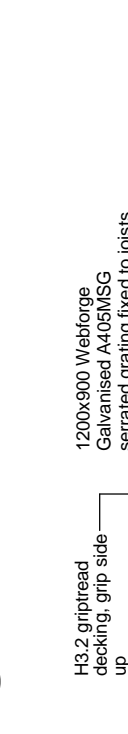
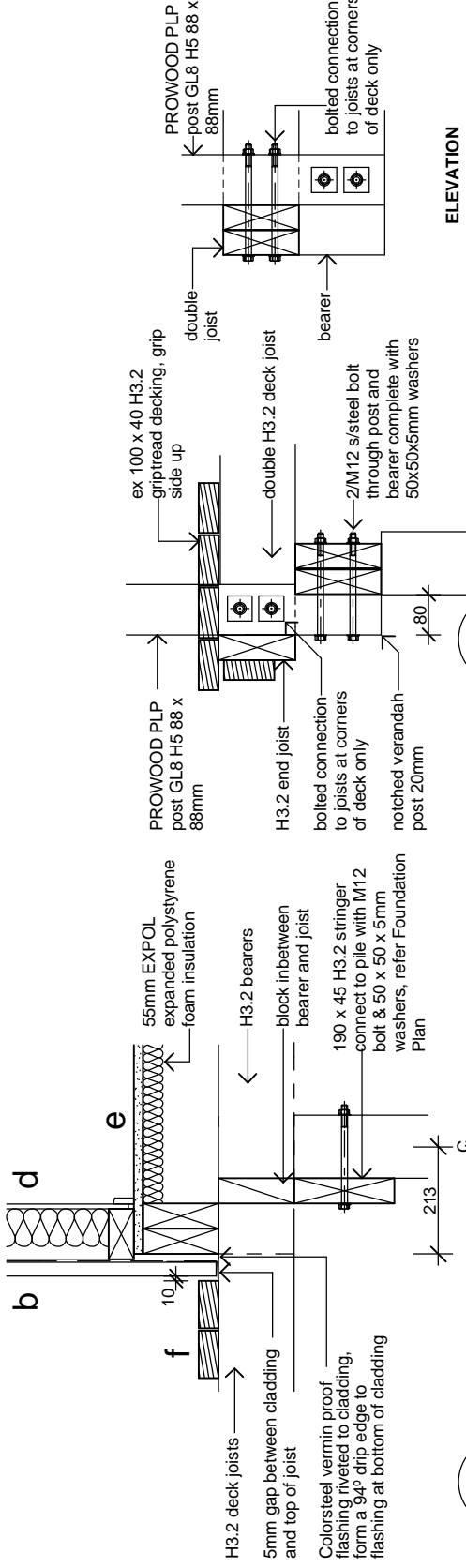
b COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.

c CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

d CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

e CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

f 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



REV	NO	DESCRIPTION	DATE	DWN	CKD
4.0		First Issue	Mar 09	-	-

V4.0 Standard Construction Details Appendix E1.3
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HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK-HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
floor to deck connection, post connection, door sill, webforge insert & external corner detail	1:10,
DESIGN	1:50
DRAWN	BY
CHECKED	PROJECT NO.
RP	REV. NO.
DATE	xyz
	C22

Material Note:

a COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

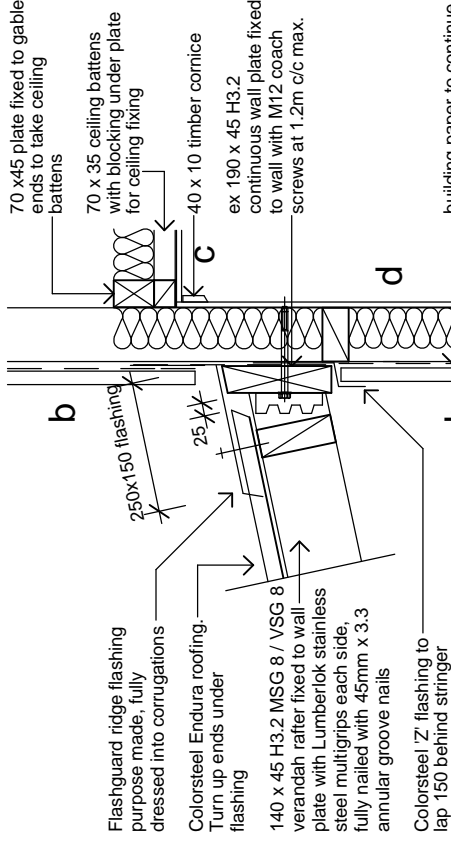
b COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.

c CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

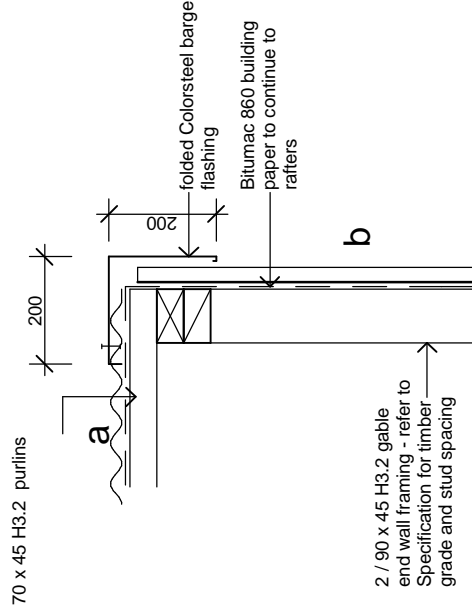
d CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

e CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

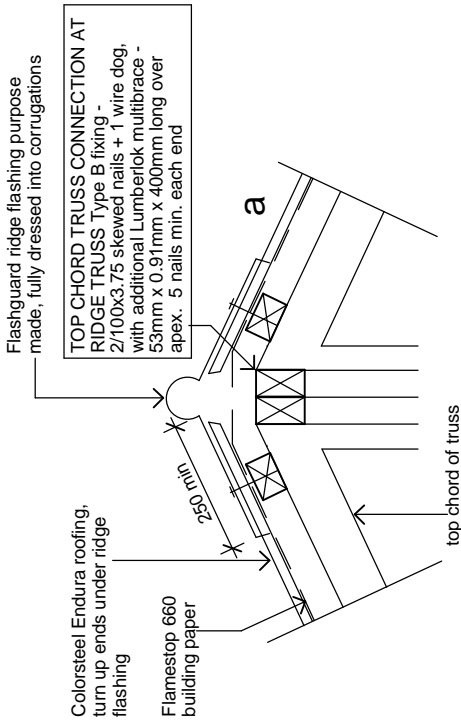
f 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



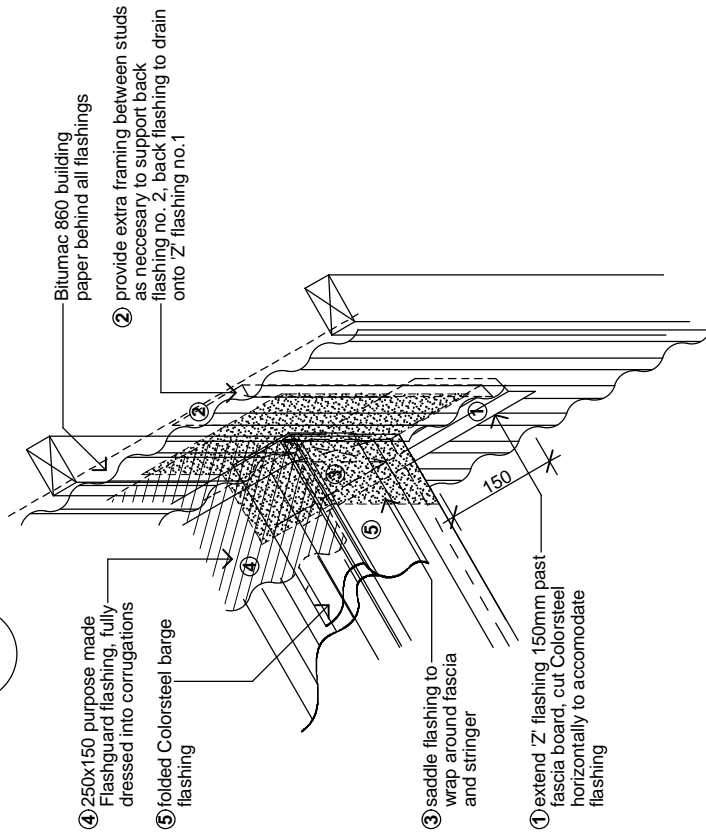
15 verandah roof - wall connection
1:10



16 verge detail
1:10



14 typical ridge flashing
1:10



verandah - roof isometric
1:10

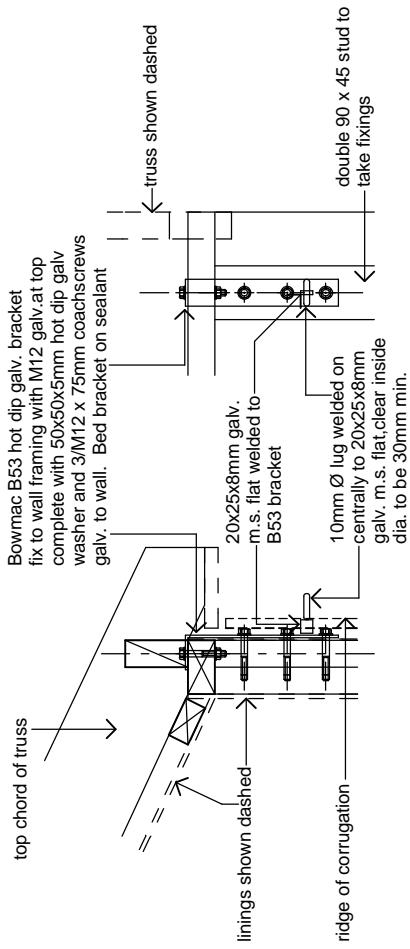
REV NO	DESCRIPTION	DATE	BY	CHKD
4.0	First Issue	Mar 09	-	-

VALO Standard Construction Details Appendix E1.3
Caplitch House
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www.jp architects.co.nz



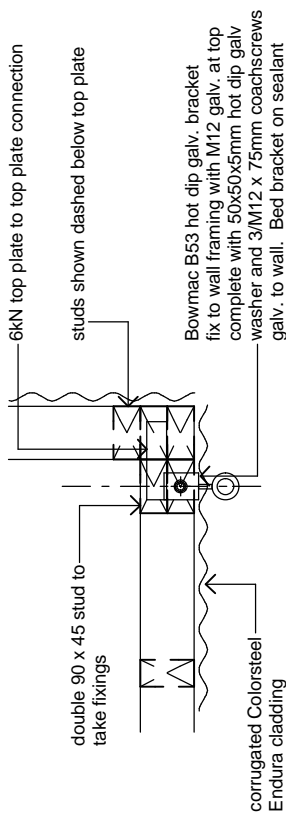
PROJECT
HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK-HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	SCALES
typical ridge flashing, verandah roof - wall connection & verge	1:10, 1:50
DESIGN	@ A3 SHEET SIZE
RP	CHECKED
DATE	PROJECT NO.
	REV NO.
	xyz
	C23



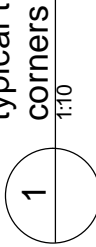
side view
1:10

front view
1:10



top view
1:10

typical tie down bracket at



1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
V4.0 Standard Construction Details Appendix E1.3			

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Contractor shall check all Dimensions on site prior to construction



PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK HUTS**

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	structural tie down bracket
SCALES	1:10
DESIGN	xyz
DRAWN	xyz
CHECKED	xyz
GR	xyz
RP	xyz
DATE	xyz
@ A3 SHEET SIZE	
SHEET No.	
REV No.	
	C31

Appendix E1.4: 10 and 12 bunk hut ply and batten cladding Standard Construction Details

This appendix contains:

- Current Drawing Register
- Amendment Register
- Standard Construction Details

ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
P20	verandah eave, verandah roof connection, cove ceiling & typical eave	4.0	March 2009
P21	floor, floor to deck connection, boundary joist & verge	4.0	March 2009
P22	floor to deck connection, post connection, door sill, webforge insert & external corner detail	4.0	March 2009
P23	typical ridge flashing, verandah roof – wall connection & verge	4.0	March 2009
P31	structural tie down bracket	4.0	March 2009

Note: Sheet C31 used only if required by Structural Engineer.

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

Material Note:

COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.

CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWH CKD
V4.0 Standard Construction Details Appendix E1.4			

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Fax: 04-384 5177
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ARCHITECTS LTD

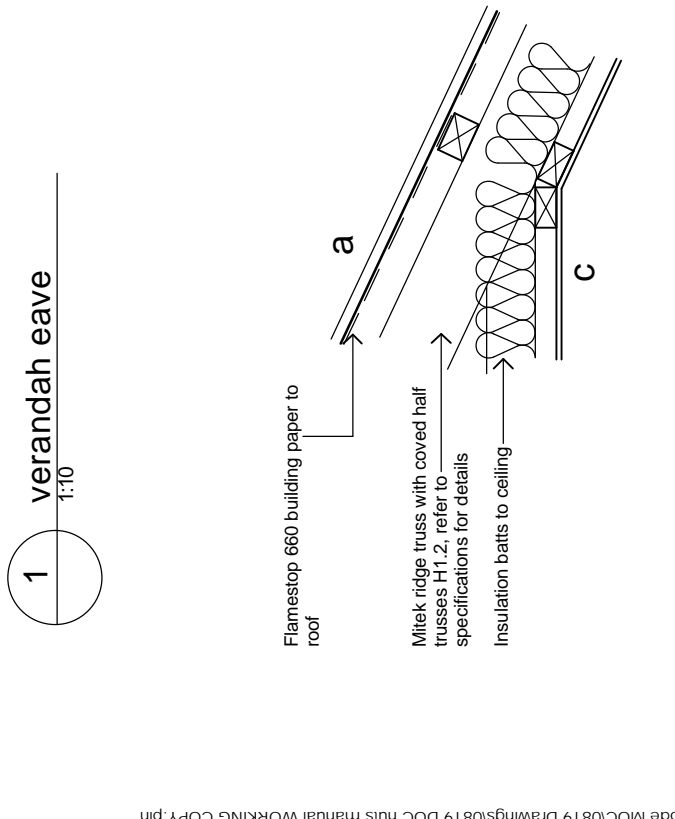
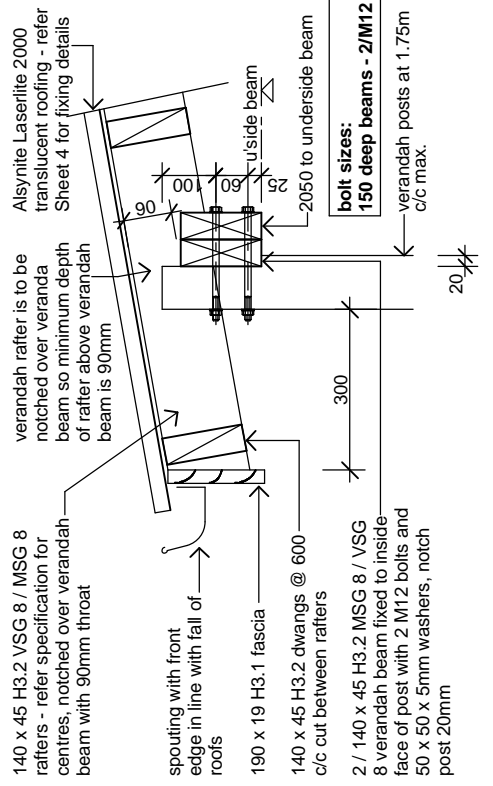
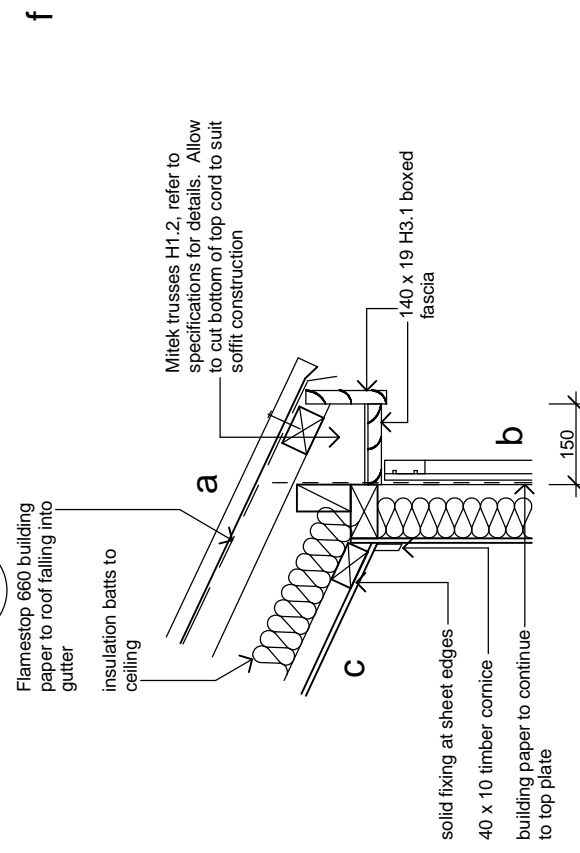
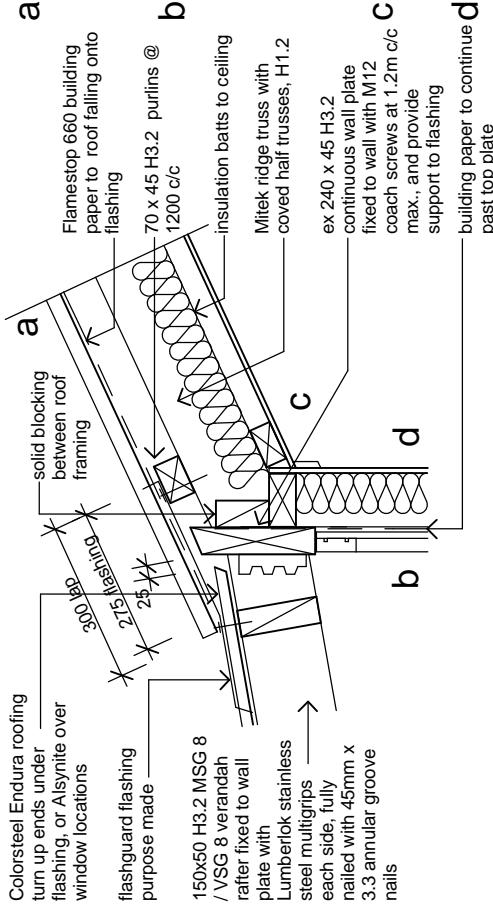
Contractor shall check all Dimensions on site prior to construction

Department of Conservation
Te Papa Ataturai

PROJECT

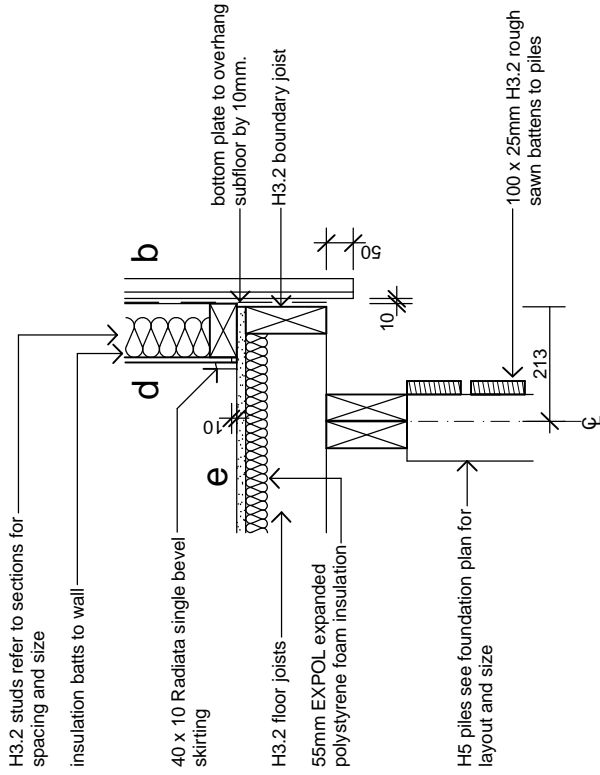
HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK-HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
verandah eave, verandah roof connection, cove ceiling & typical eave	1:10, 1:50
DESIGN	PROJECT NO.
RP	CHECKED
GR	DATE
xyz	xyz
	P20

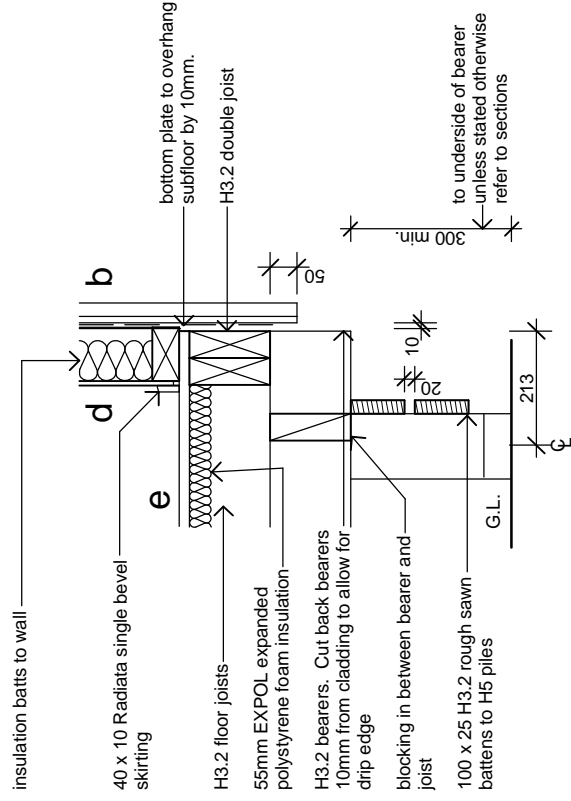


Material Note:

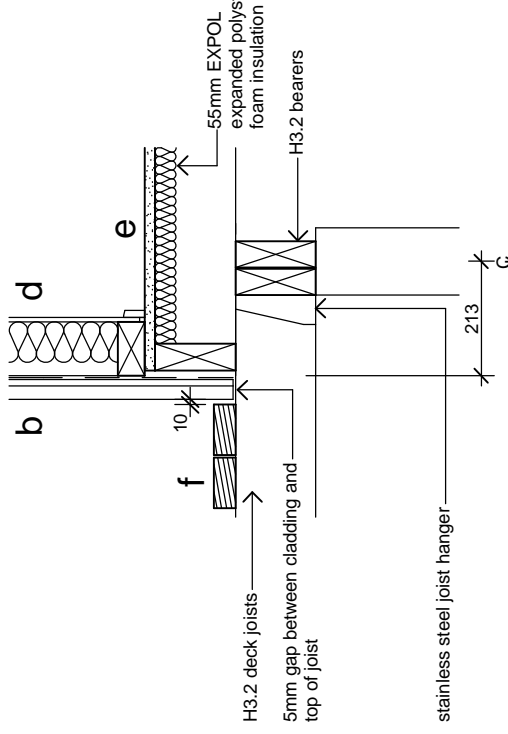
- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



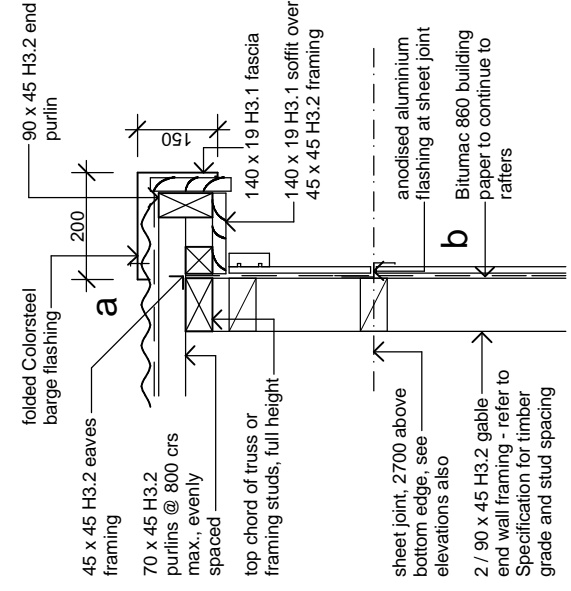
5 typical floor
1:10



7 boundary joist
1:10



6 floor to deck connection
1:10



8 typical verge
1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKD
V4.0 Standard Construction Details Appendix E1.4			
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Contractor shall check all Dimensions on site prior to construction



HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK-HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
floor, floor to deck connection, boundary joist and verge	1:10, 1:50
DESIGN	DRAWN
RP	GR
CHECKED	PROJECT No.
DATE	REV No.
	xyz
	xyz
	P21

Material Note:

COLORSTEEL ENDURA 0.40BMT
CORRUGATE PROFILE roofing over
TASMAN INSULATION FLAMESTOP
660 building paper over 70 x 45 H3.2
purlins on flat @ 800c/c max. evenly
spaced.

CHH 12mm SHADOWCLAD TEXTURE
NATURAL H3 LOSP AD grade plywood
cladding complete with
ex75 x 25 sawn H3.1 LOSP rebated
timber battens vertically @ 300c/c over
TASMAN INSULATION BITUMAC 860
building paper over timber framing.
Refer to floor plans for framing sizes &
c/c.

CHH 9mm ECOPLY CD grade untreated
ceiling lining over 70 x 35 H1.2 battens
@ 600c/c max.

CHH 9mm ECOPLY CD grade untreated
wall lining with 10mm gap to flooring.

CHH 19mm ECOPLY CD grade H3.2
LONGSPAN flooring F8 over timber
joists. Refer to foundation plan for sub
floor framing sizes & c/c.

90 x 35 H3.2 grip tread decking, grip
side up, even nail spacing, 10mm gap
between first piece of decking and wall
cladding. Refer to foundation plan for
sub floor framing sizes & c/c.

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		DRAWN	CHKD
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.4			

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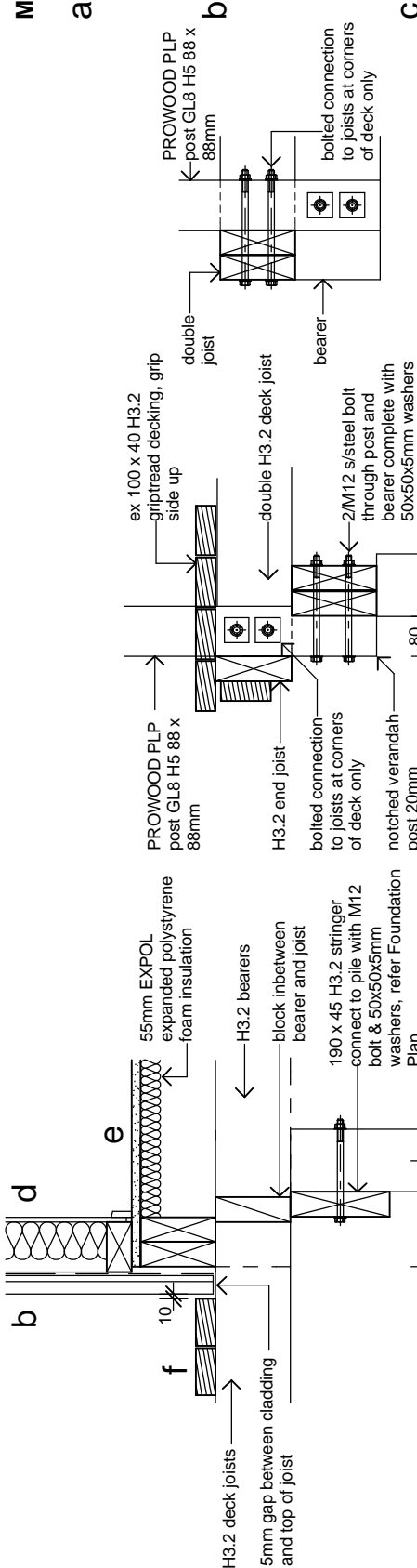
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PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK-HUTS**

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS		SCALES
floor to deck connection, post connection, door sill, webforge insert & external corner detail	DESIGN	1:10, 1:50
RP	DRAWN	@ A3 SHEET SIZE
DATE	CHECKED	SHT No.
	PROJECT No.	REV No.
		P22
		xyz

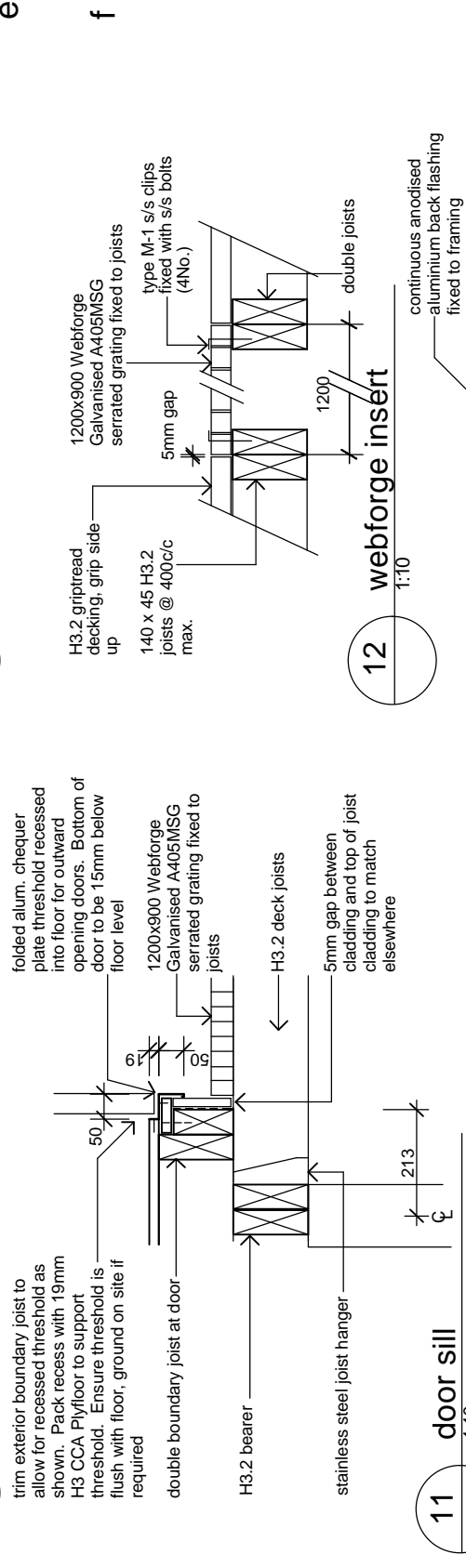


9 floor to deck connection
1:10

10 post connection
1:10

11 door sill
1:10

ELEVATION



12 webforge insert
1:10

13 external corner
1:10

trim exterior boundary joist to allow for recessed threshold as shown. Pack recess with 19mm H3 CCA Plyfloor to support threshold. Ensure threshold is flush with floor, ground on site if required

folded alum. chequer plate threshold recessed into floor for outward opening doors. Bottom of door to be 15mm below floor level

1200x900 Webforge Galvanised A405MSG serrated grating fixed to joists

H3.2 bearers

H3.2 deck joists

5mm gap between cladding and top of joist cladding to match elsewhere

double boundary joist at door

H3.2 bearers

stainless steel joist hanger

H3.2 wall framing. Refer to sections for size and spacing

Bitumac 860 building paper

continuous anodised aluminium back flashing fixed to framing

Material Note:

COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

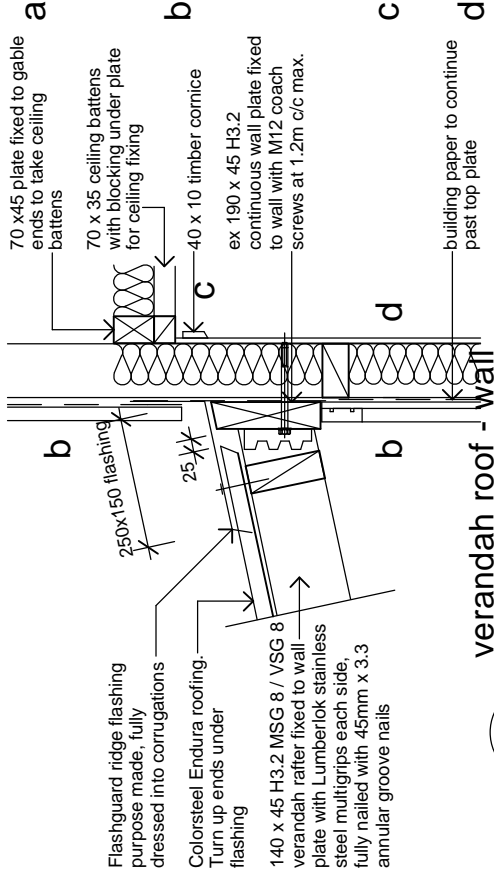
CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.

CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.

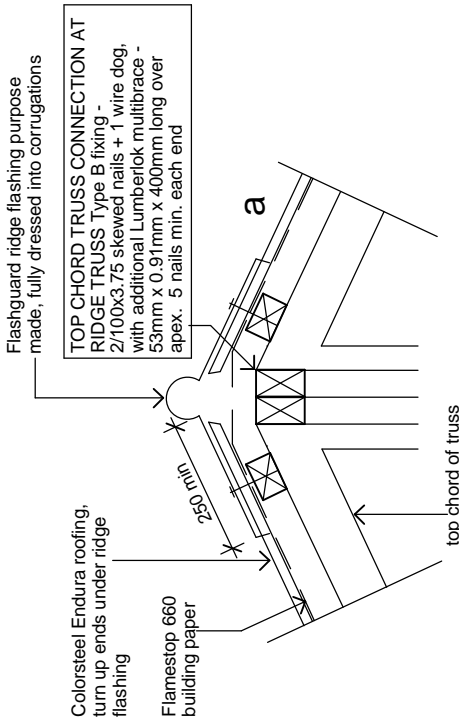
CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.

CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

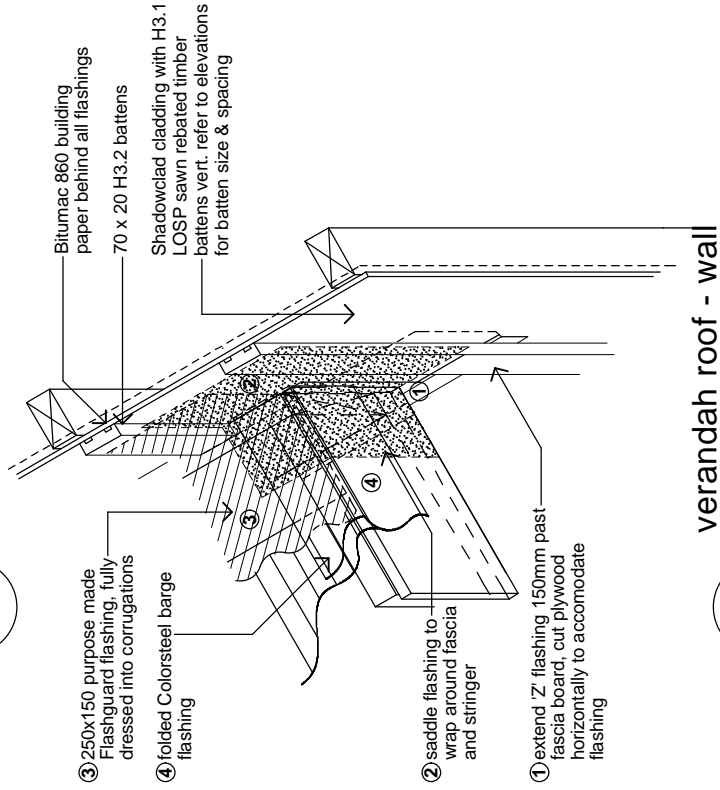
90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



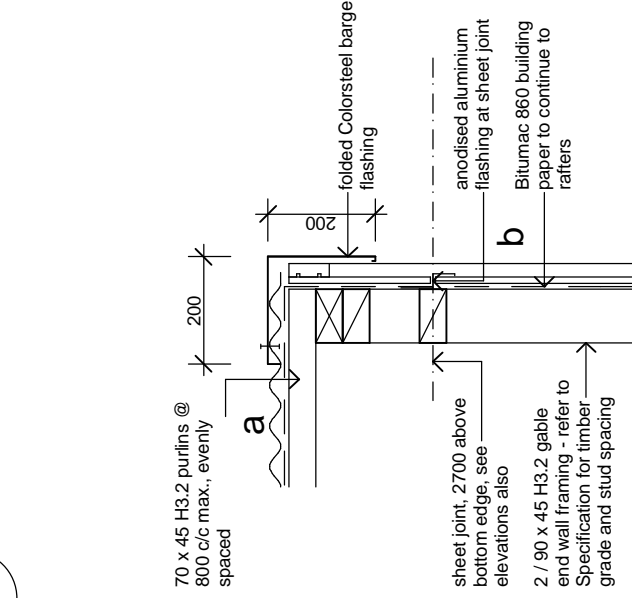
15 verandah roof - wall connection
1:10



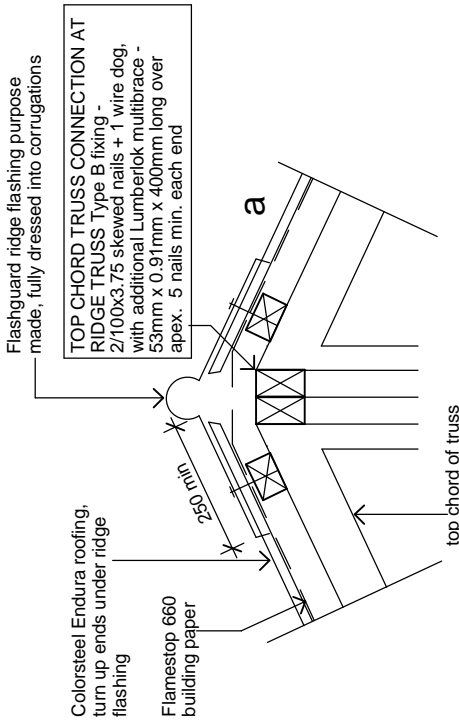
14 typical ridge flashing
1:10



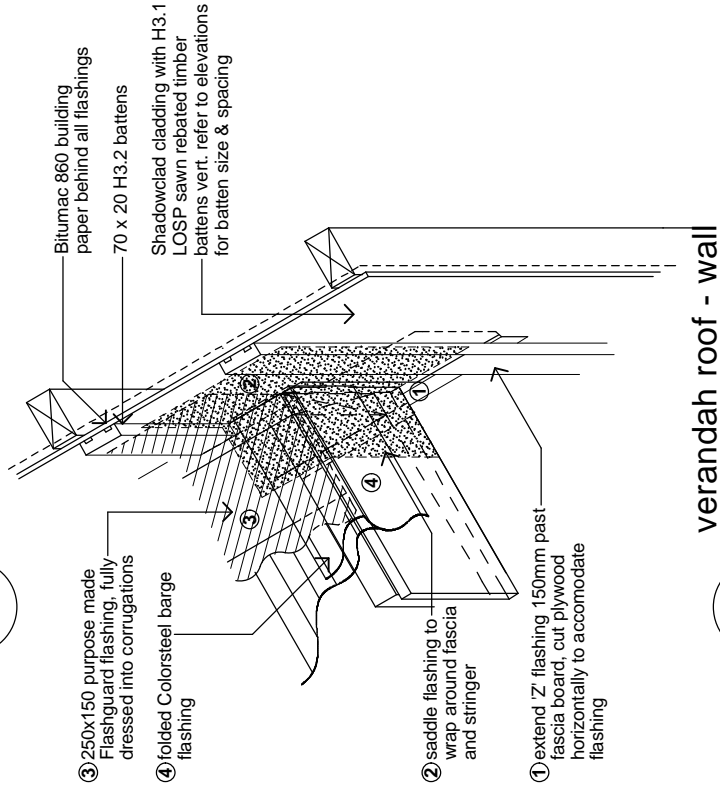
16 verge detail
1:10



15 verandah roof - wall connection
1:10



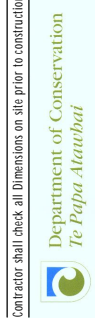
14 typical ridge flashing
1:10



16 verge detail
1:10

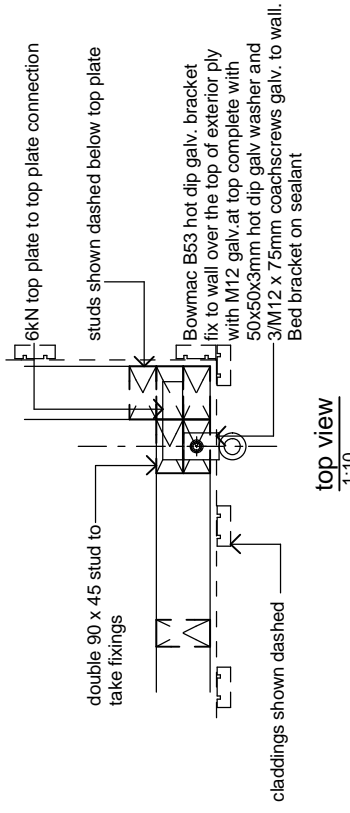
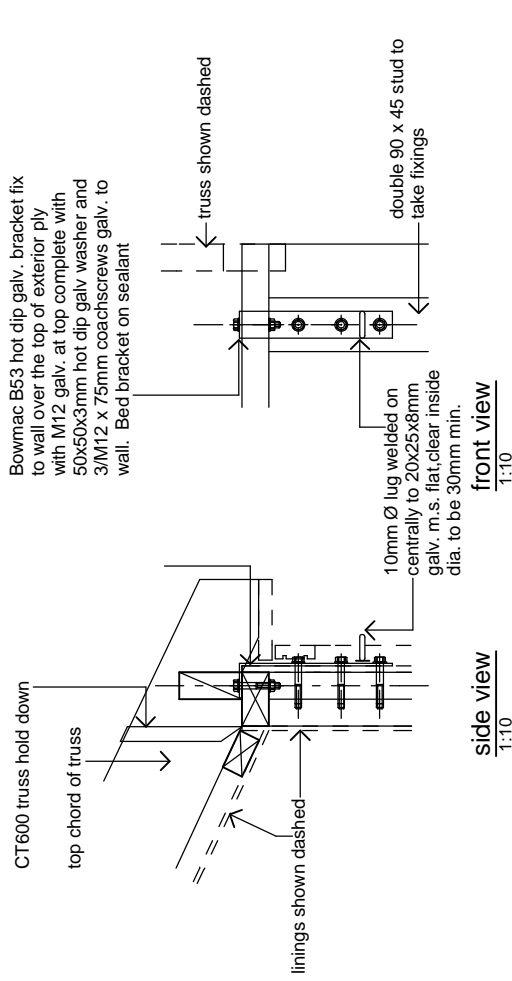
REV	NO	DESCRIPTION	DATE	BY	CHKD
4.0		First Issue	Mar 09		

Drawing Issue and Amendments
V4.0 Standard Construction Details Appendix E1.4
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PROJECT
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STANDARD DETAILS FOR
10 & 12 BUNK-HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	SCALES
typical ridge flashing, verandah roof - wall connection & verge	1:10, 1:50
DESIGN	@ A3 SHEET SIZE
RP	CHECKED PROJECT NO.
GR	DATE
xyz	xyz
	P23



typical tie down bracket at corners

1 1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
V4.0 Standard Construction Details Appendix E1.4			

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PROJECT
**HUT DESIGN MANUAL
 STANDARD DETAILS FOR
 10 & 12 BUNK HUTS**

CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	structural tie down bracket
SCALES	1:10
DESIGN	xyz
DRAWN	xyz
CHECKED	xyz
RP	xyz
GR	xyz
DATE	xyz
@ A3 SHEET SIZE	
SHEET No.	
REV No.	
	P31

Appendix E1.5: All huts common details

Standard Construction Details

This appendix contains:

- Current Drawing Register
- Amendment Register
- Standard Construction Details

ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
C24	window installation details	4.0	March 2009
P24	window installation details	4.0	March 2009
26	balustrade details	4.0	March 2009
27	stair details	4.0	March 2009
C29	louvre details	4.0	March 2009
P29	louvre details	4.0	March 2009
30	ridge truss connection details	4.0	March 2009
32	structural tie down anchor details	4.0	March 2009
C33	typical snow details – Colorsteel cladding	4.0	March 2009
P33	typical snow details – ply cladding	4.0	March 2009
C34	typical kea details – Colorsteel cladding	4.0	March 2009
P34	typical kea details – ply cladding	4.0	March 2009

Note: Sheets C24 / P24 and C29 / P29 are required depending on the selected cladding.

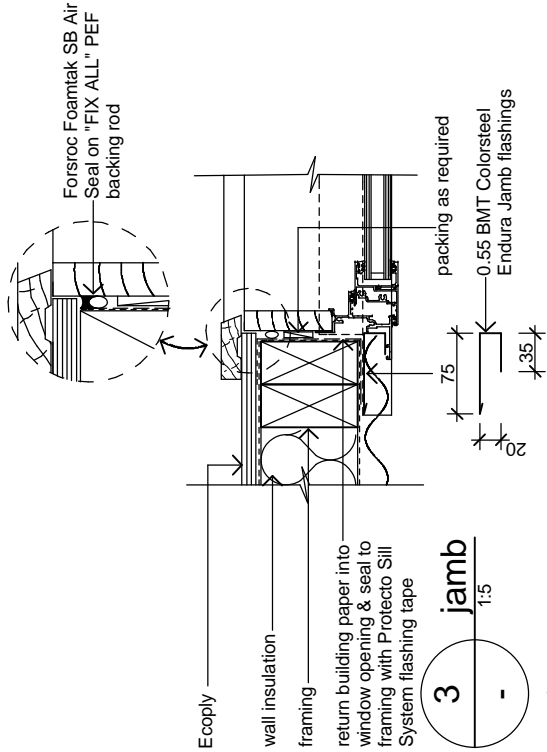
Sheet 32 used only if required by Structural Engineer.

Sheets C33 / P33 are required where keas are present, selected by cladding type.

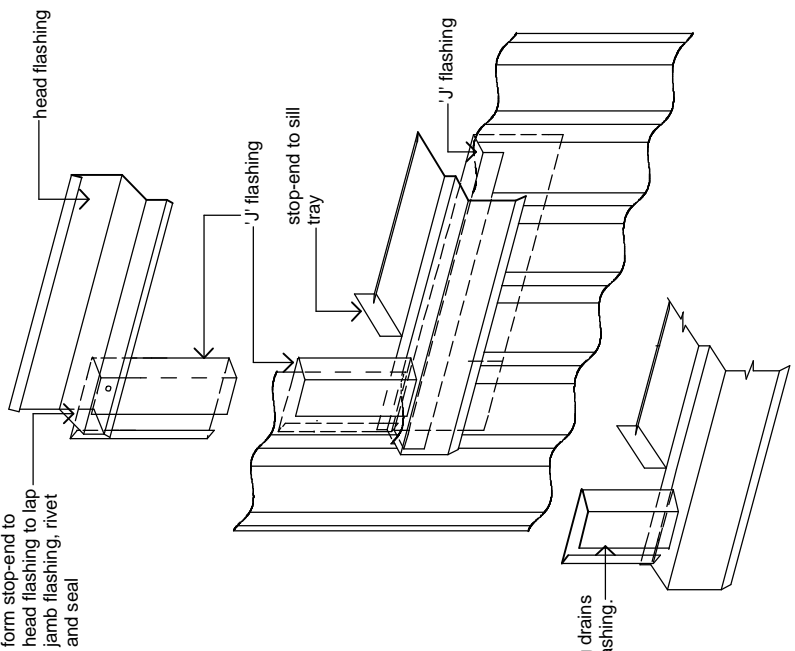
Sheets C34 / P34 are required where snow is present, selected by cladding type.

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

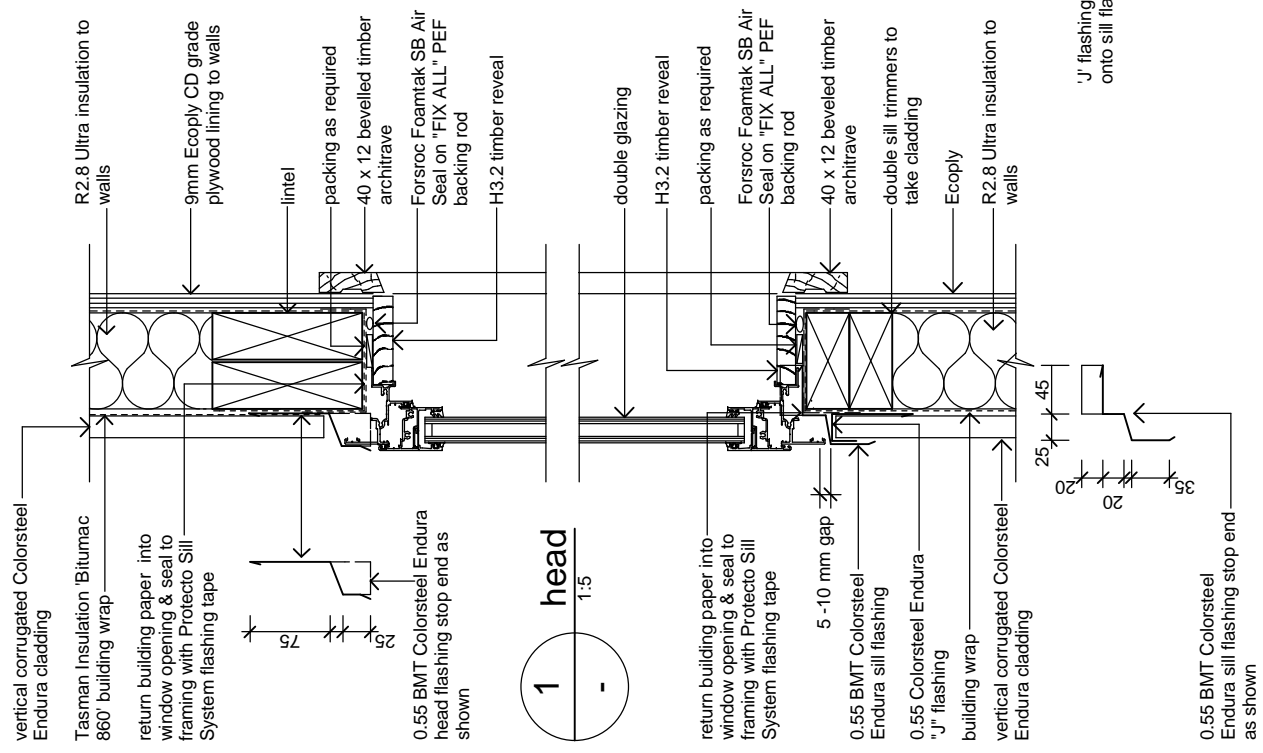


3 jamb
1:5



1 head
1:5

2 sill
1:5



2 sill
1:5

4.0	First Issue	Mar 09	-
	REV. NO. DESCRIPTION	DATE	DWN. CKD.
	Drawing Issue and Amendments		
	V4.0 Standard Construction Details Appendix E1.5		

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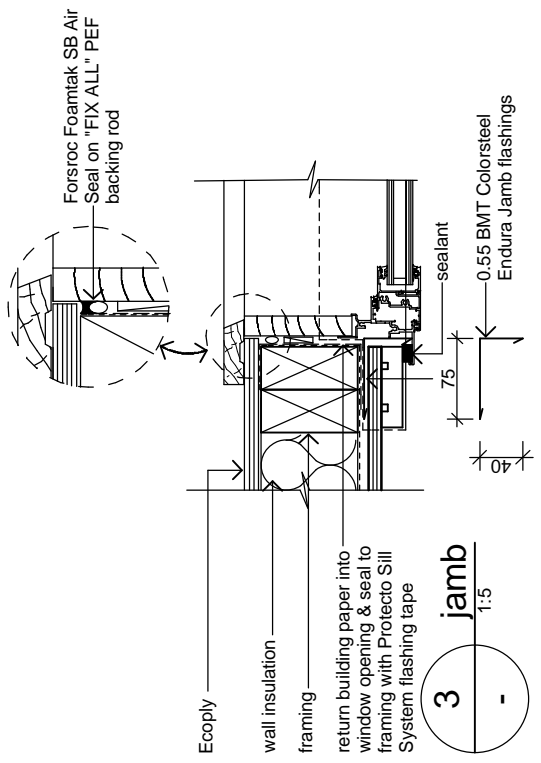
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Contractor shall check all Dimensions on site prior to construction

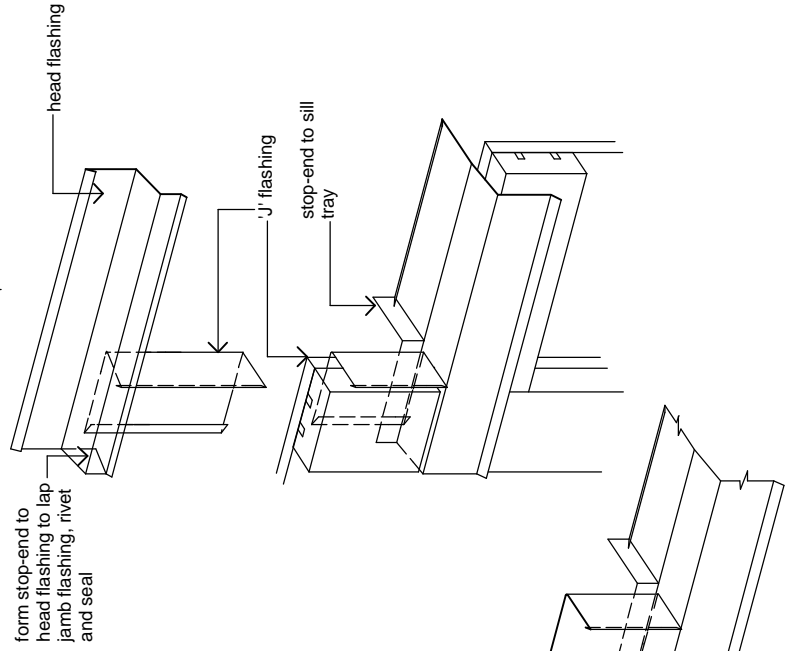
Department of Conservation
Te Papa Ataturai

HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
window installation details	1:5
DESIGN	@ A3 SHEET SIZE
RP	DRAWN
GR	CHECKED
DATE	PROJECT NO.
	REV. NO.
	xyz
	xyz
	C24

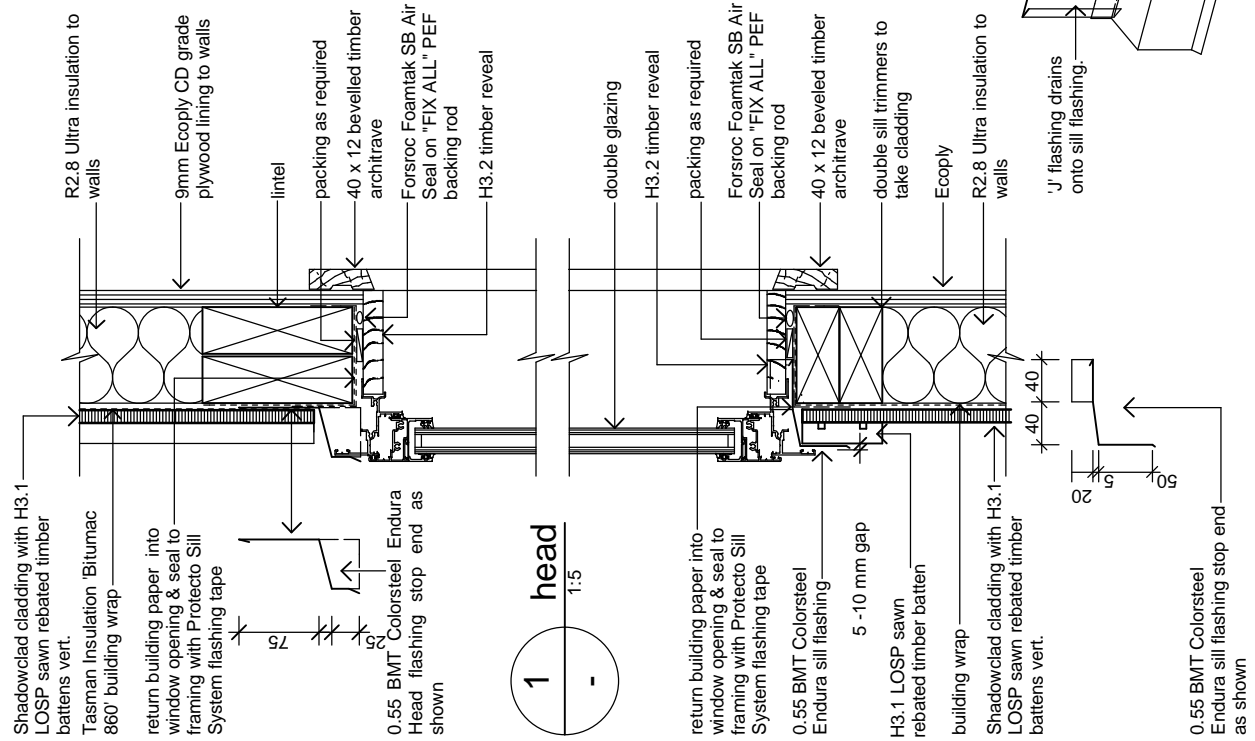


3 jamb
1:5



1 head
1:5

2 sill
1:5



4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
V4.0 Standard Construction Details Appendix E1.5			

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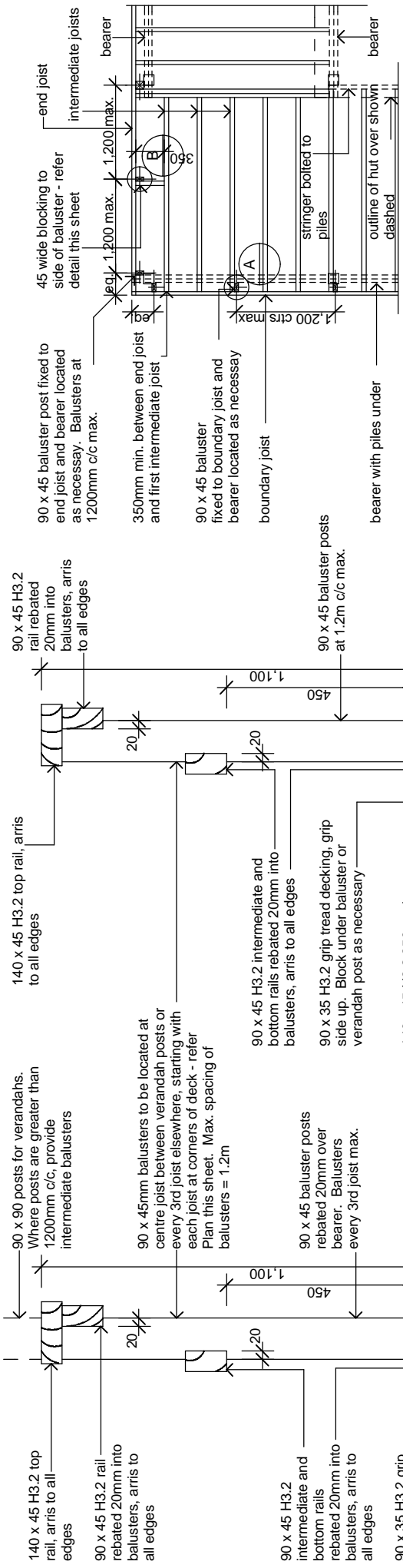
Contractor shall check all Dimensions on site prior to construction



HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

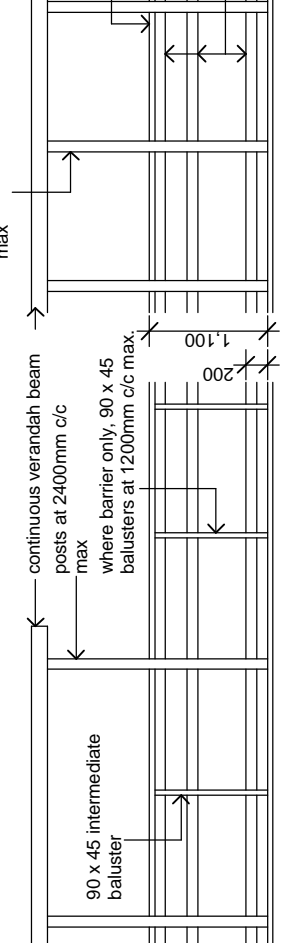
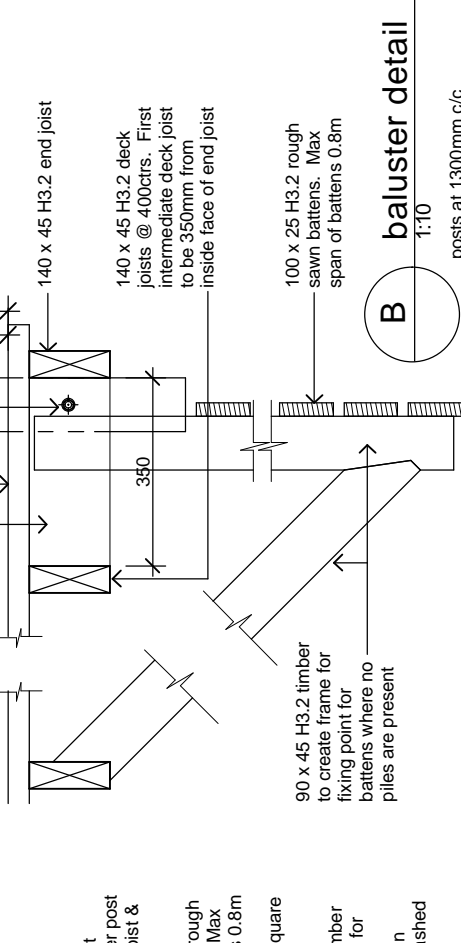
CLIENT: DEPARTMENT OF CONSERVATION
SHEET CONTENTS

SHEET CONTENTS		SCALES
window installation details		1:5
DESIGN	DRAWN	CHECKED
RP	GR	RP
DATE	xyz	xyz
		P24



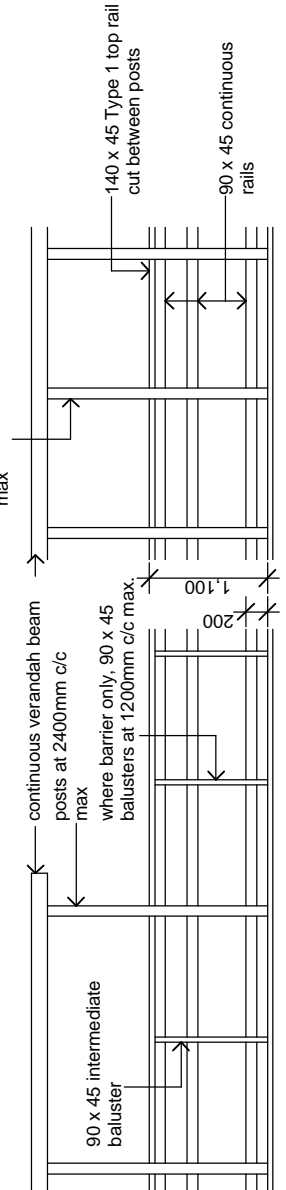
TYPICAL BALUSTER PLAN
1:50

Baluster detail
1:10



A

B



BARRIER ELEVATIONS
1:50

REV NO	DESCRIPTION	DATE	DWN	CHKD
4.0	First Issue	Mar 09	-	-

Drawing Issue and Amendments
V4.0 Standard Construction Details Appendix E1.5

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PROJECT
HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS

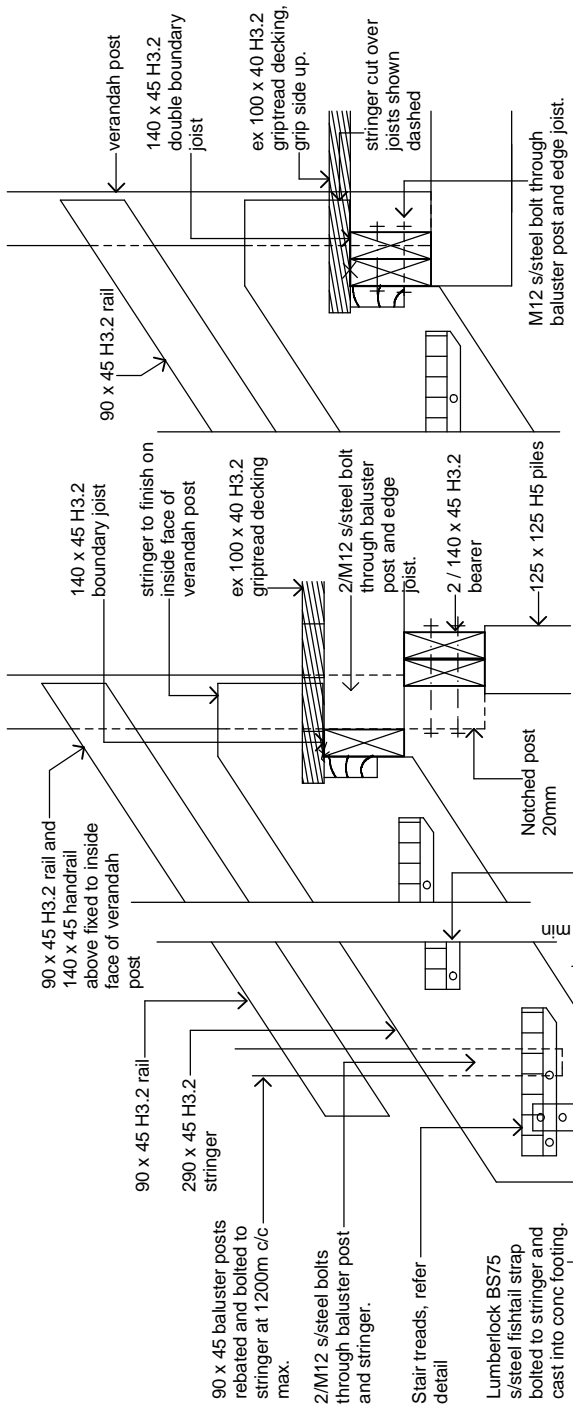
DESIGN	DRAWN	CHECKED	PROJECT NO.	REV. NO.
RP	GR	RP	xyz	xyz

DATE

SCALE
1:50,
1:10

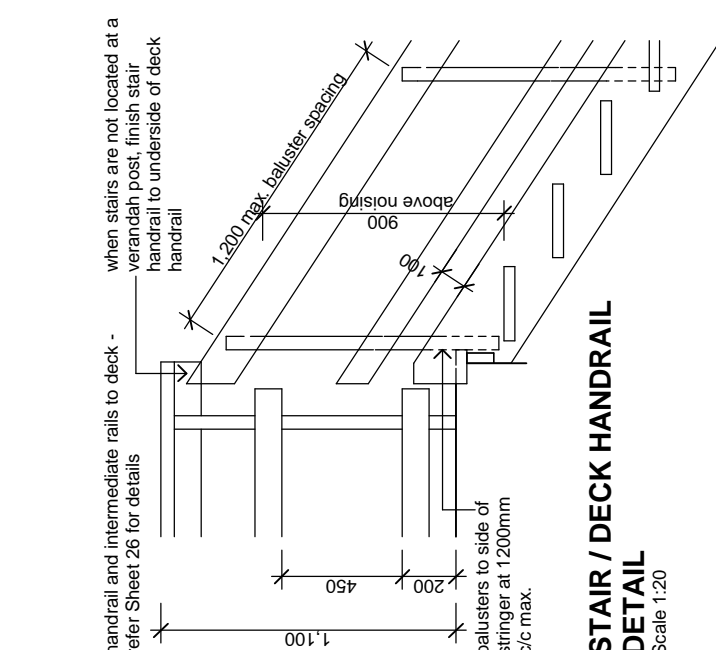
balustrade details

SHEET NO. **26**

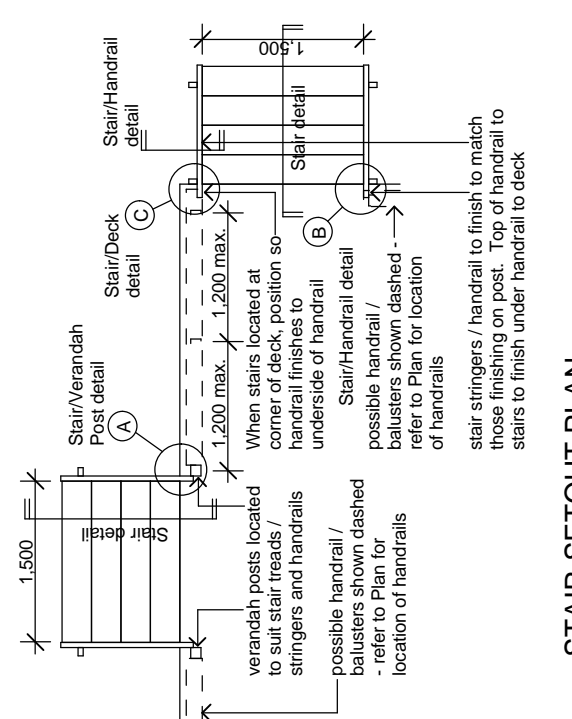


STAIR DETAIL - TOP Detail B
Scale 1:10

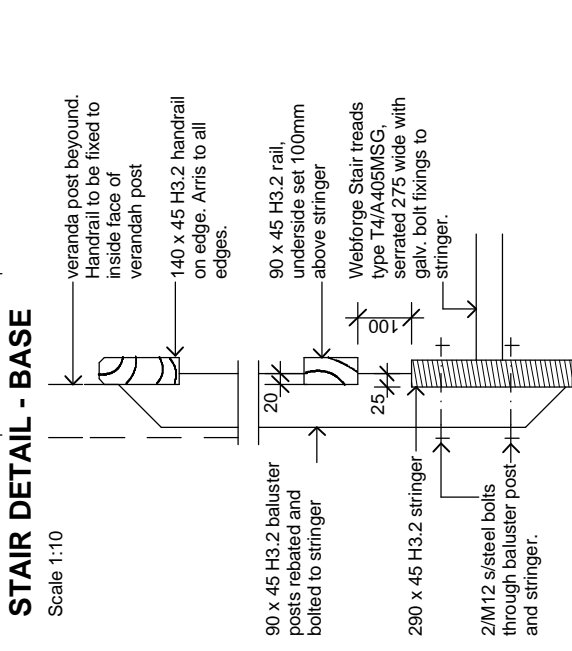
STAIR DETAIL - TOP Detail A
Scale 1:10



STAIR / DECK HANDRAIL DETAIL
Scale 1:20



STAIR SETOUT PLAN
Scale 1:50



STAIR HANDRAIL DETAIL
Scale 1:10

4.0	First Issue	Mar 09	-
REV	NO	DESCRIPTION	DATE
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.5			

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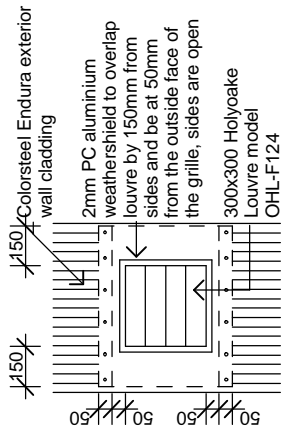
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Department of Conservation
Te Papa Ataturai

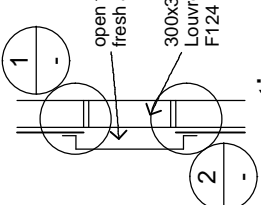
HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

PROJECT

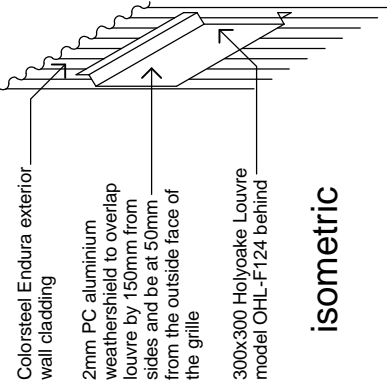
CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	
SCALES	1:50, 1:20, 1:10
DESIGN	stair details
DRAWN	RP
CHECKED	RP
PROJECT NO.	xyz
DATE	xyz
SHEET NO.	27



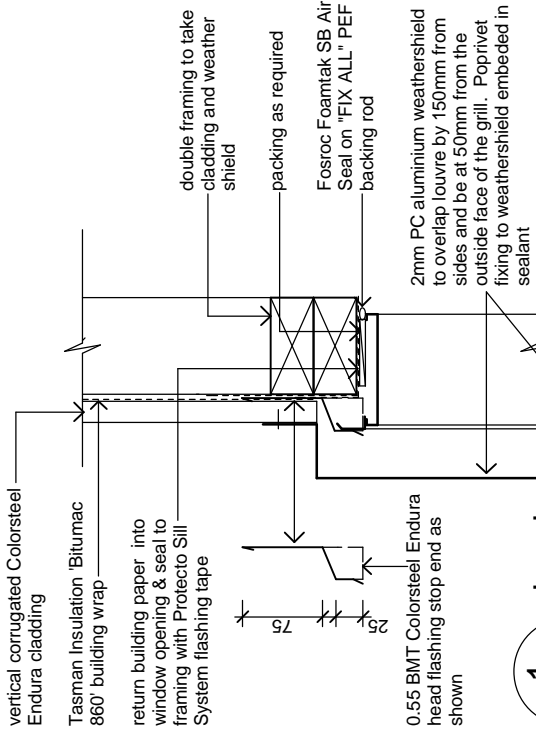
elevation



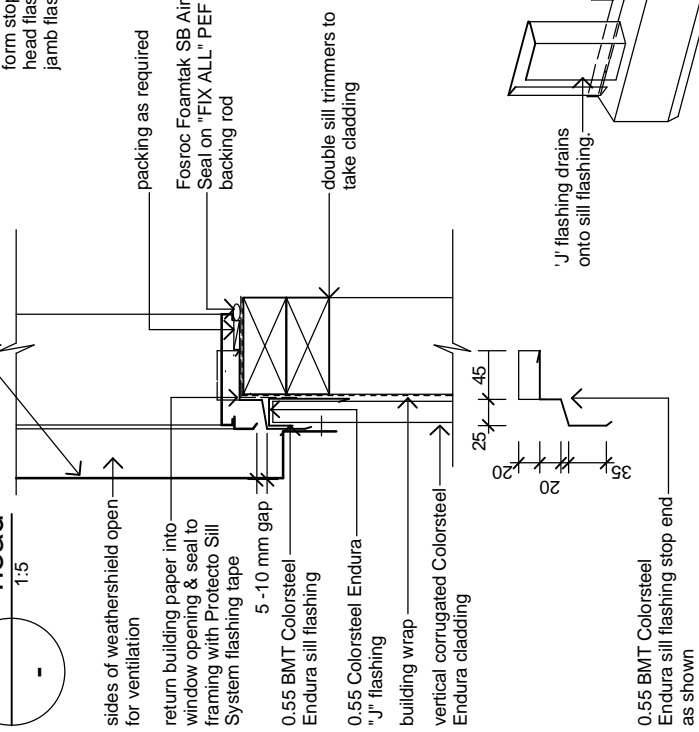
section



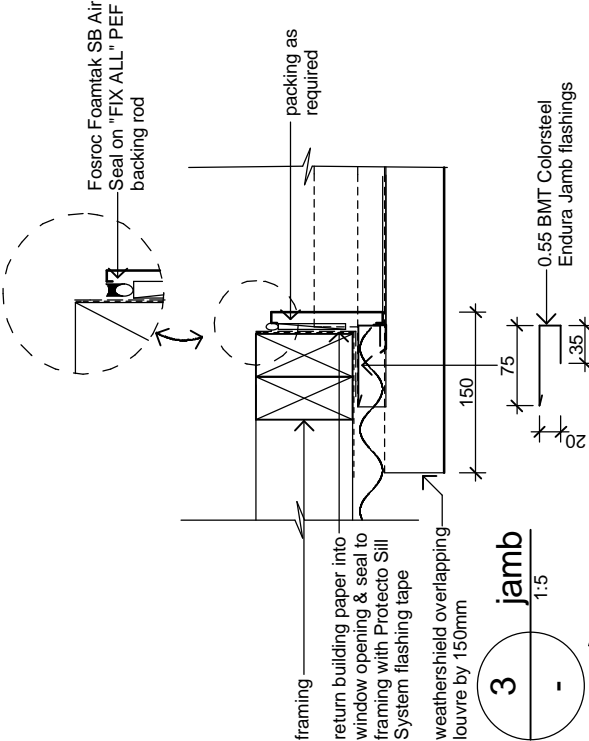
isometric



1 head



3 jamb



2 sill

4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	DWN CKD
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.5			

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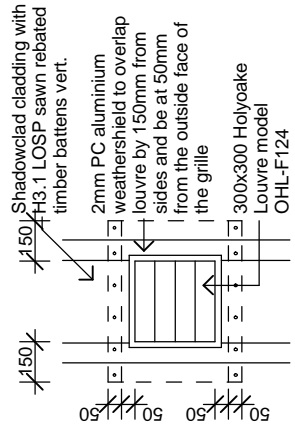
CLIENT: DEPARTMENT OF CONSERVATION
SHEET CONTENTS

DESIGN	DRAWN	CHECKED	PROJECT NO.	REV. NO.
RP	GR	RP	xyz	xyz
DATE				

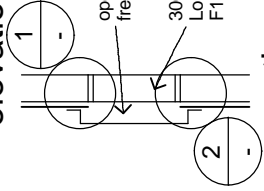
SCALES
1:20,
1:5

loouvre details

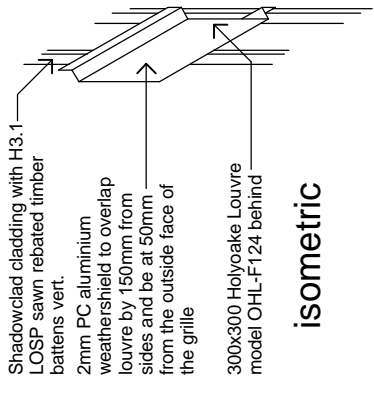
C29



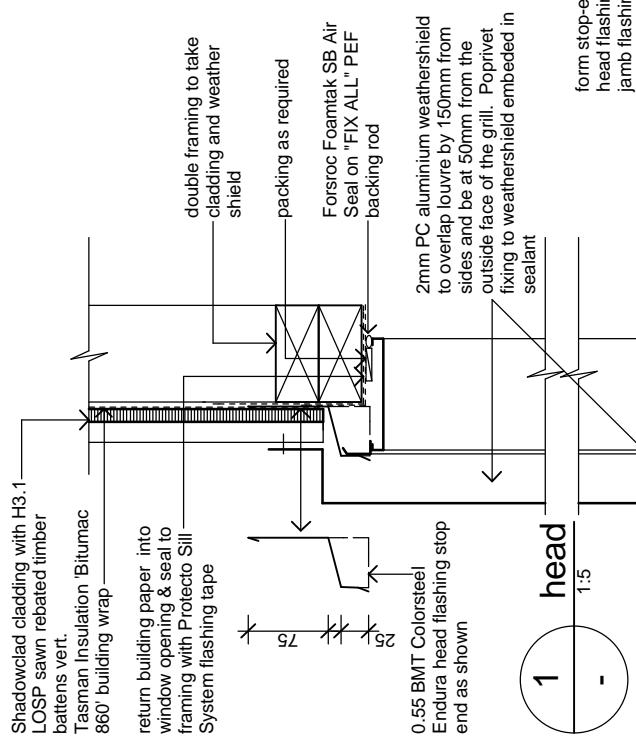
elevation



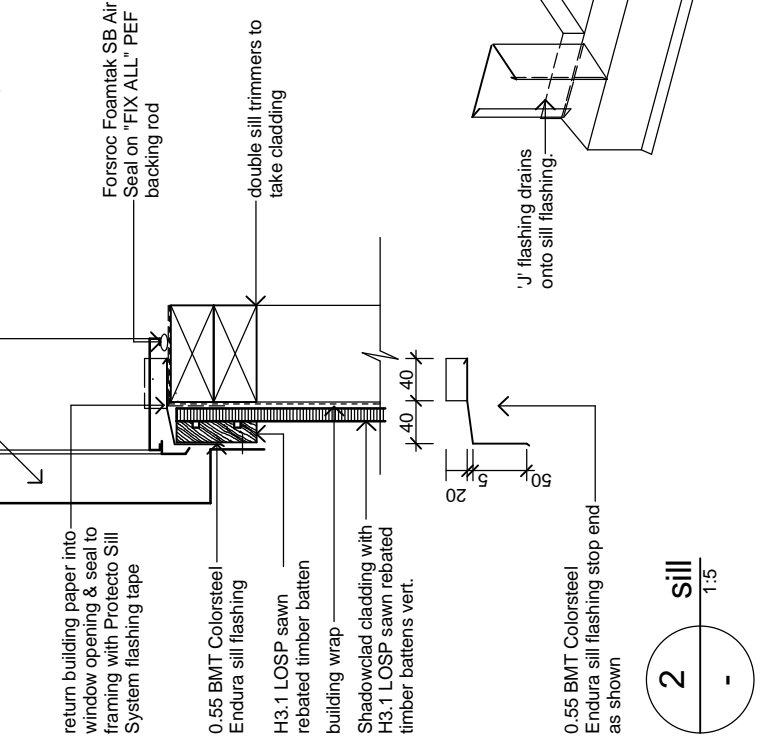
section



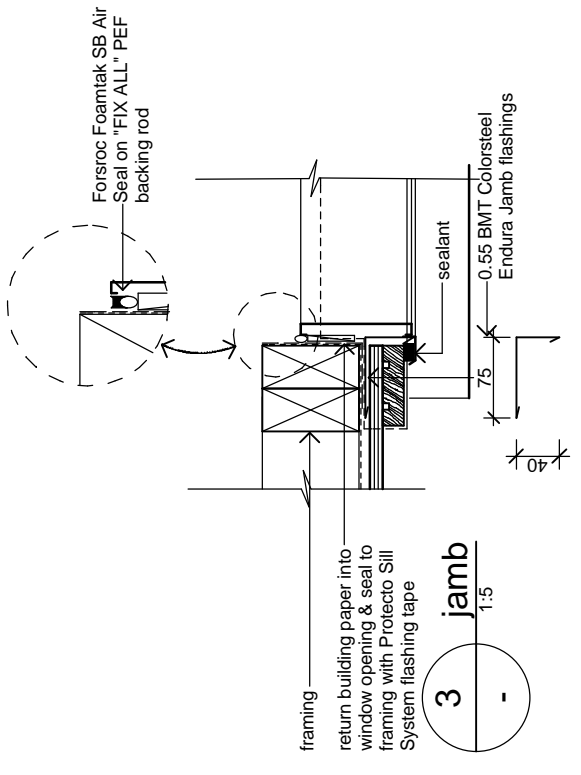
isometric



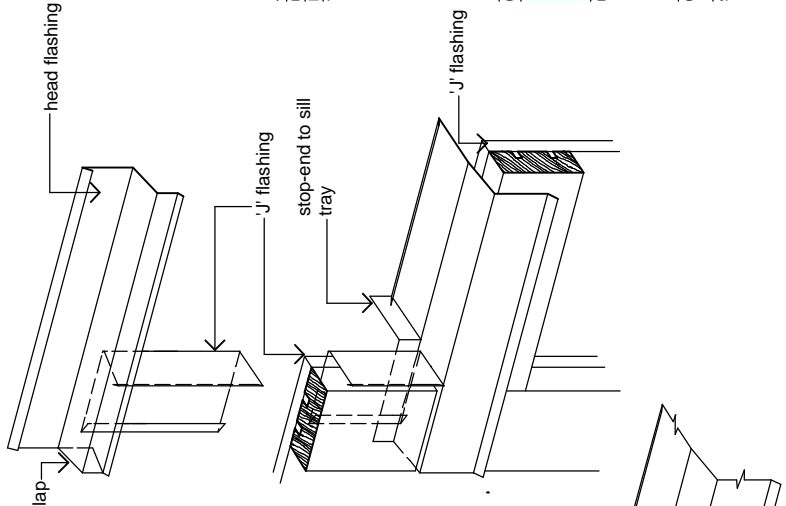
1 head



2 sill



3 jamb



4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	DWN CKO
Drawing Issue and Amendments			
V4.0 Standard Construction Details Appendix E1.5			

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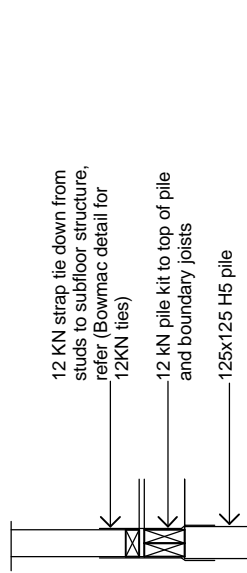
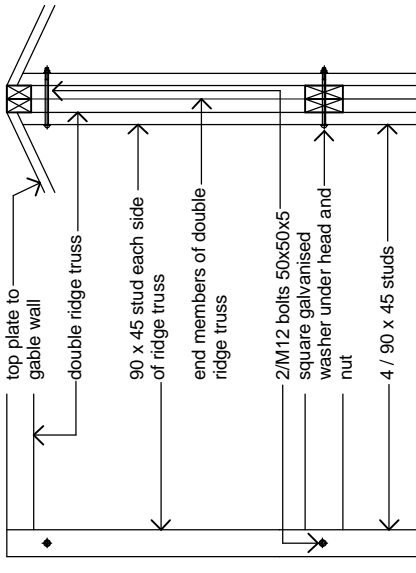


HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	louvre details

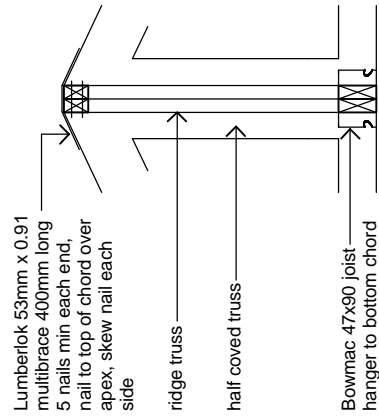
DESIGN	DRAWN	CHECKED	PROJECT NO.	BY	NO.
RP	GR	RP	xyz		
DATE					
					P29

SCALES	1:5, 1:20
--------	--------------



external gable end walls

1:20



truss connection detail

1:20

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO

V4.0 Standard Construction Details Appendix E1.5

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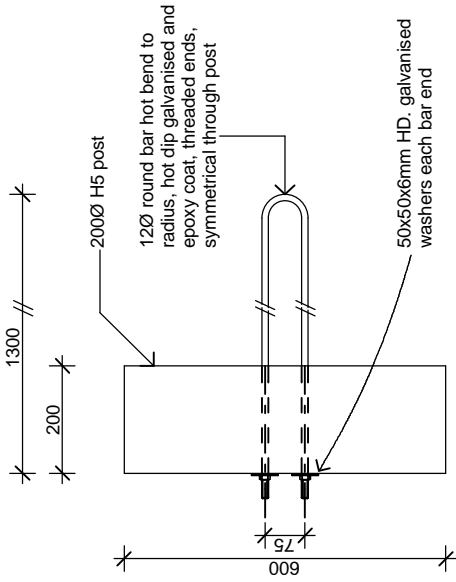
PROJECT
**HUT DESIGN MANUAL
STANDARD DETAILS FOR
10 & 12 BUNK HUTS**

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS
ridge truss connection details

SCALES
1:20

DESIGN	DRAWN	CHECKED	PROJECT No.	REV No.
RP	GR	RP	xyz	xyz
DATE				
				30

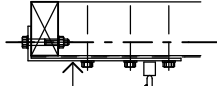


wind anchors detail
1:10

Bowmac B53 hot dip galv. bracket fix to wall framing with M12 galv. at top complete with 50x50x5mm hot dip galv washer and 3/M12 x 75mm coachscrews galv. to wall. Bed bracket on sealant REFER TO SHEET 31 FOR BRACKET DETAILS

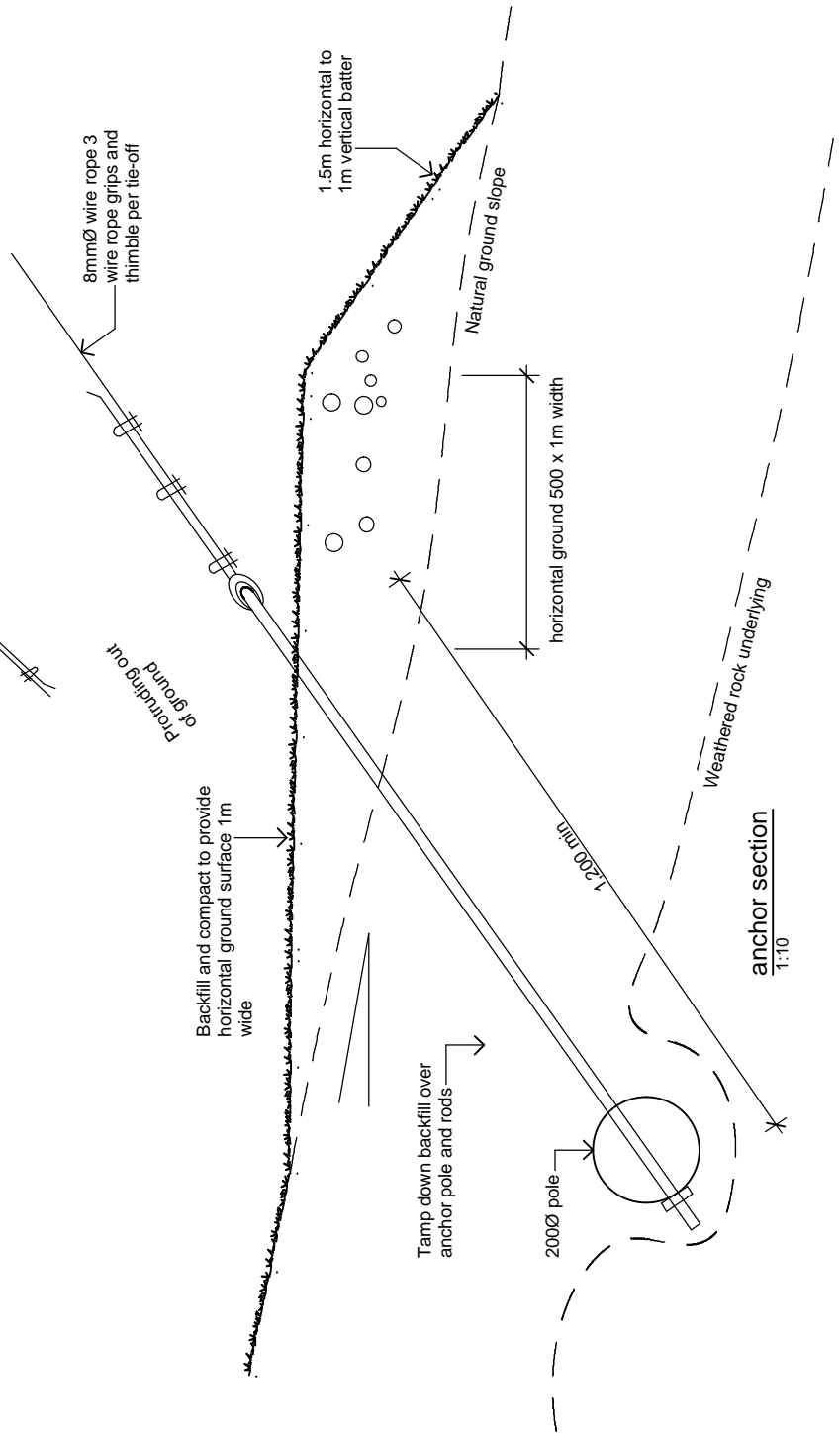
10mm Ø lug, clear inside dia. to be 30mm min.

