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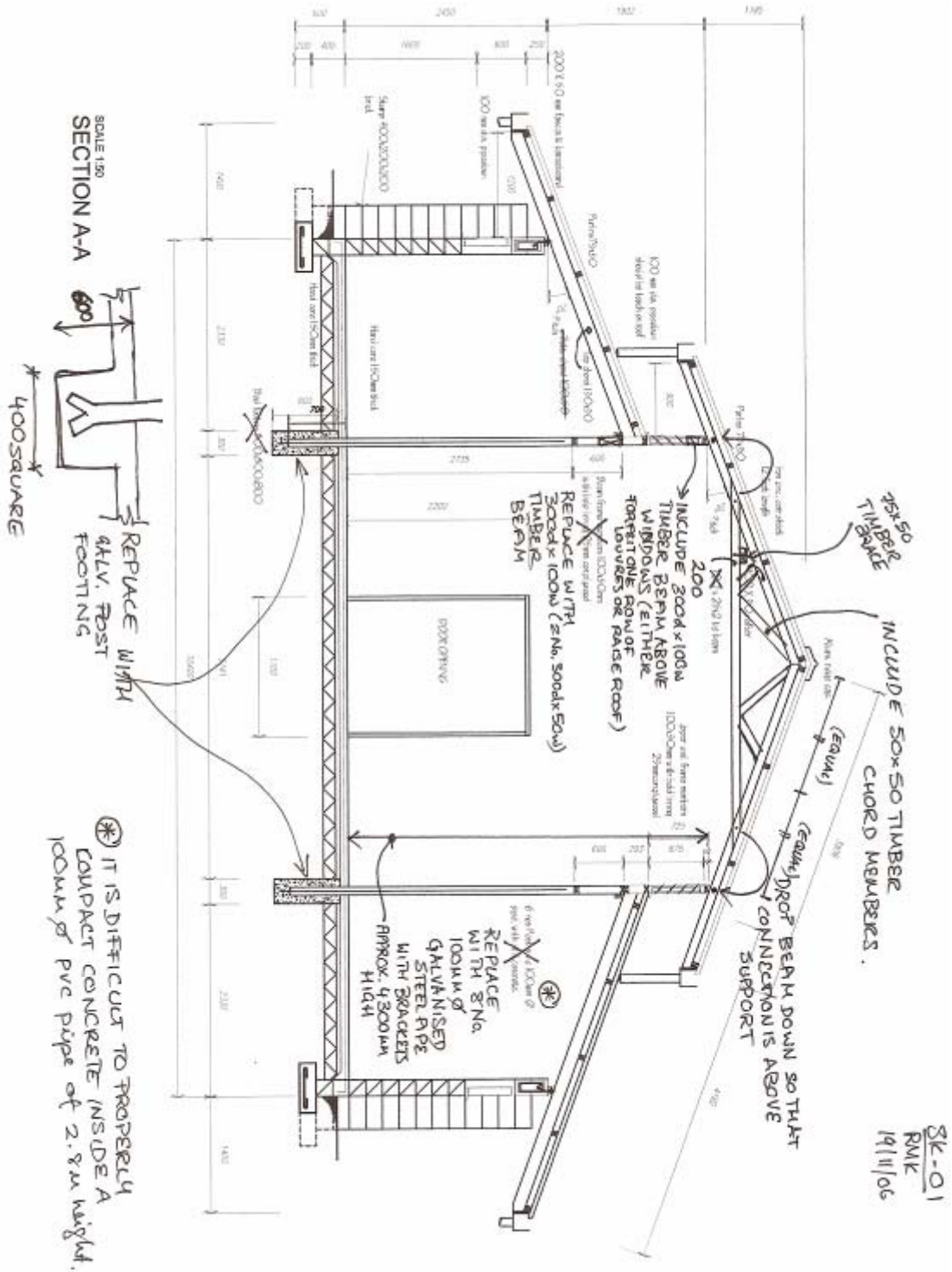
ELECTRONIC BLUEPRINT is the principal point of reference for Architects, Engineers and Builders and the only package that fully integrates regulatory and standards requirements with comprehensive, editable specifications, CAD details and approved industry training.

Republic of Kiribati Ministry of Public Works and Utilities

Copra Shed

Client:	Republic of Kiribati Ministry of Public Works and Utilities
Program Coordination:	Partner Housing Australasia (Building) Incorporated
Structural Engineer:	Quasar Management Services Pty Ltd
Specification:	ELECTRONIC BLUEPRINT

