

# ***Summary File ONLY***

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THIS PDF FILE  
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**IT IS BROWSABLE ON-SCREEN ONLY AND IS PROVIDED  
FOR YOUR INFORMATION TO DECIDE WHETHER TO  
BECOME A PROSPECTIVE TENDERER ONLY**

Note: This file may contain a brief scope statement, or an extract from the RFT documents, or a full exhibited copy – depending on the specific circumstances.

To participate in this tender process you **MUST** first download or order a full copy of the Request for Tender (RFT) documents, including the responsible components, and any addenda issued to date.

To do this return to the RFT web page on this web site and copy the RFT documents to your own computer or network – the blue “**DOWNLOAD A SOFT COPY**” link at the bottom provides access to the page from which you can do this.

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# **Tender Document**

**For**

**MOREE ACDP MAJOR WORKS**  
**CONSTRUCTION OF 4No. REPLACEMENT HOUSES AT**  
**MEHI CRESCENT, MOREE (PACKAGE 2)**  
**Contract No: 0500804**

**NOVEMBER 2006**

## **Department of Commerce**

This Specification has been produced using NATSPEC Domestic

By: Hill Lockart Architects

Subscriber Number: 92070451

Consultants:

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Architects	Hill Lockart Architects P.O.Box 801, TAMWORTH NSW 2340 Telephone: 02/6766.5188
Structural & Hydraulic Engineers	Gutteridge, Haskins & Davey Pty Ltd G.P.O. Box 668, BRISBANE QLD 4001 Telephone: 07/3258.3645

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# **TENDERING**

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# CONDITIONS OF TENDERING

This section includes notices to tenderers.

The Conditions of Tendering section does not form part of the Contract.

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## 1 GENERAL

### 1.1 CONTACT OFFICER

Refer requests for information or advice regarding documents only to:

Name: Daniel Rose Consultants Pty Ltd

Telephone number: 02/9797.7921

Facsimile number: 02/9797.7956

E-mail address: daniel@danielrose.com.au

### 1.2 ELECTRONIC TENDERING – E-TENDERING

#### Encouragement and Undertakings about Acceptance

The Department of Commerce has adopted an electronic tendering system using the Internet, which has the capacity to allow viewing of documents, downloading or ordering of Requests for Tender (RFT), and for the lodgement of tenders in appropriate circumstances.

Tenderers are encouraged, although not required, to obtain RFT electronically and to lodge tenders electronically, through the eTendering website at:

<https://tenders.nsw.gov.au/dpws>

#### Legal Status

Tenders lodged electronically will be treated in accordance with the *NSW Electronic Transactions Act 2000*, and given no lesser level of confidentiality, probity and attention than tenders lodged by other means.

Tenderers, by electronically lodging a tender are taken to have accepted any conditions shown on the Department of Commerce eTendering web site.

The Principal may decline to consider for acceptance, tenders that cannot be effectively evaluated because they are incomplete or corrupt.

### 1.3 NSW GOVERNMENT CODE OF PRACTICE FOR PROCUREMENT

#### Compliance

All tenderers must comply with the:

*NSW Government Code of Practice for Procurement*

Lodgement of a tender is evidence of the tenderer's agreement to comply with the Codes when tendering or undertaking any contract that may be awarded. If any tenderer fails to comply, the Principal may take the failure into account when considering this or any subsequent tender by the tenderer and may pass over such a tender.



Copies of the *NSW Government Code of Practice for Procurement* may be obtained from:

- the Treasury's Office of Financial Management Internet web site at

[http://www.treasury.nsw.gov.au/procurement/cfpf\\_ig.htm](http://www.treasury.nsw.gov.au/procurement/cfpf_ig.htm)

- or
- Tenders Section, Department of Commerce, Level 3, McKell Building, 2-24 Rawson Place, Sydney, 2000, Telephone 93728900.

### Complaints and Reports

Complaints alleging breaches of the *NSW Government Code of Practice for Procurement* will be investigated and acted upon where substantiated. Forms to facilitate reporting alleged breaches of the code may be obtained from the above addresses.

Reports of alleged breaches or other complaints may be submitted to the Principal's Representative or the Contact Officer.

Any complaint or any representation if a tenderer or Contractor believes that it is unnecessarily precluded from tendering or penalised in any way by the Contract terms, may be submitted to the Chairperson, State Contracts Control Board, Department of Commerce, McKell Building, 2-24 Rawson Place, Sydney, 2000.