SWL > 750 Kg shackle

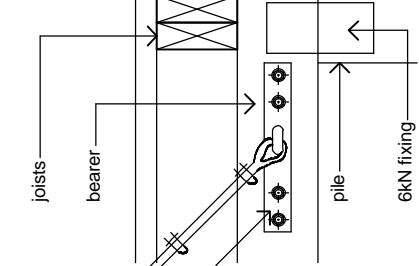


12mm Ø min rigging screw denso wrapped

tie down fixing to hut corners
1:10



tie down wire (2 off), to opposite corners of tankstand



tie down fixing to tank stand
1:10

Bowmac B85 S strap, 4/120 bolts to bearer, double joist or piles of water tank stand, 10mmØ lug welded on centrally

4.0	First Issue	Mar 09	-
REV	NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
V4.0 Standard Construction Details Appendix E1.5			

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PROJECT
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STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS**

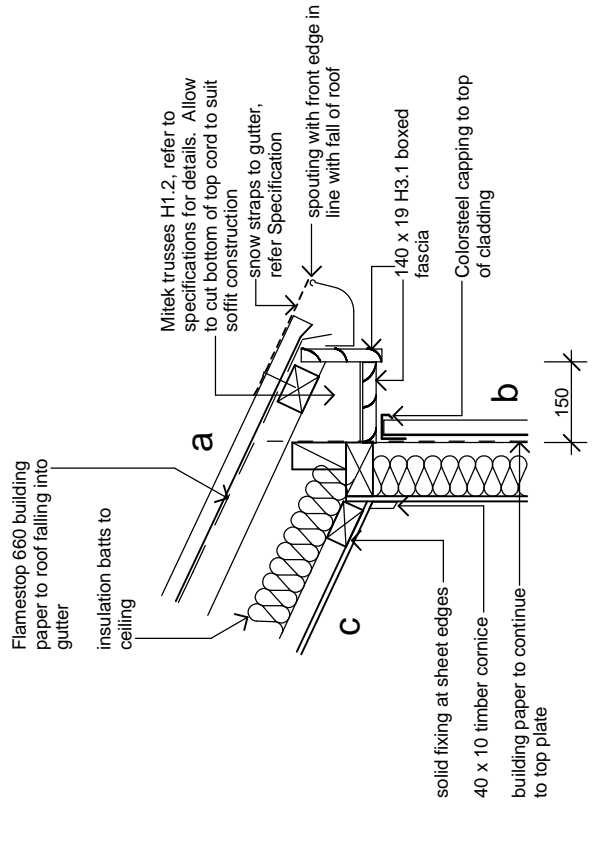
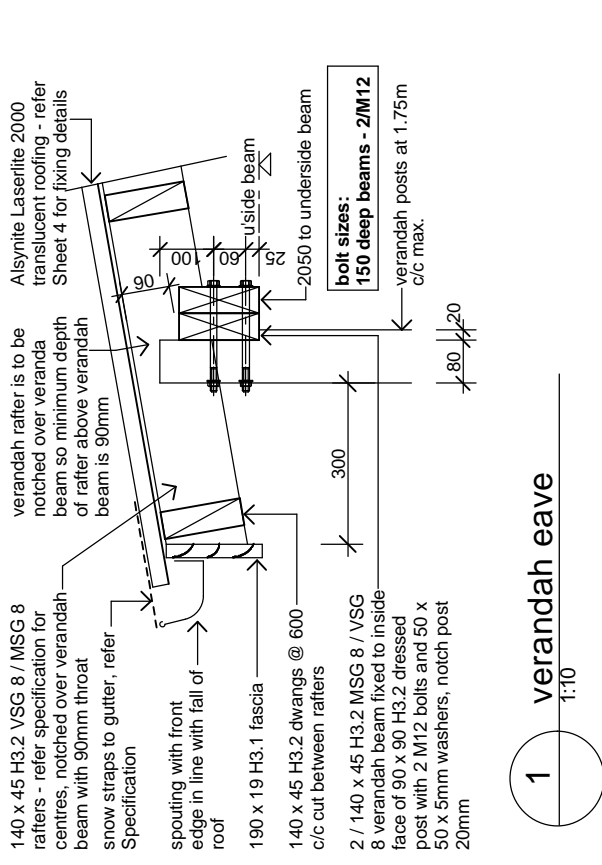
CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS

SHEET CONTENTS		SCALES
structural tie down anchor details		1:10
DESIGN	DRAWN	CHECKED
RP	GR	RP
DATE	xyz	xyz
		32

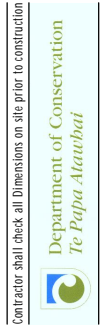
Material Note:

- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



REV NO	DESCRIPTION	DATE	BY	CHKD
4.0	First Issue	Mar 09	-	-

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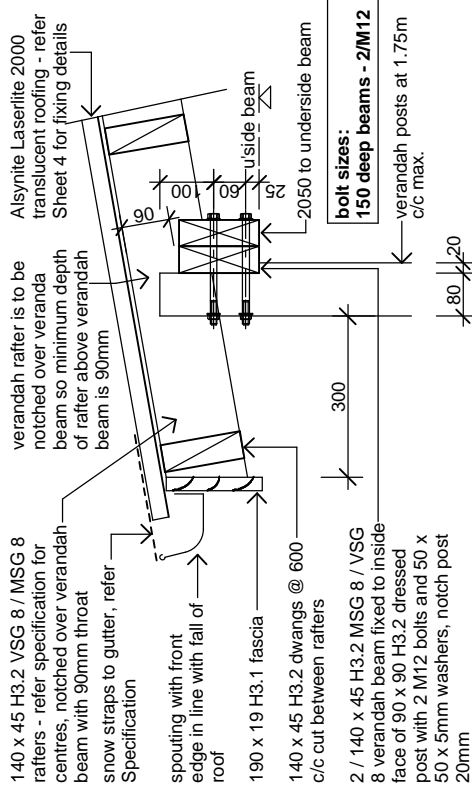


CLIENT: DEPARTMENT OF CONSERVATION
 SHEET CONTENTS: TYPICAL snow details - colorsteel cladding
 SCALES: 1:10, 1:50
 @ A3 SHEET SIZE
 DESIGN: RP
 DRAWN: GR
 CHECKED: RP
 PROJECT NO: xyz
 REV NO: xyz
 DATE: xyz
C33

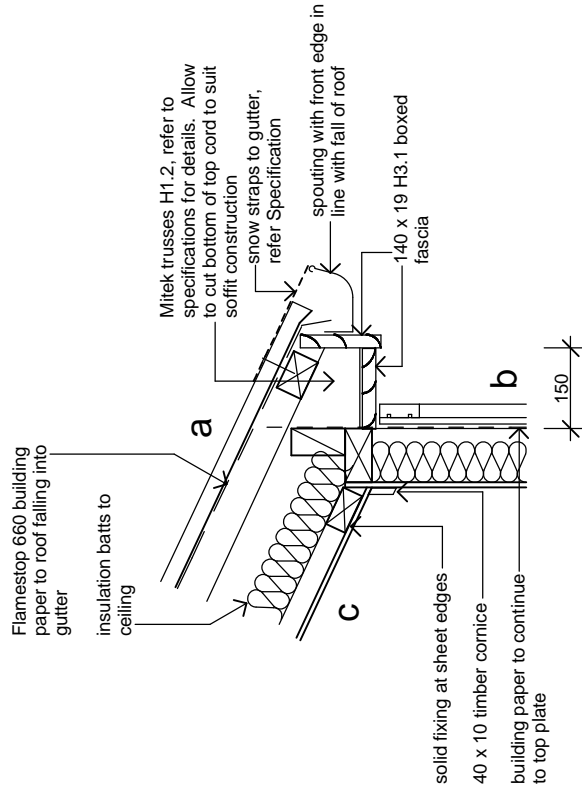
DESIGN	DRAWN	CHECKED	PROJECT NO.	REV NO.
RP	GR	RP	xyz	xyz

Material Note:

- a** COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** CHH 12mm SHADOWCLAD TEXTURE NATURAL H3 LOSP AD grade plywood cladding complete with ex75 x 25 sawn H3.1 LOSP rebated timber battens vertically @ 300c/c over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plans for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.
- d** CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.
- e** CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing, 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



1 verandah eave
1:10



2 typical eave
1:10

REV NO	DESCRIPTION	DATE	BY	CHKD
4.0	First Issue	Mar 09	-	-

Drawing Issue and Amendments
V4.0 Standard Construction Details Appendix E1.5

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PROJECT
HUT DESIGN MANUAL
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4, 6, 10 & 12 BUNK HUTS

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SHEET CONTENTS

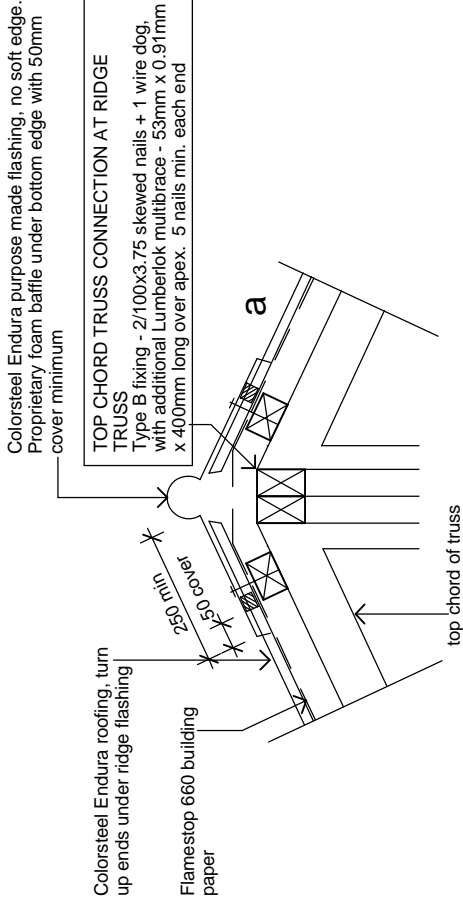
DESIGN	DRAWN	CHECKED	PROJECT NO.	REV. NO.
RP	GR	RP	xyz	xyz

SCALES
1:10,
1:50

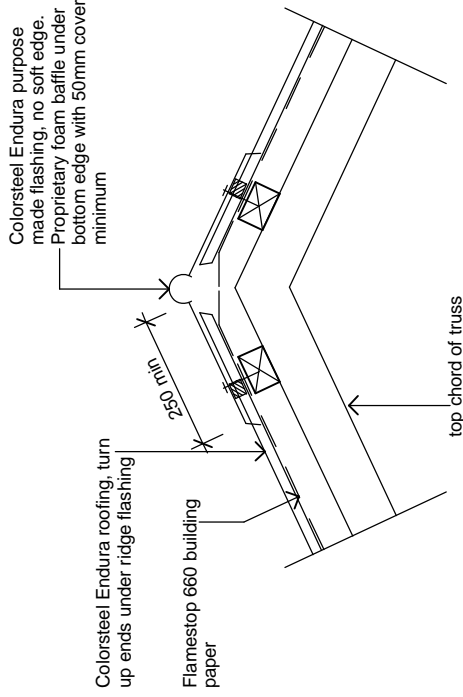
@ A3 SHEET SIZE
SHEET NO. **P33**

Material Note:

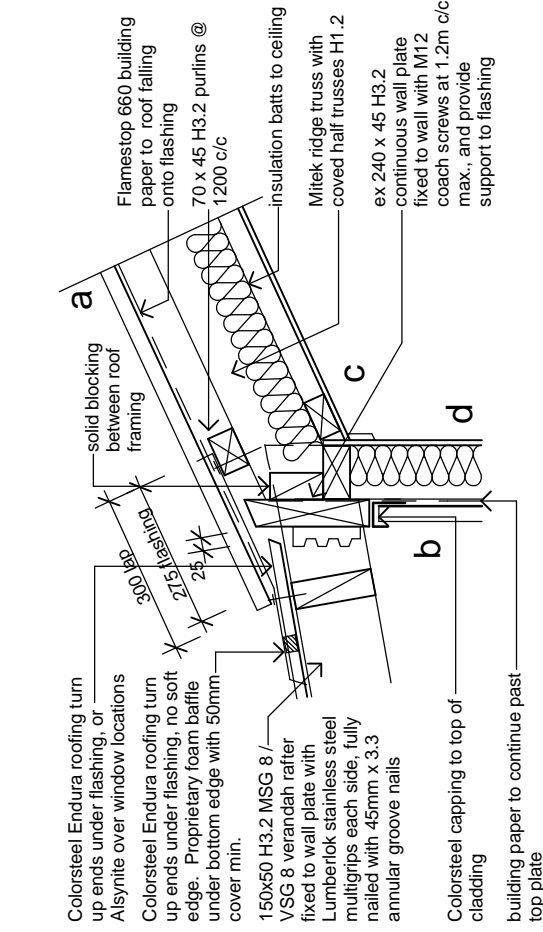
- COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.**
- COLORSTEEL ENDURA 0.40BMT CORRUGATE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.**
- CHH 9mm ECOPLY CD grade untreated ceiling lining over 70 x 35 H1.2 battens @ 600c/c max.**
- CHH 9mm ECOPLY CD grade untreated wall lining with 10mm gap to flooring.**
- CHH 19mm ECOPLY CD grade H3.2 LONGSPAN flooring F8 over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.**
- 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.**



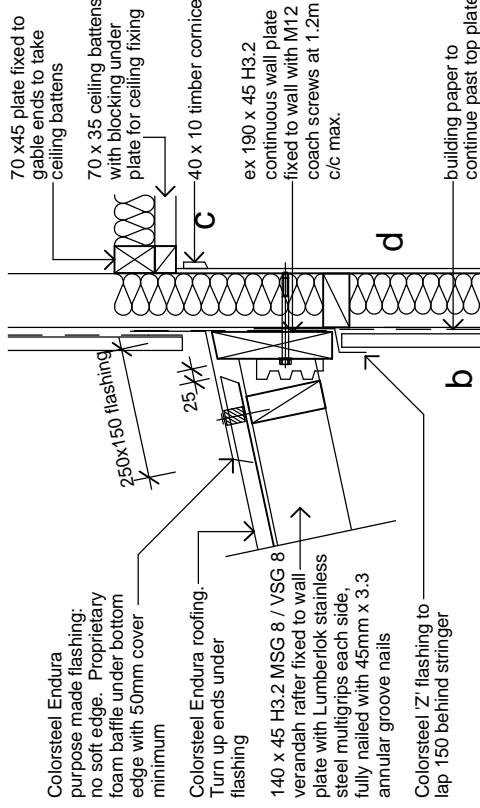
2 10-12 bunk ridge
1:10



1 4-6 bunk ridge
1:10



3 verandah roof connection
1:10



4 verandah roof - wall connection
1:10

4.0 First Issue Mar 09 -
REV NO DESCRIPTION DATE DWG CKD
DRAWING Issue and Amendments DATE
V4.0 Standard Construction Details Appendix E1.5

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HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

PROJECT

CLIENT DEPARTMENT OF CONSERVATION

SHEET CONTENTS

SCALES

1:10,
1:50

Typical kea details -
colorsteel cladding

DESIGN DRAWN CHECKED PROJECT NO. SHEET NO. REV. NO.

RP GR RP RP xyz

DATE xyz

C34

Material Note:

COLORSTEEL ENDURA 0.40BMT
CORRUGATE PROFILE roofing over
TASMAN INSULATION FLAMESTOP
660 building paper over 70 x 45 H3.2
purlins on flat @ 800c/c max. evenly
spaced.

CHH 12mm SHADOWCLAD TEXTURE
NATURAL H3 LOSP AD grade plywood
cladding complete with
ex75 x 25 sawn H3.1 LOSP rebated
timber battens vertically @ 300c/c over
TASMAN INSULATION BITUMAC 860
building paper over timber framing.
Refer to floor plans for framing sizes &
c/c.

CHH 9mm ECOPLY CD grade untreated
ceiling lining over 70 x 35 H1.2 battens
@ 600c/c max.

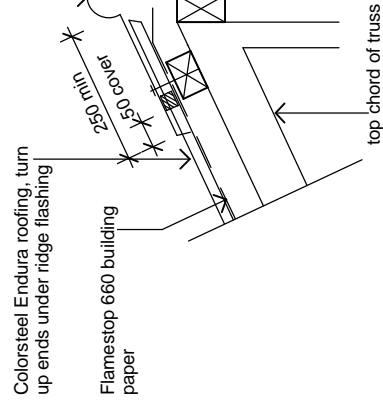
CHH 9mm ECOPLY CD grade untreated
wall lining with 10mm gap to flooring.

CHH 19mm ECOPLY CD grade H3.2
LONGSPAN flooring F8 over timber
joists. Refer to foundation plan for sub
floor framing sizes & c/c.

90 x 35 H3.2 grip tread decking, grip
side up, even nail spacing, 10mm gap
between first piece of decking and wall
cladding. Refer to foundation plan for
sub floor framing sizes & c/c.

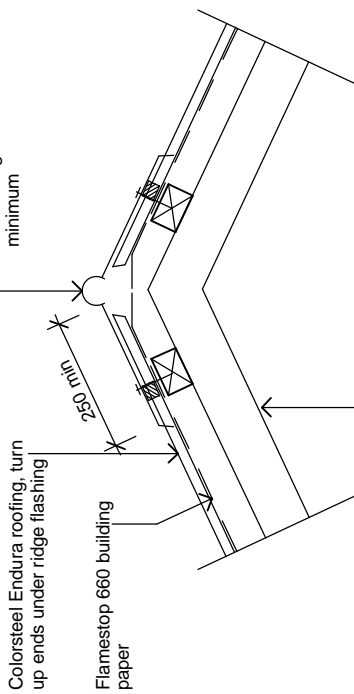
Colorsteel Endura purpose made flashing, no soft edge.
Proprietary foam baffle under bottom edge with 50mm
cover minimum

TOP CHORD TRUSS CONNECTION AT RIDGE
TRUSS
Type B fixing - 2/100x3.75 skewed nails + 1 wire dog,
with additional Lumberlok multibrace - 53mm x 0.91mm
x 400mm long over apex. 5 nails min. each end

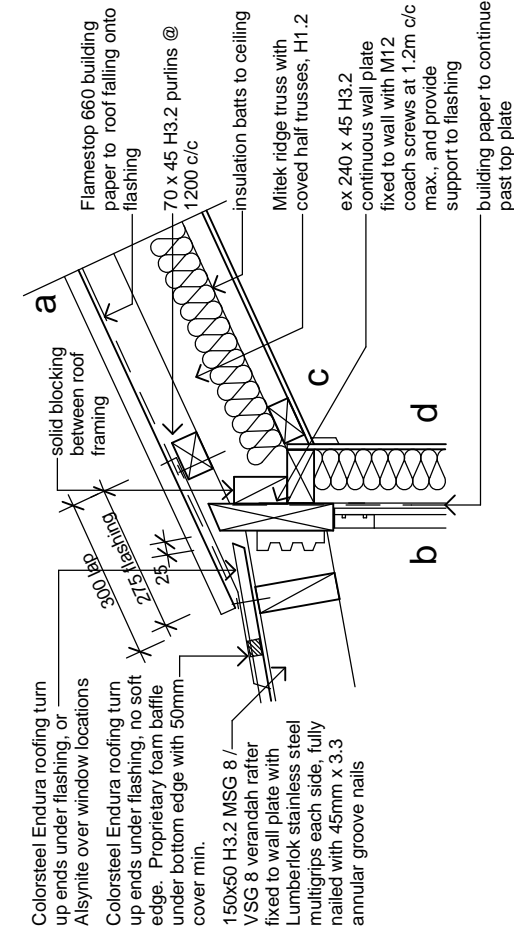


3 10-12 bunk ridge
1:10

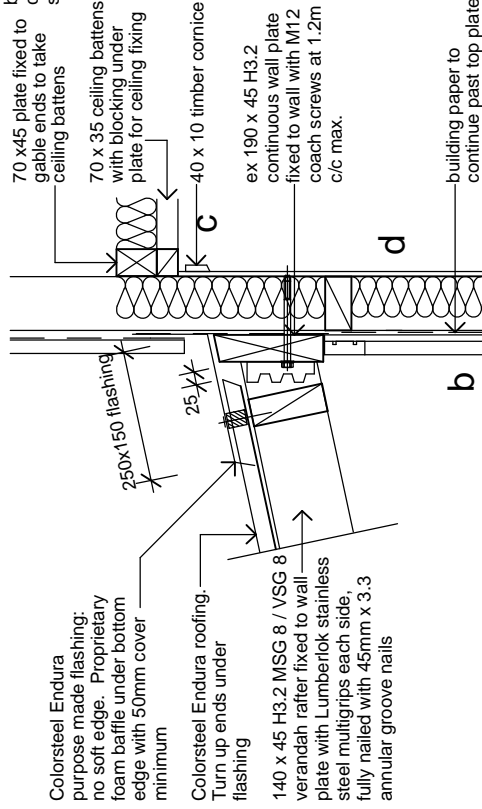
Colorsteel Endura purpose made flashing, no soft edge.
Proprietary foam baffle under bottom edge with 50mm cover minimum



1 4-6 bunk ridge
1:10



2 verandah roof connection
1:10



4 verandah roof - wall connection
1:10

REV	NO	DESCRIPTION	DATE	BY	CHK
4.0		First Issue	Mar 09		

VAL 0 Standard Construction Details Appendix E1.5

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Department of Conservation
Te Papa Ataturai

HUT DESIGN MANUAL
STANDARD DETAILS FOR
4, 6, 10 & 12 BUNK HUTS

CLIENT: DEPARTMENT OF CONSERVATION
SHEET CONTENTS: SCALES: 1:10, 1:50
Typical kea details - plywood cladding
DESIGN: DRAWN: CHECKED: PROJECT NO: SHEET NO. REV NO.
RP GR RP
DATE: xyz
P34

Section E2 Fixtures and Fittings

2.1. Contents

Section E2 contains the Fixtures and Fittings sheets. These are selected as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E3, F1 and F2 and any specific sheets derived from sections E4 and E5 to form the Tender and Building Consent drawings.

2.2 Use of section

Below is a table that is used to guide the selection of the appropriate details sheets to reflect the hut specific combination of size and design selection.

It is expected that these sheets will be selected and included in the Tender & Building Consent drawings unaltered, except that where alternative details are available on the same sheet, an overprint 'not in this contract' is added to the redundant details

If specific design is required for any aspect of the hut, the relevant detail sheet may be amended or replaced as considered appropriate.

2.3 Selection of detail sheets

Use the following chart to select the required drawings from the appendices:

Legend ● = sheet required ○ = sheet if required	Sheet Number	Colorsteel cladding	4 bunk hut - ply cladding	Colorsteel cladding	6 bunk hut - ply cladding	Colorsteel cladding	10/12 bunk hut - ply cladding
		Colorsteel cladding	4 bunk hut - ply cladding	Colorsteel cladding	6 bunk hut - ply cladding	Colorsteel cladding	10/12 bunk hut - ply cladding
Appendix	E2 - Fixtures and fittings	40	●	●	●	●	●
		42	○	○	○	○	○
		43	●	●	●	●	●
		44				●	●
		45				●	●
		46			●	●	
		47	●	●			
		48	●	●	●	●	
		49	○	○	○	○	○
		60			○	○	
		61					○

Appendix E2: Fixtures and Fittings

This appendix contains:

- Current Drawing Register
- Amendment Register
- Base drawings

ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

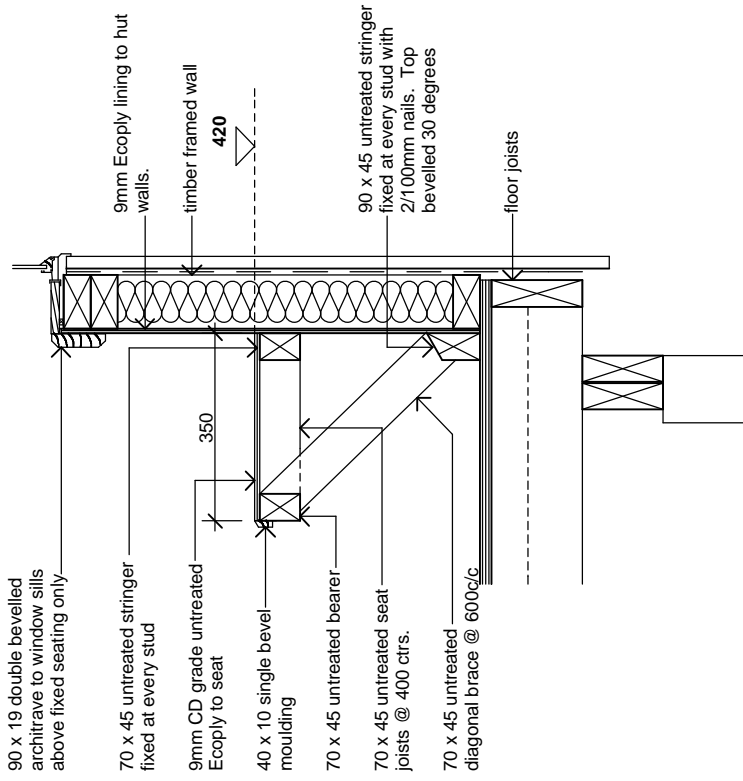
CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
40	interior fixed seating	4.0	March 2009
42	hooks rail	4.0	March 2009
43	cooking bench with shelf	4.0	March 2009
44	platform bunks – pack recess	4.0	March 2009
45	platform bunks typical details	4.0	March 2009
46	individual bunks – 6 berth	4.0	March 2009
47	individual bunks – 4 berth	4.0	March 2009
48	individual bunks typical details	4.0	March 2009
49	multi fuel burner details	4.0	March 2009
60	furniture – 6 bunk	4.0	March 2009
61	furniture – 10/12 bunk	4.0	March 2009

Note: Select only the sheets as required to reflect the fixtures and fittings required by the Developed Design documents

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date



interior fixed seating

1:10

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO

V4.0 Fixtures, Fittings & Furniture Appendix E2

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PROJECT

**HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
4, 6, 10 & 12 BUNK HUTS**

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SHEET COMMENTS

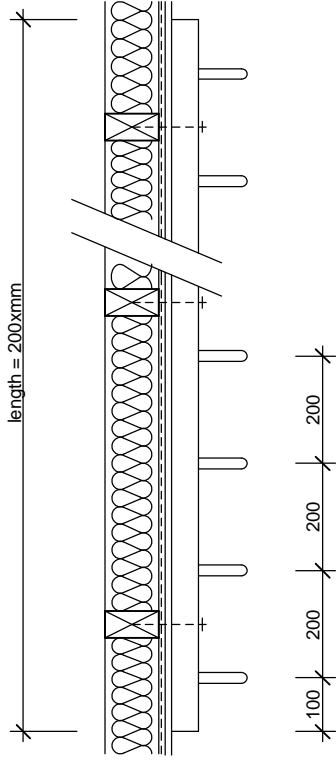
interior fixed seating

SCALES

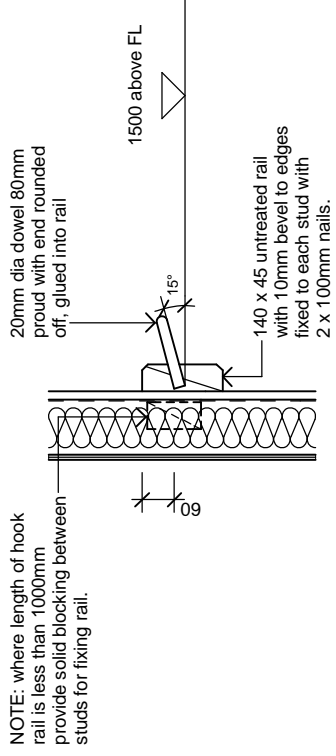
1:10

DESIGN DRAWN CHECKED PROJECT NO. SHEET NO. REV. NO.

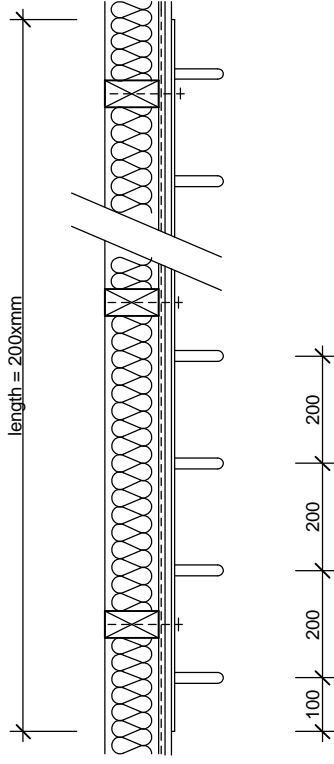
RP GR RP RP DATE xyz **40**



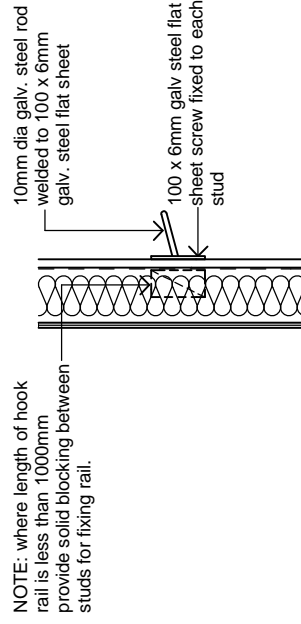
TIMBER HOOK RAIL - PLAN
1:10



SECTION
1:10



GALVANISED STEEL HOOK RAIL - PLAN
1:10



SECTION
1:10

4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	DWN CKO
Drawing Issue and Amendments			
VALO Fixtures, Fittings & Furniture Appendix E2			

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4, 6, 10 & 12 BUNK HUTS**

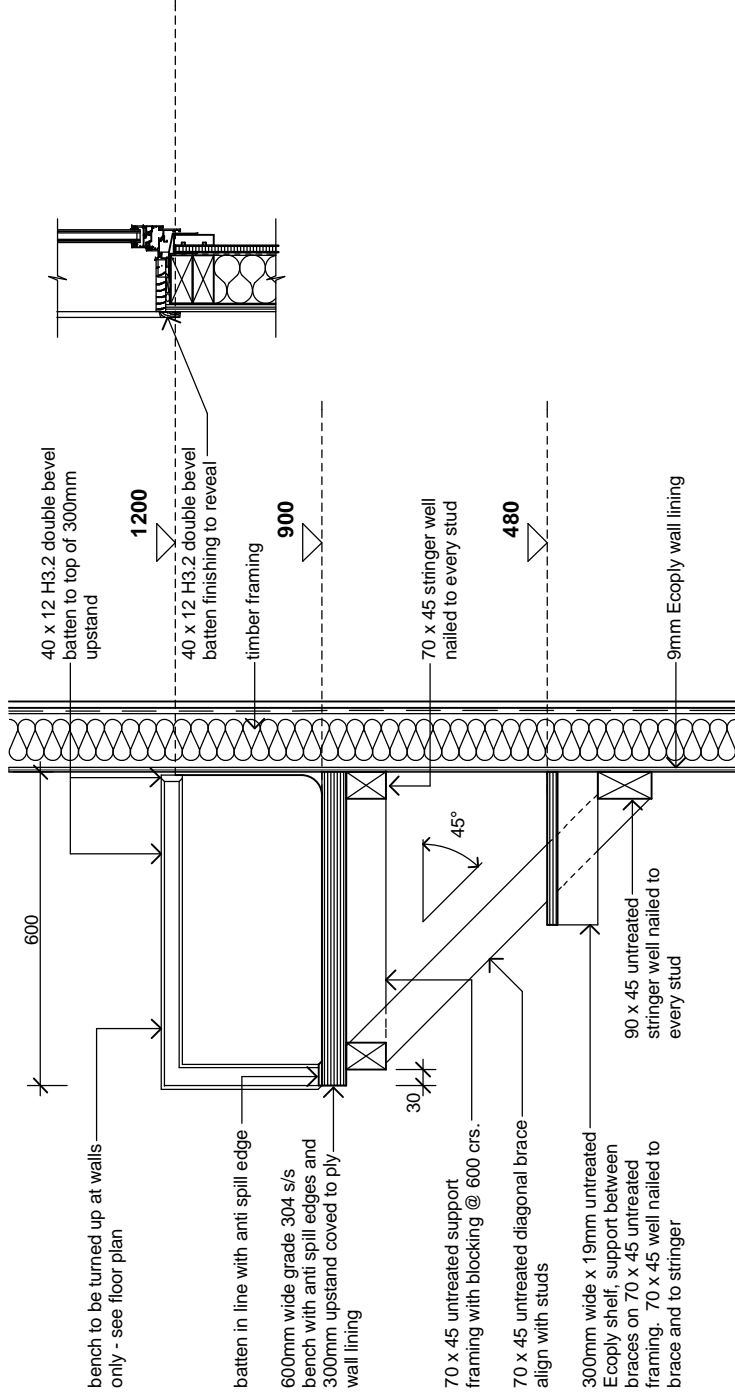
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SHEET CONTENTS

hooks rail

1:10

DESIGN	DRAWN	CHECKED	PROJECT NO.	SHEET NO.	REV. NO.
	GR	RP	xyz	42	
DATE	xyz				



COOKING BENCH TYPICAL

1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO

V4.0 Fixtures, Fittings & Furniture Appendix E2

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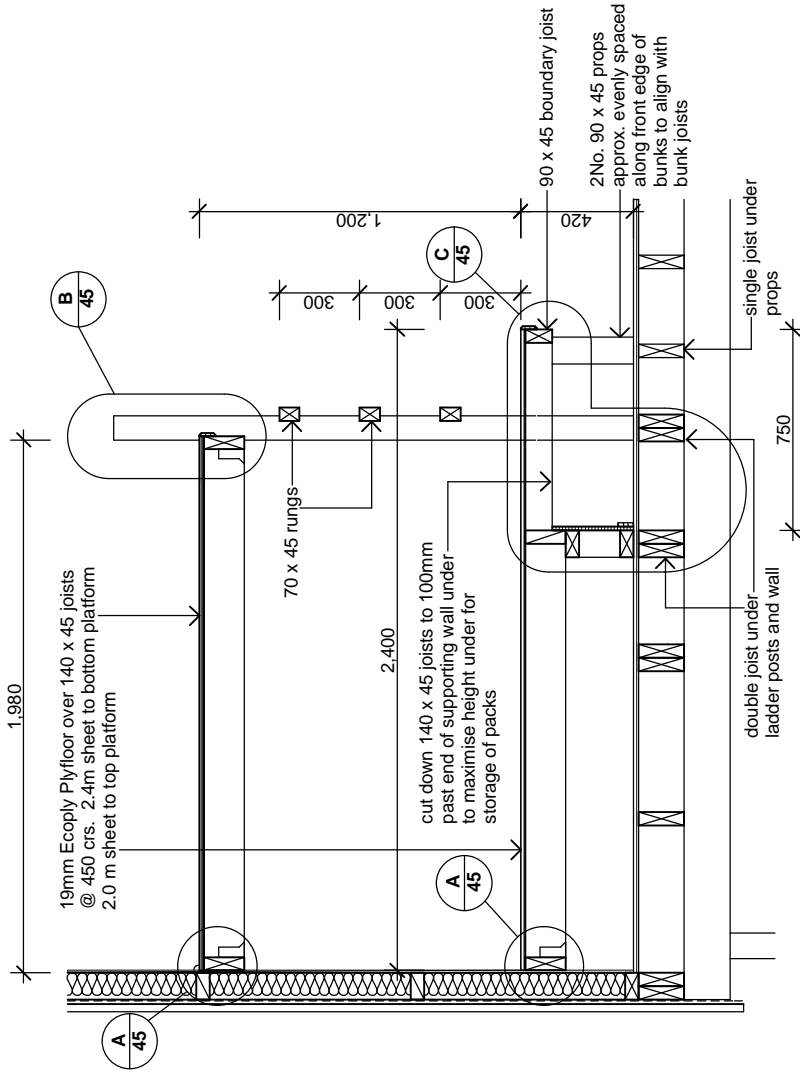


PROJECT
**HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
4, 6, 10 & 12 BUNK HUTS**

