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PIM/BC
#..72250

John Chittenden Design

PROJECT SPECIFICATION

L Booth & G Wellington

618 Te Weta Rd

RD 1

Rotorua

Issued for Tender/Consent

Booth

RRD001Y8AB

Document Number: RDC-459511

Date Registered: 12/5/2014

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

PROJECT OVERVIEW

Scope

New free-standing carport.

Sited between existing garage and existing house.

Carport not attached to either existing building, but rainwater is dischargedto gutter systems of both buildings.

Address

Site Address	618 Te Weta Rd
Suburb	RD 1
City	Rotorua
Lot #	5
DP #	84898

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Site Conditions

Wind Zone	H - High Wind Speed
Earthquake Zone	Zone 2
Exposure Zone	Zone B - Low
Snow Loading Zone	Zone N0

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

TABLE OF CONTENTS

Preliminaries and General 4
Project Overview 4
Siteworks 5
Site & Scope 5
Piling 6
House Piles 6
Concrete 7
Materials 7
Carpentry 8
Materials 9
James Hardie Weatherboards 10
James Hardie Eaves & Soffits 13
Thermakraft Underlay, DPM & DPC 14
Roofing 17
COLORSTEEL® 17
Thermakraft Underlay, DPM & DPC 19
Marley Rainwater Systems 20

REFUSE TO ISSUE

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

1 PRELIMINARIES AND GENERAL

REFUSE TO ISSUE

1.1 Project Overview

1.1.1 Contract & Tender Documents

Contract Documents

The Contract Documents are complementary and comprise this Specification, the accompanying drawings, the Contract together with all Schedules, any Notices to Tenderers issued during tendering, the Tender and the list of accepted Subcontractors, the tender acceptance letter and other relevant correspondence, and any additional details or instructions issued as variations.

The Contract will be emailed upon request.

Document Hierarchy

These Special Conditions supersede the Standard Conditions where they are in conflict. Refer any ambiguity or apparent discrepancy within or between any Contract Documents to the Architect/Designer, whose interpretation shall be binding on all parties.

Awareness

Ensure all Trades are aware of all Conditions and that subcontract prices are accepted on this basis, and in a form acceptable to the Registered Master Builders Federation or the Certified Builders Association. Ensure that all persons engaged on the works are aware of all items in this specification and on the drawings that may in any way affect their section of the works.

1.1.2 Site

Site Conditions

Relevant site conditions are believed to be correctly represented in the tender documents, however Tenderers are requested to inspect the site to ascertain for themselves the nature and extent of the works and the rights and interests that may be interfered with in the execution of the works, as no claims for additional payment will be recognised on the grounds of insufficient description.

Site Condition

Note that the balance of the site not shown for building over or for yards, paths etc. is to remain as close as possible to its current state on completion of the Contract. Plan the excavation carefully to avoid overlaying areas outside of the works area with spoil or other debris.

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

REFUSE TO ISSUE

2 SITEWORKS

2.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

2.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

2.3 Site & Scope

2.3.1 Site

Note that no claims will be recognised on the grounds of insufficient description of existing site conditions in the Contract Documents.

Take great care to excavate exactly for the wall foundations to avoid any damage to adjacent property.

2.3.2 Scope

This section covers:

Removal of vegetation
Excavation of topsoil and stockpiling and final distribution
Excavation of topsoil and stockpiling and final distribution (and new topsoil)

Excavation as required for foundations and slabs
Excavation as required for foundations, slabs, and drive
Excavation as required for foundations, slabs, and carpark
Excavation as required for foundations, slabs, carpark and drive

Supply, placing and compaction of hardfill basecourse and sand blinding
Supply and placing of any site concrete required

Supply and installation of soak holes and field drains

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

REFUSE TO ISSUE

3 PILING

3.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

3.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

3109:1997(NZS)	Concrete construction
3602:2003(NZS)	Timber and wood-based products for use in building
3604:2011(NZS)	Timber-framed buildings
3605:2001(NZS)	Timber piles and poles for use in building
3640:2003(NZS)	Chemical preservation of round and sawn timber
4210:2001(NZS)	Masonry construction: Materials and workmanship
NZBC B1	Structure

3.3 House Piles

3.3.1 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Check documents for existing underground drains, cables or other buried service within the proposed works area prior to pile excavation. Co-ordinate with trades the locations of new underground drains, pipes and cables etc. where not already installed.

