

52ST.305



TENDER FORM

The Chairman – Tender Opening Committee
PNG Power Ltd
P. O. Box 1105
BOROKO 111 NCD
Papua New Guinea
Phone: (675) 324 3381
Fax: (675) 3250791
Email: supplyhelpdesk@pngpower.com.pg

We (Full name of company).....
.....
.....
.....

hereby tender for the undermentioned goods and services subject to the conditions of tendering and at the prices quoted in the scheduled therein

TENDER No. 37/2019

CLOSING AT 4.00 PM FRIDAY 16TH AUGUST 2019

FOR EXTENSION WORKS OF PNG POWER Ltd OFFICE BUILDING AT KEREMA – GULF PROVINCE.



TENDER NO: 37 / 2019

**EXTENSION WORKS OF PNG POWER OFFICE
BUILDING AT KEREMA TOWNSHIP, KEREMA,
GULF PROVINCE**

*Property Development Team
Property Services Team
Finance & Shared Services BU
P. O. Box 1105, BOROKO 111
National Capital District*



TENDER NO: 37 / 2019

**EXTENSION WORKS OF PNG POWER OFFICE BUILDING AT
KEREMA TOWNSHIP, KEREMA, GULF PROVINCE**

Prepared By:.....

Checked By:.....

Date:.....

[Handwritten signature]
[Handwritten signature]
18/07/19.

PNG POWER LIMITED

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FRONTISPIECE

BRIEF DESCRIPTION OF TENDER

This Tender is purposely for the Extension works of PNG Power Office Building at Kerema Township, Kerema, Gulf Province and other associated works required under this contract.

PNG POWER LIMITED

SECTION 1

**EXTENSION WORKS FOR PNG POWER OFFICE BUILDING AT KEREMA TOWNSHIP,
KEREMA, GULF PROVINCE.**

(A) INVITATION TO TENDER

Tender close with:

PNG Power Limited,
P. O. Box 1105,
BOROKO,
Papua New Guinea

At 4:00 pm on 16th August, 2019.

The Tender Submission shall consist of the following, all duly completed;

- Form of Tender
- Schedule of Quantities
- GST and Tax Registration Numbers
- Additional information/price offered by the Supplier to aid the evaluation of the Tender.

Enquiries during the Tender period shall be addressed to:

PNG Power Limited,
P. O. Box 1105,
BOROKO,
Papua New Guinea.

ATTENTION: Mr. Ivan Anengo
Senior Property Development Officer
Finance & Shared Services Business Unit

Fax: 323 5239
Telephone: 324 3514
Email: ianengo@pngpower.com.pg

(B) FORM OF TENDER

EXTENSION WORKS FOR PNG POWER OFFICE BUILDING AT KEREMA TOWNSHIP, KEREMA, GULF PROVINCE.

Companies quoting are required to complete the blank spaces in this Tender Form and complete the Schedules included.

To: PNG Power Limited
P. O. Box 1105,
BOROKO, NCD

Gentlemen,

1. Having examined the Drawings, Specification and Schedules for the execution of the above named Works, we, the undersigned, offer to execute and complete the works accordingly for the sum of (words & figures)
.....
.....
.....(K.....)
2. We undertake, if our quotation is accepted, to complete and deliver the whole of the works within twelve (12) weeks from the date of receiving your Official Order.
3. We agree to abide by this Tender for the period of ninety (90) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before expiration of that period.
4. This Tender, together with the receipt of your Official Order thereof, shall constitute a binding Contract between us.
5. We understand that you are not bound to accept the lowest or any Tender you may receive.

Signed and sealed for and on behalf of:)
.....)
by)
the)
of the said Company herein)
authorised in the presence of)
Address of Company Bidding:.....

(C) **TENDERER DATA**

EXTENSION WORKS FOR PNG POWER OFFICE BUILDING AT KEREMA TOWNSHIP, KEREMA, GULF PROVINCE.

(i) **TENDERER'S ORGANISATION**

1. Name: Nationality:
2. Business Address: Fax:
- P. O. Box No: Phone:
-

(ii) **CONTRACT SUPERVISION**

Tenderers shall list their proposed supervisory staff for this Contract. (number and designation only).

(iii) **STATEMENT OF EXPERIENCE**

The Tenderer shall state hereunder facts in detail describing previous experience and achievements in performing similar or comparable works together with the names of authorities for whom, and the dates when, such works was carried out.

CONSTRUCTION SCHEDULE

EXTENSION WORKS FOR PNG POWER OFFICE BUILDING AT KEREMA TOWNSHIP, KEREMA, GULF PROVINCE.

The Bidder should indicate his proposed program for completing various stages of the work by filling in the schedule below.

ACTIVITY	TIME IN WEEKS											
	1	2	3	4	5	6	7	8	9	10	11	12
Mobilisation & Set-Up												
Excavation & Levelling												
Concrete Works												
Block Work Construction												
Metal & Steel Works												
Carpentry (incl. roof framing)												
Roofing, Plumbing & Drainage Works												
Tiling and Glazing												
Electrical & Fire												
Painting Works												
Clean Up												

(D) **PRICE SCHEDULES**

EXTENSION WORKS FOR PNG POWER OFFICE BUILDING AT KEREMA TOWNSHIP, KEREMA, GULF PROVINCE.

(i) **LUMP SUM BREAKDOWN**

1.0	Mobilisation & Site Set Up	K.....
2.0	Excavation & Levelling	K.....
3.0	Concrete Works	K.....
4.0	Concrete Blockworks	K.....
5.0	Metal/Steel Works	K.....
6.0	Carpentry Works (incl. roofing)	K.....
7.0	Roofing, Plumbing & Drainage Works	K.....
8.0	Tiling & Glazing	K.....
9.0	Electrical & Fire Works	K.....
10.0	Painting Works	K.....
11.0	Cleaning	K.....
	Sub-total	K.....
	GST	K.....
	TOTAL LUMP SUM (Carried to Form Quotation)	K.....

Name of Contractor:

Signature:

Date:

Witness:

SECTION 2 TECHNICAL SPECIFICATION

<u>Description</u>	<u>Page No</u>
1. Schedule of Preliminaries	10-11
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2. Job Specifications (Scope of Works)	12-20
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2.2 Excavation, Demolition & Drainage	
2.3 Concrete Works	
2.4 Block & Masonary Works	
2.5 Metal Works	
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2.7 Carpentry	
2.8 Joinery & Hardware	
2.10 Roofing Works	
2.11 Plumbing Works	
2.12 Fire & Electrical Works	
2.13 Painting Specification	
2.14 Cleaning up	

(A) **JOB SPECIFICATION**

1. **SCHEDULE OF PRELIMINARIES**

1.1 **GENERAL**

The Contractor shall carryout the works as detailed and or inferred in the Technical Specification comprising of Trade Schedules and Drawings which takes precedence over the Standard Specification, Part (B).

1.2 **STANDARDS**

All works shall be carried out to the accepted standard trade practices, Local Authority Regulations and the relevant PNG and Australian Standards.

1.3 **NATURE OF CONTRACT**

The contract will be Fixed Price Lump Sum Contract. Approved variations shall be paid for at the applicable rates listed in the Schedule of Rates for Variations.

1.4 **LOCATION OF SITE**

The work site is located at Kerema Township, Kerema, Gulf Province.

1.5 **DESCRIPTION OF WORK**

All works covered in this contract is as stipulated within the scope of works. It basically requires carpentry, masonry, metal and steel works, electrical, plumbing and painting.

1.6 **SITE INSPECTION**

The Contractor shall inspect the site prior to lodging his Tender and satisfy himself with the nature of the site, PNG Power will not be liable if conditions proved otherwise climatic conditions and services relevant to the contract.

1.7 **POSSESSION OF SITE**

Possession of Site shall be on the date stated in the Letter of Acceptance to the successful tenderer.

The Contractor shall be given such possession of the site as is considered necessary to carry out these works, but such possession shall not be deemed to mean exclusive possession.

1.8 **SITE OPERATIONS**

1.8.1 **Safety**

All matters and conditions regarding safety, health and welfare of persons working on site shall be the responsibility of the Contractor.