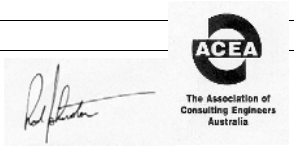
Partner Housing Australasia (Building) Incorporated Quasar Management Services Pty Ltd Design Detail & Deliver Pty Ltd Trading as ELECTRONIC BLUEPRINT 49A Parklands Road, Mt Colah NSW 2079, Australia p: +61 2 4360 2255 f: +61 2 4360 2256 email	Charity File 15429 ABN 887 220 57429 Inc in NSW ABN 21 003 954 210 Inc in NSW ABN 31 088 338 532 Inc in NSW www.electronicblueprint.com.au info@electronicblueprint.com.au
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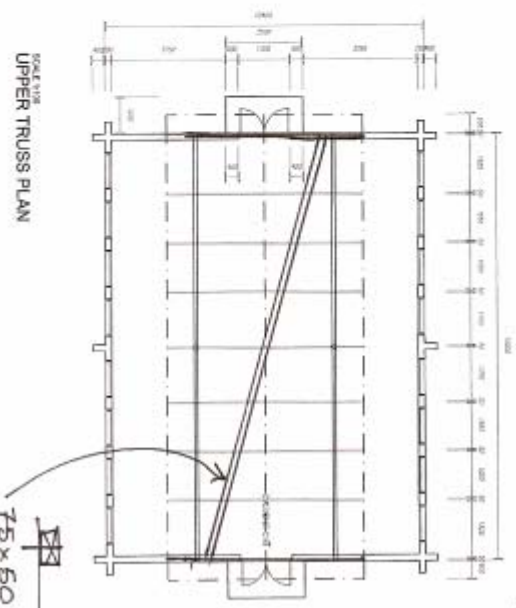
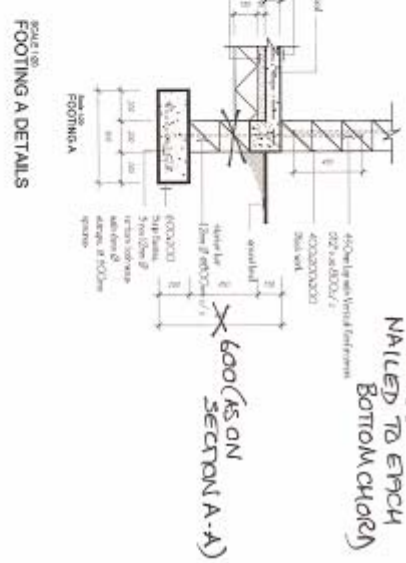
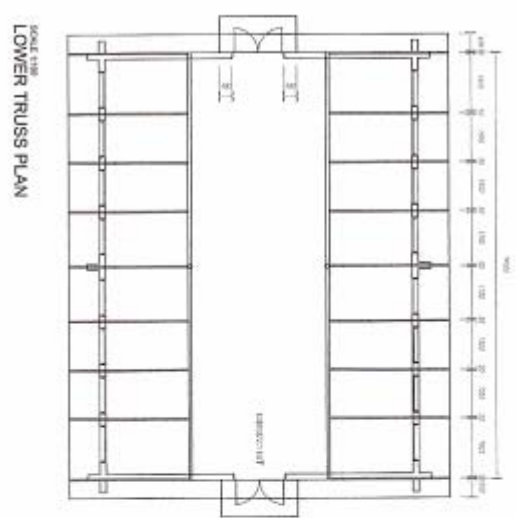
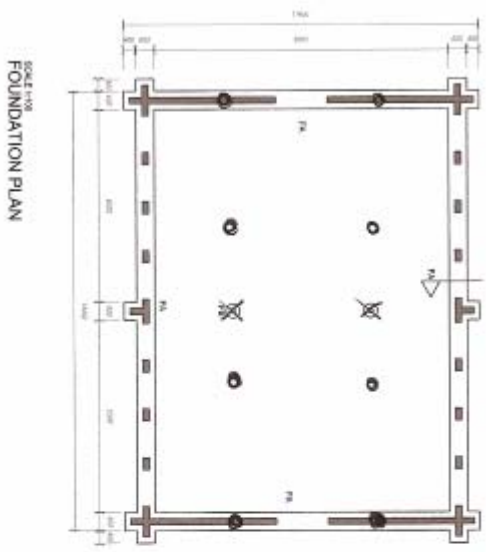


SK-01
RJK
19/11/06

1	29/12/06	R Kestermann	RK Johnston
Rev	Date	Designed	Approved

Drg: P06112601-D1 Kiribati Copra Shed
Quasar Management Services Pty Ltd ABN 21 003 954 210
 Approved: default B Tech, M Eng Sc, MICD, CP Eng, NPER, MIE Aust, RPEQ

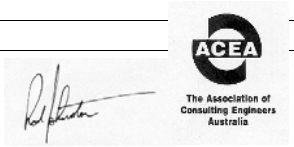




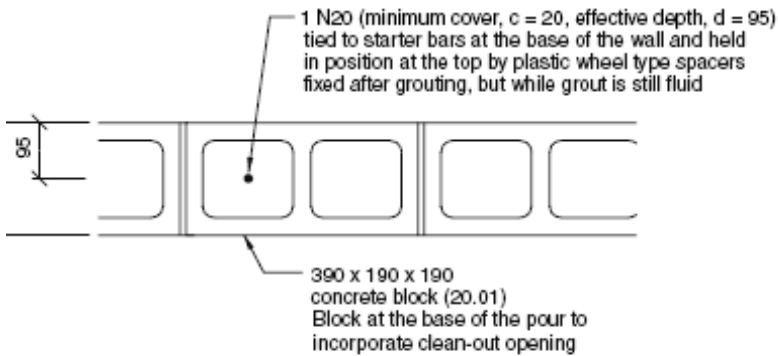
75 x 50
TIMBER
BRACE
NAILED TO EACH
BOTTOM CHORD