3.3.2 Braced Piles

Square Timber Braced Posts shall comply with the requirements of NZS 3605, and NZS 3640 timber treatment H5, and comply with and installed to the requirements of NZS 3604 as a component of a Braced Pile System.
Accurately set-out the posts and concrete in place to the required height, true to line and plumb, to the layout and details shown on the drawings.
Excavate post footings to the required footing plan dimension and depth, with neatly formed sides and flat base to undisturbed good ground. Concrete footing thickness, concrete material and strength, and pile embedment and loading, all in accordance with NZS 3604.
All cut post surfaces shall be re-treated in accordance with NZS 3604 as required during installation.
Post-to-post or beam connections as noted on the drawings and to the requirements on NZS 3064,

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

4 CONCRETE

REFUSE TO ISSUE

4.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

4.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

3101.1&2:2006(NZS)	Concrete Structures Standard
3104:2003(NZS)	Specification for concrete production
3109:1997(NZS)	Concrete construction
3112.1:1986(NZS)	Methods of test for concrete - Tests relating to fresh concrete
3114:1987(NZS)	Specification for concrete surface finishes
3121:1986(NZS)	Specification for water and aggregate for concrete
3122:2009(NZS)	Specification for Portland and blended cements (General and special purpose)
3124:1987(NZS)	Specification for concrete construction for minor works
3604:2011(NZS)	Timber-framed buildings
4455.1:2008(AS/NZS)	Masonry units, pavers, flags and segmental retaining wall units - Masonry units

4.3 Materials

4.3.1 Damp Proof Membrane

Polythene damp proof membrane shall be 0.25mm thick and shall be continuous under slabs on grade or fill and under foundations. All joints lapped 200mm and continuously sealed with pressure sensitive tape. Tape seal around penetrations. Inspect immediately before pouring concrete and repair any holes or other damage.

If alternative paving is used refer to manufactures requirements if membrane required.

4.3.2 Concrete Cover

Concrete cover not shown otherwise to be:
-Foundations - 75mm where poured against ground, 35mm where poured against formwork.
-Beams and columns - 40mm (for main reinforcing).
-Slabs - 50mm where poured on ground, 40mm where exposed to weather, 20mm elsewhere.
-Walls - 40mm where exposed or against ground, 25mm elsewhere.

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Version: 1, Version Date: 12/05/2014

5 CARPENTRY

REFUSE TO ISSUE

5.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

5.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1170.2:2011(AS/NZS)	Structural design actions - Wind actions
1491:1996(AS/NZS)	Finger jointed structural timber
1562.2:1999(AS/NZS)	Design and installation of sheet roof and wall cladding - Corrugated fibre-reinforced cement
1859.1:2004(AS/NZS)	Reconstituted wood-based panels - Specifications - Particleboard
1859.2:2004(AS/NZS)	Reconstituted wood-based panels - Specifications - Dry-processed fibreboard
2269.0:2008(AS/NZS)	Plywood - Structural - Specifications
2270:2006(AS/NZS)	Plywood and blockboard for interior use
2271:2004(AS/NZS)	Plywood and blockboard for exterior use
2295:2006(NZS)	Pliable, permeable building underlays
2904:1995(AS/NZS)	Damp-proof courses and flashings
2908.2:2000(AS/NZS)	Cellulose-cement products - Flat sheets
3602:2003(NZS)	Timber and wood-based products for use in building
3603:1993(NZS)	Timber Structures Standard
3604:2011(NZS)	Timber-framed buildings
3617:1979(NZS)	Specification for profiles of weatherboards, fascia boards, and flooring
3618:1984(NZS)	Mechanical stress grading of timber
3622:2004(NZS)	Verification of timber properties
3631:1988(NZS)	New Zealand timber grading rules
3640:2003(NZS)	Chemical preservation of round and sawn timber
4200.1:1994(AS/NZS)	Pliable building membranes and underlays - Materials
4200.2:1994(AS/NZS)	Pliable building membranes and underlays - Installation requirements
4389:1996(AS/NZS)	Safety mesh
4859.1:2002(AS/NZS)	Materials for the thermal insulation of buildings - General criteria and technical provisions
NZBC B2	Durability

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

REFUSE TO ISSUE

5.3 General

This section includes the receiving, stacking and storage of all Carpenter's materials and the fabrication, erection and fixing of all framing, sheathings and finishing timbers, including all work incidental to neatly finishing in other trades and all temporary work and temporary bracing.