### Collusive Arrangements

In consideration of being permitted to tender, the tenderer promises as a fundamental condition that:

- it has no knowledge of the tender price of any other tenderer for the work under the Contract;
- except as disclosed in the tender, it has not entered into any contract, arrangement or understanding to pay or allow any money directly or indirectly to a trade or industry association (above the published standard fee) or to or on behalf of any other tenderer in relation to this tender or any contract to be entered into consequent thereon, nor paid or allowed any money on that account, nor will it pay or allow any money on that account;
- it has not entered into any contract, arrangement or understanding to receive any money directly or indirectly from or on behalf of any other tenderer nor received any money or allowance from or on behalf of any other tenderer in relation to this tender or any contract to be entered into consequent thereon, nor will it receive any money as aforesaid;
- in the event of the tenderer receiving any money or allowance from or on behalf of another tenderer in relation to this tender, the tenderer shall immediately give the Principal written notice of such an event and such money or the value of any allowance shall be held on trust for and become immediately payable to the Principal; and
- in the event of the tenderer paying or allowing to or on behalf of a trade or industry association or another tenderer any money in breach of these conditions, the tenderer shall immediately give the Principal written notice of such an event and the Principal shall be entitled to deduct from any payment due to the tenderer on any account an equivalent sum as liquidated damages.

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## 2 TENDERER ELIGIBILITY

### 2.1 ACCEPTABLE LEGAL ENTITIES

The Principal contracts only with recognised and acceptable legal entities having appropriate financial assets. Tenders submitted by an unincorporated business such as a sole trader, partnership, or business name must identify the legal entity that proposes to enter the contract.

The Principal does not contract with firms under any form of external administration. If the tender is to be awarded to a tenderer that is a trustee the Principal may require:

- security in the form of an unconditional undertaking, in a form and from a financial institution approved by the Principal, for an amount of up to 20% of the Contract Sum or initial Contract Price in accordance with Preliminaries Clause - **Additional security and obligations for trustees**; and
- an undertaking that the tenderer will ensure, for the duration of the Contract, the total value of the trust beneficiaries' loans to the trustee is always greater than the total value of trust beneficiaries' loans from the trustee.

If the Principal requires undertakings, the Principal will advise the tenderer of the amount required, and the tenderer must provide to the Principal before award of contract a signed statement as follows:

If (insert the legal name of the tenderer) is awarded (insert the contract number and description) it will provide security in the amount of (insert the security amount advised by the Principal) in accordance with Preliminaries Clause - **Additional security and obligations for trustees**, and it undertakes to ensure that, for the duration of the Contract, the total value of the trust beneficiaries' loans to the trustee is always greater than the total value of trust beneficiaries' loans from the trustee'

Failure of a tenderer to provide the signed statement may result in its tender being passed over.

## 2.2 QUALITY ASSURANCE

The Contract requires the provision of Inspection and Test Plans meeting the requirements of Dept. of Commerce Guidelines for Preparation of ITP'S (Document PWD-0607). See Preliminaries Clause - **Quality assurance**.

To assist tenderers, the Department of Commerce document PWD-0607 *Guidelines for Preparation of Inspection and Test Plans*, which includes samples of Inspection and Test Plans and associated checklists, may be obtained free of charge from the Contact Officer or at:

<http://www.dpws.nsw.gov.au/sps/doc/pwd0607.doc>

## 2.3 OCCUPATIONAL HEALTH AND SAFETY (OHS) MANAGEMENT SYSTEMS.

Tenderers must demonstrate their capacity to manage occupational health and safety in accordance with the *NSW Government Occupational Health and Safety Management Systems Guidelines 4<sup>th</sup> Edition (OHSM Guidelines)*. The *OHSM Guidelines* are available at:

<http://www.construction.nsw.gov.au/ohs/index.html#Publications>

Submit with the Tender the information identified in Tender Schedules - **Schedule of Occupational Health and Safety Management Information**.

A tender will not be accepted from a tenderer that does not have a Corporate OHS Management System complying with the *OHSM Guidelines* and accredited by a NSW Government Construction Agency.

If the Tenderer does not have an accredited Corporate OHS Management System, submit with the Tender an undertaking that the Tenderer's Corporate OHS Management System will be revised to comply with the *OHSM Guidelines* and submitted to the Department of Commerce for accreditation within two (2) weeks after the close of tenders.