1.8.2 **Site Facilities**

The Contractor shall arrange for and meet all the costs associated with the provisions of his electricity, telephone, water ablution facilities, temporary buildings for his workmen including site security.

1.9 CONSTRUCTION SCHEDULE

The Contractor shall provide a detailed construction schedule expanding on the Tender Construction Schedule within two (2) weeks of acceptance of contract.

1.10 USE OF SECOND HAND MATERIALS

No second hand materials shall be used unless indicated in the specification or shown on the drawing or until they have been inspected and approved by the Superintendent. Any materials reused shall be finished to "as new" condition.

1.11 SETTING OUT

The works shall be located where indicated on the drawings, however, the accurate setting out and adherence to details of levels and squareness of the building will be the sole responsibility of the Contractor.

1.12 TIME FOR COMPLETION

The works shall be Practically Completed within Twelve (12) weeks from the date of Possession of Site given in the PNG Power's Letter of Acceptance.

1.13 DEFECT AND LIABILITY PERIOD

The period of 3 months will be allowed for defects and liability after completion of works. The contractor is free when 3 months is over; but if any defects appear within 3 months the contractor will be called to fix at free of charge.

1.14 VARIATIONS

Variations are not tolerated as the contractor must make an attentive assessment of the scope of works and site conditions. The contractor shall allow for the miscellaneous expenses before submitting the quotation as there may be difficulties in sourcing additional funds after the signing of the contract.

The Contractor shall notify the PNG Power Building Supervisor or Project Manager; and a joint inspection shall be scheduled before the signing of the completion certificate (COC).

1.15 CLEANING UP

Upon completion of the works, the contractor shall leave the work areas clean and clear of rubbish, excavated material and access material which is of no use to PNG Power. All rubbish shall be dumped at the local authority's official garbage dump and not at or around the work site.

2.0 DESCRIPTION OF WORKS

2.1 MOBILISATION & SITE SET-UP

- 2.1.1 The Contractor shall organise and mobilise on site upon PNG Power's instruction or upon receiving of PNG Power Official Purchase Order.
- 2.1.2 The contractor shall arrange for temporary services on site including site access, telephone, power and sewerage for use by its workers.
- 2.1.3 The Contractor shall arrange for storage spaces on site to store materials, tools and other plant and equipments.
- 2.1.4 The Contractor shall also arrange for Security on site to safe-guard building materials, plants and equipments where necessary.

2.2 EXCAVATION, DEMOLITION AND DRAINAGE

- 2.2.1 The existing ground level around the perimeter of the building shall be excavated and levelled properly. Backfill any area that is low with proper soil or road base materials. Refer slab level line on site.
- 2.2.2 Locate underground services and foundations before any excavation work commences. Make good at no extra cost damages to existing services.
- 2.2.3 Demolition of existing part of buildings and shall be confirmed by PNG Power inspector and carried out under this contract as agreed upon. Any obstruction (ie; stonewall, trees, stumps etc) shall also be cleared properly to make way for construction.
- 2.2.4 Contractor shall make good existing stone pitched drains with proper fall or gradient.
- 2.2.5 All drain wastes to connect to proper main drain system.

2.3 CONCRETE WORKS

- 2.3.1 All concrete shall have a minimum strength of 20 MPa.
- 2.3.2 All concrete mixing shall be by mechanically driven revolving drum. Hand mixing is not permitted unless approved by the Superintendent. Minimum mixing proportions shall be 3:2:1 with a maximum slump of 80mm.
- 2.3.3 All footings, slabs, reinforcing, formwork etc. shall be inspected by the Superintendent before commencement of mixing and placing of concrete.
- 2.3.4 For all slab construction, supply and lay fortecon membrane to underside of slab, lapped 150mm and taped at joints.
- 2.3.5 Construct slab of 75mm thick and lay F72 mesh on the entire floor area.
- 2.3.6 Any existing cracked concrete foot path shall be removed and replaced with new slab construction to match existing.
- 2.3.7 Cracked or broken existing stone walls for drains shall be made good or repaired.

2.4 BLOCK AND MASONARY WORKS

All works under this category shall be undertaken by the experienced Blocklayer and comply with all relevant codes of this specifications.

2.4.1 Blocks

All blocks shall be Class A blocks Monier or equal approved – with a minimum strength of 12MPa.

2.4.2 Standard 400x200 Blocks

Lay stretcher bond, reinforced and core filled as detailed.

2.4.3 Beams

At every second course where horizontal reinforcement is required all round, lay knock out beam blocks and core fill. Also lay and reinforce above all openings.

2.4.4 Reinforcements

Provide and place all bars (S12) and ties (R10) in blockwork as detailed. Horizontal at every second coarse all round.

2.4.5 Conduits

For electrical wiring the contractor will provide 25 dia. Conduits for embedding as instructed on site. Draw wires shall be left in the conduit runs.

2.4.6 Laying

All blocks shall be laid in stretcher bond to meet acceptable standards.

2.4.7 Corefill

All cores whether reinforced or not shall be core-filled.

2.4.8 Jointing

Joints in blockwork shall be "iron" jointed all through-out.

2.4.9 Chasing

Chasing of blockwork is not permitted. Pipework, conduits etc. shall be built in and concealed in blockwalls.

2.4.10 Cleaning

Clean down all blockwork as work progresses to ensure total removal of motar droppings and smears.

2.5 METAL WORKS

All works under this section shall be done with as per relevant building codes and practices.

- 2.5.1 Supply and install new 80mm NB galvanised pipe balustrades and hand rails firmly fixed to the concrete apron floor.
- 2.5.2 Supply and install new roofing sheets as listed under Roofing Section with proper fastenings.
- 2.5.3 Supply and install all required louvre frames. Louvre blade shall be 6mm glass blades or metal accepted as approved.

2.6 STEEL WORKS

- 2.6.1 All security doors shall be fabricated as per the detail drawings shown.
- 2.6.2 Supply and fabricate all security grill mesh for the windows as shown on the drawings.
- 2.6.3 All steel products shall be obtained from an approved manufacturer.
- 2.6.4 All weldings and fabrication shall be done by a Licensed Welder.

2.7 CARPENTRY

All timbers preferred are treated hardwood species such as Kwila, Malas and Taun. A written approval must be obtained from the Superintendent if the Contractor wishes to offer an equal or better species.

2.7.1 Wall Framing

Supply and use 75x50mm hardwood in external and internal wall framing with studs at maximum of 600mm ctrs and two evenly spaced rows of noggings. Check studs 6mm into plates.

2.7.2 Wall Bracing

Provide and fix 27x0.6mm galvanized angle bracing, Pryda T or equally approved.

2.7.3 Ridge Beam

Supply and use dressed beam in single length through building, supported over internal walls and fixed to top plates with trip-I-grip connectors.

Provide extra noggings under top plate supporting the beam.

2.7.4 Rafters

Supply and fix HW rafters in single lengths at 1200mm centres as detailed, nailed to the ridge beam and held together with nailing plates on both sides.

2.7.5 Purlins

Provide and fix 75 x 50 HW purlins at 900 centres on their flats, nailed to the rafters.

2.7.6 Ceiling Battens

Fix and flush with underside of purlins at 600 ctrs.

2.7.7 Roof Bracing

Provide and fix 27x0.6mm galvanized strip bracing over rafters to each corner diagonally.

2.7.8 Barge and Fascia Board

Supply and fix new fascia and barge boards. The size shall be 200x32mm and fascia boards shall be securely fixed at the end of 6mm plates with 10mm bolts.

The contractor shall ensure to apply wood primer to exposed timber board surfaces prior to fixing.

2.7.9 Door Jambs and Window Frames

The contractor shall supply and install door and window frames as shown on the drawings.

2.8 **JOINERY AND HARDWARE**

2.8.1 Doors

Supply and install new solid core doors as shown on the drawings.

2.8.2 Door Locks

- a. Provide new Tubular Dead bolts, 777 series with 56x100mm x 75mm "D" handle fixed on both sides of the doors.
- b. Provide magnetic door stoppers to all office door and entry doors where appropriate.