SK-04
RK
19/11/06

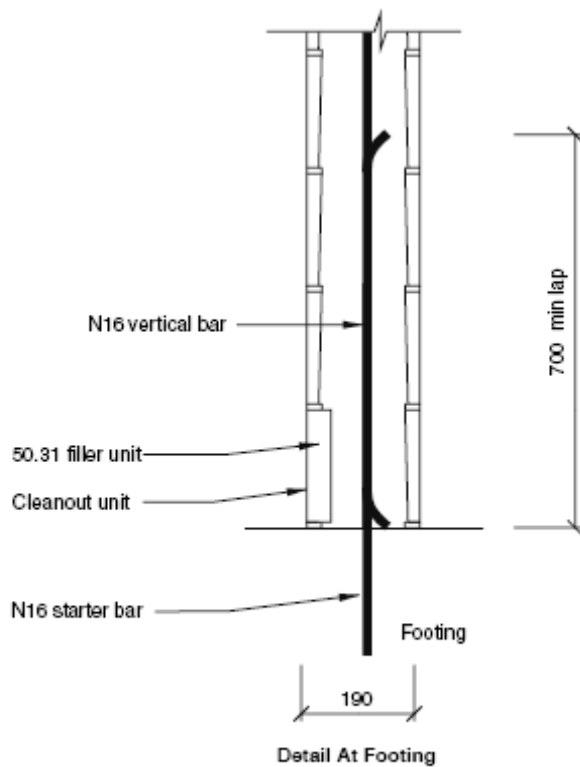
1	29/12/06	R Kestermann	RK Johnston
Rev	Date	Designed	Approved
Drg: P06112601-D4 Kiribati Copra Shed			
Quasar Management Services Pty Ltd ABN 21 003 954 210			
Approved: default B Tech, M Eng Sc, MICD, CP Eng, NPER, MIE Aust, RPEQ			



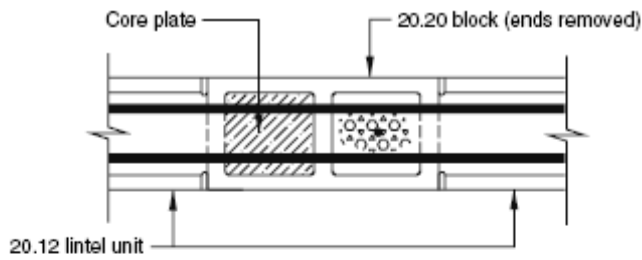
Notes:
 Concrete blocks f'_{uc} 15 MPa
 Mortar M3 (1:5 + methyl cellulose water thickener)
 Concrete grout N20 (minimum cement 300 kg/m³, maximum aggregate 10 mm)
 Reinforcement shall be held in position by plastic wheel type support



Reinforced Concrete Masonry Wall
 Scale 1:10

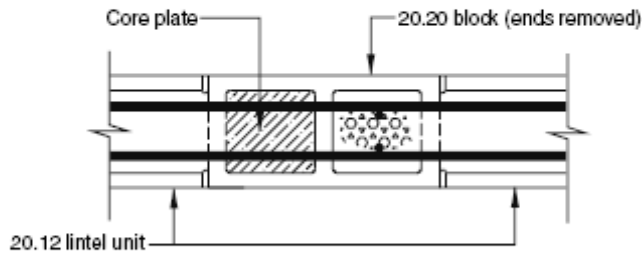


Single N16 Reinforced Masonry
 Scale 1:10



Single N16 Reinforced Masonry (At Bond Beam)

Scale 1:10

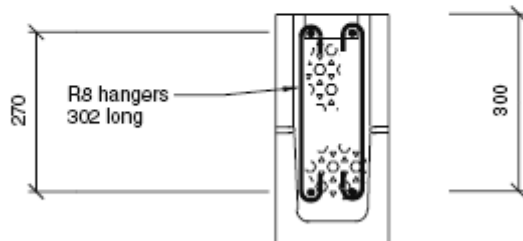
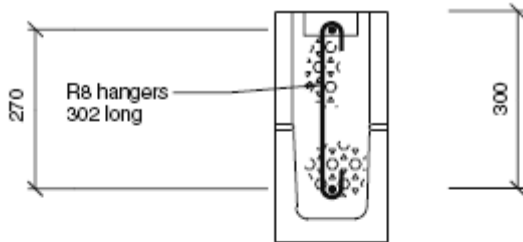


2-N16 Bar Reinforced Masonry (At Bond Beam)

Scale 1:10

Notes:

1. All reinforcing bars to be N16
2. All concrete grout to be N20 (minimum cement content 300 kg/m³, maximum aggregate size 10 mm)
3. Mortar to be 1 part portland cement to 5 parts clean sand, plus 0.005 methyl cellulose water thickner
4. For partially-grouted walls, use 20.01 blocks for infill



Steel Positioning Detail - Galvanised Wire Hangers

Scale 1:10

Notes:

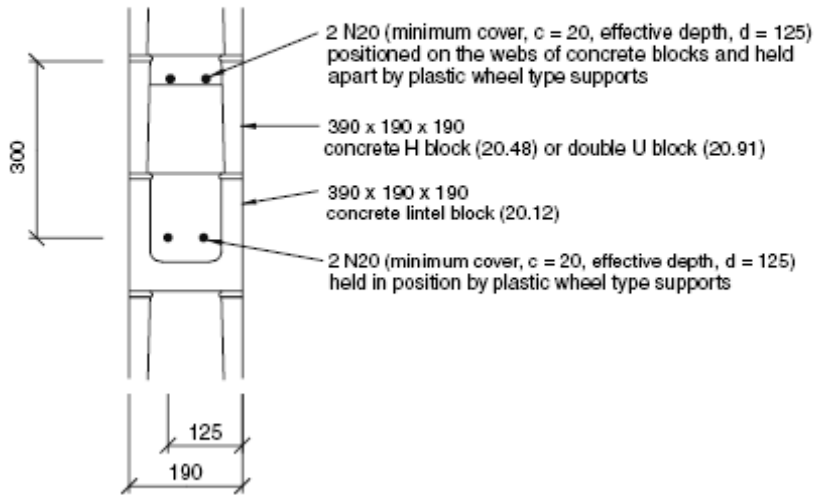
Concrete blocks f_{uc} 15 MPa

Mortar M3 (1:5 + methyl cellulose water thickener)