## 2.4 ENVIRONMENTAL MANAGEMENT SYSTEMS

The successful tenderer must comply with the requirements specified in Preliminaries Clause - **Environmental management system**.

## 2.5 FINANCIAL ASSESSMENT CRITERIA

The main criteria considered in financial assessment of tenderers are:

- Net Worth (total assets, excluding any assets of company directors, less total liabilities less intangible assets);
- Current Ratio (ratio of current assets to current liabilities); and
- Working Capital (current assets less current liabilities).

The Principal considers tenders with the following financial capacity, and no other significant detrimental financial characteristics to be financially satisfactory in respect of tenders:

- Net Worth exceeds 5% of the Contract Sum or initial Contract Price;
- Current Ratio exceeds 1; and
- Working Capital exceeds 10% of the Contract Sum or initial Contract Price.
- Where a tenderer is a trustee the total value of trust beneficiaries' loans to the trustee must be greater than the total value of trust beneficiaries' loans from the trustee.

Deviations below these indicative criteria will not necessarily prevent the Principal from considering any tender.

## 3 CONTRACT DETAILS

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### 3.1 INSURANCE

#### Works and public liability insurance

The Principal will arrange insurance of the Works (and any temporary works) and public liability, as required under General Conditions of Contract clause – **Insurance**. Tenderers are not required to allow in tenders for payment of premiums for insurance of the Works or public liability.

The insurance policy is at:

[http://www.managingprocurement.commerce.nsw.gov.au/system/index\\_contract\\_management\\_insurance\\_policies.doc](http://www.managingprocurement.commerce.nsw.gov.au/system/index_contract_management_insurance_policies.doc)

The insurance broker is Marsh Pty Ltd.

The Contractor must arrange insurance of the Works (and any temporary works) and public liability and pay all premiums in accordance with General Conditions of Contract clause – **Insurance**.

The Principal will arrange insurance of the Works (and any temporary works) and public liability, as required under General Conditions of Contract clause – **Insurance**. Tenderers are not required to allow in tenders for payment of premiums for insurance of the Works or public liability.

The Principal will provide a copy of the insurance policy on request.

#### Other Insurance

The Contractor must arrange and pay all premiums for all other insurance required under General Conditions of Contract clause – **Insurance**.

For professional indemnity insurance, a Certificate of Currency or evidence of the ability to obtain the required insurance, such as a letter from a broker or insurer, may be required as a condition of acceptance of tender.

## 4 CURRENT POLICIES

### 4.1 GOODS AND SERVICES TAX

Prices and fees in this Tender must include Goods and Services Tax (GST) if it is payable.

### 4.2 NSW GOVERNMENT PREFERENCE SCHEME

#### Preference

The Principal will give a preference advantage to goods of Australian and New Zealand origin over imported goods supplied under the Contract. NSW country manufacturers may be eligible for an additional preference under the Country Industries Preference Scheme (CIPS). Details of these schemes may be obtained from the Department of State and Regional Development, telephone (02) 9338-6780; facsimile (02) 9338-6676.

The Industry Capability Network Office has been established to provide assistance in planning for, purchasing and using Australian and New Zealand made products. The office can provide professional advice on local industry capability and on the availability and efficiency of local supplies suited to Australian conditions, while retaining commercial confidentiality. The Industry Capability Network Office may be contacted on: telephone (02) 9819 7200; facsimile (02) 9181 3321; e-mail [enquiry@icnsw.org.au](mailto:enquiry@icnsw.org.au); internet <http://www.icnsw.org.au>.

#### Imported Goods

Where imported goods are proposed, complete the Tender Schedule - **Schedule of Imported Materials and Equipment**. Provide details of alternatives to such goods which are of Australian or New Zealand origin, or give reasons why such alternatives cannot be supplied by completing the Tender Schedule - **Schedule of Alternatives to Imported Goods**.

If the Contractor breaches provisions of Preliminaries clause - **Australian and New Zealand Goods**, the Principal will not pay for the imported goods. The Principal may but is not bound to, negotiate a reduction in price to accept the imported goods, but the reduction will be not less than 20% of the Principal's estimate of the imported value of the goods.

#### NSW Country Manufactured Goods

If the tenderer wishes to seek preference under the NSW Country Industries Preference Scheme, submit Tender Schedules – **Schedule of NSW country manufactured goods** with the tender.