2.8.3 Hinges and Catches

Supply and install new 100mm butt steel hinges. Mark out for fitting of the butt steel hinges shall be 150mm from the top of the door and 200mm up from the bottom edge of the door

2.8.4 Work Bench

- a. All work bench to be constructed as shown on the drawing.
- b. Bench tops shall covered 2mm thick laminex glued with contact adhesives.

2.9 ROOFING WORKS

All roofing works to be carried out according to Manufacturers relevant codes and practices.

2.9.1 Roofing Sheets

Roofing shall be corrugated zincaluminum bond custom orb neatly fixed on to the purlins/battens.

2.9.2 Overhangs

Overhang length shall be 900mm minimum as shown on drawings.

2.9.3 Roof Fasteners

60mm long tek screws shall be used as roof fasteners and the contractor shall use three(3) number of tek screws on roof sheets and securely fastened as per roof battens.

2.9.4 Sisalation

Supply and install 1.2m wide double sided insulation paper and allow 150mm lap over on each joints.

2.9.5 Gutter

- a. Supply and install new sheerline gutter and shall be fixed the full length of both sides of the existing building.
- b. The contractor shall allow a fall starting from the centre of the length of the building and runs towards the two ends of the building.

2.9.6 Gutter Brackets

An appropriate trim line gutter brackets shall be used prior to fixing of the gutter. The gutter brackets shall be fixed at 1.0 meter spacing with an appropriate fixer or fasteners.

2.9.7 Down Pipes

Down pipes shall be 100 diameter PVC and shall be filtered tightly where the drops are. All joints shall be neatly fitted to avoid appearing of gaps.

2.9.8 Flashings

An appropriate metal flashing shall be provided at the edges of the roofing and securely fasten with appropriate fasteners on to the Barge Board. Ensure to seal off screw heads properly with approved sealant.

2.10 PLUMBING WORKS

2.10.1 General

All plumbing shall be carried out by competent Tradesmen who hold current Sanitary Plumbers licences issued by the authorised Public Health Authority.

2.10.2 Cold Water Supply

Provide and maintain cold water supply to the following fittings:-

- hand basin
- water closet
- tea room sink

2.10.3 Traps and Wastes

Supply and provide 50mm dia. uPVC to hand basin and sinks.

2.11 FIRE AND ELECTRICAL

All electrical works to be undertaken by a Licensed Electrician according to the relevant codes and practices. All materials shall be of the best quality and workmanship shall be accordingly to the best trade practice of the workmanship in accordance with the PNG Power requirement.

2.11.1 Fire

a. Standards and Workmanship

Comply with all relevant Fire Authority rules, codes and requirements.

b. Provide and install portable fire extinguisher of the types and capacities shown below. Install fixings, brackets and position indicating signs and labels for each extinguisher.

c. Provide extinguisher as;

Type 1 4.5kg Dry Chemical Powder (DCP)

Locate extinguisher any where reachable.

2.11.2 Electrical

a. Standards and Workmanship

Comply with all the relevant PNG Power Limited rules, codes and requirements.

b. Distribution Board

The contractor shall supply and install new distribution board for the new building.

c. Wiring

All wiring shall be concealed inside the ceiling and in conduits embedded in the block walls.

d. Power Outlets / 3 Phase Outlets

Supply and install as shown on the Electrical Drawing where necessary.

A 3 phase supply is required for this building as it will contain number of heavy duty machines.

e. Light Switch

Supply and install light switches as shown on the Electrical plans. Switches shall be mounted 1.2m above floor level.

f. Lights and Fittings

Supply and install light tubes and fittings as shown on the Electrical plan.

g. Daylight Switch

Provide and install a daylight switch as shown on drawing.

2.12 PAINTING SPECIFICATION

2.12.1 Quality of Materials

The contractor shall supply all painting materials and store them neatly in an appropriate area free from dust, moisture or anything that may have an immediate effect on painting materials.

All materials used for this painting work shall be of higher grade. No second grade materials shall be used, if the contractor shall or may want to use second graded materials, the contractor must seek Inspector's approval.

2.12.2 Brand

The contractor shall supply materials such as, undercoat, turps, final coat etc, from the same Manufacturer. Mixtures of painting materials from different brand of manufactures shall not be allowed.

2.12.3 Wash down

All painting surfaces shall be thoroughly washed down with approved detergent or sugar soap prior to commencement of any painting work. The contractor shall seek approval from PNG Power supervisor after thorough wash down all surfaces before commencing of painting work.

2.12.4 Drop Sheet

A drop sheet shall be used by the Contractor during the cause of the painting work to protect the floor of the building.

2.12.5 Under Coats

A water base Acrylic under coat or similar approved type under coat that can quickly settled and dried shall be used. The Contractor shall apply one (1) coat on old surfaces. 2 coats of under coats on new surfaces.

2.12.6 Putty

The contractor shall use sparkfilla and polyfilla or similar approved putty to fill holes, gaps or any uneven surfaces. Puttied areas shall be left for a day before any sanding is carried out. This putting work shall be carried out after painting of first coat of under coat.

2.12.7 Final Coat

After completion of the sanding work to all painting surfaces, the contractor shall carry out the painting of the final two (2) coats. Colours shall be preferred by the PNG Power Supervisor.

2.12.8 Turpentine

The Contactor shall only use turpentine to wash paintbrushes or to soften paint so that paints are flexible and easy to use. Kerosene shall not be used when carrying out the painting work.

2.12.9 Scaffolding

The Contractor's responsibility to provide necessary scaffolds and securely fixed to avoid accidents. PNG Power shall not be responsible for any accident created due to negligence.

2.12.10 Painting and Varnishing

- a. The contractor shall use Taubmans paints only when carrying painting works.
- b. Do not apply under coat without the approval of the PNG Power Inspector.
- c. All existing paint surface shall be cleaned and washed down properly with sugar soap or detergents prior to applying of any under coat.
- d. Apply masonry filler under coat for all masonry surfaces prior to painting of final coats.
- e. All rusted metal surface shall be cleaned and scrape off properly before applying of metal primer.
- f. Colours scheme shall be provided by PNG Power Inspector.
- g. New surfaces shall have 2 coats of under before applying of 2 final coats.
- h. Light machine sand living and bedroom floors. Apply 1 coat of sanding sealer and 2 coat of poly gloss varnish.

2.13 CLEANING UP

Upon completion of the works, the contractor shall leave the work areas clean and clear of rubbish and excess material which is of no use to PNG Power Ltd.

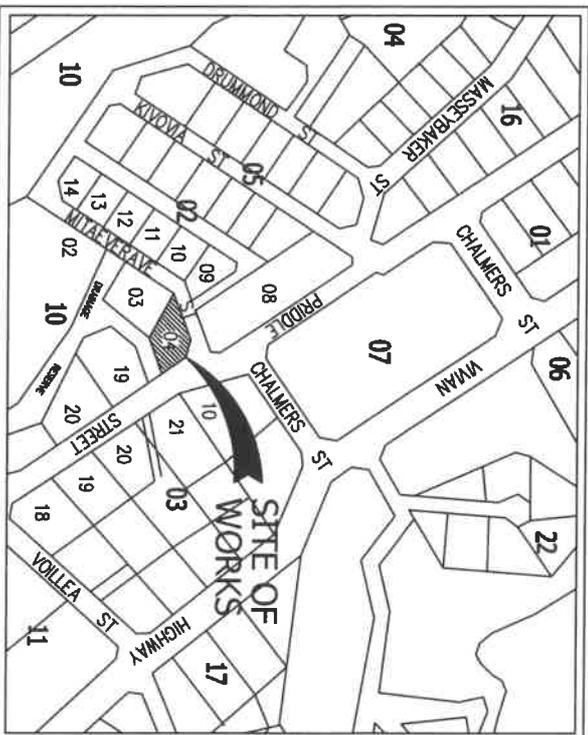
All rubbish shall be dumped at the Local Authority's official dump site and not at or around the work site.