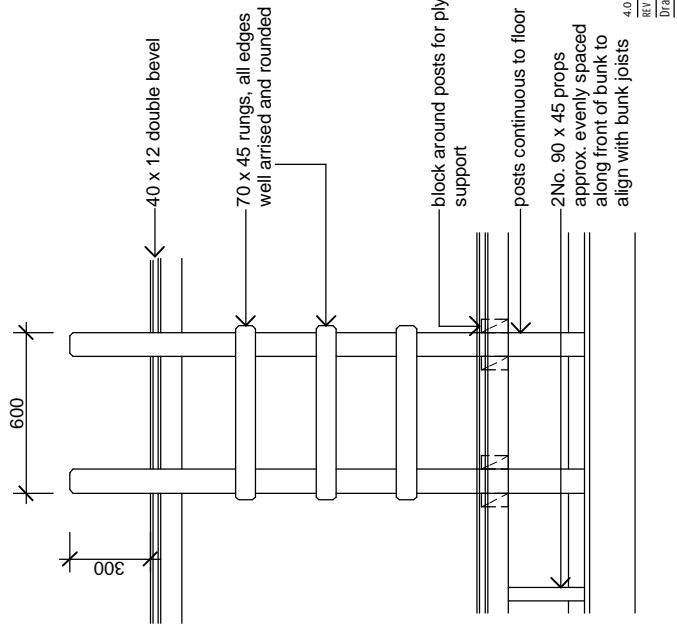
CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS
SHEETS
1:10
cooking bench with shelf

DESIGN	DRAWN	CHECKED	PROJECT No.	REV No.
RP	GR	RP	xyz	43
DATE				



TYPICAL PLATFORM BUNK SECTION
1:20



TYPICAL LADDER DETAIL
1:20

REV	NO	DESCRIPTION	DATE	DWN	CKD
4.0		First Issue	Mar 09	-	-

Drawing Issue and Amendments

V4.0 Fixtures, Fittings & Furniture Appendix E2

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PROJECT
**HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
10 & 12 BUNK HUTS**

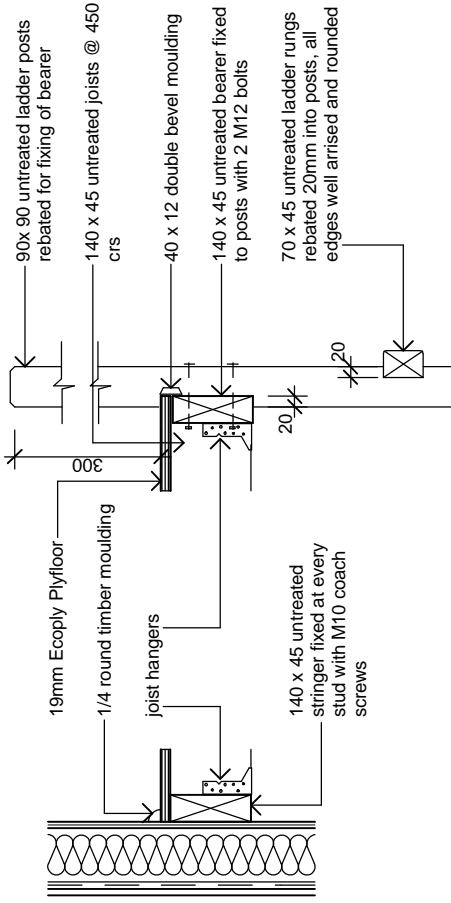
CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS

DESIGN	DRAWN	CHECKED	PROJECT NO.	SHEET NO.	REV. NO.
RP	GR	RP	xyz	44	

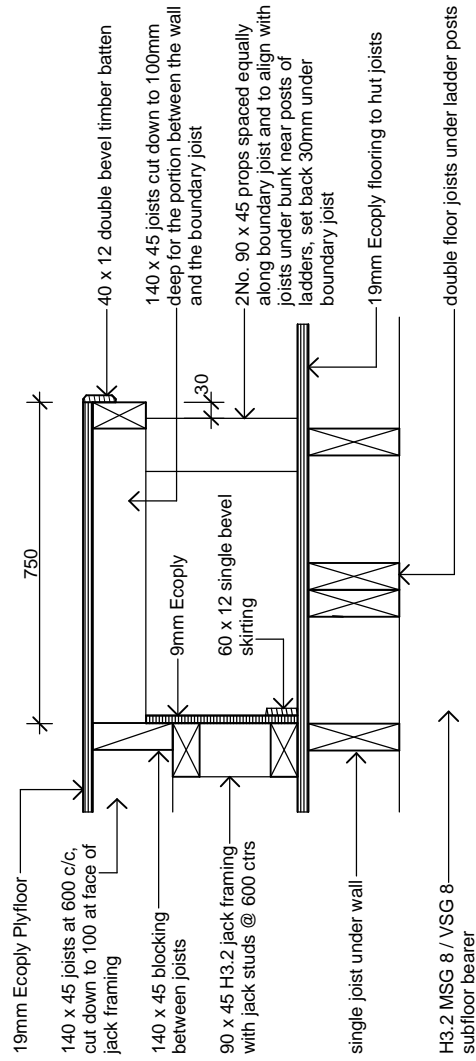
SCALES
1:20

platform bunks - pack
recess



A bunk - wall detail
1:10
44

B bunk - ladder detail
1:10
44



C pack recess detail
1:10
44

REV NO	DESCRIPTION	DATE	DWN	CKD
4.0	First Issue	Mar 09	-	-

Drawing Issue and Amendments
V4.0 Fixtures, Fittings & Furniture Appendix E2



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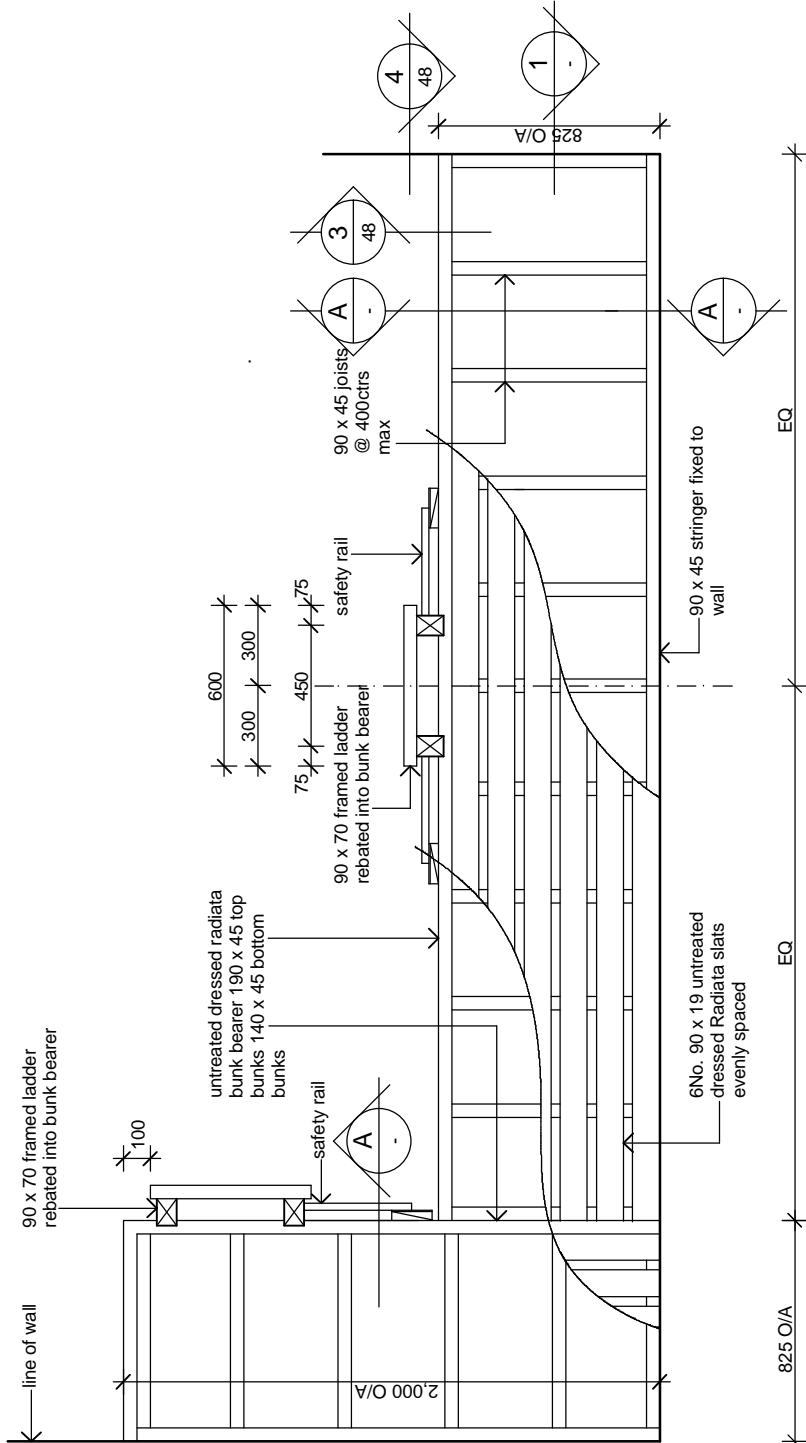
Contractor shall check all Dimensions on site prior to construction



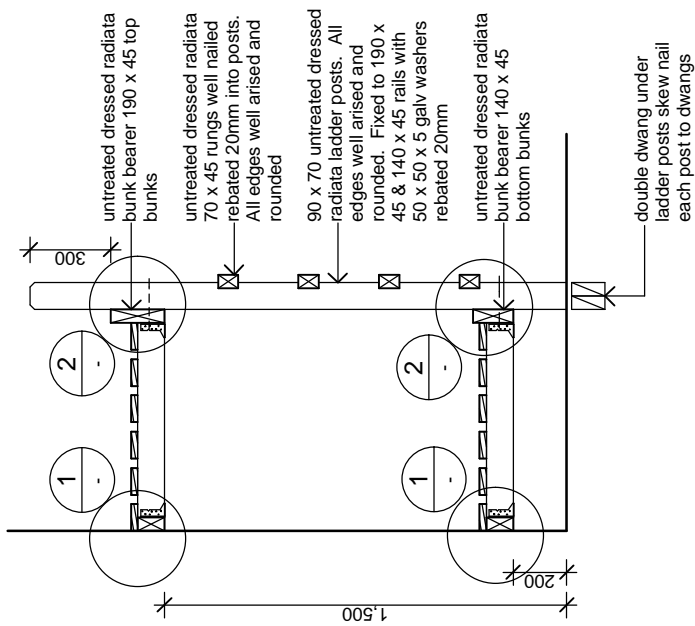
PROJECT
HUT DESIGN/MANUAL
FIXTURES, FITTINGS & FURNITURE
10 & 12 BUNK/HUTS

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS		SCALES	
platform bunks typical details		1:10	
DESIGN	DRAWN	CHECKED	PROJECT NO.
RP	GR	RP	xyz
DATE	xyz		45



INDIVIDUAL BUNKS PLAN - 6 BERTH
1:20



TYPICAL INDIVIDUAL BUNK SECTION
1:20

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
		V4.0 Fixtures, Fittings & Furniture Appendix E2	

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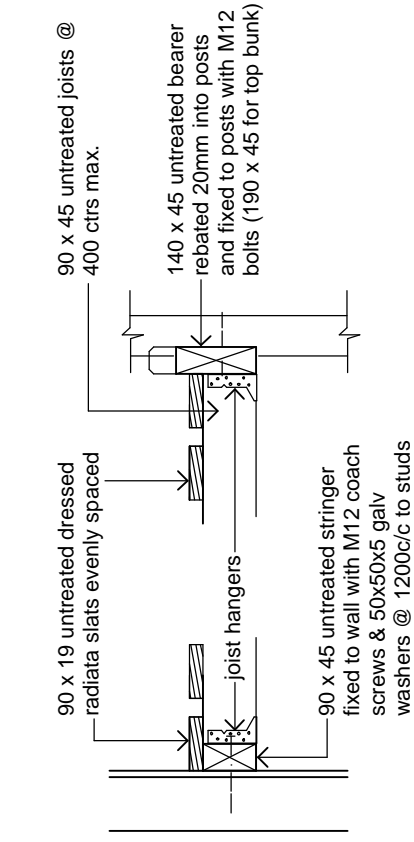
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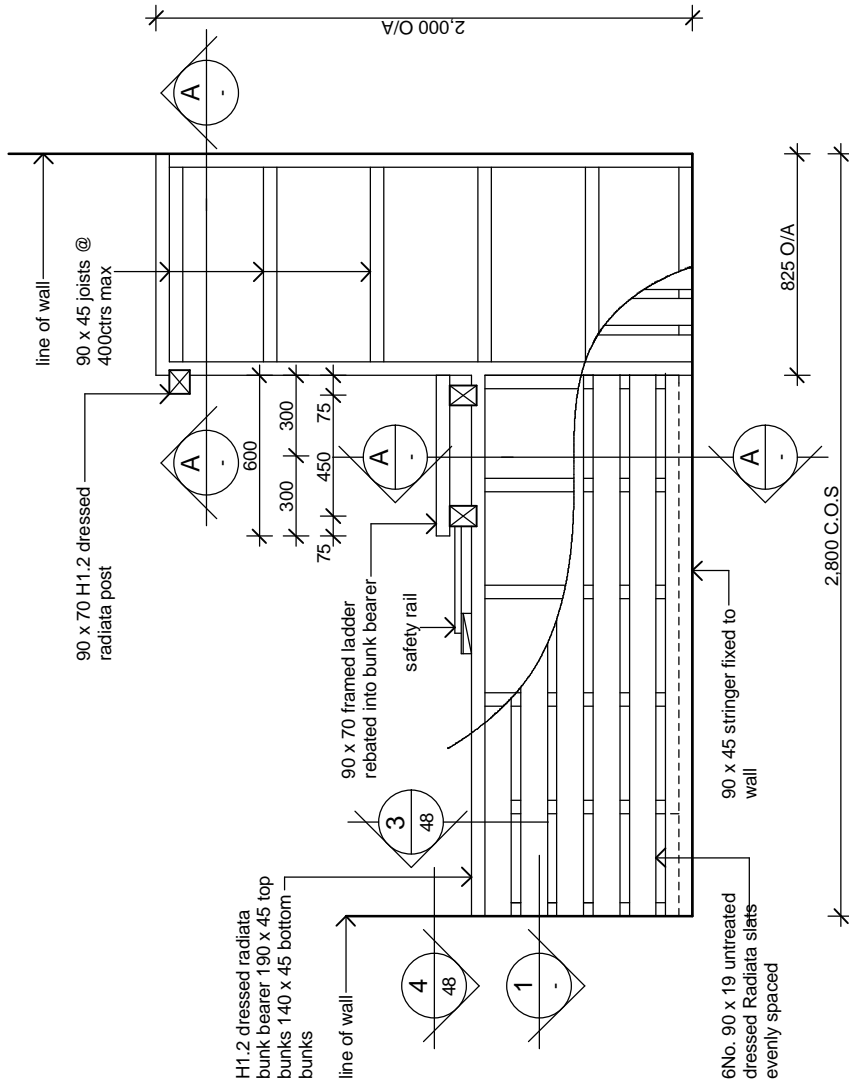
PROJECT: HUT DESIGN/MANUAL
FITTURES, FITTINGS & FURNITURE
6 BUNK HUT

SHEET CONTENTS		SCALES
individual bunks - 6 berth		1:20, 1:10
DESIGN	DRAWN	CHECKED
RP	GR	RP
DATE	xyz	xyz
		46

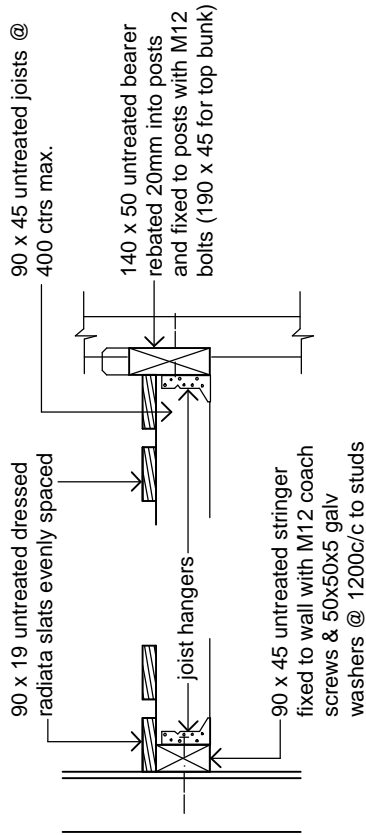


1 stringer - wall connection
1:10

2 bunk beam - ladder detail
1:10

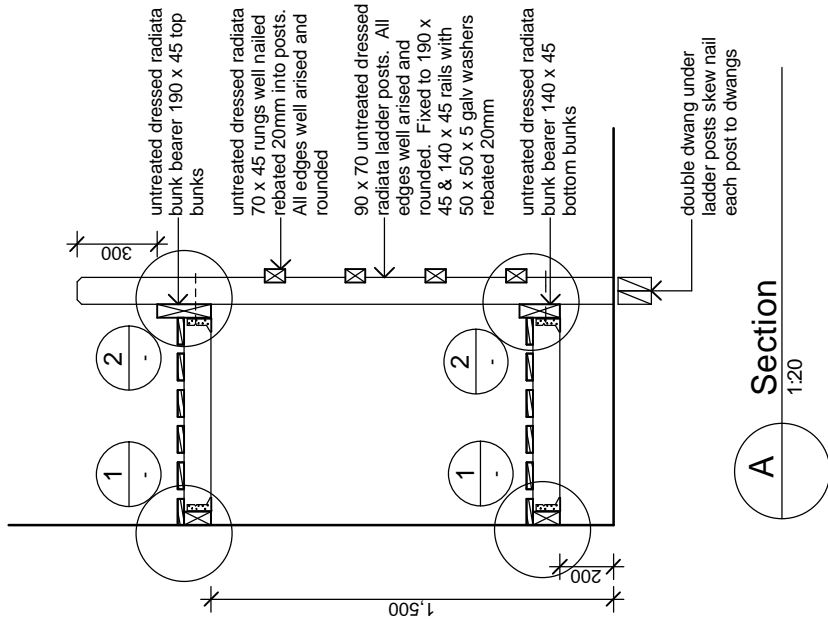


INDIVIDUAL BUNKS PLAN - 4 BERTH
1:20



1 stringer - wall connection
1:10

2 bunk beam - ladder detail
1:10



A Section
1:20

4.0	First Issue	Mar 09	-
REV No	DESCRIPTION	DATE	DWN (X/D)
Drawing Issue and Amendments			
V4.0 Fixtures, Fittings & Furniture Appendix E2			

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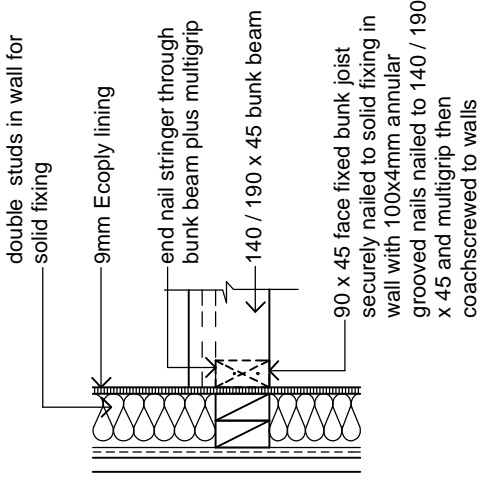
Contractor shall check all Dimensions on site prior to construction



HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
4 BUNK HUT

CLIENT: DEPARTMENT OF CONSERVATION
SHEET CONTENTS

DESIGN	DRAWN	CHECKED	PROJECT No.	DATE	REV No.
individual bunks - 4 berth					
SCALES					
1:20,					
1:10					
@ A3 SHEET SIZE					
SHEET No. 47					
xyz					



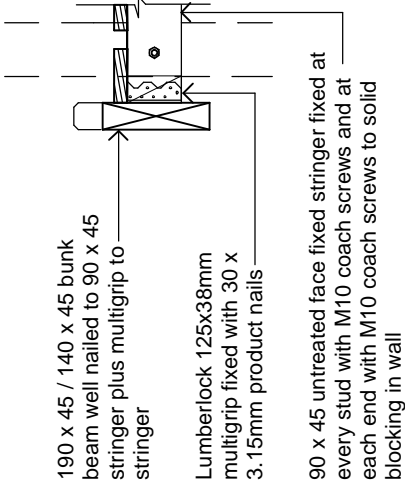
double studs in wall for solid fixing

9mm Ecoply lining

end nail stringer through bunk beam plus multigrip

140 x 45 bunk beam

90 x 45 face fixed bunk joist securely nailed to solid fixing in wall with 100x4mm annular grooved nails nailed to 140 / 190 x 45 and multigrip then coachscrewed to walls

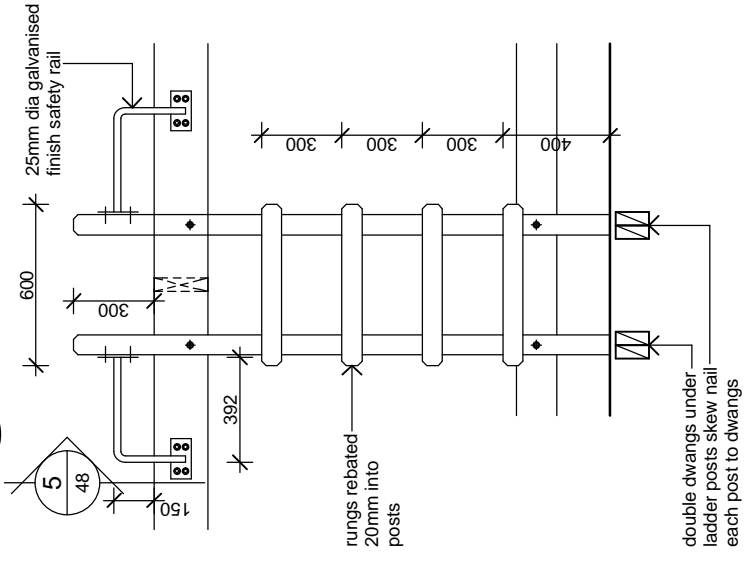


190 x 45 / 140 x 45 bunk beam well nailed to 90 x 45 stringer plus multigrip to stringer

Lumberlock 125x38mm multigrip fixed with 30 x 3.15mm product nails

90 x 45 untreated face fixed stringer fixed at every stud with M10 coach screws and at each end with M10 coach screws to solid blocking in wall

3 bunk beam - wall detail 1:10

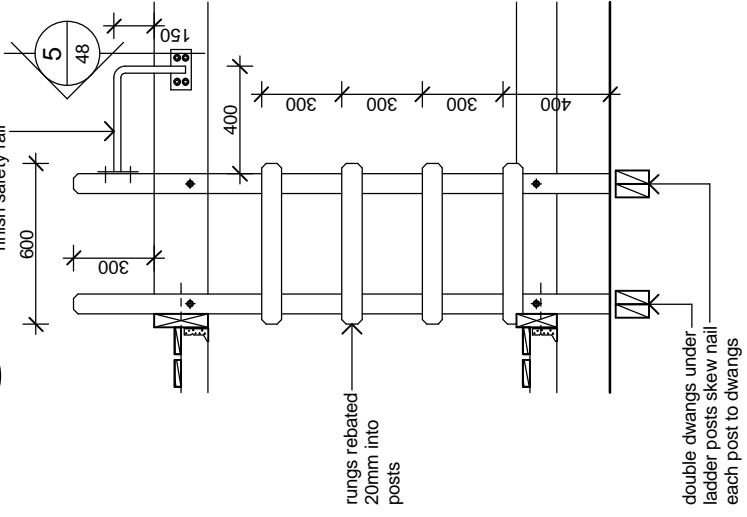


rungs rebated 20mm into posts

double dwangs under ladder posts skew nail each post to dwangs

typical ladder elevation 1:20

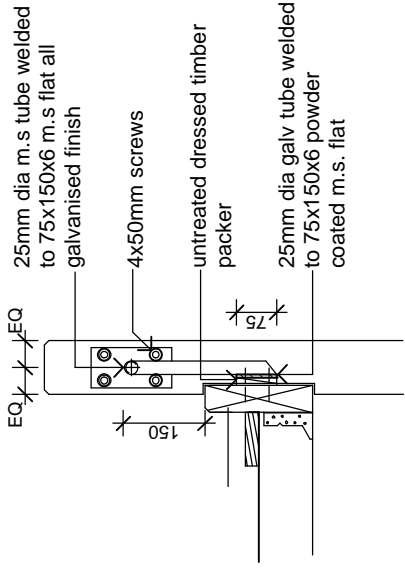
4 stringer - bearer connection 1:10



rungs rebated 20mm into posts

double dwangs under ladder posts skew nail each post to dwangs

typical ladder elevation 1:20



25mm dia m.s tube welded to 75x150x6 m.s flat all galvanized finish

4x50mm screws

untreated dressed timber packer

25mm dia galv tube welded to 75x150x6 powder coated m.s. flat

5 safety rail connection 1:10

4.0	First Issue	Mar 09	-
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	Drawing Issue and Amendments		DWN CKO
	VALO Fixtures, Fittings & Furniture Appendix E2		

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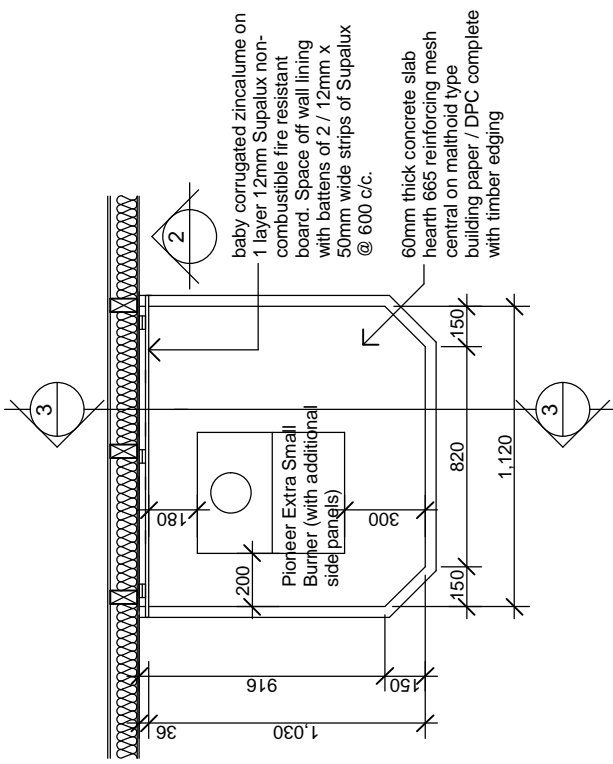
Contractor shall check all Dimensions on site prior to construction



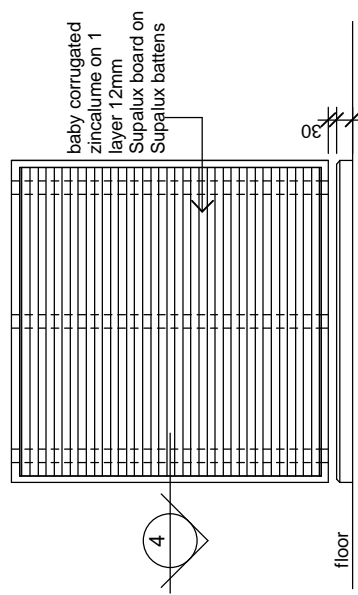
PROJECT
HUT DESIGN/MANUAL
FIXTURES, FITTINGS & FURNITURE
4, 6, 10 & 12 BUNK HUTS

CLIENT
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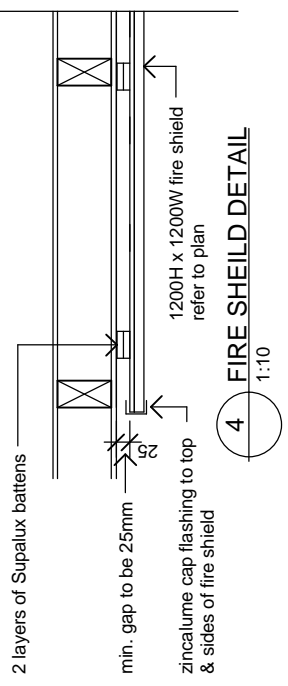
SHEET COMMENTS		SCALES
individual bunks typical details		1:20, 1:10
DESIGN	DRAWN	CHECKED
RP	GR	RP
DATE	xyz	xyz
		48



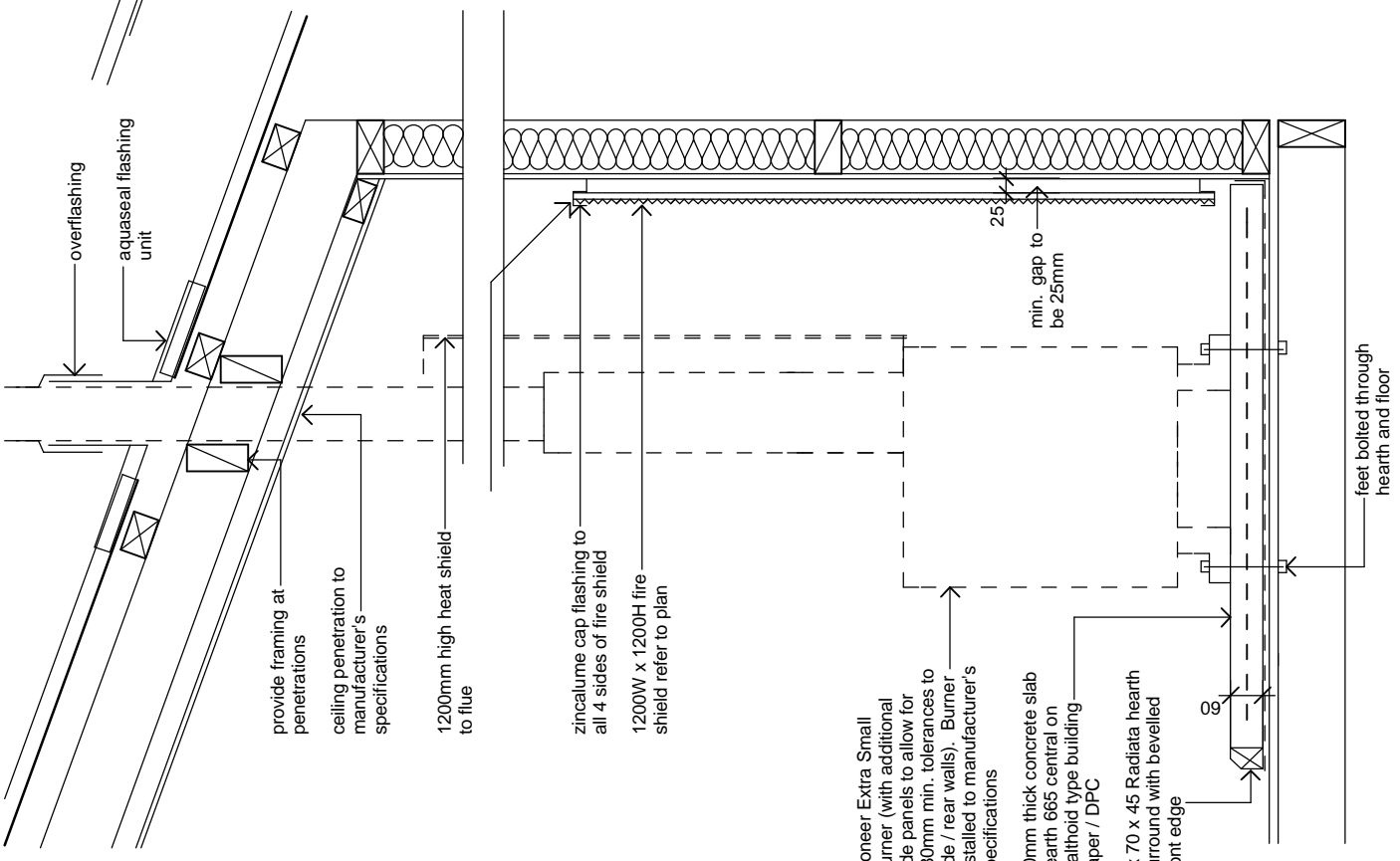
1 WOODBURNER PLAN
1:20
plan handed for 6 bunk huts