### 4.3 DISCLOSURE OF CONTRACT INFORMATION

In accordance with NSW Government Policy to publicly disclose details of its contracts, the Principal may publish the following information about a contract awarded under this tender:

- Details of contract (description of project to be completed or goods/services to be provided or property to be transferred; commencement date of the contract; the period of the contract);
- The full identity of the successful Tenderer including details of cross ownership of relevant companies;
- The price payable by the agency and the basis for future changes in this price;
- The significant evaluation criteria and the weightings used in tender assessment;
- Provisions for re-negotiation (where applicable).

The Principal will not disclose the following information about any contract awarded under this tender unless the Tenderer agrees, or release is determined under the Freedom of Information Act 1989 or is otherwise legally required:

- The Contractor's financing arrangements;
- The Contractor's cost structure or profit margins;
- Items of the Contractor having an intellectual property characteristic (eg. non-tangible property that is the result of creativity, such as patentable ideas or inventions, trademarks, copyrights, etc.); and
- Any other matters where disclosure would place the Contractor at a substantial commercial disadvantage with its competitors both at the time of entering into the contract and at any later date when there would be an effect on future competitive arrangements.

Tenderers may request that the Principal not disclose particular information included in their tender but must give the reasons for requesting this. The Principal will advise a Tenderer in contention for a contract what information it agrees not to disclose. If the Principal and a Tenderer cannot agree about what should be disclosed, the Principal will seek the advice of the Chair of the State Contracts Control Board. The Principal's decision is however final and is at the Principal's absolute discretion. Neither a decision by the Principal, nor a recommendation by the Chair of the State Contracts Control Board under this paragraph is a decision which falls within any dispute resolution procedures specified in the Contract being tendered for.

The Principal may publish the identities of all Tenderers, but will not disclose other information included in an unsuccessful tender unless the Tenderer agrees, or release is determined under the Freedom of Information Act 1989 or is otherwise legally required.

For contracts valued at more than \$100,000, the Principal will normally publish the names of Tenderers when tenders close, and the other information about the contract specified above, on the internet, within 60 days after award of the contract. For other contracts the Principal will disclose the specified information on request.

#### **4.4 EXCHANGE OF INFORMATION BETWEEN GOVERNMENT AGENCIES**

By tendering for this Contract, the Tenderer authorises the Principal to make available to other NSW government departments or agencies or local government authorities information including, but not limited to, any information provided by the Tenderer to the Principal and information relating to the Tenderer's performance or financial position. The Tenderer acknowledges that any information about the Tenderer, from any source, including but not limited to substantiated reports of unsatisfactory performance may be taken into account by the Principal, other NSW government departments or agencies or local government authorities in considering whether to offer the Tenderer opportunities for NSW government work including but not limited to assessment of suitability for registration, pre-qualification, selective tender lists or the award of a contract.

The Principal regards the provision of information about the Tenderer to any NSW government department or agency or local government authority as privileged under Section 22 of the Defamation Act 1974. The Principal and the State of NSW will reject claims in respect of any matter arising out of the provision or receipt of such information, including any claim for loss to the Tenderer arising out of the communication.

#### **4.5 CONTRACTOR PERFORMANCE**

During the course of the Contract, the successful tenderer's performance may be monitored and assessed.

For details refer to the document *A Guide to Performance Reporting on Construction Contractors and all Categories of Consultants* which is available on request from any Department of Commerce tender enquiry counter or the Department's internet web site at:

<http://www.commerce.nsw.gov.au/sps/pdf/cprguide.pdf>

#### 4.6 FINANCIAL ASSESSMENT

By tendering for this Contract, the Tenderer agrees that the Principal may engage private sector consultants to financially assess tenderers. Financial details of tenderers may be obtained by an external Financial Assessor for assessment. Financial Assessors have a contract with the Principal to safeguard the financial details obtained. Financial Assessors must not disclose such details, either in whole or in part to any party other than NSW Government departments or agencies without the express written permission of the tenderer.

The Financial Assessor is Kingsway Financial Assessments Pty Ltd

Submit, when required by the Financial Assessor or Principal, the Financial Assessment information shown in TENDER SCHEDULES - SCHEDULE OF FINANCIAL ASSESSMENT INFORMATION.

#### 4.7 STATUTORY DECLARATIONS

The Contract requires the Contractor to provide the Principal with approved statutory declarations regarding payments to workers, subcontractors and suppliers with all submitted claims for payment as well as at any other times when requested by the Principal, and to obtain equivalent statutory declarations from certain of the Contractor's subcontractors.