*******END OF SCOPE*******

(B) LIST OF DRAWINGS

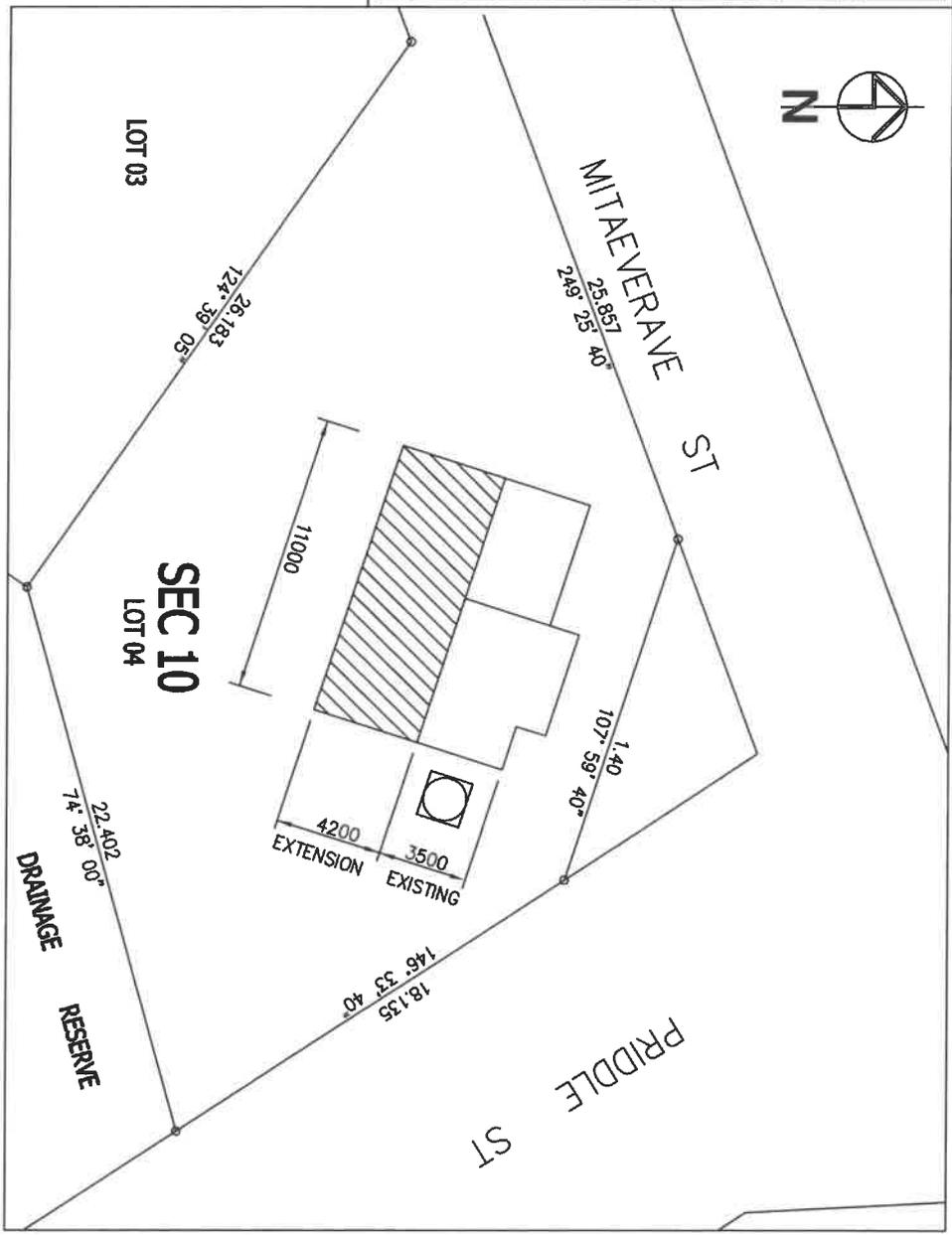
The Contractor shall undertake the works for Tender in accordance with the Drawings listed below and as appended. The drawings form part of the Contract Documents and all notes on the drawings are considered to be part of the drawings and the Contract. If the drawings conflict with any other part of the Contract Documents, the drawings will take precedence.

Drawing Ref. No.	Drawing Title	Date of Issue
M11929	Extension of Office Building at Kerema, Gulf Province.	JULY 2018
Sheet 00	Cover Sheet, Drawing Index	
Sheet 01 of 09	Locality & Site Layout	
Sheet 02 of 09	Proposed Floor Layout	
Sheet 03 of 09	Elevation 01 & 02	
Sheet 04 of 09	Elevation 03 & 04	
Sheet 05 of 09	Proposed Electrical & Plumbing Layout	
Sheet 06 of 09	Cross Section A-A & Details	
Sheet 07 of 09	Construction Details	
Sheet 08 of 09	Window and Door Schedule & Details	
Sheet 09 of 09	Septic Tank Detail	



LOCALITY PLAN
REF NTS

- NOTES
1. ALL MEASUREMENTS ARE TO BE CONFIRMED ON SITE BEFORE THE COMMENCEMENT OF ANY WORKS.
 2. THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING BOUNDARY PEGS ARE LOCATED AND CONFIRMED BEFORE COMMENCEMENT OF ANY WORKS.



SITE LAYOUT
REF 1 : 200

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Date Plotted: 02.05.18
Time Plotted: 12:09PM
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Rev.	Revision	By	Check	Date



PNG Power Ltd
P. O. Box 1105, BOROKO H.I. NCD, Papua New Guinea.
Telephone: (675) 324 3200
Facsimile: (675) 323 8072
Website: www.pngpower.com.pg

Drawn	Checked	Designed	Approved

Location	Title	Number	Revision
KEREMA TOWNSHIP, KEREMA, GULF PROVINCE	PNG POWER OFFICE EXTENSION LOCALITY & SITE LAYOUT	M11929	

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Time Plotted: 12:00PM

Rev.	Revision	By	Check	Date

PNG Power Ltd
 P. O. Box 1105, BOROMO Hill, NCD, Papua New Guinea.
 Telephone: (675) 324 3300
 Facsimile: (675) 322 0072
 Website: www.pngpower.com.pg