The Carpenter shall attend upon all trades, and shall supply and fix all obviously necessary but not specifically mentioned fixings and materials.

5.4 Materials

5.4.1 Timber

Timber standards

All timber shall be true to NZS 3631, SG 8 or better for all framing, and dressing A for all finishings. Timber which is below standard, in the opinion of the Architect/Designer, shall be removed from the site.

Timber seasoning

All timber shall be seasoned or kiln dried to the stable moisture content suitable for its location in the finished construction, and if the use of inadequately seasoned timber results in damage or opening joints in the finished building the timber shall be replaced. Fixing of linings delayed after closing in until the framing has dried back below 20% and to allow for the maximum settling of substrates.

Timber treatment

All non-durable timber, including components in manufactured items, shall be appropriately treated against moisture and/or insect decay by a member of the NZ Timber Industry Federation Inc. Treatment shall be to the requirements of NZS 3602 as an absolute minimum, and all treated timber shall be identified and marked as required.
Ensure that similar timbers with different treatment levels are carefully managed to avoid accidental use of an H1 item where H3 treatment is required by the Standard.

Timber Species

Unless noted or specified on the drawings, in the list below, or elsewhere in this specification all timber used shall be Radiata.

Note: the use of alternate grades and varieties to those specified is subject to approval in each instance.

Timber priming

Ensure that enclosed surfaces and ends of paint finished exterior finishing timbers are fully primed before fixing. If this trade carries out the priming it shall be to the standards required of the Painter.

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

Timber re-treatment

Ensure that all cut or drilled surfaces of H4 and H5 treated timbers are flood coat re-treated, with the product recommended by the original treatment plant, before installation.

5.4.2 Other Materials

Shall be delivered with the packaging and labeling intact, shall be of the same type, finish or colour to maintain continuity, shall be handled, stored, and conditioned if required all in accordance with manufacturers recommendations, and shall be protected from rain or dampness where appropriate. The use of items damaged in any way is subject to approval.

REFUSE TO ISSUE

5.4.3 Fixings

Nails

Comply with the Nailing Schedules in NZS 3604. All nails fixing exterior timbers shall be stainless steel, (OR hd galv. and nails in cedar shall be st.st), and nails that will be covered with plaster or any similar material shall be hot dip galvanized, unless otherwise specified.

Finishing brads to all finishing timbers shall be set out neatly and punched to the diameter of the nail below the surface. Bore slightly undersize holes for nailing that will possibly cause splitting.

Machine staples are completely unacceptable in finishing timbers.

Screws

Shall be of suitable gauge, thread design and length to provide secure fastening,hot dip galvanised to the exterior, hot dip galvanised or similar corrosion resistant for damp situations.

Screws fixing hardware or similar shall be of the same material and finish as the hardware.

Bolts

Timber/timber and timber/steel - Hexagonal head mild steel with metric thread and with 50 x 50 x 3mm washers, all hot dip galv, M12 unless otherwise note

All bolt holes 1mm larger than the bolt. Bolts tightened until the washer just indents the timber surface, and re-tightened just prior to Practical Completion to remove any slack consequent on timber shrinkage. Secure all nuts by punching thread.

Framing Hardware

Multigrips, joist shoes, Z nails, gang nails and similar hardware may be used where specifically approved, or where required on the drawings or by NZS 3604 schedules.

5.5 James Hardie Weatherboards

5.5.1 Scope

Supply and install James Hardie Rusticated 205mm Weatherboards as a fibre-cement weatherboard cladding material to the walls identified on the drawings, complete with all accessories. The weatherboards are to be finished with a paint system. All aspects of this work shall be in complete

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

accordance with James Hardie Weatherboard Technical Specification (check www.jameshardie.co.nz, or call 0800 808 868 for the latest edition) and other relevant product manufacturers' recommendations.

NB Check existing weatherboards on existing dwelling.

If different profil match existing

REFUSE TO ISSUE

5.5.2 Co-operation

Co-ordinate with other trades to ensure that appropriate clearances are allowed from roofing products and associated flashings etc, that the panels correctly allow for door and window installation, and that services penetrations are correctly handled to maintain full weathertightness and panel integrity.

Ensure that other trades are aware of the James Hardie Safe Working Practices.