Failure to do so may result in the Principal not being required to make payments otherwise due to the Contractor.

Refer to General Conditions Clause - **Payment and retention.**

#### 4.8 INDUSTRIAL RELATIONS MANAGEMENT

Tenderers must plan and manage industrial relations (IR) in accordance with the NSW Government *Industrial Relations Management Guidelines*. A copy of the Guidelines may be obtained from the Construction Agency Coordination Committee internet web site at:

<http://www.construction.nsw.gov.au/publications/strategic-area.shtml>

Submit when requested by the Principal:

- Tender Schedules - **Undertaking to comply with industrial relations aspects of \_NSW Government code of practice for procurement\_.**

#### 4.9 UNCONDITIONAL UNDERTAKINGS - APPROVED INSTITUTIONS

For the purpose of giving unconditional undertakings, the Principal has approved banks, building societies, credit unions and insurance companies listed by the Australian Prudential Regulation Authority (APRA) as being regulated by the APRA. Lists appear at the APRA website at:

<http://www.apra.gov.au/>

The Principal is prepared to consider proposals from tenderers for the approval of Unconditional Undertakings by substantial financial institutions, not registered by APRA, which lawfully carry on business in Australia. The Principal may require the submission of evidence demonstrating the substance and status of any proposed financial institution without cost to the Principal.

#### 4.10 NATIONAL CODE OF PRACTICE FOR THE CONSTRUCTION INDUSTRY

All tenderers must comply with the requirements of the *National Code of Practice for the Construction Industry*. To the extent of any inconsistency between the National Code and the *NSW Government Code of Practice for Procurement*, the NSW Code prevail. Lodgement of a tender is evidence of the tenderer's agreement to comply with the Codes for the duration of any subsequent contract that is awarded. If any tenderer fails to comply, the Principal may take the failure into account when considering this or any subsequent tender by the tenderer, and may pass over such a tender.

Copies of the National Code of Practice for the Construction Industry may be obtained from the Australian Procurement and Construction Council Inc (APCC), PO Box 106, Deakin West ACT 2600 or from the web site at:

<http://www.apcc.gov.au>

Substantiated breaches of the National Code of Practice will be reported to the Commonwealth Department of the Environment and Heritage.

#### **4.11 ABORIGINAL PARTICIPATION**

Tenderers must demonstrate their commitment and capacity to plan and facilitate Aboriginal participation in employment in accordance with Section 4 Employment Strategy.

Refer to PRELIMINARIES – ABORIGINAL PARTICIPATION.

Tenders must complete returnable Tender Schedule 6 “Schedule of Employment proposed”. Failure to lodge this schedule with the tender will render the tender non-conforming and the tender will not be considered.

### **5 FURTHER INFORMATION**

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#### **5.1 ADDENDA TO TENDER DOCUMENTS**

Tenderers may ask for clarification of anything in the tender documents. The Principal will issue any instruction resulting from such request in writing to all tenderers in the form of an Addendum which becomes part of the tender documents. Similarly, should the Principal require documents to be amended an Addendum will be issued. Written Addenda issued by the Principal are the only recognised explanations of, or amendments to, the tender documents.

If tender documents have not been obtained directly from the Principal, tenderers should advise the Contact Officer before submitting tenders to ensure that they receive any addendum or variation to the original document, which may be issued.

#### **5.2 SITE ACCESS RESTRICTIONS**

Tenderers and their agents or representatives must observe the following access restrictions:

- they must obtain permission to inspect the Site from the Client’s Representative at least 48 hours prior to requiring access to the Site;
- upon arrival they must introduce themselves at the Client Representative’s office, at the pre-arranged time, prior to undertaking their inspection of the Site.

The Client’s Representative may be contacted on Monday to Friday between 9am and 5pm as follows:

Site	Client's Representative	Phone	Facsimile	E-mail
Moree (Various)	Daniel Rose Consultants Pty Ltd	02/9797.7921	02/9797.7956	daniel@danielrose.com.au

#### **5.3 MANDATORY PRE-TENDER MEETING**

A pre-tender meeting will be held on the date, at the time and at the place nominated in the newspaper advertisement or the invitation to tender.

A tender briefing meeting is to be held in Moree on *a date to be advised*.



The Contact Officer will be available at that time to answer any Tenderer's queries regarding the contract.