Drawn	Checked	Designed	Approved

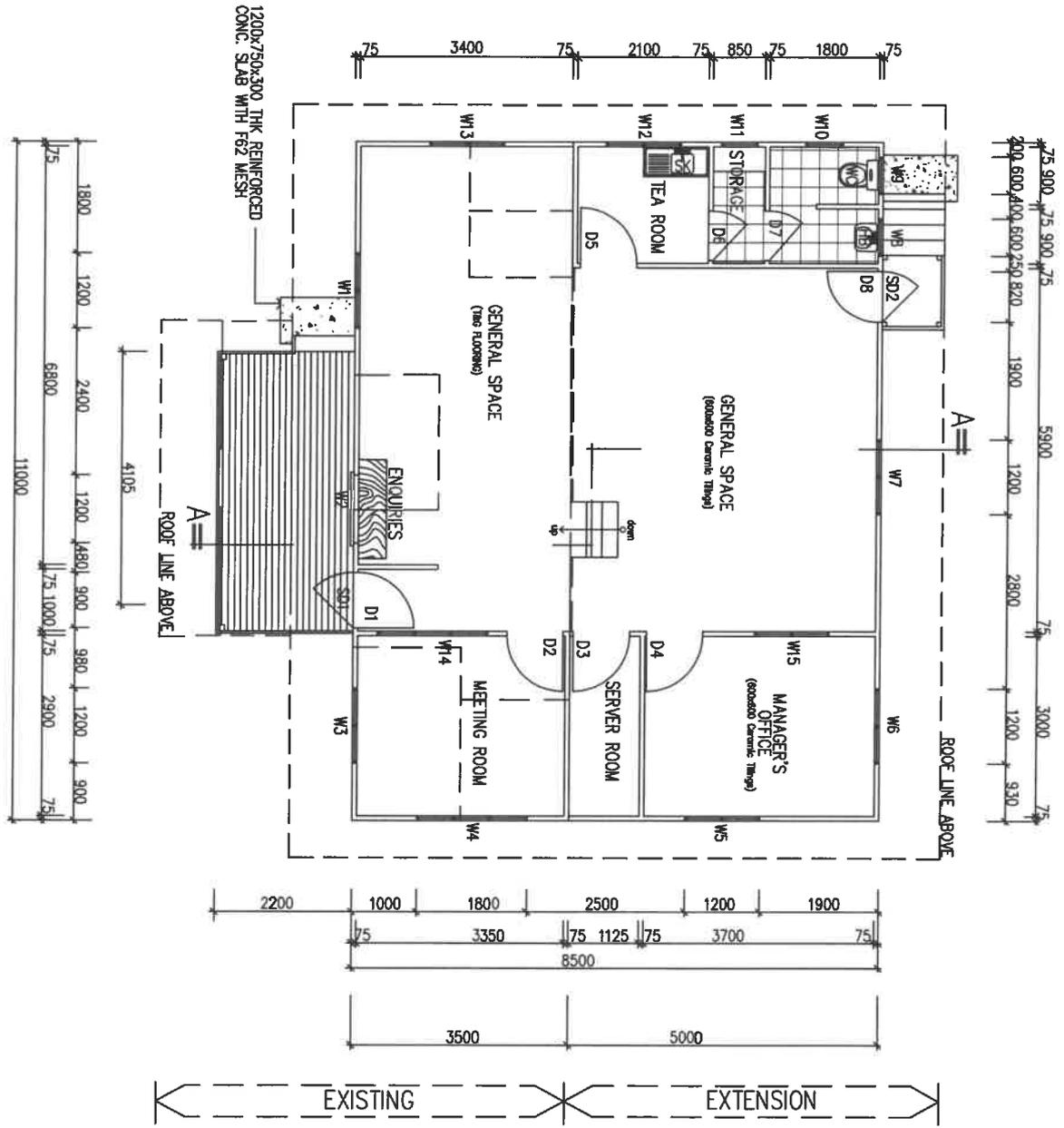
Location	Title	Number	Revision
KEREMA TOWNSHIP, KEREMA, GULF PROVINCE	PNG POWER OFFICE EXTENSION	M11929	
	PROPOSED FLOOR PLAN		

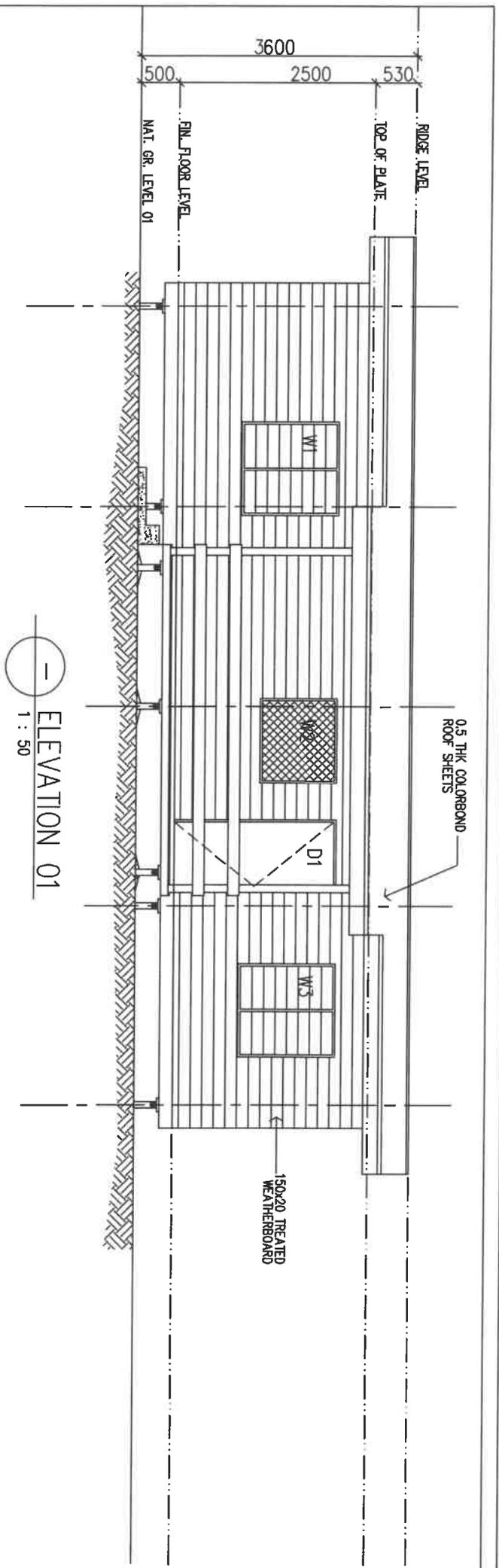
NOTES
 1. ALL MEASUREMENTS ARE IN MILLIMETRES.



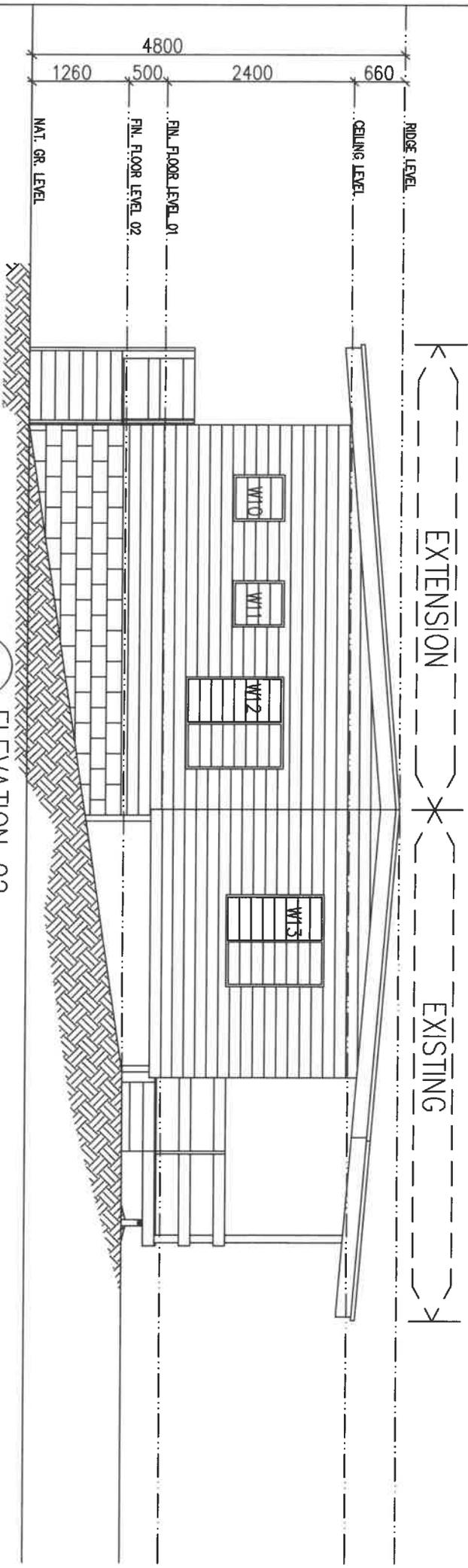
ELEVATION LEGEND

PROPOSED FLOOR PLAN
 1 : 75





— ELEVATION 01
1 : 50



— ELEVATION 02
1 : 50

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Scale: 1 : 50 / AS SHOWN Time Plotted: 12:00PM