5.5.3 Preparation

Check that the timber framing elements are in accordance with NZS 3604, or in accordance with NZS 3603 and AS/NZS 1170 for specific design, and in accordance with James Hardie requirements. Framing shall be plumb and in true alignment, complete and suitable for the weatherboards, and maximum moisture content as per NZS 3602. Ensure that the framing is true in line with no projections due to structural and bracing bracketry etc. Ensure that the bottom plate hold-downs are correctly installed.

Check that the building underlay or rigid air barrier has been installed in full accordance with the manufacturer's requirements and the drawings, and completely finished to all penetrations including doors, windows, services, etc. Check junctions to all other building elements and ensure that all necessary works have been completed eg. flashings etc that will enable the weatherboards and all accessories to be installed.

Check that the ground levels are sloping away from the building so that there will be no ponding water against the building, and that the ground will be remain clear of the weatherboards by at least 100mm at all times in accordance with E2/AS1.

5.5.4 Sealant

Flexible silicone sealant to be SIKA Silaflex MS. Use to seal the weatherboards and accessories in accordance with the sealant manufacturer's recommendations and to James Hardie requirements. Ensure sealant compatibility with selected finish.

5.5.5 Workmanship

All installation work shall be carried out by an LBP, or supervised by an LBP, in accordance with James Hardie Weatherboards Technical Specification and other relevant product manufacturers' recommendations.

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

5.5.6 Delivery & Handling

Carry all boards on edge. Stack boards flat on a level platform off the ground ie. use the supplied delivery pallet on level ground (if no pallet then evenly spaced bearers on level ground at 600mm crs maximum). Keep boards and accessories dry at all times. Avoid damage to board edges, ends, and surfaces. Keep uPVC flashings etc. out of direct sunlight, and store all accessories on flat and avoid damage to any. All installers to be familiar with and comply with the James Hardie Safe Working Practices in the Technical Specification, to use appropriate safety gear, and in particular to be aware to avoid breathing silica dust. Do not use any damaged or blemished weatherboards or accessories.

5.5.7 Installation

Install the weatherboards through the building underlay or rigid air barrier to the framing in accordance with the Technical Specification, complete with all accessories eg. corner mouldings, cant strip, sealant, soakers, etc. Weatherboard end joints are to be formed off framing with a back soaker and sealant.

Ensure that all cut edges of weatherboards are primed prior to installation with Dulux Primacryl, Resene Quick Dry, or similar. Ensure that the bottom edge of the weatherboard overhangs below the bottom plate by 50mm, and is clear of the ground surface by at least 100mm; the finished ground clearance shall be in accordance with E2/AS1. Install flexible flashing tape to all junctions and penetrations (including cables etc), with the addition of a pipe bandage for pipes to maintain weathertightness and air pressure resistance, and seal around.

Install H3.1 finger-jointed pine timber trim, scribers, eaves moulds, etc. to complete the weatherboard junctions as shown on the drawings.

Install James Hardie mould accessories as shown on the drawings.

REFUSE TO ISSUE

5.5.8 Fixings

Fix weatherboards and accessories with galvanised nails in accordance with James Hardie requirements.

Fix timber trim with jolt-head galvanised nails punched below the surface and flushed with exterior grade builders fill.

Fix mould accessories with the same fixings as used for the weatherboards.

5.5.9 Completion

Ensure that the weatherboards have been fixed correctly, that all vertical joints and accessories have been completed correctly, and that all penetrations have been taped correctly. Check that no damage has occurred to any installed weatherboard element or associated component, replace as necessary. Check that no dirt has been mounded up within 175mm of the weatherboards, and maintain the clearance. Ensure that the weatherboards are painted within 90 days of the weatherboard installation, complete with all accessories and flashings. Hand over a copy of the latest edition of the James Hardie Weatherboard Product Warranty to the client. Hand over a copy of the latest James Hardie Weatherboard Maintenance Schedule to the client.

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

5.6 James Hardie Eaves & Soffits

5.6.1 Scope

Supply and install James Hardie 6mm thick HardieFlex Sheet as a fibre-cement sheet lining material to the underside of trusses identified on the drawings, complete with all accessories. The sheets are to be finished with a paint system. All aspects of this work shall be in complete accordance with James Hardie Eaves And Soffits Installation Manual (check www.jameshardie.co.nz, or call 0800 808 868 for the latest edition) and other relevant product manufacturers' recommendations.

5.6.2 Co-operation

Co-ordinate with other trades to ensure that the panels correctly allow for fascia and wall cladding installation and associated flashings etc., and that services penetrations are correctly handled to maintain full weathertightness and sheet integrity.