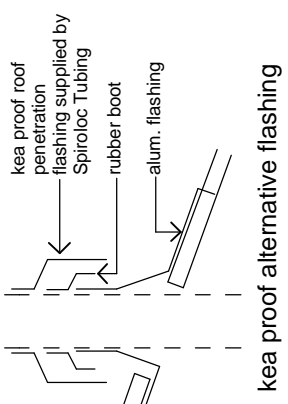
2 FIRE SHIELD ELEVATION
1:20



4 FIRE SHIELD DETAIL
1:10



3 WOODBURNER SECTION
1:10



ke a proof alternative flashing

4.0	First Issue	Mar 09	-
	REV NO DESCRIPTION	DATE	DWN CKO
	Drawing Issue and Amendments		
	VALO Fixtures, Filings & Furniture Appendix E2		

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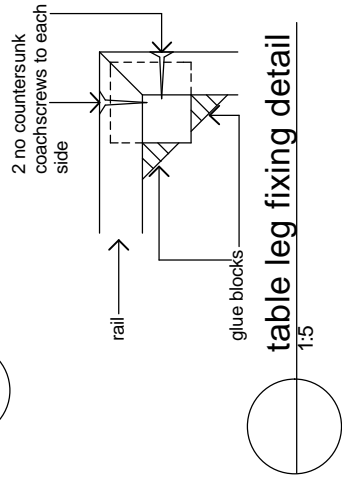
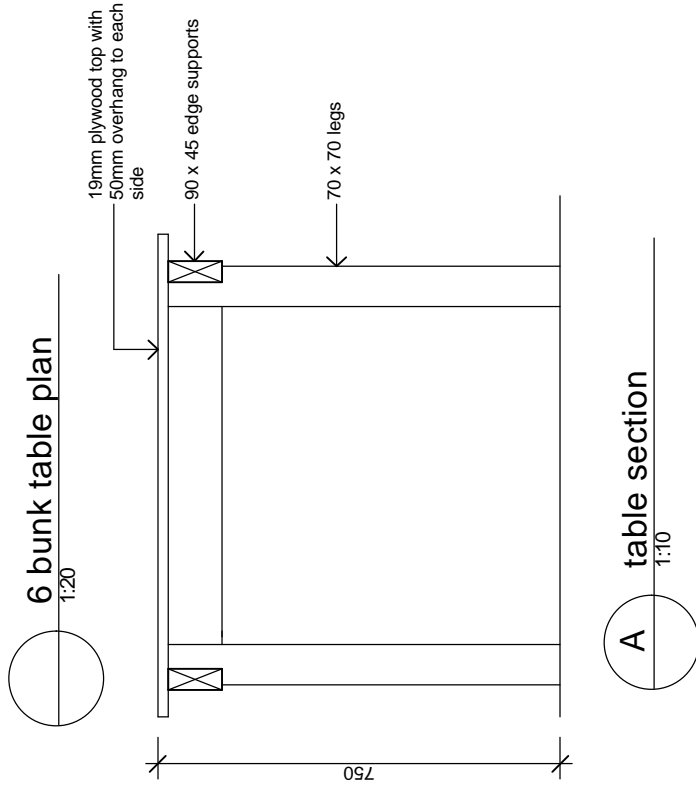
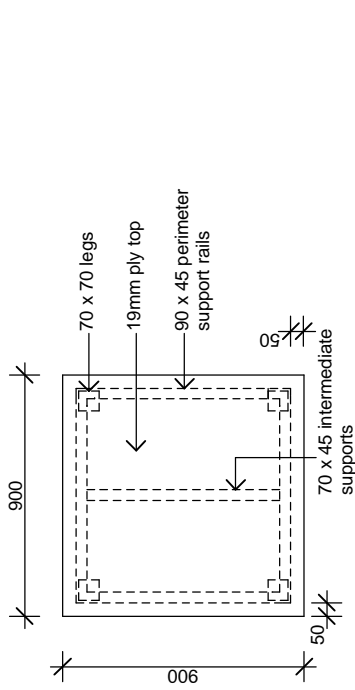
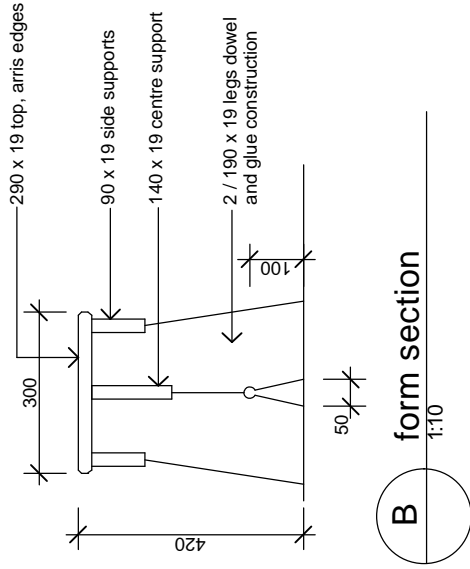
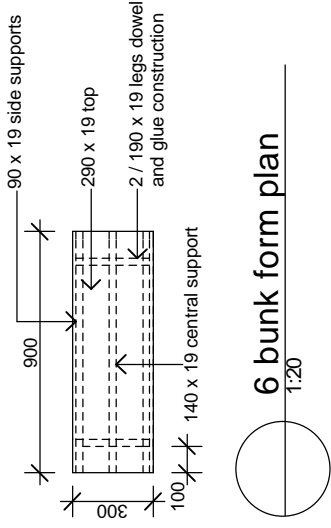
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PROJECT
**HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
4, 6, 10 & 12 BUNK HUTS**

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SHEET CONTENTS		SCALES
multi fuel burner details		1:20, 1:10
DESIGN	DRAWN	@ A3 SHEET SIZE
RP	GR	SHT No.
	RP	REV No.
DATE	xyz	49



4.0	First Issue	Mar 09	-
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		Drawing Issue and Amendments	DWN CKO
V4.0 Fixtures, Fittings & Furniture Appendix E2			

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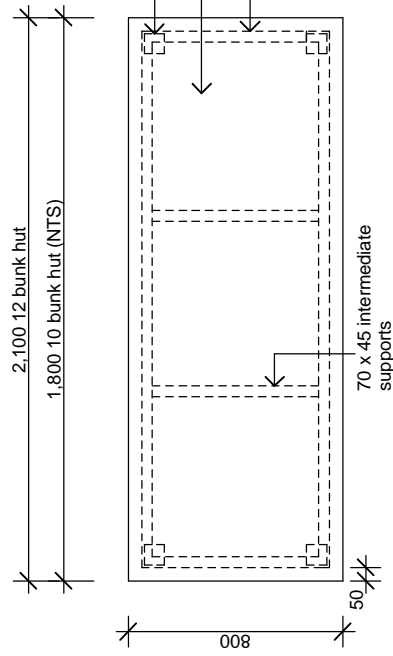
Contractor shall check all Dimensions on site prior to construction



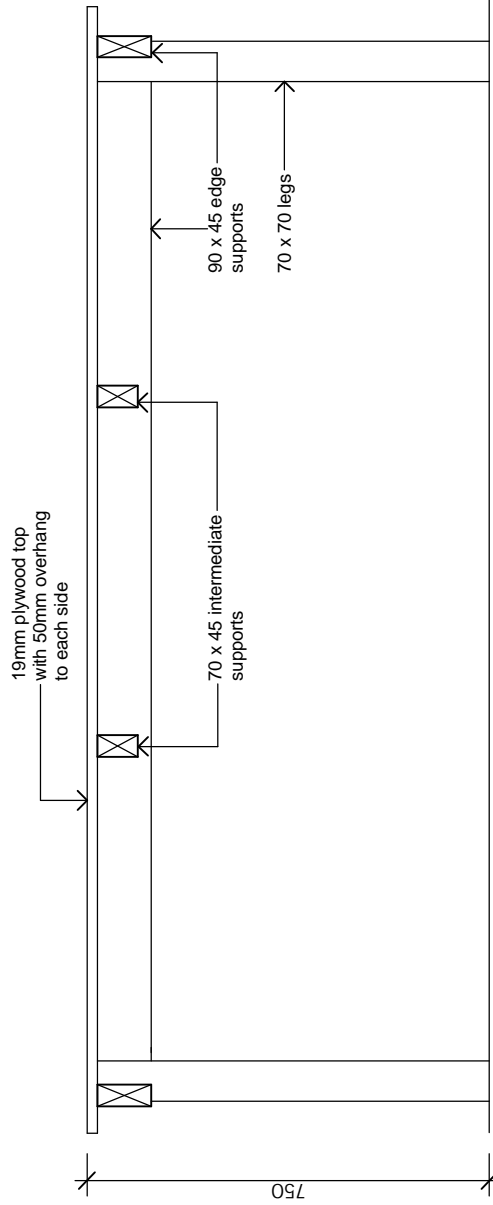
PROJECT
**HUT DESIGN MANUAL
FIXTURES, FITTINGS & FURNITURE
6 BUNK HUT**

CLIENT
DEPARTMENT OF CONSERVATION

SHEET COMMENTS		SCALES	60
furniture - 6 bunk		1:20,	
		1:10,	
		1:5	
DESIGN	CHECKED	PROJECT No.	xyz
RP	GR	RP	xyz
DATE			xyz



10/12 bunk table plan
1:20



A table section
1:10

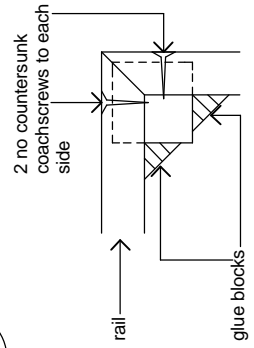
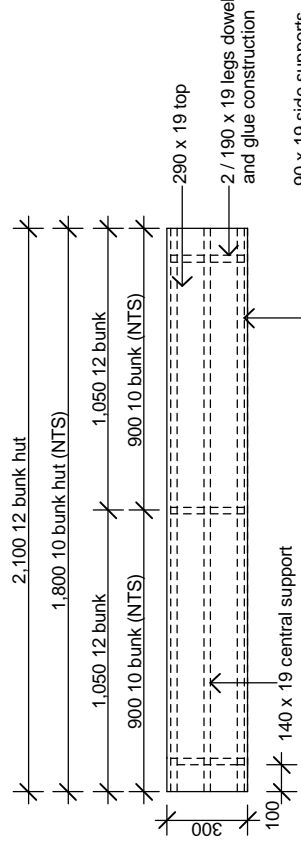
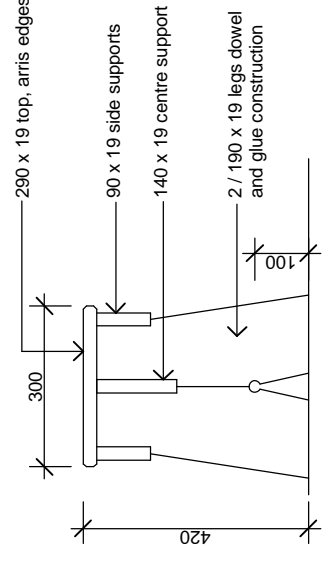


table leg fixing detail
1:5



10/12 bunk form plan
1:20



B form section
1:10



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Drawing Issue and Amendments			
V4.0 Fixtures, Fittings & Furniture Appendix E2			

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PROJECT
**HUT DESIGN MANUAL
FITURES, FITTINGS & FURNITURE
10 & 12 BUNK HUTS**

CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS
Scales
1:20,
1:10,
1:5
furniture - 10/12 bunk

DESIGN DRAWN CHECKED PROJECT NO.
RP GR RP
DATE xyz
61

Section E3 Water Supply

3.1 Purpose

This section contains the design information for rainwater water supply systems for backcountry huts. Guidance notes are provided in the text and complying solutions are provided in the Appendix.

3.2 Interpretation

A rainwater water supply comprises:

- the hut roof and gutters
- a rain water storage tank
- supply outlets, which may or may not discharge over a sink.

3.2 Roof and Gutters

3.2.1 Roof materials

- i) Roof materials suitable for water collection for human consumption include:
 - unpainted zinc/aluminium coated or galvanised steel
 - factory-coated or painted zinc/aluminium alloy-coated or galvanised steel
 - stainless steel
 - aluminium
 - PVC (without lead stabilisers) or fibreglass sheet
- ii) Lead flashings shall not be used.
- iii) New roofs shall be left for a period of at least one month or as otherwise recommended by the roofing material manufacturer before connecting the downpipes to the water tank.

3.2.2 Roof paint and coating systems

- i) Any roof coating system shall be recommended by the manufacturer as suitable for the roof collection of rainwater for drinking. Rainwater shall not be collect from roofs coated with:
 - lead-based paints
 - bitumen-based paints
 - acrylic paint until it has been washed by a good rainfall.

3.2.3 Gutters and downpipes

- i) Gutter and downpipe materials suitable for water collection for human consumption include:
 - extruded PVC
 - factory-coated or painted zinc/aluminium alloy-coated steel
 - galvanised steel
 - copper (may cause staining if water has a low pH)
 - aluminium
 - polyethylene/polypropylene.
- ii) Gutters shall have a fall of at least 1:100 to down pipes.

3.3 Water Tanks, Pipe Work and Fittings

3.3.1 Water Tanks

- i) Water tank materials suitable for water collection for human consumption include:
 - galvanised steel
 - fibreglass
 - plastics such as polyethylene and polypropylene
- ii) Construction and materials shall comply with AS/NZS 4020 *Testing of products for use in contact with drinking water*.
- iii) Tank materials shall not transmit light.
- iv) For huts with a sleeping capacity of more than 20 and where a storage capacity of more than 3,000 litres is required, two or more smaller tanks shall be installed in series.

Comment: Tanks operating in series should reduce considerably the levels of microbial contamination of stored rainwater. Free discharge of water into one or more downstream tanks should result in most dirt and micro-organisms being confined to the first tank.

- v) Water storage tanks shall be installed above ground, and not buried or partly buried.

Comment: If installed in the ground tanks can split or crack, allowing groundwater and surface water to enter and thus increasing the risk of contamination of the water supply. Also, high water table can result in damage to a tank or flotation of a tank unless the tank has been designed and installed to accommodate safely high groundwater.

- vi) All tanks shall be flushed before use.

3.3.2 Pipe Work and Fittings

- i) Pipes and fittings used for potable water reticulation shall comply with AS/NZS 4020 *Testing of products for use in contact with drinking water*.
- ii) Water tanks shall be fitted with:
 - An inlet pipe that connects the gutter and the water tank or first water tank (where there are two or more tanks)
 - An overflow pipe
 - A washout valve that allows full draining of the tank
 - A outlet valve
 - An access opening
 - A first flush diverter if the sleeping capacity of the hut is more than 20
- iii) The inlet pipe shall be the same size as the down pipe and shall:
 - Be fitted with a debris diverter when the hut is in a bush area
 - Be able to be readily disconnected from the water tank
 - Discharge horizontally in the water tank at a level of 500 mm above the tank invert.
- iv) The overflow pipe shall:
 - discharge either to ground or to a downstream water tank
 - be of a size equal to or greater than the inlet pipe
 - draw from the base of the tank
 - be fitted with a anti-siphon device.
 - Any discharge to ground shall be away from the foundations of the hut, a pit toilet or the land application area of a grey water on-site system. The discharge to ground shall incorporate an energy dissipation facility, such as stones placed on the ground or a drilled elbow, so as to prevent erosion of soil or other environmental damage.
- v) The washout valve shall:
 - be located in the base of the water tank in an accessible location
 - have a minimum internal diameter of 32mm
 - not be susceptible to frost damage (where freezing may occur)
 - Enable liquids and solids to be washed into the washout pipe without hindrance
 - Enable the ready connection of a discharge pipeline to allow the washout water to be disposed away from the site of the water tank.

Comment: Preferably, the washout valve will be installed as an outlet in a sump in the base of the water tank.

- vi) The outlet valve shall:
- Be located at least 100 mm above the tank invert
 - Have a minimum internal diameter of 20mm
 - Not be susceptible to frost damage (where freezing may occur).
- vii) The access opening shall:
- Have a minimum opening of 500 mm diameter
 - Be covered with a secure, removable lid.
- viii) The First flush diverter shall:
- Collect the first quantity of rainfall runoff from the roof when it rains.
 - When the chamber is full, a ball shall seal the chamber and allow further runoff water to flow into the water tank.
 - Have a flow control valve in the base of the chamber that restricts the rate that water drains from the chamber.

Comment: A first flush diverter diverts the first, most-contaminated rain water away from the water tank when it rains

Where a hut site is subject to freezing weather conditions, consideration should given to placing the first flush diverter on the sunny-side of hut to minimise freezing. Painting the exterior of diverter black will maximise rate of thawing.

3.4 Signage

Signage shall be provided above all supply taps and shall be either:

- i) The non-potable water sign within G12/AS1, or
- ii) A sign saying “Non-potable water – boil before drinking”

Comment: A rainwater water supply is not a potable water supply, and the Department is not required to provide potable water at backcountry huts. Signage is required to inform users of a potential hazard and advise users of the need to treat or boil the water.

3.5 Verification Method

A design method for water supply fittings may be verified as satisfying the relevant Performances of NZBC G12 if it complies with:

- i) AS/NZS 3500.1 Section 2, Section 3 and Appendix C; and
- ii) AS/NZS 3500.4

3.6 Standard Solutions

Appendix E3 contains standard solutions for water tanks and sinks. Below is a table that is used to guide the selection of the appropriate sheets to reflect the hut specific requirements.

These sheets are added to the amended Developed Design Drawings, the selected sheets from Appendices E1, E2, E4 and E5, and F1 and F2 to form the Tender and Building Consent drawings.

It is expected that these sheets will be selected and included in the Tender & Building Consent drawings unaltered, except that where alternative details are available on the same sheet, an overprint 'not in this contract' can be added.

If specific design is required for any aspect of the hut, the relevant detail sheet may be amended or replaced as considered appropriate.

3.7 Selection of detail sheets

Use the following chart to select the required drawings from the appendices. Select only the sheets as required to reflect the fixtures and fittings required by the Developed Design documents.

Legend		Sheet Number	Colorsteel cladding	4 bunk hut - ply cladding	Colorsteel cladding	6 bunk hut - ply cladding	Colorsteel cladding	10/12 bunk hut - ply cladding	20+ bunk hut
●	= sheet required								
○	= sheet if required								
Appendix									
E3 - Water supply	50	○	○	○	○				
	51					○	○		
	52					○	○		
	53			○	○	○	○		
	54								○

Appendix E3: Water Supply

This appendix contains:

- Current Drawing Register
- Amendment Register
- Base drawings

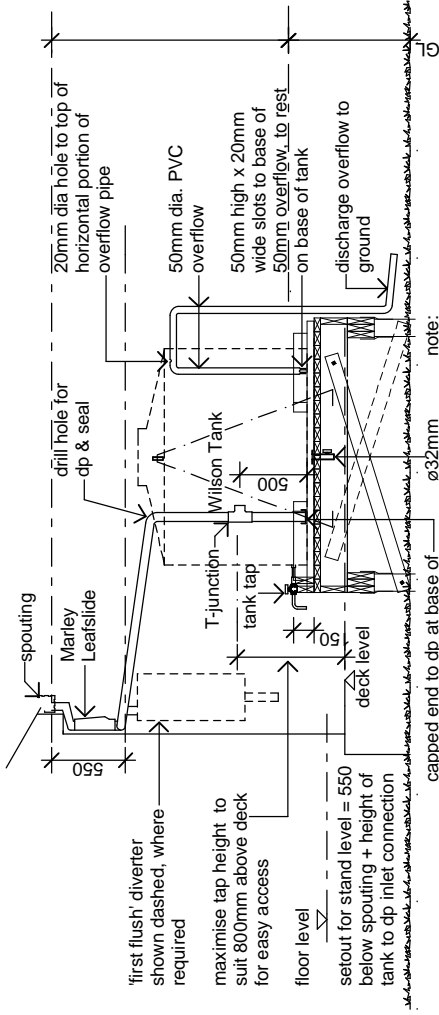
ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Sheet	Title	Version	Date issued
50	1000L Water Tank Stand	4.0	March 2009
51	2000L Water Tank Stand	4.0	March 2009
52	Exterior sink – Deck	4.0	March 2009
53	Exterior sink –tank stand	4.0	March 2009
54	Internal sink	4.0	March 2009

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date

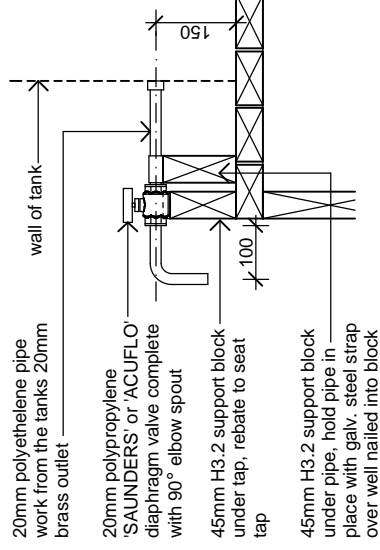


note:

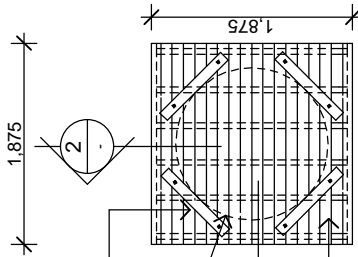
1. tank supplied complete with:
 - screw lid, with leaf strainer
 - 32mm wash-out valve to base
 - 50mm pvc overflow
 - 20mm polyethylene outlet with washers on each side of tank wall
 - tie down lugs

water supply schematic
1:40

2. all huts located in bush to have a debris diverter fitted
3. all huts with a sleeping capacity of more than 20 bunks to have a 'first flush' water diverter



3 tap detail
1:10

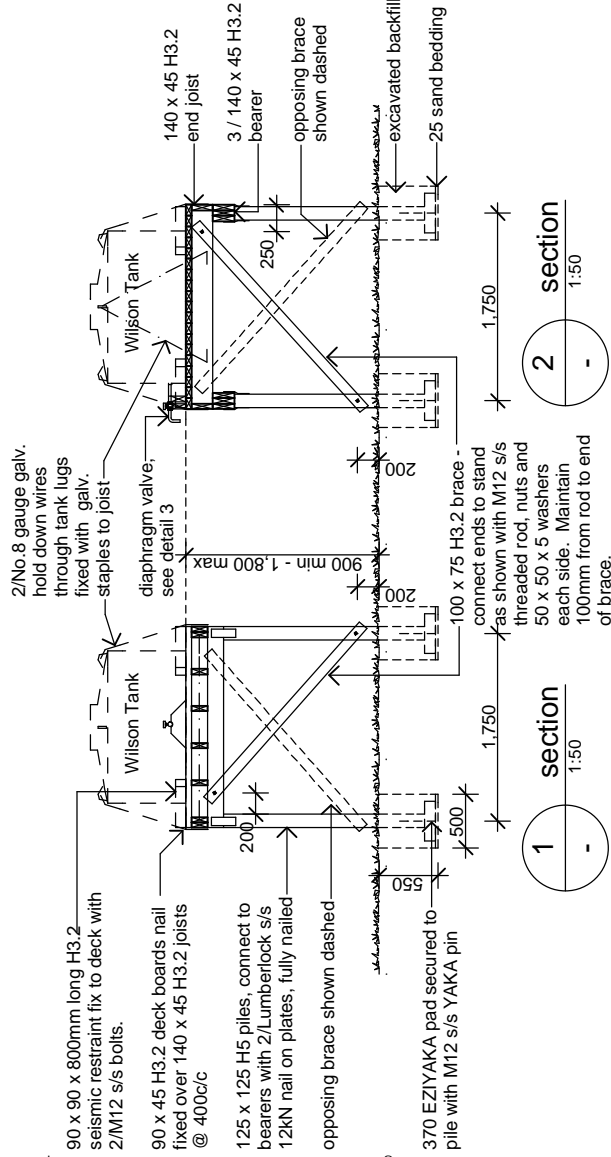


90 x 90 x 800mm long H3.2 seismic restraint fix to deck with 2/M12 s/s bolts.

1000L Wilson TS1000 Tank shown dashed, positioned centrally on stand deck.

90 x 45 H3.2 deck boards nail fixed over 140 x 45 H3.2 joists @ 400c/c

plan on tank stand
1:50



2 section
1:50

1 section
1:50

4.0	First Issue	Mar 09	
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		Drawing Issue and Amendments	DWN CKO
		VALO Water Supply/Appendix E3	

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Department of Conservation
Te Papa Ataturangi

PROJECT
HUT DESIGN/MANUAL
WATER SUPPLY
4 & 6 BUNK HUTS

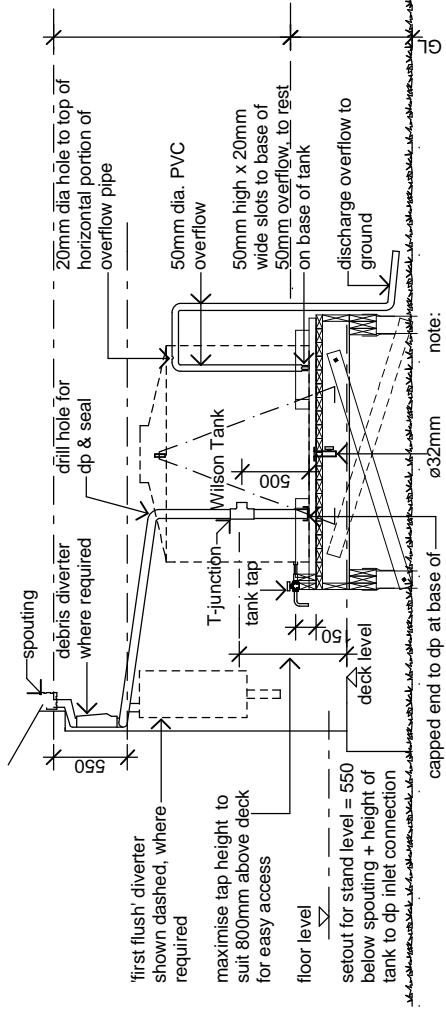
CLIENT
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SHEET CONTENTS

1000L water tank stand

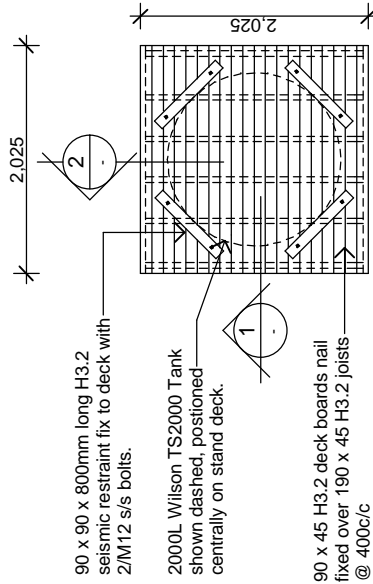
DESIGN DRAWN CHECKED PROJECT No. SHEET No. REV No.

xyz xyz **50**



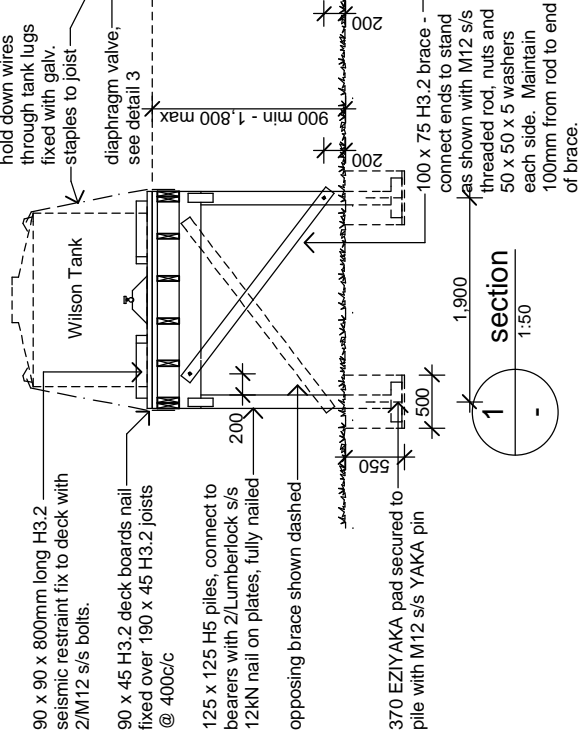
- note:
1. tank supplied complete with:
 - screw lid, with leaf strainer
 - 32mm wash-out valve to base
 - 50mm pvc overflow
 - 20mm polyethylene outlet with washers on each side of tank wall
 - tie down lugs
 2. all huts located in bush to have a debris diverter fitted
 3. all huts with a sleeping capacity of more than 20 bunks to have a 'first flush' water diverter

water supply schematic
1:40



plan on tank stand
1:50

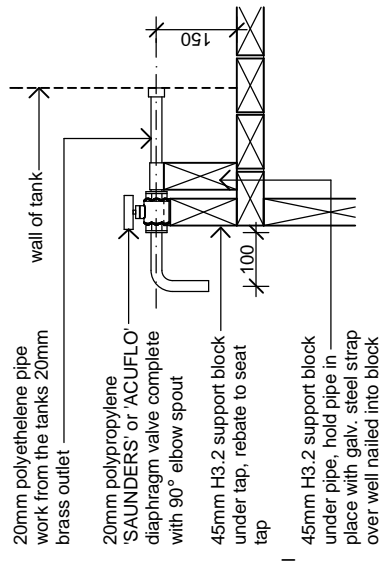
- 90 x 90 x 800mm long H3.2 seismic restraint fix to deck with 2/M12 s/s bolts.
- 2000L Wilson TS2000 Tank shown dashed, positioned centrally on stand deck.
- 90 x 45 H3.2 deck boards nail fixed over 190 x 45 H3.2 joists @ 400c/c



2 section
1:50

1 section
1:50

- 2/No.8 gauge galv. hold down wires through tank lugs fixed with galv.
- staples to joist
- diaphragm valve, see detail 3
- Wilson Tank
- 90 x 90 x 800mm long H3.2 seismic restraint fix to deck with 2/M12 s/s bolts.
- 90 x 45 H3.2 deck boards nail fixed over 190 x 45 H3.2 joists @ 400c/c
- 125 x 125 H5 piles, connect to bearers with 2/Lumberlock s/s 12KN nail on plates, fully nailed
- opposing brace shown dashed
- 370 EZIY AKA pad secured to pile with M12 s/s YAKA pin
- 100 x 75 H3.2 brace connect ends to stand as shown with M12 s/s threaded rod, nuts and 50 x 50 x 5 washers each side. Maintain 100mm from rod to end of brace.
- Wilson Tank
- 190 x 45 H3.2 end joist
- 3 / 190 x 45 H3.2 bearer
- opposing brace shown dashed
- excavated backfill
- 25 sand bedding



3 tap detail
1:10

- 20mm polyethylene pipe work from the tanks 20mm brass outlet
- 20mm polypropylene SAUNDERS or ACUFLO diaphragm valve complete with 90° elbow spout
- 45mm H3.2 support block under tap, rebate to seat
- 45mm H3.2 support block under pipe, hold pipe in place with galv. steel strap over well nailed into block

4.0	First Issue	Mar 09	
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
		VALO Water Supply/Appendix E3	

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Department of Conservation
Te Papa Ataturai