Attendance by Tenderers at the pre-tender meeting is mandatory. Failure to attend will result in the tender being passed over.

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## 6 PREPARATION OF TENDERS

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### 6.1 ALTERNATIVE TENDERS

Submit a conforming tender, in full compliance with the work as specified without any conditions or qualifications attached. Submit any mandatory or optional alternative tender described earlier, in full compliance with the work as specified without any conditions or qualifications attached. Other alternative tenders will not be considered.

### 6.2 TECHNICAL DATA – NOT USED

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## 7 SUBMISSION OF TENDERS

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### 7.1 DOCUMENTS TO BE LODGED

The following documents need to be completed and submitted by the Tenderer:

- Tender Form (Tender Schedule 1)
- Schedule of Rates and Lump Sum Items (Tender Schedule 2)
- Schedule of Imported Materials and Equipment (Tender Schedule 3)
- Schedule of Alternatives to Imported Goods (Tender Schedule 4)
- Schedule of NSW Country Manufactured Goods (Tender Schedule 5)
- Schedule of Employment Proposed (Tender Schedule 6)

Tender Schedules marked "Submit with Tender Form" and other required documents must be lodged with the Tender Form in accordance with Conditions of tendering clause- **Lodgement of Tender**. Tender Schedules marked "Submit when required by the Principal" may not be required until after close of tenders.

Complete the Tender Form provided, together with accompanying schedules. Supply all information called for in the tender documents. Where any alternative tender is required or permitted under Conditions of Tendering clause - **Alternative tenders**, submit alternative tender schedules where the information submitted for the conforming tender differs for the alternative(s). Clearly identify each schedule and the alternative to which they apply.

Where applicable, refer to each Addendum and state that the tender allows for the instructions given in the Addendum.

### 7.2 ELECTRONIC TENDERING – E-TENDERING

Tenderers are encouraged, although not required, to obtain RFT electronically and to lodge tenders electronically, through the eTendering website at:

<https://tenders.nsw.gov.au/dpws>



## **Lodging Tenders**

RFT for which electronic lodgement is available through the web site can be identified by the blue 'LODGE A RESPONSE' button on the web pages for the RFT.

To lodge tender responses electronically the files containing the tender response must be uploaded through the website. Access to the up-loading process is through the blue 'LODGE A RESPONSE' button, then follow the steps and the instructions on the Department of Commerce eTendering website and any instructions which may have been supplied with the VIEWABLE COPY, and/or RESPONDABLE COPY.

On receipt of tenders they are encrypted and stored in a secure 'electronic tender box'. For reasons of probity and security the Department's officers are prevented from interrogating the electronic system to ascertain whether tenders have been received, or for any other reason, until after the closing time and date specified on the RFT documentation. The e-mail receipt that is sent to the tenderer after successfully up-loading the tender response is the only evidence of tender lodgement provided.

## **Viewing RFT**

To locate an RFT, and view RFT summary details, follow the instructions on the Department of Commerce eTendering website. First locate the RFT using the RFT Search, or by looking at the Current RFT listings screen where the additional Search function may also be used. You may see some details of the RFT by accessing them through the blue 'VIEWABLE COPY' button. This function is provided to assist in making a decision to obtain a RESPONDABLE COPY of the RFT, through processes that may be detailed on the web site.

## **Downloading**

Downloading of the RESPONDABLE COPY files from the website is accessed through the blue 'RESPONDABLE COPY' button and then follow the steps and the instructions on the Department of Commerce eTendering website.

## **Electronic Format for Submissions**

Electronically lodged tenders must be lodged in a file format that can be read, formatted, displayed and printed by Microsoft Word 97, or any format required by the RFT.

## **File Compression**

Tenderers may, optionally, compress electronically submitted tenders in any format that can be decompressed by WinZip. Tenderers must not submit self-extracting (\*.exe) zip files.

## **Change of Tender Form Text**

Tenderers must not change existing text in electronic tender forms other than to insert required information.

## **Signature**

Signatures are not required on tenders submitted electronically. Tenderers must ensure that electronically submitted tenders are authorised by the person or persons who may do so on behalf of the Tenderer, and appropriately identify the person and indicate the person's approval of the information communicated.

## **Virus Obligations**

Electronically submitted tenders may be made corrupt or incomplete by computer viruses. To reduce the likelihood of viruses, Tenderers must not include any macros, applets, or executable code or executable files in tenders, unless required to by the RFT.