REFUSE TO ISSUE

Ensure that other trades are aware of the James Hardie Safe Working Practices.

5.6.3 Preparation

Check that the timber framing elements are in accordance with NZS 3604, or in accordance with NZS 3603 and AS/NZS 1170 for specific design, and in accordance with James Hardie requirements. The fascia and framing shall be in true alignment, complete and suitable for the sheets, and maximum moisture content as per NZS 3602. Ensure that the framing is true in line with no projections due to structural and bracing bracketry etc. Ensure that any hold-downs from the roof framing to the wall framing are correctly installed.

Check that the building underlay or rigid air barrier to the wall framing has been installed in full accordance with the manufacturer's requirements and the drawings. Check junctions to all other building elements and ensure that all necessary works have been completed eg. flashings etc that will enable the sheets and all accessories to be installed.

5.6.4 Flexible Sealant

Flexible silicone sealant to be SIKA Silaflex MS. Use to seal the sheets and accessories in accordance with the sealant manufacturer's recommendations and to James Hardie requirements. Ensure sealant compatibility with selected finish.

5.6.5 Workmanship

All installation work shall be carried out by an LBP, or supervised by an LBP, in accordance with James Hardie Eaves And Soffits Installation Manual and other relevant product manufacturers' recommendations.

5.6.6 Delivery & Handling

Carry all sheets on edge. Stack sheets flat on a level platform off the ground ie. use the supplied delivery pallet on level ground (if no pallet then evenly spaced bearers on level ground at 600mm crs maximum). Keep sheets and accessories dry at all times. Avoid damage to sheet edges, ends, and surfaces. Keep uPVC flashings etc. out of direct sunlight, and store all accessories on flat and avoid damage. All installers to be familiar with and comply with the James Hardie Safe Working Practices in

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

the Installation Manual, to use appropriate safety gear, and in particular to be aware to avoid breathing silica dust. Do not use any damaged or blemished sheets or accessories.

5.6.7 Installation

Install James Hardie mould accessories as shown on the drawings.

REFUSE TO ISSUE

Joints to be formed with uPVC jointers.

Install H3.1 finger-jointed pine timber trim, scribers, eaves moulds, etc. to complete the sheet junctions as shown on the drawings.

5.6.8 Fixings

Fix sheets with galvanised nails in accordance with James Hardie requirements.

5.6.9 Completion

Ensure that the sheets have been fixed correctly, that all joints and accessories have been completed correctly, and that all penetrations have been taped correctly. Check that no damage has occurred to any installed sheet element or associated component, replace as necessary. Ensure that the sheets are painted within 90 days of the sheet installation, complete with all accessories and flashings. Hand over a copy of the latest edition of the James Hardie HardieFlex Eaves Lining Product Warranty to the client. Hand over a copy of the latest James Hardie Eaves And Soffits Installation Manual to the client for their maintenance information.

5.7 Thermakraft Underlay, DPM & DPC

5.7.1 Scope

Supply and install the selected Thermakraft Industries Underlays and Membranes to the locations identified on the drawings, complete with all accessories. All aspects of this work shall be in complete accordance with Thermakraft Industries Ltd technical information and installation requirements (check www.thermakraft.co.nz, or call 0800 806 595 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Thermakraft Industries Underlays and Membranes.

5.7.2 Damp-Proof Membrane

Thermathene Black (250um): 250 micron thick (0.25mm), tear resistant, polyethylene film sheet concrete underlay. Installed over nominal 10mm (max. 25mm) thick compacted sand blinding layer, over a properly prepared base course, as a moisture vapour barrier under concrete slabs on-ground (prior to concreting), in accordance with the manufacturer's requirements and as shown on the drawings. Coloured black.
All joints lapped 200mm and continuously sealed with Thermakraft White General Purpose Tape. Tape-seal around penetrations. Inspect immediately before pouring concrete and repair any holes or other damage.

Location:

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

5.7.3 Wall Underlay

Covertek 403: fire retardant, absorbent, breathable, synthetic non-woven polyolefin underlay, high strength, nominal weight 130g/m2.
Installed only over a rigid air barrier in accordance with NZBC E2/AS1 9.1.7.2 to the manufacturer's requirements and as shown on the drawings, in Extra High NZS 3604 Wind Zone situations.
Covertek 403 can be used with absorbent and non-absorbent direct-fixed wall claddings, or absorbent and non-absorbent wall claddings over a 20mm drained cavity, and masonry veneer over a drained cavity in accordance with E2/AS1 and BRANZ Appraisal No.711 (2011).
Do not leave Covertek 403 exposed for more than 7 days before covering.