PROJECT
HUT DESIGN/MANUAL
WATER SUPPLY
10 & 12 BUNK HUTS

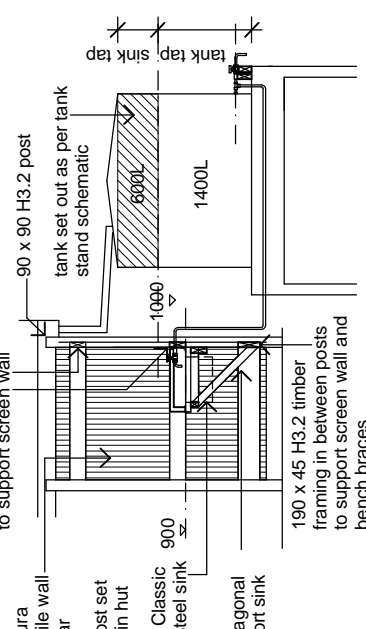
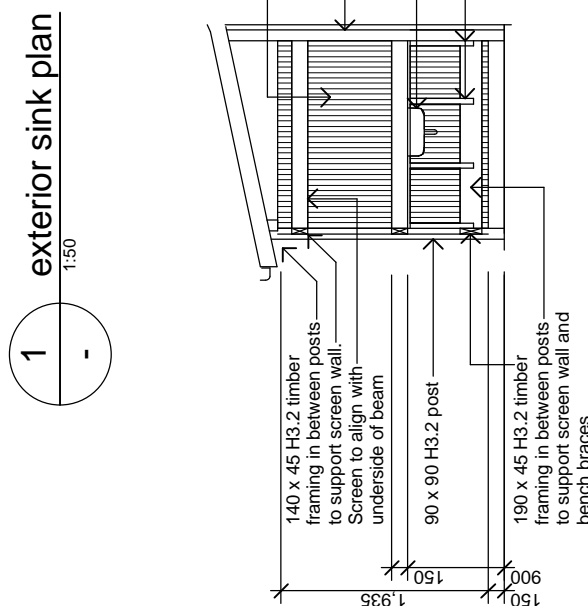
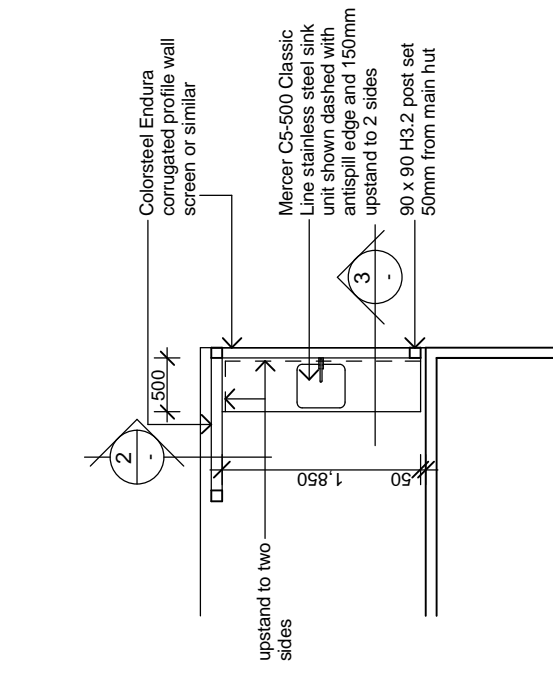
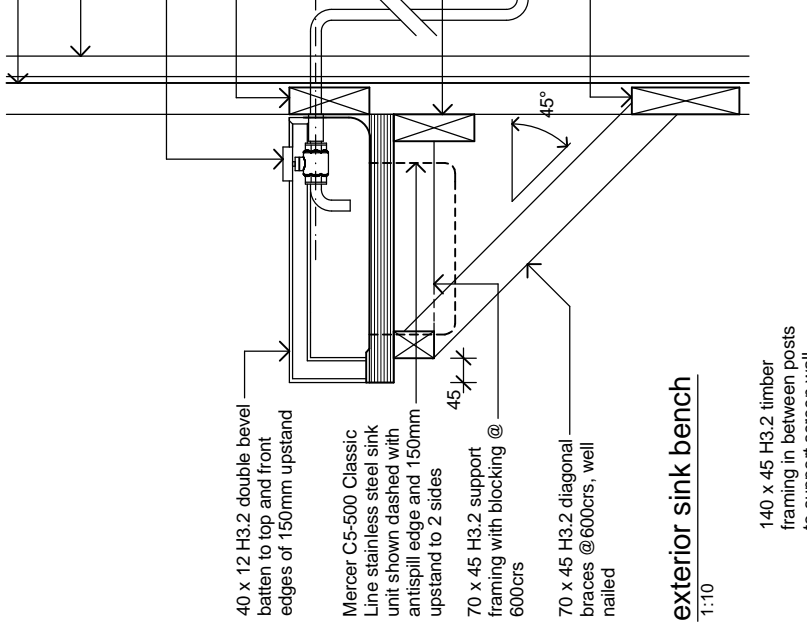
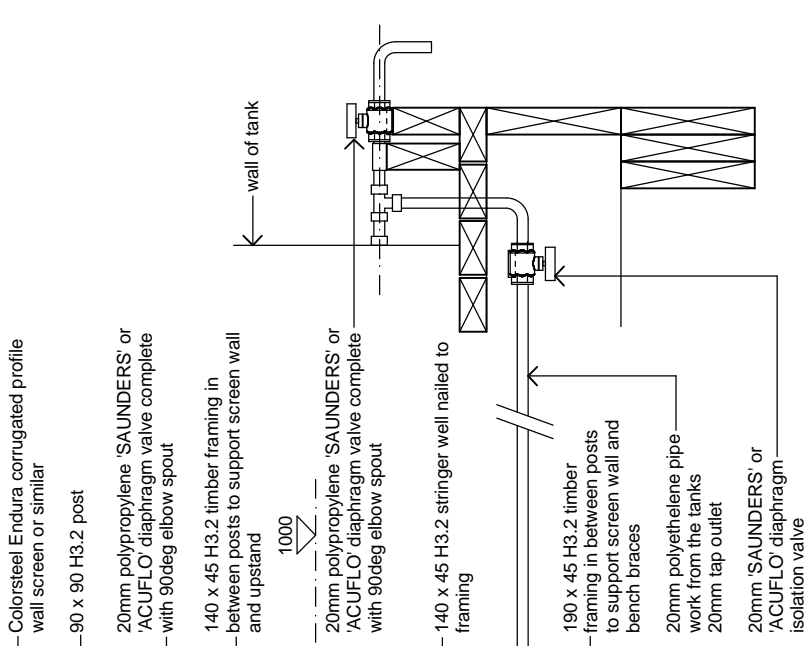
CLIENT
DEPARTMENT OF CONSERVATION

SHEET CONTENTS

DESIGN	DRAWN	CHECKED	PROJECT No.	DATE	REV No.
				xyz	51

SCALES
1:50,
1:40,
1:10

2000L water tank stand



3 exterior sink section
1:50

2 exterior sink elevation
1:50

NOTE:
With the height of the tank stand based on the water supply schematic sheet 51 for a 2000 litre low profile tank (WILSON TS2000), only 600 litres will be available at the sink. The tap at the water tank is then used

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
		VALO Water Supply/Appendix E3	

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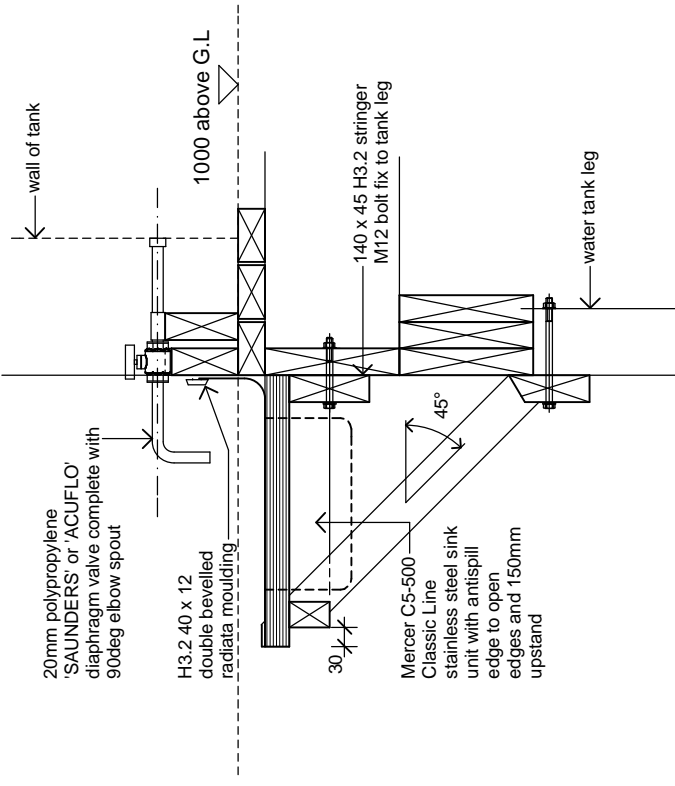
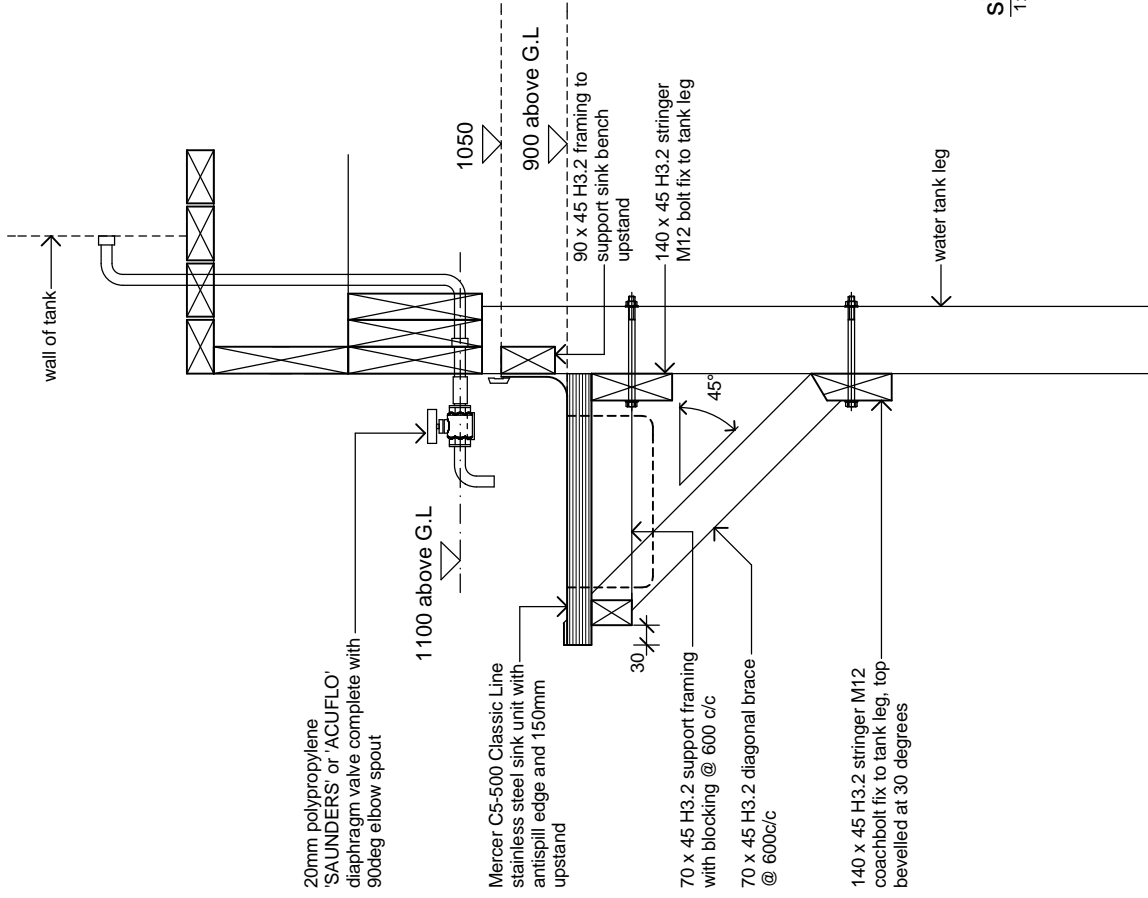
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HUT DESIGN MANUAL
WATER SUPPLY
10 & 12 BUNKHUTS

CLIENT		DEPARTMENT OF CONSERVATION	
SHEET CONTENTS		SCALES	
exterior sink - deck		1:50,	1:10
DESIGN	DRAWN	CHECKED	PROJECT No.
RP	GR	RP	xyz
DATE			52



sink bench to water tank stand. stand height <1000 above ground
1:10

sink bench to water tank stand. stand height >1000 above ground
1:10

4.0	First Issue	Mar 09	-
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		Drawing Issue and Amendments	DWN CKO
		V4.0 Water Supply Appendix E3	

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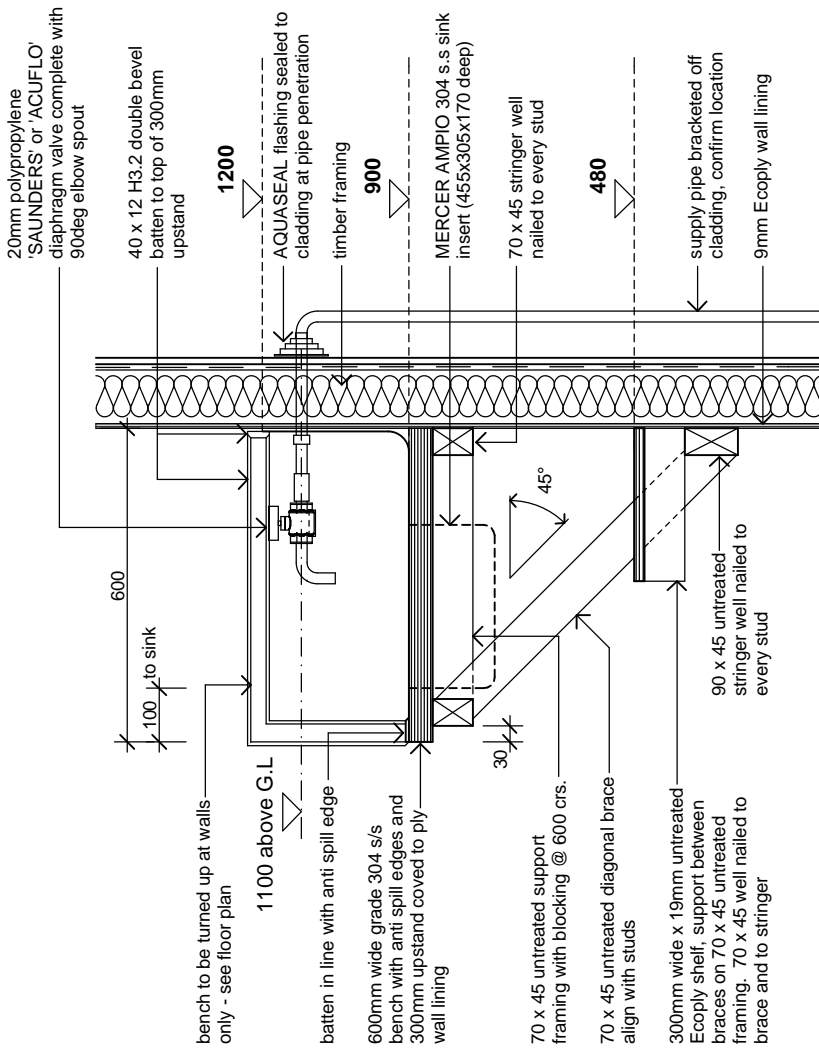


PROJECT
HUT DESIGN MANUAL
WATER SUPPLY
4, 6, 10 & 12 BUNK HUTS

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DEPARTMENT OF CONSERVATION

SHEET CONTENTS
SINKS
exterior sink - tank stand

DESIGN	DRAWN	CHECKED	PROJECT NO.	DATE
	GR	RP	xyz	xyz
SCALE	1:10			
NO. OF SHEETS	53			



internal sink typical
1:10

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
		V4.0 Water Supply Appendix E3	

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PROJECT
HUT DESIGN MANUAL
WATER SUPPLY
4, 6, 10 & 12 BUNK HUTS

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SHEET CONTENTS

SHEET CONTENTS		SCALES
internal sink		1:10
DESIGN	DRAWN	CHECKED
RP	GR	RP
DATE	xyz	xyz
		@ A3 SHEET SIZE
		SHEET No.
		PROJECT No.
		REV No.
		54

Section E4 Tender and Building Consent Alpine Details

4.1. Contents

Section E4 contains guidance on the issues and details that need to be taken into account when the hut is located in an alpine environment. An Alpine environment is where design is dictated by extremes of cold, wind and snow loading. Generally these huts are sited at altitudes above 1,200m and/or are subject to snow loads of 2kPa or more. Snowfall may remain on or around the hut for extended periods of time. Occasionally it would be extended to include huts below 1,200m where similar conditions are experienced.

These details may be selected or amended as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E2, E3, F1 and F2 and any specific sheets derived from section E5 to form the Tender and Building Consent drawings.

Information and requirements arising from these details can then be incorporated in the specifications.

There are no generic Tender and Building Consent Alpine Details as details are likely to be non-standard designs specific to the at the hut site. However, included in Appendix E4 are typical details that have been used in alpine huts and may be suitable for the hut under consideration.

Hut users' needs and local environmental factors should be discussed with Area staff. Based on these discussions and consideration of the specific environmental factors these details may be incorporated into the project, amended as necessary or not used. There may also be additional details that are considered necessary due to site-specific considerations.

4.2. Considerations

4.2.1: Access and egress

i) Entry lobby:

The provision of an entry lobby is permitted for huts in alpine environments. The entry lobby serves as an insulating space between the interior of the hut and the exterior environment, minimising the loss of warm air. It provides a sheltered area where hut users can remove their gear (parkas, ropes, crampons, ice axes etc) prior to entering the hut. It also provides a protected area to store alpine gear outside of the hut interior.

Considerations for the entry lobby include:

- Orientation of door relative to prevailing winds to provide a sheltered entry and to minimise likelihood of snow drifting against door

- Likely size of parties using the hut
- Width, length and construction of any fixed seating to accommodate hut users putting on or removing alpine gear
- provision of hook rails or other fixtures for the storage of specific equipment
- the door between the entry lobby and the hut interior may open in to the hut space (refer Part D – Fire Safety, Section D3: Examples of Complying Huts)

ii) Doors:

All exterior doors of huts in an alpine environment are to open inwards. This is to allow for the opening of the door even when there is snow drift piled against the outside face of the door.

Considerations for doors include:

- exterior door construction, which may be specifically designed using material such as an aluminium insulated sandwich panel, an aluminium suite incorporating thermal breaks, or PVC rather than a standard aluminium joinery suite to deal with issues of heat loss, cold transfer and condensation on interior surfaces.
- exterior doors hardware, which may need to be designed in such a way that they can be opened by using additional force in the event that the door panel is stuck to the frame by frozen spin-drift. 'D' handles fitted to the both the inside and outside faces of the door which can be used, rather than the latch furniture, to apply additional force to open the door may be required. Heavy duty commercial latch furniture is inadequate to cope with extreme wind pressures and suction, so that the door latch system may need to be a mechanical system that penetrates through the face of the door and latches to the door jamb both inside and outside. As a result the door jambs and door frame may need to be stronger than standard aluminium joinery suites.

iii) Means of escape:

- Where an entry lobby is provided a means of escape directly to the exterior from the hut must still be provided. Therefore the lobby results in a requirement for two means of escape, and the one from the main hut may be via a side hung window (refer Part D – Fire Safety, Section D3: 'Examples of Complying Huts for requirements and for an example of an alpine hut').

4.2.2: Flooring and stairs

The floors in huts in an alpine environment are subject to harsher 'wear and tear' than standard huts and ply may not always be sufficient. Hut users are likely to enter the hut wearing crampons and there is likely to be more moisture from snow and rain off both clothing and alpine gear.

Considerations for the flooring include:

- flooring to entry lobby to be hard wearing such as aluminium checker plate to allow for the use of crampons on entry and prior to departure from the hut.
- flooring to main hut to be made from solid timber ex 100 x 40mm macrocarpa TG & V or similar.
- Drainage and snowmelt control with the lobby flooring laid to falls to a snow tray located just inside the exterior door. The snow tray should have web-forge grating over to allow for snow and ice to be knocked off the bottom of boots / crampons. There should be draining pipes in the base of the snow tray that discharge snow melt to the ground below the hut. The ends of the draining pipes should be cut at 45 degrees and orientated away from the prevailing wind. If base boards are not being used around the hut then the draining pipes should also be shrouded to prevent spin-drift from being blown back up inside the hut.

4.2.3: Exterior wall cladding and finishing

Huts in an alpine environment are subject to extreme winds and 'spin-drift' – small particles of frozen water which get blown or sucked into small spaces by pressure differentials. Once pressure differentials drop, the spin-drift can settle and accumulate in enclosed spaces (ceiling voids, wall cavities etc) and pose problems either while frozen due to increased loadings on horizontal elements or when thawing through moisture. Based on the site specific conditions, the cladding may need to be detailed to either prevent the ingress of spin-drift or enable ready drainage upon melting.

Considerations for the cladding detailing include:

- the base metal thickness for the exterior cladding being 0.55 BMT.
- the building paper behind the cladding to be continuous to the highest wall framing members and to the base of the floor framing, taped to the framing along the edges and at all laps to prevent spindrift entering the wall cavity and settling in the insulation. Dwargs should be installed as necessary to create a continuous surface on to which the building paper should be taped.
- the cladding of trapezoidal profile to make the on-site cutting of flashings easier. All flashings should be cut on site to suit locations of cladding crests.
- the lengths of back flashings increased to cover the maximum distance between the crests of the selected wall cladding.
- Compriband or similar compressible seals installed between cladding and the flashing.

4.2.4: Roofing

The roofing is also subject to extreme winds and spindrift, but with the additional factor of snow load and drift. Based on the site specific conditions, the roofing may need to be designed to cope with heavy snow loads, and detailed to either prevent the ingress of spin-drift or enable ready drainage upon melting.

Considerations for the roofing detailing include:

- If a deck with a veranda is to be incorporated into the design of an alpine hut, one continuous roof plane extending from the roof to cover the veranda may be required to avoid the increased snow load due to snowdrift accumulating at the change in angle of the roofing as per the standard hut design incorporating a deck and a veranda.
- the base metal thickness for the exterior cladding being 0.55 BMT.
- the building paper under the roofing to be continuous and lapped over the wall building paper, taped to the roof framing or wall building paper along the edges and at all laps to prevent spindrift entering the roof cavity and settling in the insulation. Dwargs should be installed as necessary to create a continuous surface on to which the building paper should be taped.
- the cladding of trapezoidal profile to make the on-site cutting of flashings easier. All flashings should be cut on site to suit locations of cladding crests.
- gable eaves may not be included to reduce the number of junctions in the cladding and enabling the gable flashing to flash directly from the roof over the edge and be cut on site to suit the cladding profile
- the roofing sheets may be one piece continuous from one side of the hut to the other, with the ridge being roll formed to the minimum radius as recommended by the roofing manufacturer. By using continuous roofing, ridge flashings are eliminated preventing the ingress of spin-drift at this point.

4.2.5: Interior lining and finishing

Huts in an alpine environment are subject to greater humidity differentials between the exterior and interior environment. The alpine environment typically has lower humidity than sub-alpine environments. During hut occupancy, the interior temperature and humidity levels will increase. The variation between the exterior and interior humidity levels combined with exterior and interior temperatures differentials can result in relatively moist air moving from the interior into the roof and wall cavity where the dew point may occur within the insulation. Condensation can form and then freeze, Insulation value and performance is lost, surface temperatures fall, interior condensation occurs. In addition to poor interior thermal comfort, durability of the building structure and fabric is adversely affected through deterioration of the wall framing, insulation, linings and other material.

Considerations for the interior lining detailing include:

- installing a vapour barrier directly behind the ply wall linings and ply ceiling lining to prevent the moist air migrating far enough into the cavity to reach the dew point. The vapour barrier should be continuous between wall and ceiling, with all joints lapped 150mm min. and taped. The vapour barrier should be taped at all edges to the framing.

4.2.6: Joinery

Joinery in an alpine environment may need to be detailed to prevent the ingress of spin-drift, as well as coping with the specific wind pressures at alpine sites.

Considerations for the joinery detailing include:

- joinery to be selected from a suite that is designed to cope with the site wind speed.
- joinery to be double glazed and the joinery suite may have thermal breaks to raise internal surface temperatures and reduce surface condensation.
- avoid integrated ventilation openings that could allow the ingress of spin-drift
- avoid integrated condensation channels that could allow the ingress of spin-drift. Instead, provide an aluminium condensation catchment trough to the reveal at the base of the window to allow for condensation to evaporate from catchment
- all opening windows to be fitted with restrictor stays to limit the opening to 200mm, except any window which is designated as a fire escape window
- openings for joinery for windows which are designated as fire escape windows to be side hung and of minimum dimensions as required by Part D – Fire Safety, Section D2.2 'Means of escape'. The window should be fitted with heavy-duty door hinges and be glazed with laminated safety glass

4.2.7: Guttering

Huts in an alpine environment are subject to snow and ice on and around the hut for extended periods of time. Snow that has accumulated on the roof may pull the guttering off its brackets and destroy it when the snow starts to melt and slips off the roof.

Considerations for the plumbing and drainage include:

- Colorsteel spouting with external brackets. Space the spouting brackets as necessary to allow for the increased weight of snow drift on the spouting
- snow straps should be rivet fixed to spouting spaced at 300mm centres (corrugate profile roofing) or every crest (trapezoidal profile roofing)

4.2.8: Ventilation

Huts in an alpine environment are required to be ventilated via a passive ventilation system that does not rely on openings in the joinery for fresh air intake and does not use the ceiling cavity for air inlet or exhaust because of the issues of spin-drift. When all windows, doors and mechanically operated vents are closed, alpine huts should still residual ventilation.

Considerations for the ventilation include:

- providing inlet/s at floor level, with the fresh air taken from below the floor of the hut, that have a means of controlling the rate of natural ventilation. The ends of the air inlet pipes located below the floor level should be cut at 45 degrees and orientated away from the prevailing wind. If base boards are not being used around the hut then the inlet pipes should also be shrouded to prevent spin-drift from being blown back up inside the hut
- providing the outlet for the ventilation through a ceiling mounted ventilation grille connected directly to a rigid ducted system to exhaust via a vertical vent with incorporated cowl designed to prevent spin-drift entering the hut. The outlet/s should have a means of controlling the rate of natural ventilation (e.g. a chain operated damper or similar).
- Providing the junction between the ventilation cowl / rigid ducting and the hut cladding with an integrated flashing to the wall cladding so that there is a continuous seal at the junction where the ventilation cowl enters the building
- Placing the inlet/s and outlets at opposite ends of the hut to allow for cross-flow ventilation
- Not installing base boards to the perimeter of the hut will prevent snow drift accumulating against and under the hut as the increased wind speed under the hut clears snow from under the hut. Against this benefit is the need to consider managing spindrift with any ventilation inlet.

Appendix E4: Alpine Huts

This appendix contains:

- Current Detail Register
- Amendment Register
- Detail Drawings

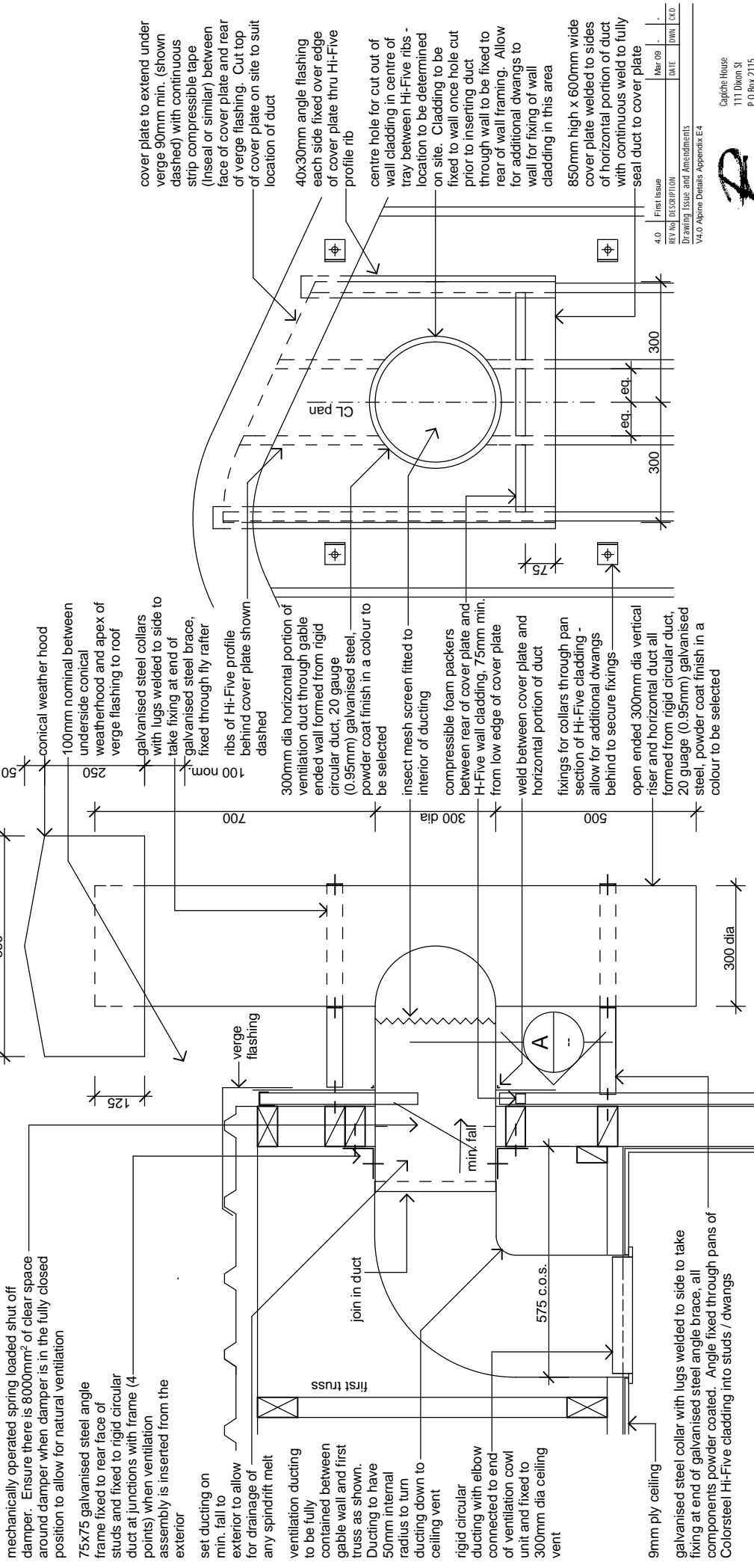
ALL DRAWINGS ARE A4 REDUCTIONS OF A3 ORIGINALS AND THEREFORE ARE NOT TO SCALE. DO NOT MEASURE OFF THESE DRAWINGS OR USE FOR CONSTRUCTION.