Concrete grout N20 (minimum cement 300 kg/m³, maximum aggregate 10 mm)

Reinforcement shall be held in position by

- steel ligatures; or
- steel hangers; or
- plastic wheel type support



Reinforced Concrete Masonry Bond Beam

Scale 1:10

Notes:

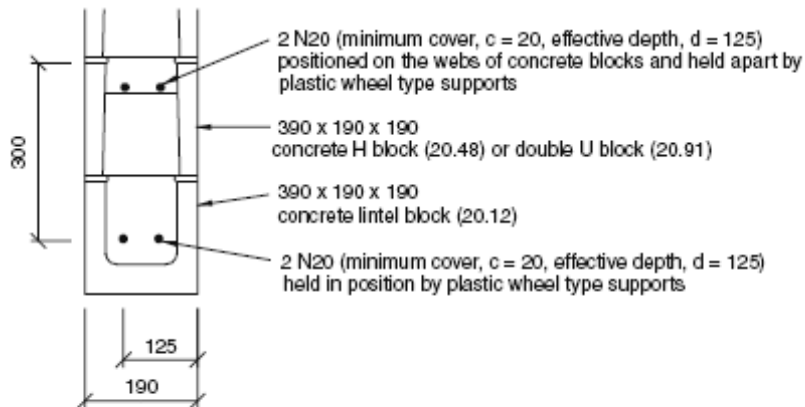
Concrete blocks f_{uc} 15 MPa

Mortar M3 (1:5 + methyl cellulose water thickener)

Concrete grout N20 (minimum cement 300 kg/m³, maximum aggregate 10 mm)

Reinforcement shall be held in position by

- steel ligatures; or
- steel hangers; or
- plastic wheel type support



Reinforced Concrete Masonry Lintel

Scale 1:10

GENERAL

Throughout this specification reference is made to Standards. If there are local standards in force, these will take precedence.

EARTHWORKS

Standards

All components and installation shall comply with the Kiribati Building Regulations and the relevant Standards including AS 3879 and AS 3500 and the standards referred to therein.

Construction

General

All construction shall comply with AS AS 3879.

Existing Services

The Contractor shall locate and, where required, disconnect, terminate and remove any obsolete parts of existing services. When required to divert existing services that obstruct new building work, at least three day's notice shall be given to the Builder.

Geotechnical Engineer's Report

All construction shall comply with the Geotechnical Engineer's recommendations, which form part of this specification. If a Geotechnical Engineer's report is not available, the foundations shall be checked at the time of excavation to ensure that the design assumptions contained herein are valid.

Site Classification for Residential Construction

The site classification is assumed to be non-reactive sandy soil, with minimum bearing capacity of 200 KPa (kN/m²), and not subject to subsidence.

Bulk Earthworks and Site Grading

Bulk earthworks shall be carried out in accordance with AS 3798, based on the reports of a suitably qualified and experienced Geotechnical Engineer and drawings and designs by a suitably qualified and experienced Civil Engineer. The required frequency of field testing shall be determined from AS 3798 Table 8.1 and Appendix B.

Earthworks for Site Drainage

To prevent the entry of water into the building, the finished ground level (inclusive of any paving) shall be at least 150 mm below the finished floor level, in accordance with the architect's drawings and to the consent authority requirements.

Earthworks to accommodate surface drainage shall be provided to avoid the possibility of water ponding near the building and the finished ground surface shall fall 50 mm over a distance of one metre away from the building. On sloping sites liable to erosion by surface water, edge beams shall be protected by:

- grading the ground surface to limit the catchment area adjacent to the building to less than 100 square metres; or
- providing a drainage system which prevents run-off near the building; or
- providing a 600 mm wide concrete path around the building; or
- by founding the edge beam at least 300 mm below the finished ground level.

Subsoil drains shall not be placed adjacent to footings. Excavations for services parallel to the edge of the slab shall not extend below a line drawn at 45 degrees to the horizontal for clay and 30 degrees for sand from the bottom of the edge beam, or from the base of bored or bulk piers.

Earthworks Under Construction

Strip and remove rubbish, top soil and any vegetation within 1 metre of the proposed building. Soil from footing or beam excavation shall be placed clear of the slab area.

Bench the site to the specified levels. Vertical or near vertical permanent excavations 600 mm or more in depth and within a distance of 2.0 metres from the building shall be retained or battered and drained away from the building.

Controlled fill (excluding sand fill) may be placed to a maximum depth of 400 mm, and shall be compacted in layers less than 150 mm by mechanical roller or vibrating plate.

Controlled sand fill may be placed to a maximum depth of 800 mm, and shall be compacted in layers less than 300 mm by mechanical roller or vibrating plate.

Rolled fill (excluding sand fill) may be placed to a maximum depth of 300 mm, and compacted in layers less than 150 mm by rolling with an excavator.

Rolled sand fill may be placed to a maximum depth of 600 mm, and compacted in layers less than 300 mm by rolling with an excavator.

Granular material up to 50 mm thick may be placed beneath the slab but not under the edge beams.

Edge beams shall be founded on natural soil with an allowable bearing capacity greater than 50 KPa (kN/m²) or on controlled fill (not rolled fill) extending at least 1 metre past the edge of the building and retained or battered at a slope not more than two horizontal to one vertical. All edge beams shall be tied to the slab.

Strip footings or pad footings shall be founded on natural soil with an allowable bearing capacity greater than 100 KPa (kN/m²).