REFUSE TO ISSUE

Location:

5.7.4 Roof Underlay

Covertek 403: heavy weight, fire retardant, absorbent, breathable, synthetic non-woven polyolefin underlay, high strength, nominal weight 130g/m2.
Installed over timber or steel roof framing as a roof underlay in accordance with the manufacturer's requirements and as shown on the drawings.
Covertek 403 can be used directly under direct-fixed roof claddings, or directly under roof cavity battens in accordance with Thermakraft requirements and BRANZ Appraisal No.710 (2010).
Covertek 403 must installed in a manner that prevents ponding of water, and span no more than 300mm without additional support.
Do not leave Covertek 403 exposed for more than 7 days before covering.

Location:

5.7.5 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to install Thermakraft Underlays, DPMs, and DPCs as required.

5.7.6 Workmanship

Where required by the NZ Building Amendment Act 2012 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All installation work shall be carried out by experienced and competent tradesmen, familiar with the specified products and installation techniques, in accordance with the manufacturer's installation requirements, and as noted and detailed on the drawings.

5.7.7 Delivery & Handling

Store underlay rolls on ends, undercover on a flat surface. Keep dry and out of direct sunlight and protect from damage. Handle products in accordance with the manufacturer's requirements.

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

5.7.8 Completion

Check that all underlay has been installed correctly, and is correctly supported, and that all edges, joins and ends are correctly finished prior to closing off with claddings. Check for damage and repair or replace as necessary. Remove rubbish from the site.

Issue to the Owner a copy of the Thermakraft maintenance requirements and the Thermakraft product warranties for the installed products.

REFUSE TO ISSUE

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

REFUSE TO ISSUE

6 ROOFING

6.1 Preliminary

Refer to General Conditions of Contract and the Special Conditions in this Specification as appropriate. Read this section in conjunction with all other trade sections.

6.2 Compliance

Comply with the New Zealand Building Code 1992 including all revisions and amendments, Verification Methods where appropriate, and construction principles that are embodied in the Acceptable Solutions.

Comply with all relevant provisions and recommendations of:

1397:1993(AS/NZS)	Steel sheet and strip - hot-dipped, zinc-coated or aluminium/zinc-coated
1562.1(AS)	Design and installation of sheet roof and wall cladding - Metal
2295:2006(NZS)	Pliable, permeable building underlays
2904:1995(AS/NZS)	Damp-proof courses and flashings
3500.3:2003(AS/NZS)	Plumbing and drainage - Stormwater drainage
3604:2011(NZS)	Timber-framed buildings
4020:2005(AS/NZS)	Testing of products for use in contact with drinking water
4200.1:1994(AS/NZS)	Pliable building membranes and underlays - Materials
4200.2:1994(AS/NZS)	Pliable building membranes and underlays - Installation requirements
4389:1996(AS/NZS)	Safety mesh
4859.1:2002(AS/NZS)	Materials for the thermal insulation of buildings - General criteria and technical provisions
NZBC B2	Durability
NZBC E2	External moisture

6.3 COLORSTEEL®

6.3.1 Scope

Supply the selected Colorsteel roofing and install on the areas identified on the Roof Plan. All aspects of the work shall be in complete accordance with NZ Steel 'Installers Guide' (check 0800 100 523 for the latest edition) and any other relevant Product Manufacturers Recommendations.

6.3.2 Product

COLORSTEEL® Endura™.
or equialent

Colour: To match Existinfg Dwelling or owners choice

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

6.3.3 Profile

Trapezoidal 0.40 BMT x G550.

Check and match existing

REFUSE TO ISSUE

6.3.4 Qualifications

All installation work shall be carried out by experienced and competent tradesmen who are familiar with the techniques and materials specified. All handling and fixing techniques, and all jointing and sealing materials and techniques, shall be exactly as recommended by New Zealand Steel.

6.3.5 Co-operation

Co-operate with other trades to ensure that roof framing has appropriate spacings, alignments and fixings, and is in accordance with NZS3604, and coordinate to ensure that all timber members required for ridges, hips, valleys, barges, penetrations, junctions with vertical faces, etc. are correctly in place.