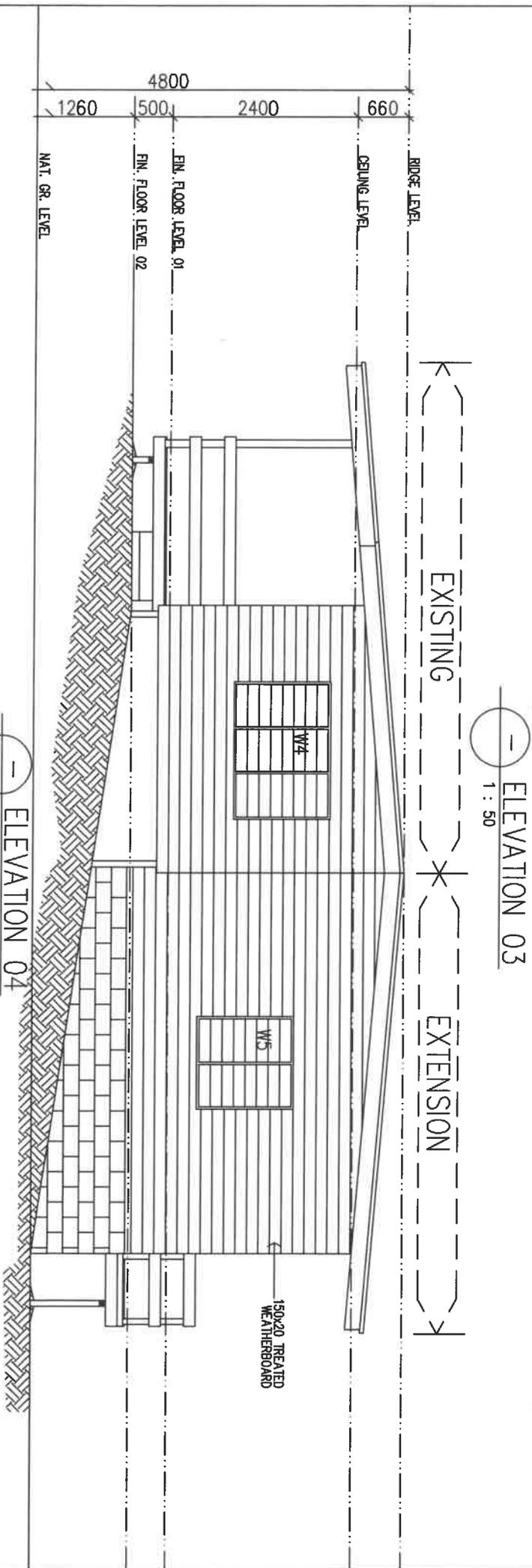
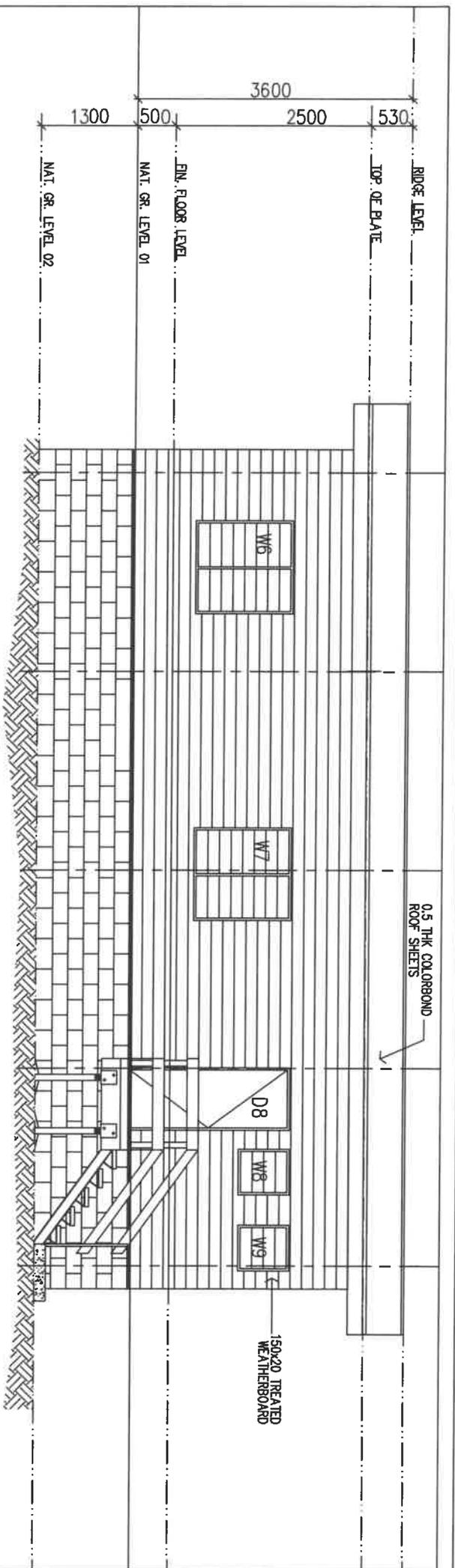
Rev.	Reason	By	Chkd	Date



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Location	Title	Number	Revision
KEREMA TOWNSHIP, KEREMA, GULF PROVINCE	PNG POWER OFFICE EXTENSION	M11929	03 OF 09



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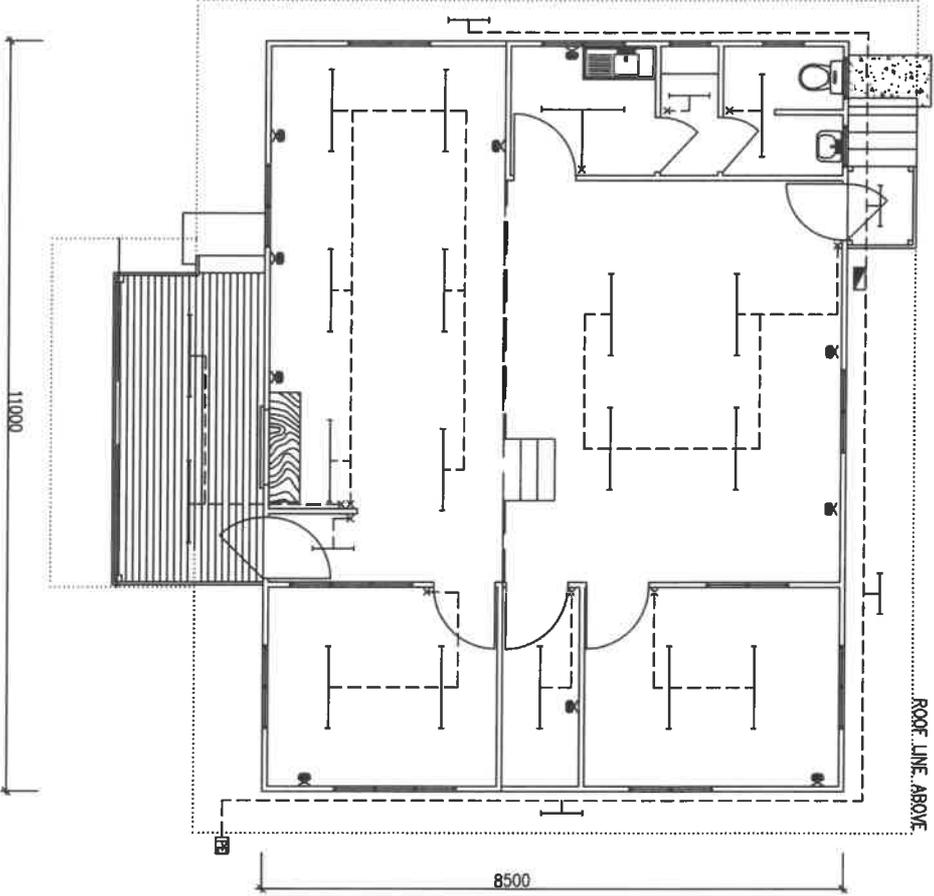
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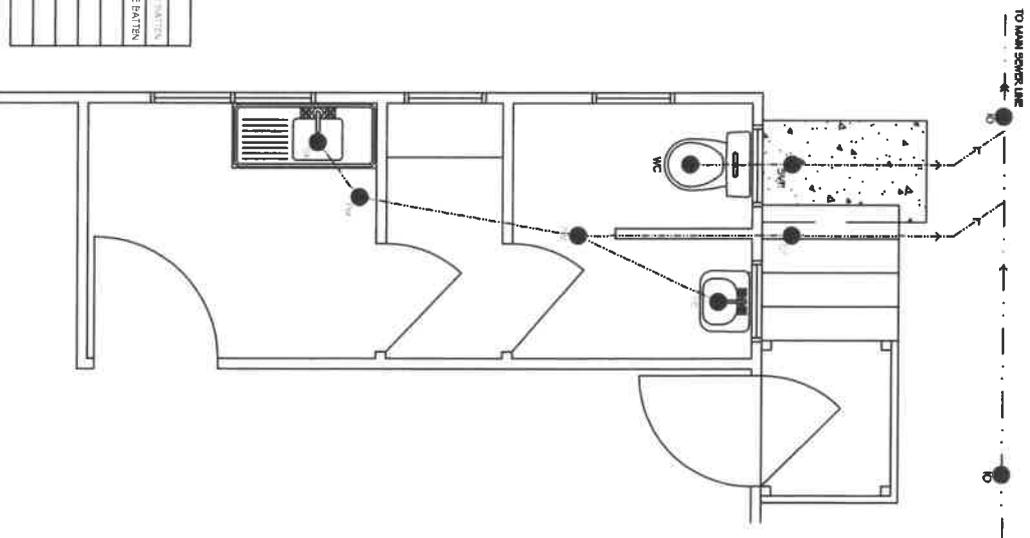
PROPOSED ELECTRICAL LAYOUT
1 : 75