Slab panels, internal beams and load support thickenings shall be supported on natural soil with an allowable bearing capacity greater than 50 KPa (kN/m²), on rolled fill or on controlled fill. Bedding sand up to 50 mm thick may be placed beneath the slab and edge beams.

If the foundation under an edge beam or footing slopes more than 1 vertical in 10 horizontal, the edge beam or footing shall be stepped.

For cut and fill construction, the fill shall be controlled fill extending past the edge of the building at least 1 metre and retained or battered at no steeper than 1 vertical in 2 horizontal. Where required, piers shall be positioned and constructed to provide adequate support to beams and footings in accordance with the requirements of AS 2870.

If bored piers are required, they shall be:

- founded on firm material in accordance with the Geotechnical Engineers recommendations,
- a minimum 400 mm diameter,
- at not greater than 1800 mm centres and at beam intersections.

CONCRETE SLABS-ON-GROUND AND FOOTINGS

Standards

All components and installation shall comply with the Kiribati Building Regulations and the relevant Standards, including, AS 3600 and the standards referred to therein. Formwork shall comply with AS 3610. Protection from subterranean termites shall comply with AS 3660.1.

Materials

Concrete

Concrete in the footings and ground slab shall comply with AS 3600, strength grade N20, and maximum aggregate size of 20 mm. Concrete shall be subject to plant control testing.

Suitable Concrete Mix

The following concrete mix is deemed suitable for N20 applications.

- 1 part portland cement
- 2 parts sand
- 4 parts aggregate

[More details...click here](#)

Reinforcement

Reinforcement shall comply with AS/NZS 4671 and shall be:

- Deformed bars - 500 MPa (N/mm²), normal ductility (N)
- Square fabric, rectangular fabric and trench mesh - 500 MPa (N/mm²), low (L) or normal (N) ductility ribbed wires
- Fitments -500 MPa (N/mm²), low (L) or normal (N) ductility ribbed wires
- Round bar (eg R250 N10 for dowels) - 250 MPa (N/mm²) round

[More details...click here](#)

Bar Chairs

Bar chairs shall be such that:

- reinforcement is positioned in the top half of the concrete slab
- reinforcement in footings has 40 mm in concrete in contact with unprotected ground and 30 mm to a sealed vapour barrier

[More details...click here](#)

Vapour Barrier

The vapour barrier shall be medium iMPa (N/mm²) resistance polyethylene vapour barrier 0.2 mm thick as defined in AS 2870 and complying with AS 4200.1.

Adhesive tape shall be PVC for normal applications or polyethylene tape for fixing to higher strength or thicker membranes.

[More details...click here](#)

Termite Protection Barrier

Termite protection barriers shall comply with AS 3660.1.

[More details...click here](#)

Formwork

Formwork shall comply with AS 3610.

[More details...click here](#)

Curing Compounds

Curing compounds shall comply with AS 3799 and shall be hydrocarbon, solvent-based acrylic, water-based acrylic or wax-based acrylic. Wax-based compounds shall not be used in areas requiring the subsequent application of curing adhesives.

[More details...click here](#)

Joint Material

Backing rod for control joints, expansion joints and articulation joints shall be expanded polystyrene tube or bead or, rigid steel backing profile with closed cell foam adhered to the metal profile face.

Joint sealant shall be gun grade multi-purpose polyurethane sealant.

[More details...click here](#)

Sand Bedding

Sand shall be clean, free from salts, vegetable matter and impurities. It shall conform to AS 2758.1 except that the following grading shall apply:

Sieve	Percent Passing	
4.75 mm	90	100
2.36 mm	60	100
1.18 mm	30	85
0.600 mm	15	60
0.300 mm	5	30
0.150 mm	0	15
0.075 mm	0	10

[More details...click here](#)

Construction

Sand Bedding

A bedding sand layer 50 to 100 mm in thickness shall be placed over the compacted soil base to the level of the underside of the slab.

Vapour Barrier

The vapour barrier shall be placed immediately beneath the concrete slab-on-ground and footings and installed in accordance with AS 4200.2. The vapour barrier shall not be punctured. Laps shall be 200 mm at joints. Plumbing penetrations shall be taped or sealed with a close fitting sleeve. Where shallow bulk piers are used, the vapour barrier shall line the pier hole to enable the piers and footings to be poured integrally.

Termite Protection

Termite protection shall be installed in accordance with AS 3660.1.

Reinforcement

Reinforcement shall be placed in accordance with the drawings such that the following cover and laps are achieved.

Bar chairs shall be placed to give the following clear cover.

- 40 mm in concrete in contact with unprotected ground
- 40 mm in concrete exposed externally
- 30 mm to a sealed vapour barrier
- 20 mm to the internal surface

Reinforcement Required Laps

Bars 500 mm

Fabric 2 cross wires overlapping

Trench mesh 500 mm

Three N12 corner bars 2.0 metre long shall be placed at all re-entrant corners.

Bar chairs shall be placed at one metre centres both ways. Bar chairs shall incorporate wide bases and be placed on metal bases that do not puncture the vapour barrier. Where SL72 Fabric (or smaller) is used, the bar chair spacing shall be reduced to 800 mm.

Placing, Finishing and Curing Concrete

Trenches and footing excavations shall be dewatered and cleaned prior to concrete placement so that no softened or loosened material remains.

All concrete shall be compacted by mechanical immersion vibrator.

Concrete surfaces shall be finished as noted below unless specified otherwise.

- Floor slabs - Steel float.
- External paths, driveways and parking areas at less than 10% slope - Fine broomed steel float.
- External paths, driveways and parking areas at greater than 10% slope - Coarse broomed steel float.
- Vertical surfaces exposed in the completed building - Rubbed back to fill all voids and provide smooth surface.
- Vertical surfaces not exposed in the completed building - Off form finish.