CURRENT DRAWING REGISTER

Detail	Title	Version	Date issued
E4.1	hut ventilation – wall outlet	4.0	March 2009
E4.2	hut ventilation – floor inlet box	4.0	March 2009
E4.3	roof details	4.0	March 2009
E4.4	floor details	4.0	March 2009
E4.5	external corner & door sill	4.0	March 2009
E4.6	bench seat and cooking bench details	4.0	March 2009

AMENDMENT REGISTER

Amendment date	Amendment details (section, page number, block)	Version	Signature of copyholder and date



mechanically operated spring loaded shut off damper. Ensure there is 8000mm² of clear space around damper when damper is in the fully closed position to allow for natural ventilation

75x75 galvanised steel angle frame fixed to rear face of studs and fixed to rigid circular duct at junctions with frame (4 points) when ventilation assembly is inserted from the exterior

set ducting on min. fall to exterior to allow for drainage of any spindrift melt

ventilation ducting to be fully contained between gable wall and first truss as shown. Ducting to have 50mm internal radius to turn ducting down to ceiling vent

rigid circular ducting with elbow connected to end of ventilation cowl unit and fixed to 300mm dia ceiling vent

9mm ply ceiling

galvanised steel collar with lugs welded to side to take fixing at end of galvanised steel angle brace, all components powder coated. Angle fixed through pangs of Colorsteel Hi-Five cladding into studs / dwangs

conical weather hood
100mm nominal between underside conical weatherhood and apex of verge flashing to roof
galvanised steel collars with lugs welded to side to take fixing at end of galvanised steel brace, fixed through fly rafter
ribs of Hi-Five profile behind cover plate shown dashed

300mm dia horizontal portion of ventilation duct through gable ended wall formed from rigid circular duct, 20 gauge (0.95mm) galvanised steel, powder coat finish in a colour to be selected

insect mesh screen fitted to interior of ducting

compressible foam packers between rear of cover plate and Hi-Five wall cladding, 75mm min. from low edge of cover plate

weld between cover plate and horizontal portion of duct

fixings for collars through pan section of Hi-Five cladding - allow for additional dwangs behind to secure fixings

open ended 300mm dia vertical riser and horizontal duct all formed from rigid circular duct, 20 gauge (0.95mm) galvanised steel, powder coat finish in a colour to be selected

cover plate to extend under verge 90mm min. (shown dashed) with continuous strip compressible tape (Inseal or similar) between face of cover plate and rear of verge flashing. Cut top of cover plate on site to suit location of duct

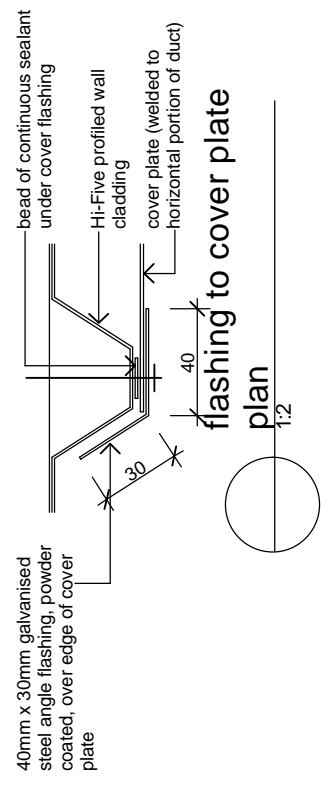
40x30mm angle flashing each side fixed over edge of cover plate thru Hi-Five profile rib

centre hole for cut out of wall cladding in centre of tray between Hi-Five ribs - location to be determined on site. Cladding to be fixed to wall once hole cut prior to inserting duct through wall to be fixed to rear of wall framing. Allow for additional dwangs to wall for fixing of wall cladding in this area

850mm high x 600mm wide cover plate welded to sides of horizontal portion of duct with continuous weld to fully seal duct to cover plate

1 side elevation
1:10

A Section
1:10



flashing to cover plate
plan
1:2

REV	NO	DESCRIPTION	DATE	BY	CHKD
4.0		First Issue	Mar 09		

VALO Alpine Details - Appendix E4

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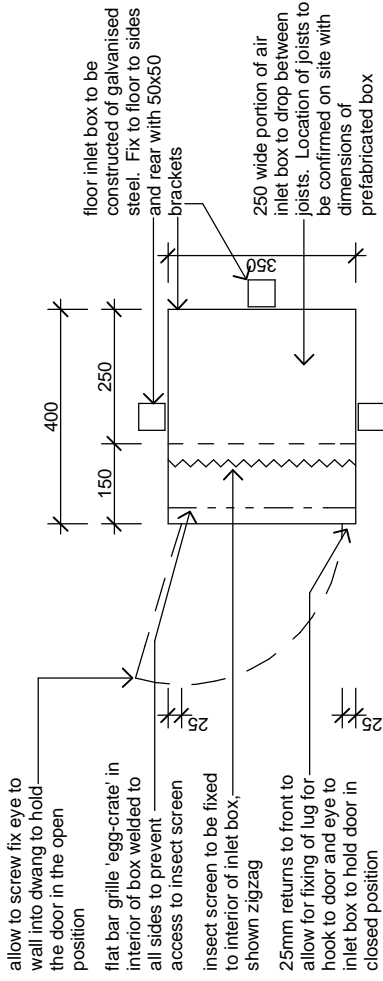
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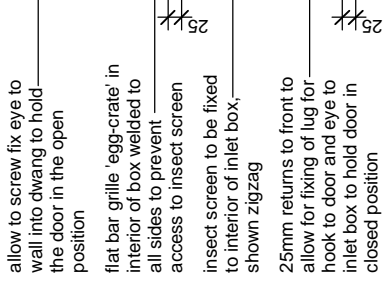
PROJECT
HUT DESIGN MANUAL
ALPINE DETAILS

CLIENT		DEPARTMENT OF CONSERVATION	
SHEET COMMENTS			
hut ventilation - wall outlet		SCALES	
		1:10, 1:2	
DESIGN	DRAWN	CHECKED	PROJECT NO.
RP	GR	RP	
DATE			xyz
			E4.1



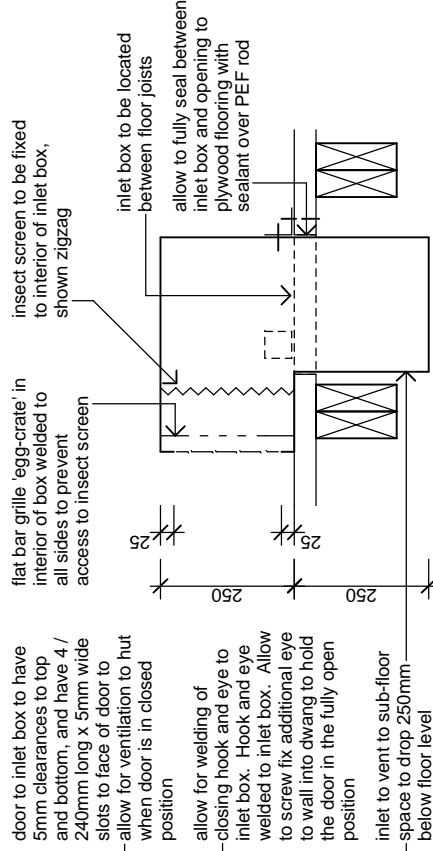
FLOOR INLET BOX

Plan
Scale 1:10



FLOOR INLET BOX

Front Elevation
Scale 1:10



FLOOR INLET BOX

Side Elevation
Scale 1:10

4.0	First Issue	Mar 09	-
REV NO	DESCRIPTION	DATE	DWN CKO
Drawing Issue and Amendments			
VALO Alpine Details Appendix E4			

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PROJECT

HUT DESIGN MANUAL
ALPINE DETAILS

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SHEET CONTENTS

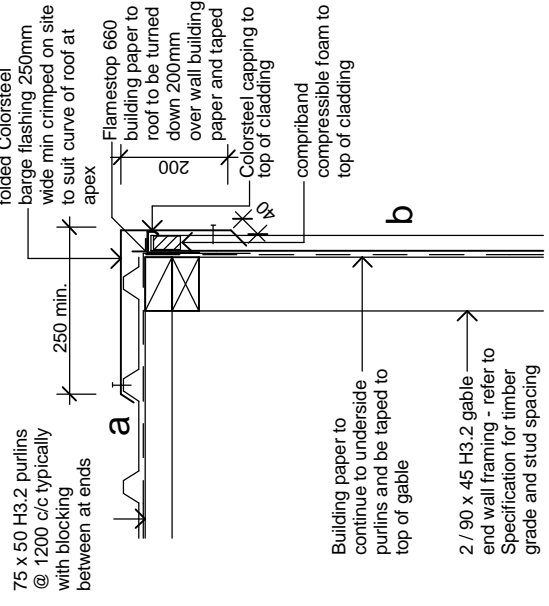
SCALES

hut ventilation - floor inlet box 1:10

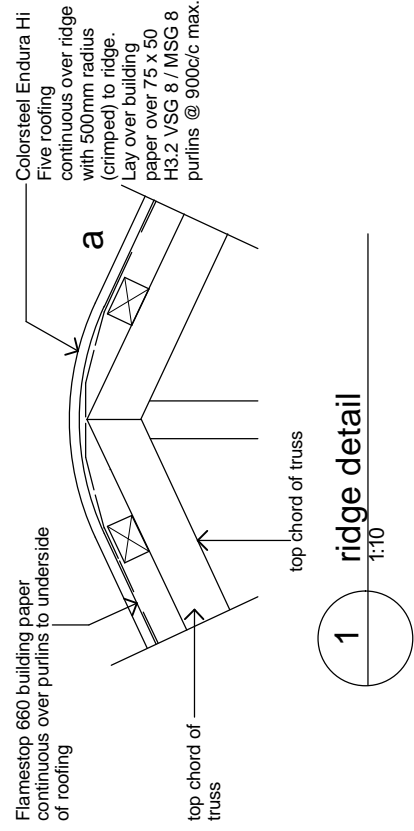
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RP	GR	RP		
DATE			xyz	E4.2

Material Note:

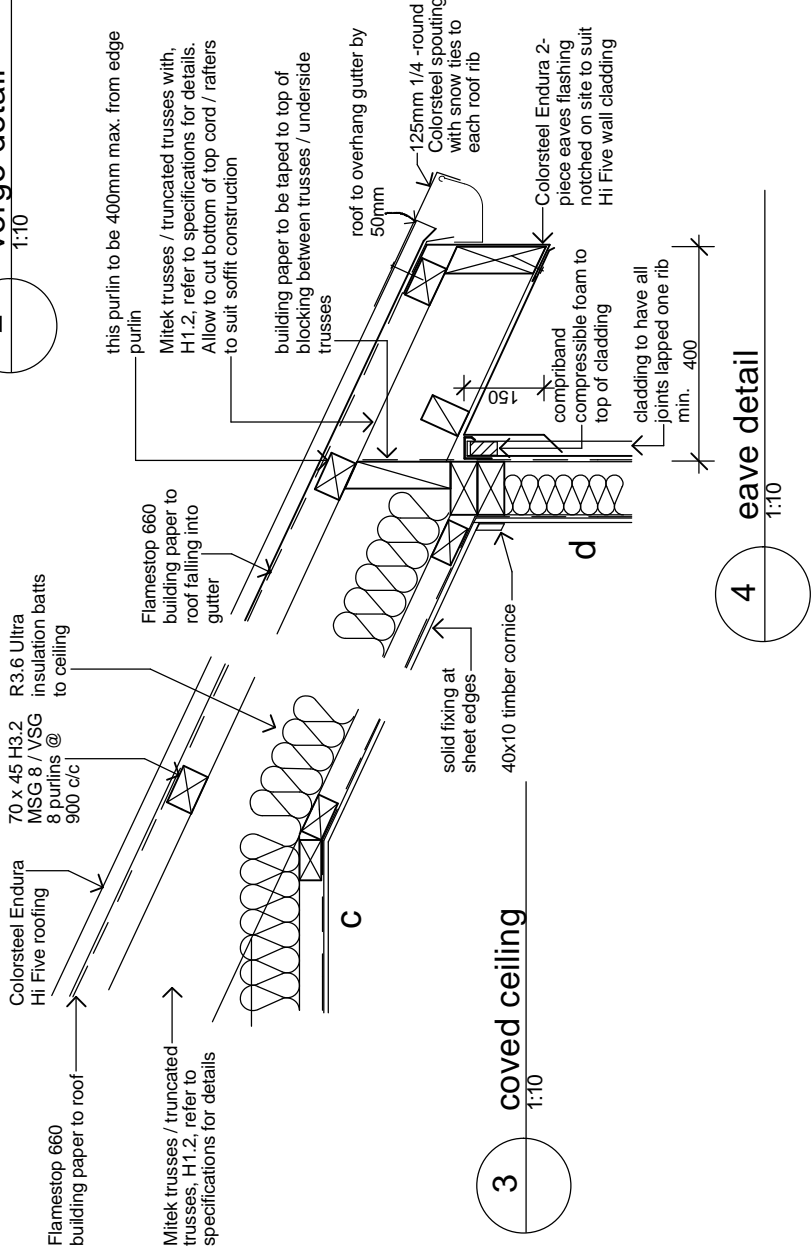
- a** COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over polythene membrane over 70 x 35 H1.2 battens @ 600c/c max. Polythene to be continuous behind ceiling / coved ceiling and wall
- d** CHH 9mm ECOPLY CD grade untreated wall lining (10mm gap to flooring) over polythene membrane. Polythene to be continuous behind wall lining and taped to bottom plate.
- e** ex100x40 PG T&G MACROCARPA flooring over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



2 verge detail
1:10



1 ridge detail
1:10



3 covered ceiling
1:10

4 eave detail
1:10

4.0	First Issue	Mar 09	-
	REV NO	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKD
		V4.0 Alpine Details - Appendix E4	

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HUT DESIGN MANUAL
ALPINE DETAILS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	SCALES
roof details	1:10,
	1:50
DESIGN DRAWN CHECKED PROJECT NO.	@ A3 SHEET SIZE
DATE	REV. NO.
	xyz
	E4.3

Material Note:

COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE roofing over **TASMAN INSULATION FLAMESTOP 660** building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.

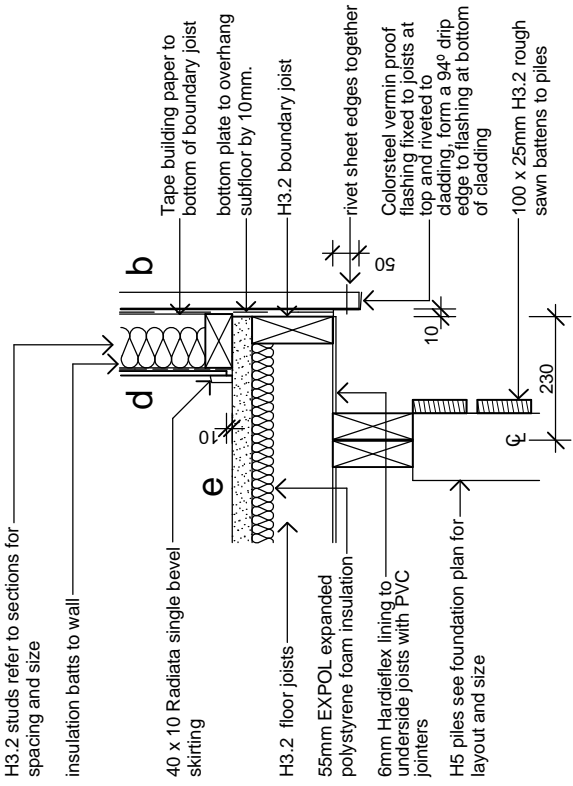
COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE cladding over **TASMAN INSULATION BITUMAC 860** building paper over timber framing. Refer to floor plan for framing sizes & c/c.

CHH 9mm ECOPLY CD grade untreated ceiling lining over polythene membrane over 70 x 35 H1.2 battens @ 600c/c max. Polythene to be continuous behind ceiling / coved ceiling and wall

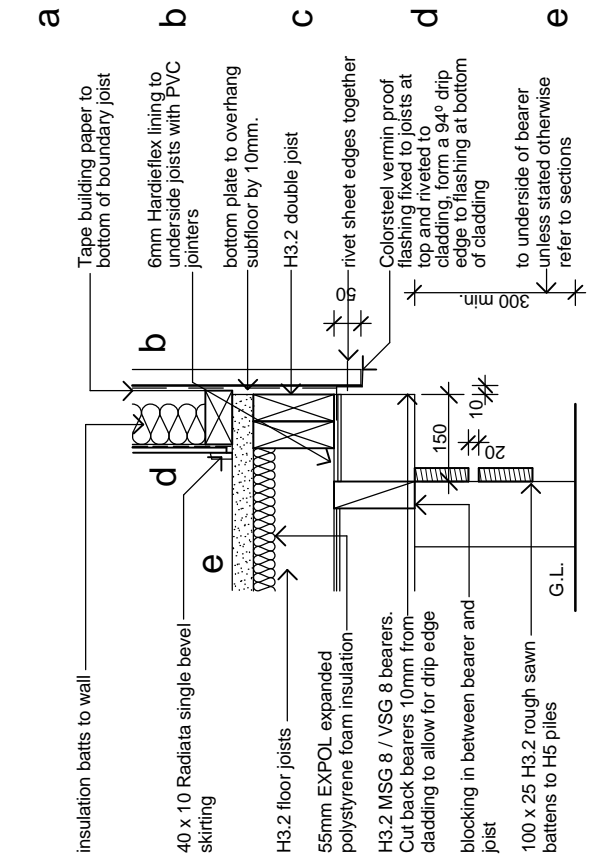
CHH 9mm ECOPLY CD grade untreated wall lining (10mm gap to flooring) over polythene membrane. Polythene to be continuous behind wall lining and taped to bottom plate.

ex100x40 PG T&G **MACROCARPA** flooring over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.

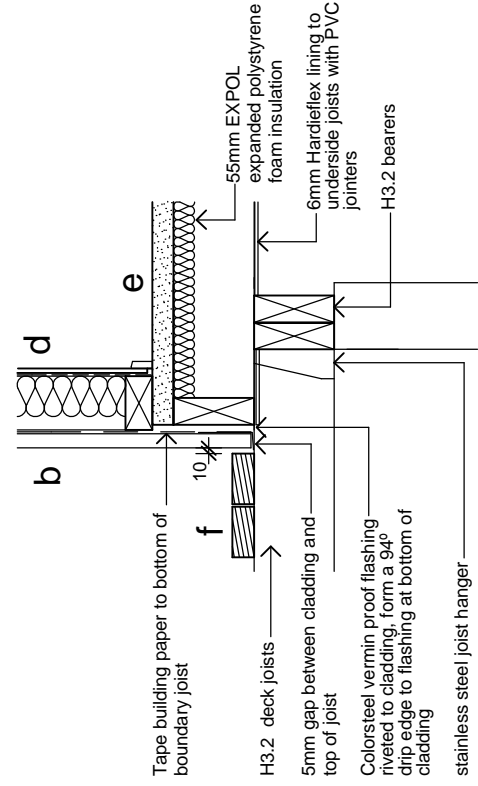
90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.



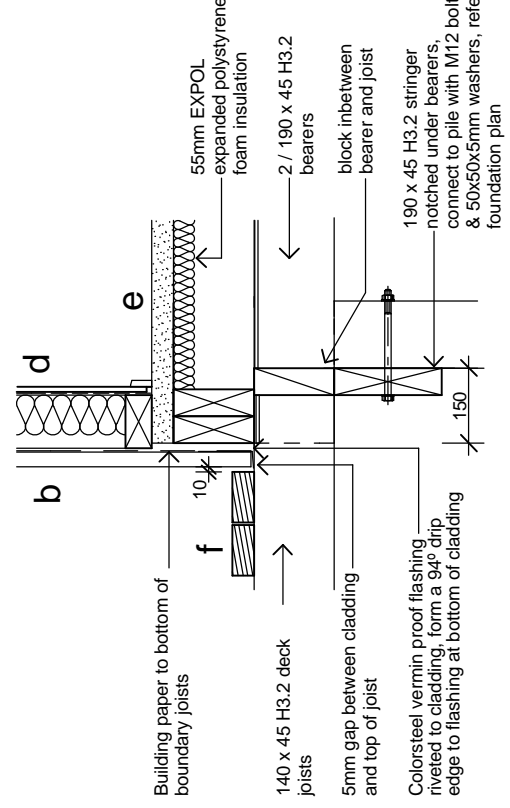
1 floor detail
1:10



2 boundary joist detail
1:10



3 floor to deck connection
1:10



4 floor to deck connection
1:10

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Issue and Amendments	DWN CKO
		Drawing Issue and Amendments	
		V4.0 Alpine Details Appendix E4	

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HUT DESIGN MANUAL
ALPINE DETAILS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET CONTENTS	
SCALES	1:10, 1:50
DESIGN	RP
DRAWN	GR
CHECKED	RP
PROJECT No.	xyz
REV No.	xyz
DATE	
	E4.4

Material Note:

- a** COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE roofing over TASMAN INSULATION FLAMESTOP 660 building paper over 70 x 45 H3.2 purlins on flat @ 800c/c max. evenly spaced.
- b** COLORSTEEL ENDURA 0.55BMT HI FIVE PROFILE cladding over TASMAN INSULATION BITUMAC 860 building paper over timber framing. Refer to floor plan for framing sizes & c/c.
- c** CHH 9mm ECOPLY CD grade untreated ceiling lining over polythene membrane over 70 x 35 H1.2 battens @ 600c/c max. Polythene to be continuous behind ceiling / coved ceiling and wall
- d** CHH 9mm ECOPLY CD grade untreated wall lining (10mm gap to flooring) over polythene membrane. Polythene to be continuous behind wall lining and taped to bottom plate.
- e** ex'100x40 PG T&G MACROCARPA flooring over timber joists. Refer to foundation plan for sub floor framing sizes & c/c.
- f** 90 x 35 H3.2 grip tread decking, grip side up, even nail spacing. 10mm gap between first piece of decking and wall cladding. Refer to foundation plan for sub floor framing sizes & c/c.

4.0	First Issue	Mar 09	-
	REV No	DESCRIPTION	DATE
		Drawing Issue and Amendments	DWN CKO
VALO Alpine Details Appendix E4			

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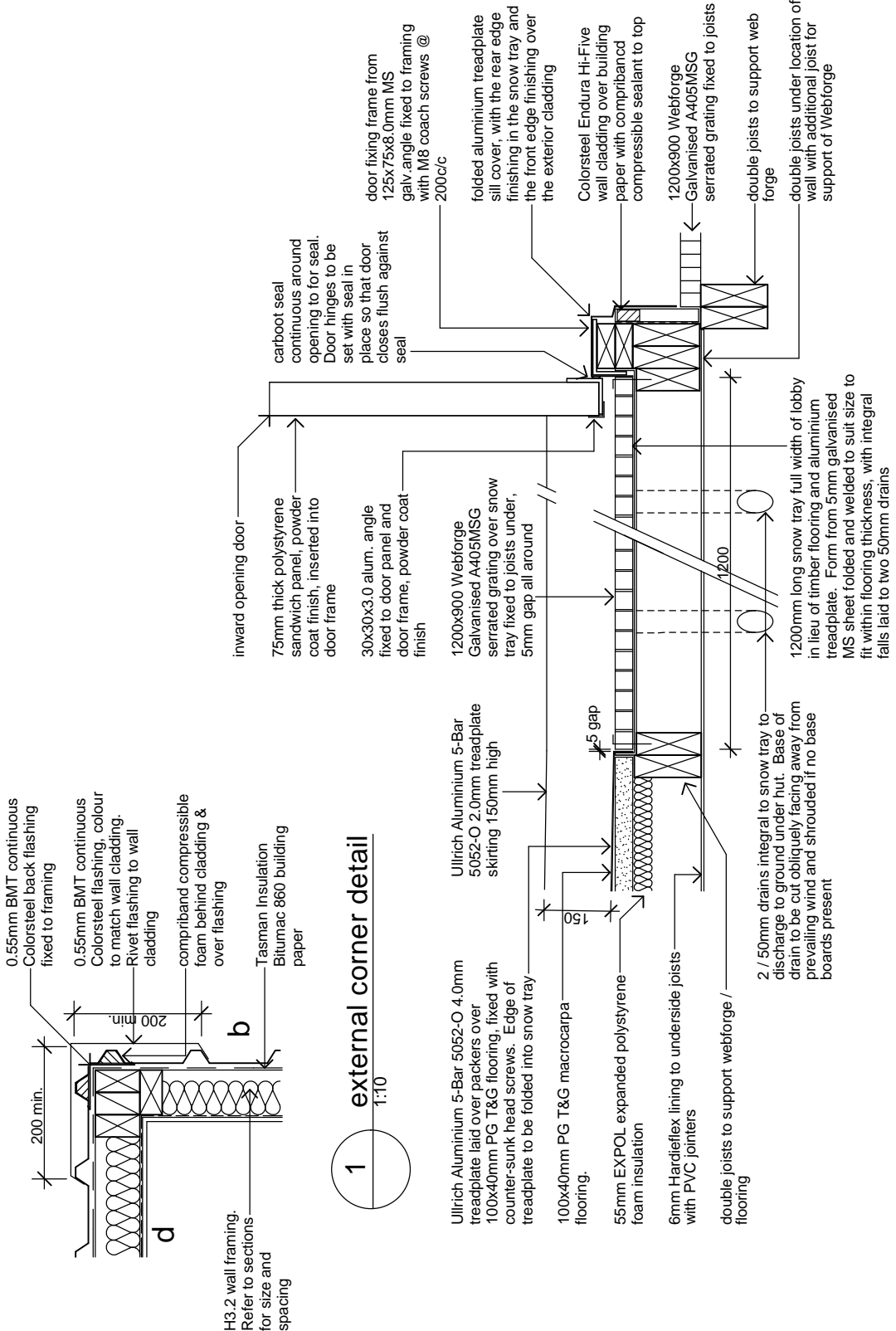
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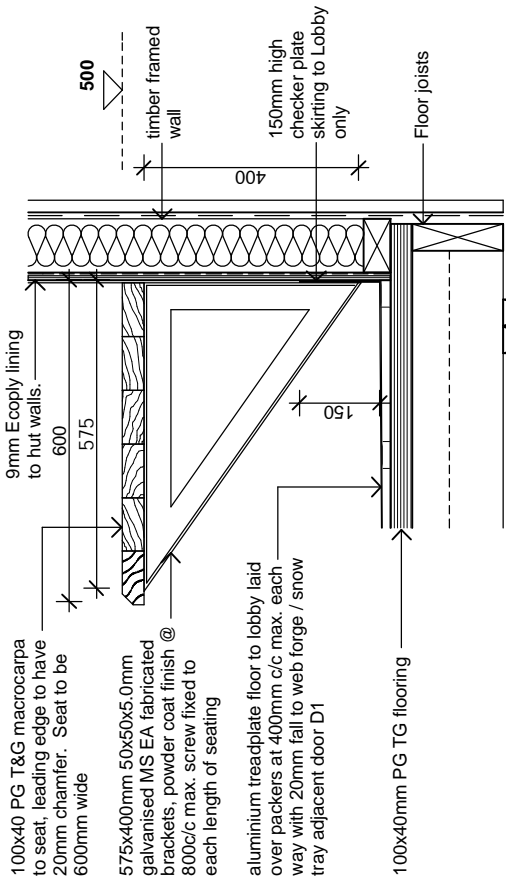
Contributor shall check all Dimensions on site prior to construction

Department of Conservation
Te Papa Ataturai

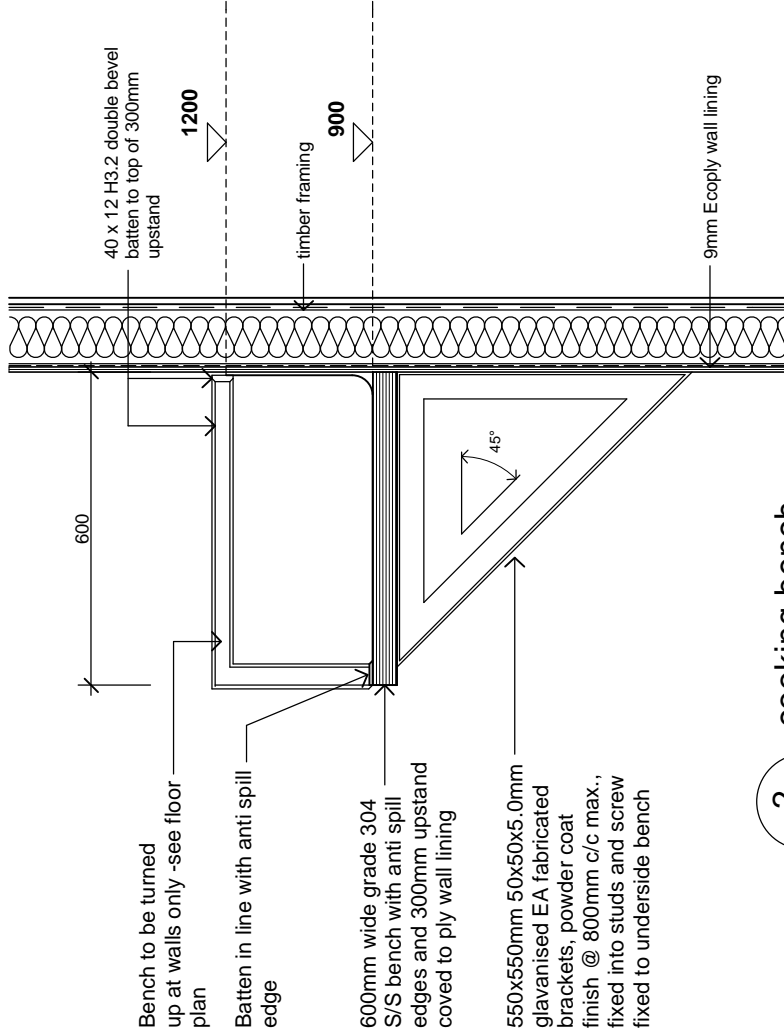
PROJECT
HUT DESIGN MANUAL
ALPINE DETAILS

CLIENT	DEPARTMENT OF CONSERVATION
SHEET COMMENTS	SCALES
external corner & door sill	1:10, 1:50
DESIGN	DRAWN
CHECKED	PROJECT No.
RP	GR
DATE	REV No.
	xyz
	E4.5





1 bench seat
1:10



2 cooking bench
1:10

REV NO	DESCRIPTION	DATE	DWN	CHKD
4.0	First Issue	Mar 09	-	-

Drawing Issue and Amendments

V4.0 Alpine Details Appendix E4

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Contractor shall check all Dimensions on site prior to construction



PROJECT

HUT DESIGN MANUAL
ALPINE DETAILS

CLIENT DEPARTMENT OF CONSERVATION

SHEET CONTENTS

bench seat & cooking bench

SCALES 1:10

DESIGN DRAWN CHECKED PROJECT NO. SHEET NO. REV. NO.

RP GR RP RP xyz E4.6

DATE xyz

Section E5 Harsh Environment Details

5.1. Contents

Section E5 contains guidance on the issues that need to be taken into account when the hut is located in a harsh environment. A Harsh environment is where design is dictated by a higher risk of corrosion and will either be coastal or geothermal. Generally these huts are sited within 500m of the coast, within 100 metres from tidal estuaries and sheltered inlets or within 50 metres from a geothermal hot spot within the Central volcanic plateau of the North Island. Figure 4.1 of NZS 3604 identifies these areas as the sea spray zone and zone 4 respectively.

There are no generic Tender and Building Consent Harsh Environment Details as these details will be one-off and may be non-standard designs specific to the environmental factors at the hut site. In most cases, the construction details will be the same as per the details contained in Appendix E1 but with different material specification to suit the harsh environment.

The relevant details need to be amended as required, added to the Developed Design Drawings, the selected sheets from Sections E1, E2, E3, F1 and F2 and any specific sheets derived from section E4 to form the Tender and Building Consent drawings

Information and requirements arising from these details can then be incorporated in the specifications.

Hut users' needs and local environmental factors should be discussed with Area staff. Based on these discussions and consideration of the specific environmental factors decisions regarding the solutions, if any, can be made and incorporated.

5.2. Considerations

5.2.1: Material and fixing selection

All cladding and the structural and non-structural fixings building materials for huts located in a harsh environment need to be selected based on the nature of the harsh environment.

Considerations for material selection includes:

- the base metal of the cladding and roofing should be selected to suit the environment, including the grade of base metal and the type of coating.
- if aluminium is selected as the cladding material, the material is to be ColorCote ARX, with a minimum base metal thickness of 0.7mm. Fixings for aluminium cladding are to be those recommended by the manufacturer. Note that there are usually minimum quantity requirements for aluminium claddings

- for aluminium joinery in marine environments, powder coating is to be selected from the Orica Dulux Duratec range
- flashing materials should be compatible with the cladding and roofing materials, the building paper and any other component that it comes into contact with (e.g. CCA timber treatment)
- the spouting materials should be selected to suit the environment and be compatible with receiving water run-off from the roofing material
- refer to NZS 3604:1999 Table 4.1 'Protection required for steel fixings and fastenings excluding nails' and Table 4.3 'Steel items such as nails and screws for framing and cladding' for fixing material specification

5.2.2: Water supply

In a geothermal region there is a risk of eruption and ash fall accumulating on roofs. Consideration should be given to providing a means of disconnecting the roof supply in the event of an eruption to avoid contamination of the water supply held in the tanks.