Tenderers should ensure that electronically submitted files are free from viruses by checking the files with an up to date virus-checking program before submission.

### Special Provisions About Closing Time for Electronic Submission of Tenders

If Tenderers experience any persistent difficulty with accessing the Department of Commerce eTendering website, in submitting tenders, or otherwise, they are invited to inform the Contact Officer.

Tenderers should note that there are usually alternative tender lodgement methods described in the RFT, and it is the Tenderers responsibility to lodge the tender response on time.

If there is a defect or failure of the Department of Commerce eTendering website, and the Contact Officer has been advised, consideration may be given to the time for closing tenders being extended, by Addendum to the RFT.

### Receipting and E-Mail Acknowledgment

When a Tender is received in the Department of Commerce eTendering website a unique receipt acknowledgment number will be displayed on the screen and an e-mail confirming receipt of the tender will be sent to the e-mail address shown in the tenderer's registration on the system.

## 7.3 LODGEMENT OF TENDER

As an alternative to the lodgement procedures shown below, for tenders that are advertised through the Department of Commerce eTendering website at URL <https://tenders.nsw.gov.au/dpws>, and have the blue 'lodge response' button available on the web pages for that tender, the tender may be submitted for lodgement in the electronic tender box.

Address the tender to the Secretary of the Tender Opening Committee and mark the tender with "Tender for Moree ACDP Major Works – Construction of 4No. Replacement Houses at Mehi Crescent, Moree (Package 2)" and the closing date on the envelope or the first page of the facsimile.

Lodge the tender (Tender Form, Tender Schedules marked **Submit with the Tender Form** and other required information) in a sealed envelope in the Tender Box, or alternatively by facsimile, by the date and time given in the advertisement or invitation, at the Tender Closing Office, located at

McKell Building, Level 3, 2-24 Rawson Place, Sydney NSW 2000

Facsimile number: 02/9372.8974

The tender may be submitted at the Tender Closing Office or by lodging the complete tender in the Tender Box, or alternatively by facsimile, at any one of the following locations before the close of tenders.

McKell Building  
Level 3, McKell Building,  
2-24 Rawson Place,  
SYDNEY NSW 2000  
Fax: (02) 9372-8974

Hunter and New England Region, Newcastle  
Office,  
117 Bull Street,  
NEWCASTLE WEST NSW 2302  
Fax: (02) 4908 4879

South Coast Region,  
Wollongong Office,  
84 Crown Street,  
WOLLONGONG NSW 2500  
Fax: (02) 42268517

North Coast Region,  
Lismore Office,  
Dalley Street,  
LISMORE NSW 2480  
Fax: (02) 6626 5690

Riverina/Western Region,  
Bathurst Office,  
140 William Street,  
BATHURST NSW 2795  
Fax: (02) 6332 6520

Notwithstanding any other requirements of the tender documents, submit by the stipulated date and time Tender Schedules marked “Submit when requested by the Principal” and any other information which may be requested to allow further consideration of the tender. Failure to meet this requirement may result in the tender being rejected.

If more than one tender submission is made through one or more of the above alternative lodgement methods, each submission lodged should be marked clearly as to whether it is a copy, an alternative tender, or whether the submission supersedes another submission.

## **7.4 LATE TENDERS**

In accordance with the *NSW Government Code of Practice for Procurement*, late tenders will not be accepted, except where the integrity and competitiveness of the tendering process will not be compromised.

Late tenders will generally not be considered for acceptance if they are:

- hand delivered, including courier deliveries;
- received through Australia Post unless the envelope is clearly postmarked or time stamped with a date or time and date before the time and date of tender closing; or
- received by electronic communication, and the dispatch of the electronic communication of the tender has occurred after the time and date of tender closing.

Tenders which are sent by facsimile and which are not completely received at one of the specified locations by the close of tenders, may be excluded from consideration for acceptance even if transmission or receipt is delayed due to the receiving facsimile machine being engaged, faulty or otherwise inoperative.

## **8 PROCEDURES AFTER CLOSING OF TENDERS**

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### **8.1 INFORMAL TENDERS**

Tenders which do not comply with any requirement of, or which contain conditions or qualifications not required or allowed by the tender documents may be passed over.