STRUCTURAL STEELWORK

Standards

All components and installation shall comply with the Kiribati Building Regulations and the relevant Standards, including AS 4100 and the standards referred to therein.

Materials

Structural Steel Plates and Sections

Unless noted otherwise on the drawings, structural steel plates and sections shall be a minimum grade 250 MPa (N/mm²) to AS 3678.

[More details...click here](#)

Bolts and Nuts

Unless noted otherwise on the drawings, bolts and nuts shall comply with AS 1111.

[More details...click here](#)

Fabrication and Erection

- All fabrication and erection shall comply with AS 4100 and the standards referred to therein.
- Welding shall be SP and comply with AS 1554. All welds shall be 6 mm continuous fillet unless noted otherwise. Full penetration butt welds are required on all plates over 12 mm in thickness.
- All bolts and nuts, except high strength friction grip bolts, shall be snug tightened as per AS 1252.
- All seal plates on hollow sections shall be provided with a breather hole to permit hot dip galvanising.
- All purlins, girts, fascias, associated bridging and accessories shall be installed in accordance with the manufacturer's recommendations.

Mortar Packs

Mortar packs under base plates shall be 1 part portland cement to 2 parts sand.

Surface Preparation

On completion of all fabrication, all dags and weld spatter shall be removed from the surfaces exposed in the completed structure.

Painting and Galvanising

All painting and galvanising shall comply with AS/NZS 2312. For surface preparation, refer to AS 1627.4 and 1627.5. When galvanising is specified, it shall consist of hot dip galvanising to AS 4680 to a minimum of 300 g/m².

When shop painting is specified it shall comply with the following tables.

Painting Systems For Steel Extract from AS/NZS 2312 - Guide to the protection of iron and steel against exterior atmospheric corrosion				
Treatment	Internal		External	
Not painted after erection	MP 1-A	Table 7.4	LP 1-A	Table 7.5
Painted after erection	SP 1-A	Table 7.3	SP 1-A	Table 7.3

Protection Systems								
System Designation	Surface Preparation	Prime Coat		Intermediate Coat		Final or Top Coat		System Total dry film thickness
		Generic type	Nominal dry film thickness	Generic type	Nominal dry film thickness	Generic type	Nominal dry film thickness	
Long Term LP 1 -A	Abrasive blast, class 2.5	Inorganic zinc silicate	70 - 85 µm	High build epoxy	100 -125 µm	High build epoxy	100 - 125 µm	265 - 325 µm
Long term LP 2 -A	Abrasive blast, class 2.5	Inorganic zinc silicate	70 - 85 µm			High build epoxy / MIO paint	175 -200 µm	240 - 275 µm

TIMBER FRAMING

Standards

Timber framing shall comply with AS 1720.1.

Materials

Timber and Timber Products

Stress Grade

Timber shall comply with A AS 1720.1. and the following specifications. Timber shall comply with the stress grade specified on the drawings for the particular application. Unless stated otherwise, timber shall comply with the following:

- Softwoods for general purposes framing (without enhanced performance) shall be seasoned, and shall be not less than MGP10 stress grade.
- Hardwoods for general purposes framing (without enhanced performance) shall be seasoned, and shall be not less than F11 stress grade.

Durability

Timber shall comply with the durability requirements specified on the drawings for the particular application and AS 1720. Unless stated otherwise, timber shall comply with the following:

[More details...click here](#)

Durability Requirements

In-ground contact	Durability Class 1 or 2 timbers, with sapwood removed or preservative treated to H5
External, above-ground, exposed	Softwood preservative treated to H5 Durability Class 1 or 2 timbers, with sapwood removed or preservative treated to H3 Softwood preservative treated to H3 (Note: AS 1684 makes provision for the use of some Durability Class 3 and 4 timbers in some applications. These shall only be used with the express approval of the designer)
External, above-ground, protected	Durability Class 1, 2, 3 or 4 timbers
Internal, fully protected and ventilated	Durability Class 1, 2, 3 or 4 timbers (any timber)

Preservative Treatment

Where required to achieve particular resistance to termite and/or borer attack, the species listed herein shall be treated to achieve the Hazard levels listed in AS 1684.2, & 3 Table C1. Where appropriate, particular state regulations shall apply.

Note: There are particular limitations regarding the use of CCA (Copper chrome arsenic).

SHEET METAL ROOF & WALL CLADDING

Standards

All components and installation shall comply with the Kiribati Building Regulations and the relevant Standards, including AS/NZS 1562.1, AS/NZS 4256 and AS/NZS 4597.

Materials

Steel Sheet Metal Roof and Wall Cladding

Steel sheet metal roof and wall cladding shall comply with the AS 1397 and shall be in the style, colour and base metal thickness (BMT) set out in the schedule of materials. Fixings for sheet roofs shall be supplied with rubber washers to isolate the fixing from the sheet, to avoid corrosion.

[More details...click here](#)

Timber battens

Timber battens shall comply with AS 1684.

Metal battens shall comply with BCA Vol 2 performance requirements P2.1.

[More details...click here](#)

Mineral wool blankets

Mineral wool blankets installed between the battens and the sheeting shall comply with AS 3742, with an R2 rating.

[More details...click here](#)

Flashings

Flashings shall be of a type compatible with the sheeting, to avoid corrosion. Lead flashings shall not be used in conjunction with or upstream of zinc-aluminium coated materials or to channel potable water. Copper materials shall not be used in conjunction with or upstream of galvanized materials. See also the specifications for Roof Plumbing.