Note and co-ordinate with the installer of the rainwater system specified above. Handle roofing without scratching, distortion or other damage, store on even bearers, and keep dry until installed. Ensure that each section of roof is waterproofed as soon as possible after preparatory work is complete; allow to carry out the works in several operations if necessary to comply with this condition.

6.3.6 Installation

Set-out the roofing sheets exactly square to building axis and maintain this accurate setout throughout the works, and set-out to lap sheets away from the prevailing wind.

Install the underlay running up and down the slope with minimum 300mm side laps. Do NOT install any fixings to the underlay (to avoid dissimilar metals/electrolysis) - install the underlay length by length as the roofing proceeds and ensure it is taut and evenly lapped when the roofing screws are installed.

6.3.7 Fixings

Screw fix, screws to comply with AS3566 (Self-drilling construction screws) Class 3 or 4. (Do NOT use stainless steel screws). Use only low carbon (

Join with aluminium blind rivets in conjunction with neutral cure silicone sealant. (Do not use Monel metal, stainless steel or carbon steel rivets).

6.3.8 Flashings

Ridges, hips, and barge flashings etc. shall all be matching Colorsteel, and as detailed. Soft zinc flashing edges very neatly dressed down where required, plumbing penetrations custom flexible rubber flashed (fully sealed), and instruct the Plumber that no copper (or brass) pipes are to discharge on to the roof.

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

6.3.9 Protection

Protect the coated surface from damage at all times; replace the whole sheet where a significant depth of the coating has been damaged. Completely clean off all drill and power saw swarf and pop-rivet shanks as the work proceeds (at least daily, and keep them and other rubbish out of the spoutings). Remove trade debris from the roof and from the site progressively, and on completion leave the roof and rainwater system completely clean.

Do not use black lead pencils for marking Colorsteel - permanent marking may result. Observe NZ Steel's recommendations where flues discharge above roofs, and for the installation of solar heating panels. Do NOT weld Colorsteel. NO abrasive disc cutters, no soldering, no lead head nails or lead edged flashings, no touch-up paints, and do not slide tools down the roof.

6.3.10 Maintenance

Advise owner to minimize walking on the roof, and to use soft-sole shoes during maintenance access. Advise owner re maintenance of unwashed surfaces, and to light detergent wash the whole roof every three to five years. Advise owner that any leaf build-up gutter protection system that traps water will invalidate the roofing warranty.

6.4 Thermakraft Underlay, DPM & DPC

REFUSE TO ISSUE

6.4.1 Scope

Supply and install the selected Thermakraft Industries Underlays and Membranes to the locations identified on the drawings, complete with all accessories. All aspects of this work shall be in complete accordance with Thermakraft Industries Ltd technical information and installation requirements (check www.thermakraft.co.nz, or call 0800 806 595 for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

No substitutions are permitted for Thermakraft Industries Underlays and Membranes.

6.4.2 Roof Underlay

Covertek 403: heavy weight, fire retardant, absorbent, breathable, synthetic non-woven polyolefin underlay, high strength, nominal weight 130g/m2.
Installed over timber or steel roof framing as a roof underlay in accordance with the manufacturer's requirements and as shown on the drawings.
Covertek 403 can be used directly under direct-fixed roof claddings, or directly under roof cavity battens in accordance with Thermakraft requirements and BRANZ Appraisal No.710 (2010).
Covertek 403 must installed in a manner that prevents ponding of water, and span no more than 300mm without additional support.
Do not leave Covertek 403 exposed for more than 7 days before covering.

Location:

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

REFUSE TO ISSUE

6.4.3 Co-operation

Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Co-ordinate with other trades to install Thermakraft Underlays, DPMs, and DPCs as required.

6.4.4 Workmanship

Where required by the NZ Building Amendment Act 2012 it is the building contractor's responsibility to ensure that all restricted building work is carried out by a Licensed Building Practitioner.

All installation work shall be carried out by experienced and competent tradesmen, familiar with the specified products and installation techniques, in accordance with the manufacturer's installation requirements, and as noted and detailed on the drawings.

6.4.5 Delivery & Handling

Store underlay rolls on ends, undercover on a flat surface. Keep dry and out of direct sunlight and protect from damage. Handle products in accordance with the manufacturer's requirements.

6.4.6 Completion

Check that all underlay has been installed correctly, and is correctly supported, and that all edges, joins and ends are correctly finished prior to closing off with claddings. Check for damage and repair or replace as necessary. Remove rubbish from the site.

Issue to the Owner a copy of the Thermakraft maintenance requirements and the Thermakraft product warranties for the installed products.