ELECTRICAL LEGEND

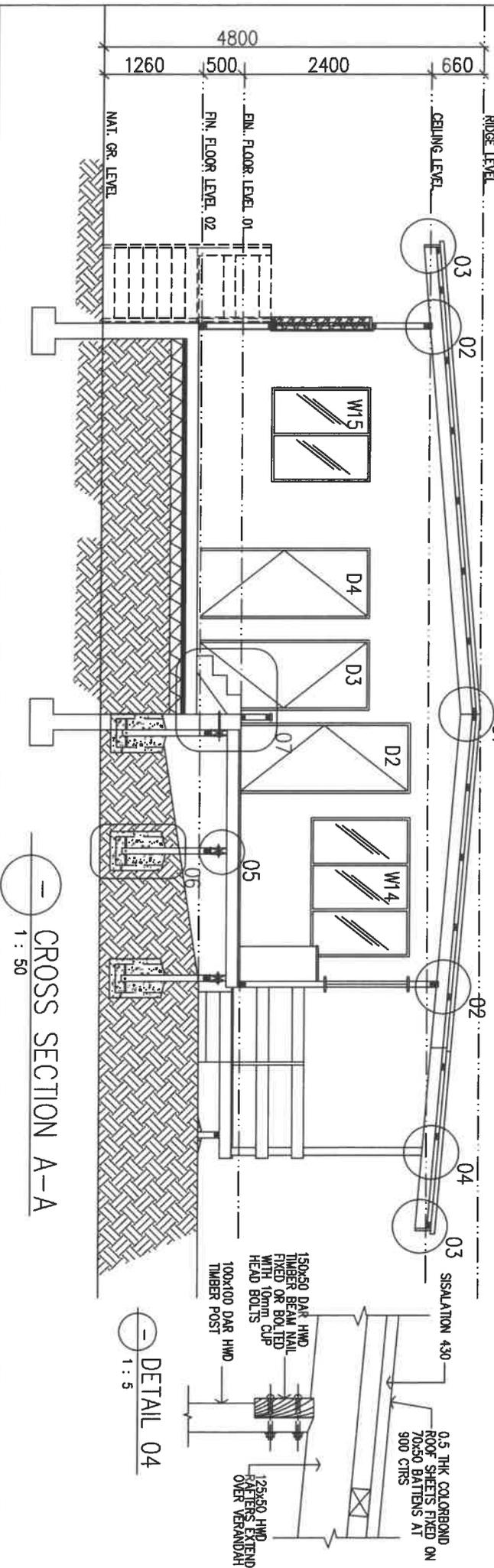
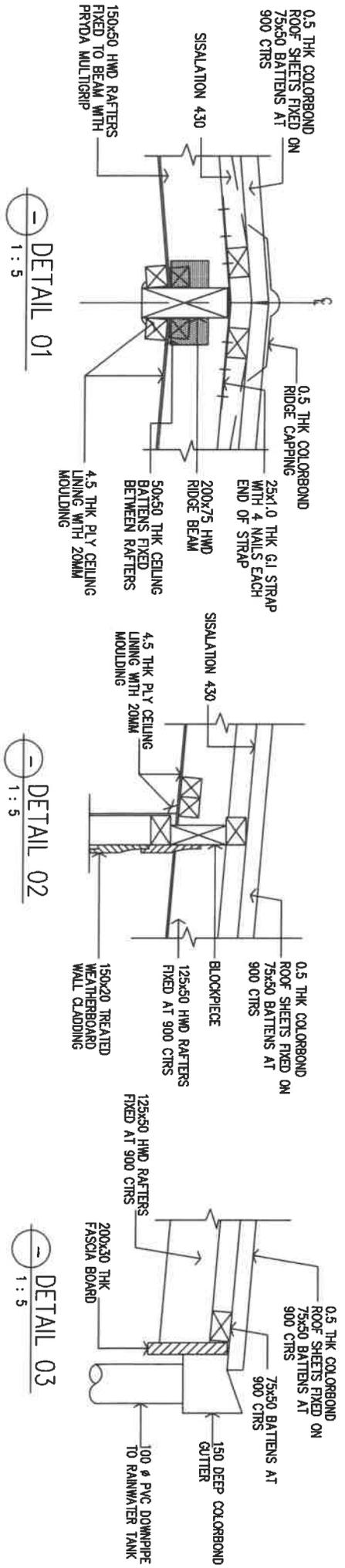
[Symbol]	DISTRIBUTION BOARD
[Symbol]	1/2" SWG GALVANIZED BARE TUBE BATHEN
[Symbol]	NEW SINGLE POWER OUTLET
[Symbol]	NEW DOUBLE POWER OUTLET
[Symbol]	SWITCH - ONE WAY
[Symbol]	ELECTRICAL WIRING

DRAINAGE LEGEND

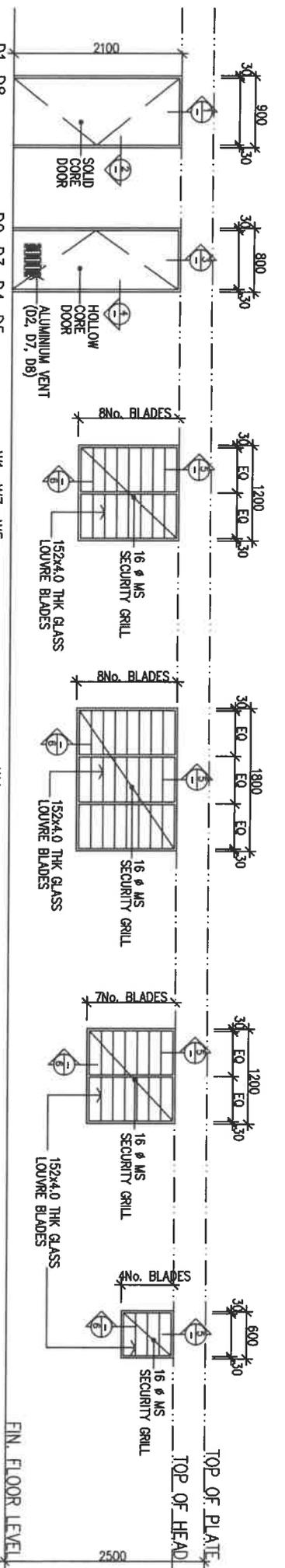
WC	WATER CLOSET
HAUC	HAND BASIN
SINK	SINK WARE
FW	FLOOR WASTE
DT	DISCONNECTOR TRAP
INS	INSPECTION OPENING