[More details...click here](#)

Installation

Sarking shall be installed under roof battens in accordance with AS 4200.2.

Timber battens complying with AS 1684 shall be supplied and fixed to trusses.

Roof sheeting shall be fixed in accordance the manufacturer's recommendations for the particular Wind Category and with BCA Vol 2 Figures 3.5.1.5 for Wind Category W33 or W41

For Wind Category W33 or W41, fixings shall not be less than as set out below.					
Profile	Base metal thickness (mm)	End span (mm)	Internal span (mm)	Fixing	
				End Span	Internal Span
Corrugated	0.42	950	1200	Every second rib	Every third rib
Close pitched trapezoidal	0.42	1900	2400	Every rib	Every second rib
Trapezoidal	0.42	1350	1700	Every rib	
Concealed fasteners	0.48	1800	2100	Every rib	

Roof sheets shall be laid in continuous lengths where practical. If this is not practical, the correct laps and fixings specified in the BCA and by the manufacturer shall be used.

The upper end of the roof sheets shall be turned up, using the correct tool.

In high wind areas, turn the sheets down into the eaves gutter at the lower end.

Sheets shall be fixed through the high point of the ribs using long screws, not valley fixed.

Metal Rainwater Goods

Metal rainwater goods and flashings shall comply with the AS 2179.1. Steel sheet shall comply with AS 1397 with a minimum yield stress of 550 MPa (N/mm²) with a zinc-aluminium coating complying with AZ150. They shall be in the style and colour set out in the schedule of materials. Gutters with high fronts shall incorporate slots to permit overflow.

[More details...click here](#)

MASONRY

Standards

All components and installation shall comply with the Kiribati Building Regulations and the relevant Standards, including AS 3700 and the standards referred to therein.

Materials

Concrete Blocks for Reinforced Masonry Applications

Unless specified otherwise, concrete masonry units for reinforced masonry applications shall comply with AS/NZS 4455 and the following requirements:

- Dimensional category DW4
- Salt attack resistance grade shall be:
 - General Purpose except as listed below for Exposure Grade
 - Exposure Grade where the masonry is:
 - subject to saline wetting and drying; or
 - in aggressive soils; or
 - in a severe marine environment; or
 - subject to saline or contaminated water, including tidal splash zones; or
 - in especially aggressive environments. e.g. subject to attack by corrosive liquids or gasses, or within 1 km of industry in which chemical pollutants are produced.
- Minimum characteristic compressive strength shall be nominated by the engineer, and not less than 15 MPa (N/mm²).
Note: AS 3700 Section 12 permits the use of 12 MPa (N/mm²) units for reinforced hollow masonry in small buildings. However, 15 MPa (N/mm²) units are commonly available and form the basis of many design charts in common use. The required strength depends on the particular application. Refer to the manufacturer's design literature for guidance.
- Dimensions and core configuration shall be such that:
 - If units are intended to incorporate both horizontal and vertical reinforcement and are not protected both sides by a waterproof membrane, they shall be "H" or "Double U" configuration;
 - Units may be fully grouted and may be reinforced both vertically and horizontally;
 - Grout may flow easily around and enclose the reinforcement in all cores; and
 - Cover is consistent with the requirements of AS 3700 for durability, strength and fire resistance as appropriate.
- Mean Coefficient of Residual Drying Contraction shall be not more than 0.6 mm/m.
- If intended for face applications and exposed to the weather:
 - Permeability shall be not more than 2 mm/minute
 - Efflorescence Potential shall be Nil or Slight
 - Colour and texture shall be within an agreed range.

[More details...click here](#)

Reinforcement

Reinforcement shall comply with AS/NZS 4671 and shall be:

- Deformed bars - 500 MPa (N/mm²), normal ductility (N)
- Square fabric, rectangular fabric and trench mesh - 500 MPa (N/mm²), low (L) or normal (N) ductility ribbed wires
- Fitments -500 MPa (N/mm²), low (L) or normal (N) ductility ribbed wires
- Round bar (eg R250 N10 for dowels) - 250 MPa (N/mm²) round

[More details...click here](#)

Concrete Grout

Concrete grout shall have:

- a minimum portland cement content of 300 kg/cubic metre;
- a maximum aggregate size of 10 mm;
- sufficient slump to completely fill the cores; and
- a minimum compressive cylinder strength of 20 MPa (N/mm²).

[More details...click here](#)

Cement

Cement shall be Type GP portland cement or GB blended cement complying with AS 3972.

[More details...click here](#)

Masonry Cement

Masonry cement shall comply with AS 1316.

[More details...click here](#)

Lime

Lime shall be hydrated building lime complying with AS 1672.1.

[More details...click here](#)

Water Thickener

Water thickener shall be methyl-cellulose based.

[More details...click here](#)

Sand

Sand shall be well graded and free from salts, vegetable matter and impurities. Sand shall not contain more than 10% of the material passing the 75 micron sieve. Sand within the following grading limits complies with this requirement and is deemed suitable for concrete masonry.

Sieve	Percent Passing
4.76 mm	100
2.36 mm	95–100
1.18 mm	60–100
600 µm	30–100
300 µm	10–50
150 µm	0–10
75 µm	0–4

[More details...click here](#)

Joint Material

Backing rod for control joints, expansion joints and articulation joints shall be expanded polystyrene tube or bead.

Expansion material shall be compressible.

Joint sealant shall be gun grade multi-purpose polyurethane sealant.

Control joints and articulation joints shall incorporate de-bonding tape.

[More details...click here](#)

Damp Proof Course

Damp-proof-courses (DPCs) shall consist of one of the following options.