6.5 Marley Rainwater Systems

6.5.1 Scope

Supply and install the selected Marley uPVC Spouting and Downpipes, complete with all accessories, to the locations identified on the drawings. All aspects of this work shall be in complete accordance with Marley 'Spouting Systems Installation Guide' and product requirements, (check www.marley.co.nz, or call 0800 MARLEY for the latest editions), other relevant product manufacturers' recommendations, and as shown on the drawings.

6.5.2 Spouting Profile

Marley 'Classic' uPVC spouting, (white).

6.5.3 Downpipe Profile

Marley 'Round' 80mmø uPVC downpipes, (white).

6.5.4 Installation

All installation work shall be carried out by experienced tradesmen familiar with the techniques and materials specified. Co-operate with other trades to ensure that all preliminary and preparatory works are completed to specification and as shown on the drawings.
Coordinate with trades the locations of all rainwater system fittings, and other fittings installed by

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

others, as necessary. Check that all preparatory materials are lapped such that any water will run down to the exterior.

All spouting and downpipe fixing, jointing and sealing shall be exactly as recommended by Marley. Use stainless steel fixings only. Remove excess solvent cement from joints before drying and leave joints clean and unmarked.

Fix Marley spouting brackets, expansion outlets and jointers, true to line at the required centres and falls to fascia boards, and install Marley spouting, spouting corners and stop-ends in accordance with Marley installation recommendations.

Marley downpipes and spreaders set-out and installed complete with bends and support brackets, as shown on the drawings and to Marley requirements. Direct downpipes into stormwater system as noted on the drawings.

Clean up thoroughly on completion, and provide the Marley Rainwater System maintenance instructions to the owner.

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Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

PIM/BC
№ - 72250A

28 APR 2014
10.

GIB EzyBrace® 2011 Software

Demand Calculation Sheet — single storey — V06/11

Job Details

Name	Booth Wellington
Street and Number	618 Te Weta Rd
Lot and DP Number	Lot 5 DP 84898
City/Town/District	Rotorua
Designer	John Chittenden
Company Name	John Chittenden Design
Date	16/04/2014

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BRANZ Appraised
Appraisal No.294 [2011]

Select Lining Option: 10 or 13 mm GIB® Plasterboard

Building Specification

		Single Floor	Complete Single Floor Column only
Number of storeys	single		
Floor Loading	2kPa		
Foundation Type	slab		
Cladding Weight		light	
Roof Weight		light	
Room in Roof Space		no	
Roof Pitch (degrees)		15	
Roof height above eaves (m)		1.2	
Building height to apex (m)		3.8	
Ground to lower floor level (m)		0.2	
Stud Height (m)		2.4	
Building Length (m)		6.4	
Building Width (m)		5.6	
Building Plan Area (m2)		36	

Building Location

Wind Zone	***High***	**Earthquake Zone**	**Soil Type**
Select by Building Consent Authority Map		2	D&E (deep to very soft)
or Preference	Not Available	**Annual exceedance probability**	
Wind Region	A	1/500 (NZS3604:2011 default)	
Lee Zone	no		
Ground Roughness	Open		
Site Exposure	Exposed		
Topographic Class	T1		

Bracing Units required for Wind

Demand W (BU)

		Walls single
along	slab	225
across	slab	213

Bracing Units required for Earthquake

Demand along / across E (BU)

	Walls single
slab	137

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

Booth Wellington

John Chittenden

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SINGLE OR UPPER STOREY WALLS ALONG

V06/11

Lines		*Bracing Elements*							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved	
								W	E
240	**A**	1	2		2.4	braced pile	NZS3604	320	240
240	**B**	1	2		2.4	braced pile	NZS3604	320	240

						Wind	Earthq.
Totals Achieved	W	284%	EQ	351%		640	480
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						225	137

Document Set ID: 2767247
Version: 1, Version Date: 12/05/2014

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B.C. No.

Booth Wellington

John Chittenden

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SINGLE OR UPPER STOREY WALLS ACROSS

V06/11

Lines		*Bracing Elements*							
1	2	3	4	5	6	7	8	9	10
Line Total Check	Line Label	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	Bracing Units Achieved	
								W	E
240	**M**	1	2		2.4	braced pile	NZS3604	320	240

REFUSE TO ISSUE

						Wind	Earthq.
Totals Achieved	W	151%	EQ	175%		320	240
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						213	137

Document Set ID: 2767247
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