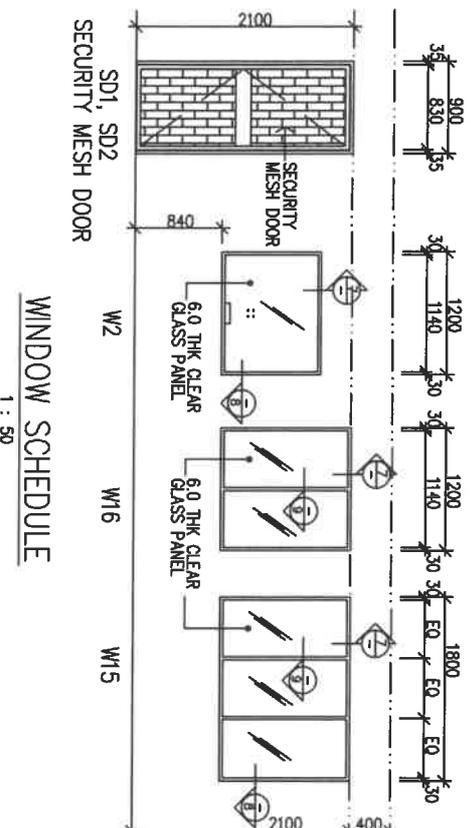
PROPOSED PLUMBING LAYOUT
1 : 25



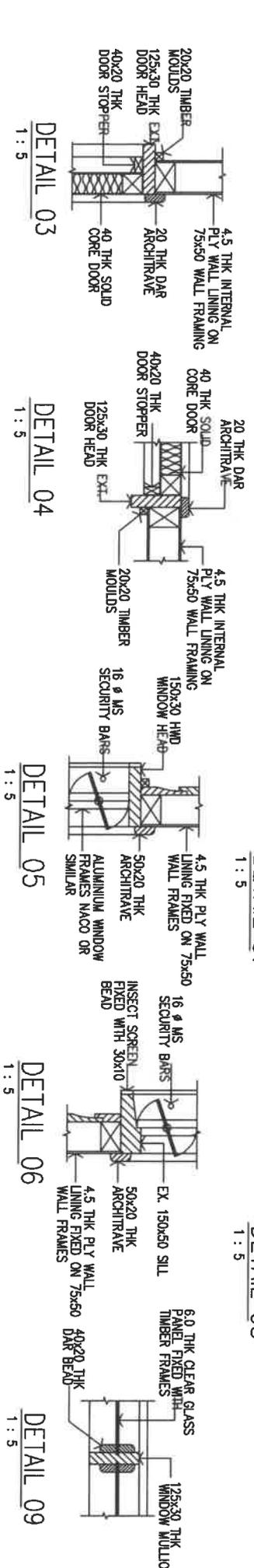
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M11929	PNG POWER OFFICE EXTENSION CROSS SECTION A-A & DETAILS
Sheet:	06 OF 09



DOOR & WINDOW SCHEDULE
1 : 50



WINDOW SCHEDULE
1 : 50



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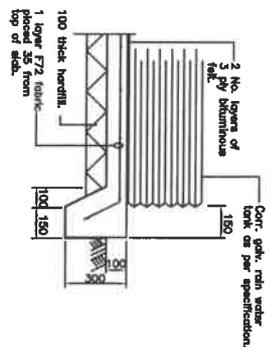
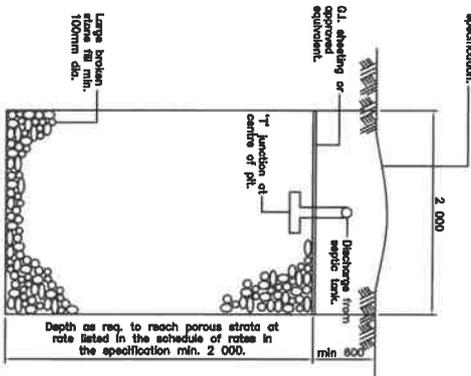
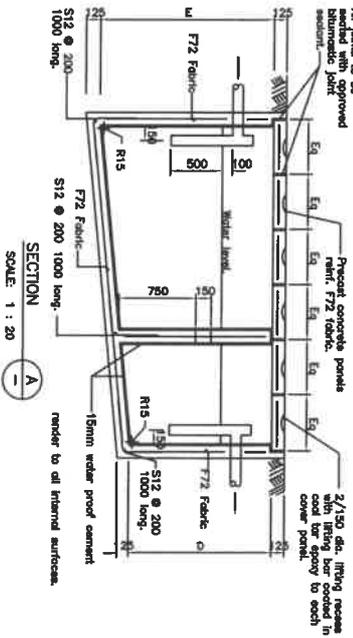
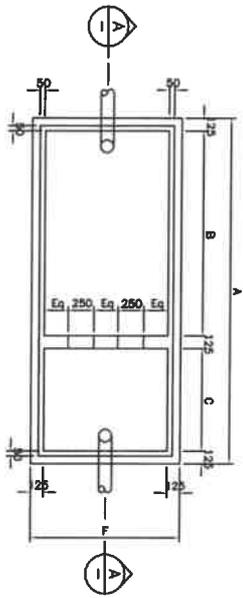
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KEREMA TOWNSHIP, KEREMA, GULF PROVINCE
PNG POWER OFFICE EXTENSION
WINDOW AND DOOR DETAILS & DETAILS

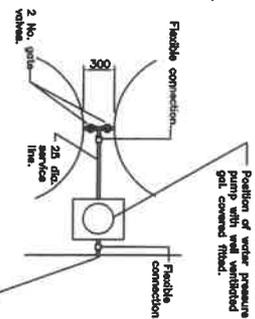
SEPTIC TANK DETAILS.

HIGH CONVENANT HOUSES	LOW CONVENANT HOUSES	PERSONS	W.C. ONLY.						ALL WASTES EXCLUDING LAUNDRY.						ALL WASTES INCLUDING LAUNDRY.					
			A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
1-2	1	5-10	1 850	-	-	1 500	1 700	1 250	1 75	1 200	600	1 500	1 700	1 250	1 75	1 200	600	1 500	1 700	1 450
3	2	11-15	2 100	-	-	1 500	1 700	1 250	625	1 500	750	1 500	1 700	1 250	625	1 500	750	1 500	1 700	1 450
4-5	3	16-20	2 350	-	-	1 500	1 700	1 250	775	1 800	800	1 500	1 700	1 250	775	2 000	900	500	1 700	1 450
6	4	21-25	2 625	1 500	750	1 500	1 700	1 250	900	900	950	1 500	1 700	1 250	975	4 000	2 000	500	1 700	1 450
7	5	26-30	2 775	1 600	800	1 500	1 700	1 250	825	2 200	1 000	1 500	1 700	1 450	575	2 800	4 000	500	1 700	1 450
8	6	31-35	3 075	1 800	900	1 500	1 700	1 250	1 250	3 000	1 500	1 700	1 250	1 250	3 000	2 500	500	1 700	1 450	



TYPICAL WATER TANK BASE DETAIL

SCALE: 1 : 10



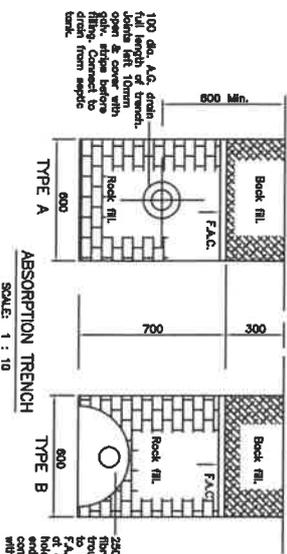
TYPICAL TWIN WATER TANK CONNECTION DETAIL

SCALE: 1 : 20

- NOTES:
- All drainage pipes to be 100 dia. pvc. laid to a min. fall of 1 : 80.
 - All water tanks are to be provided with lead-acid tank corrosion protection throughout its construction with manufacturer's instructions.
 - Rain water tank inlets are to be raised & fitted with gruze strainers.
 - 15mm top with threaded spout fixed at the base of each water tank.
 - 100 dia. gully tank overflow to each tank with a 300x300 concrete splash pad directly under overflow.

SEPTIC TANK	TRENCH LENGTH
5-10 PERSON	15m
11-15 PERSON	20m
16-20 PERSON	25m
21-25 PERSON	30m
26-30 PERSON	40m
31-35 PERSON	45m

ABSORPTION TRENCH DETAILS.



ABSORPTION TRENCH

SCALE: 1 : 10

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