- a material complying with AS/NZS 2904;
- embossed black polyethylene film of high impact resistance and low slip, with a nominal thickness of 0.5 mm prior to embossing, and meeting the requirements of Clause 7.6 of AS/NZS 2904;
- Polyethylene coated metal damp proof courses with an aluminium core not less than 0.1 mm thick, shall be coated both sides with bitumen adhesive enclosed in polyethylene film not less than 0.1 mm thick on each face, and has a nominal total thickness of not less than 0.5 mm prior to embossing;
- bitumen impregnated materials of not less than 2.5 mm thickness, that meet the requirements of Clause 7.5 of AS/NZS 2904, when used in walls that are not higher than 7.8 m above the level of the DPC;
- termite shields (with no penetrations) continuous throughout the wall or pier .

[More details...click here](#)

Flashings

Flashings shall comply with AS/NZS 2904.

Metal flashings shall not be used in locations that are subject to rising salt damp.

Metal flashings shall be compatible with the materials with which they are in contact, and shall not give rise to electrolytic action. If there is potential for electrolytic action to occur, flashings shall be isolated by inert materials.

Flashings intended to hold their shape shall be manufactured from rigid material. (e.g. metal cored material)

Flashings in Exposed Locations (e.g. flashings from the roof to masonry wall) shall be one of the following:

- Uncoated annealed lead having a mass not less than 20 kg/m² in lengths not exceeding 1.5 m, but shall not be used on any roof that is used to catch potable water;
- Uncoated copper having a mass not less than 2.8 kg/m² and having a thickness of 0.3 to 0.5 mm;
- Bitumen coated metal (normally aluminium) with a total coated thickness of 0.6 mm to 1.0 mm;
- Zinc coated steel of thickness not less than 0.6 mm.

[More details...click here](#)

Termite Barrier

Termite barriers shall comply with the requirements of AS 3660.1.

[More details...click here](#)

Slip Joint Material

Slip joint material shall comply with the following requirements. Metal slip joint materials shall not be used in locations that are subject to rising salt damp.

- Bitumen-coated aluminium
- Embossed polyethylene
- Polyethylene-and-bitumen coated aluminium.

[More details...click here](#)

Reinforced Masonry Lintels

Reinforced masonry lintels shall comply with AS 3700, including Section 8 and Appendix J. For applications in external walls, reinforcement shall be Grade 316 austenitic stainless steel, 6 mm diameter (or 8 mm or 10 mm for heavy duty applications in wide joints).

[More details...click here](#)

Mortar

For the applications listed below, Type M4 mortar shall be used, and shall consist by volume of:

- 1 part GP or GB cement, 0.5 part lime, 4.5 parts sand (water thickener optional)
- 1 part GP or GB cement, 4 parts sand plus water thickener
- 1 part GP or GB cement, 0-0.25 parts lime, 3 parts sand (water thickener optional)
- 1 part masonry cement, 3 parts sand (See Note 1)

Termite barriers shall be installed in accordance with AS/NZS 3660.1

Mortar joints shall be 10 mm thick.

Mortar joints in hollow blockwork, shall be face shell bedded and shall be ironed, unless a flush joint is specified for aesthetic reasons.

Construction

Vertical steel reinforcement shall be tied using tie wire to steel starter bars through clean-out holes in each reinforced core and fixed in position at the top of the wall by plastic clips or template. Starter bars shall be tied into position to provide the specified lap above the top surface of the footing. The starter bars shall be held in position on the centre line of a reinforced blockwork wall by a timber member or template and controlled within a tolerance of +/- 5 mm through the wall and +/- 50 mm along the wall.

Horizontal steel shall be held in position by steel ties or plastic clips. Cover to horizontal steel in lintel blocks shall be maintained by the use of wheel type plastic clips. The minimum cover to the inside face of the block shall be 30 mm.

Control joints shall be built into reinforced concrete masonry at all points of potential cracking and at the locations shown on the drawings. The spacing of control joints should not exceed 16 metre.

Design Assumptions

Wind loads shall be calculated in accordance with AS/NZS 1170.2 and HB 212 Design wind speeds for the Asia-Pacific region, both published by Standards Australia. The following uplift pressures and racking pressures apply in the nominated wind classification areas for:

- Equivalent annual probability of exceedance of 1 in 500
- Reference period (design life) of 15 years
- Leading to a probability of exceedance during the design life of approximately 0.03

Wind Classification	Uplift kN/m ² (kPa)	Racking kN/m ² (kPa)
I Thailand, Malaysia, Singapore, Indonesia, East Timor, South & West Sri Lanka, Deccan (India), Kiribati	0.7	0.6
II Australia A (Most of south and inland) Central Sri Lanka, West coast & southern India	1.0	0.8
III Australia B (< 25°S 50-100 km, 25°S - 30°S 0-100 km), North & east Sri Lanka, India (East coast, North, Ganges, Assam)	1.5	1.2

Kiribati is approximately 3° south latitude, and is designated in Zone I.

Foundation Soil Properties

The bearing capacity of foundations shall be determined using the principles set out in AS 4678 *Earth retaining structures* and the Terzagghi method, for a characteristic friction angle (conservative estimate of the mean), ϕ . Unless there is geotechnical evidence to the contrary, a characteristic friction angle (conservative estimate of the mean), ϕ , of 32° shall be used, corresponding to a medium compacted loose sand, as is common in many of the construction areas. A further limitation of 100 kPa shall be applied to working dead loads, to minimise the risk of settlement. It is this criterion that normally governs the design.

It is assumed that these conditions apply in Kiribati.