### **8.2 EVALUATION OF TENDERS**

In addition to prices tendered, evaluation criteria will contain the critical factors to be used in the evaluation of tenders. These factors may include, but are not limited to:

- delivery times offered;
- quality offered;
- previous performance of tenderer;
- experience of tenderer and personnel proposed;
- capability of tenderer, including technical, management, human resource, organisational and financial capability and capacity;
- tenderer’s occupational and health and safety management practices and performance;

- tenderer's workplace and industrial relations management practices and performance;
- tenderer's environmental management practices and performance;
- tenderer's community relations practices and performance;
- conformity of tender with requirements; and
- the Principal will closely consider the Employment Program set out in Tender Schedule 6. The Principal may contact the referees nominated in the schedule.

The Principal may treat any required detail in the tender which is left out, illegible or unintelligible as failing to fulfil the relevant requirement. The Principal may assess, score or rate any detail in the tender which is left out, illegible or unintelligible in the way least favourable to the Tenderer, or in some other way at the Principal's absolute discretion.

If required, submit additional information, by the stipulated date and time, to allow further consideration of the tender before any tender is accepted. Failure to meet this requirement may result in the tender being passed over.

### **8.3 ACCEPTANCE OF TENDER**

The Principal may accept tenders that do not conform strictly with all requirements of the tender documents.

The Principal is not bound to accept the lowest or any tender.

No tender, or qualification or departure from a contract condition or specification is accepted unless the Principal gives an acceptance or formal agreement in writing.

### **8.4 PROTECTION OF PRIVACY**

The tenderer warrants, in respect of any personal information provided in this tender or any contract arising from this tender, that the information is accurate, up to date and complete, and that individuals to which the personal information refers authorise its collection and are aware:

- that the information is being collected, and will be held by the Department of Commerce at the address shown in the tender form;
- that the information is being collected for the purpose of evaluating tenders and commercial proposals, and the administration of any contracts arising from those tenders or proposals, and may be made available to other NSW government departments or agencies or local government authorities for those purposes;
- whether the supply of the information by the individual is required by law or is voluntary, and any consequences for the individual if the information (or any part of it) is not provided; and
- of the existence of any right of access to, and correction of, the information.

### **END OF SECTION – CONDITIONS OF TENDERING**



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## **TENDER SCHEDULES**

## 1 TENDER FORM

Location and Fax No. of  
Tender Closing Office: Level 3, McKell Building, 2-24 Rawson Place, Sydney NSW 2000

Facsimile: 02/9372.8974

Name of Tenderer  
(in block letters): .....

A.B.N.  
(if applicable): .....

Address: .....

Telephone number: .....

Facsimile number: .....

e-mail address: .....

hereby tender(s) to perform the work for

MOREE ACDP MAJOR WORKS – CONSTRUCTION OF 4NO.  
REPLACEMENT HOUSES AT MEHI CRESCENT, MOREE  
(PACKAGE 2)

(Contract No. 0500804)

in accordance with the following documents:

TENDER DOCUMENT VOL. 1 SPECIFICATION

TENDER DOCUMENT VOL. 2 DRAWINGS

and Addenda Numbers: .....

For the lump sum of: .....

(\$.....) including GST.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 2 SCHEDULE OF RATES AND LUMP SUM ITEMS

(SUBMIT WITH TENDER FORM)

Complete the Schedule by inserting the tendered rates under RATE or where Lump Sum appears, by inserting the tendered lump sum for the items of work under AMOUNT. Where a rate is tendered, insert under AMOUNT the amount arrived at by multiplying the tendered rate by the quantity. The rates and lump sums tendered shall form part of the Contract. The correct extended amounts and total shall be used to assess tenders.

Item No.	Description	Quantity	Unit	Rate	Amount
1.	All work and obligations under the Contract NOT INCLUDED ELSEWHERE in this Schedule.		Item	Lump Sum	\$
2.A	Schedule of Lump Sum items:				
2.A1	Construction of 4No. Replacement Houses at Mehi Crescent, Moree excluding items 2.A2 – 2.A5 scheduled below:				
	No. 11 Mehi Crescent, Moree		Separate price per house		\$
	No. 35 Mehi Crescent, Moree		Separate price per house		\$
	No. 46 Mehi Crescent, Moree		Separate price per house		\$
	No. 48 Mehi Crescent, Moree		Separate price per house		\$
2.A2	Fencing		Item	Lump Sum	\$
2.A3	Clothes Lines		Item	Lump Sum	\$
2.A4	Driveways		Item	Lump Sum	\$
2.A5	Landscaping		Item	Lump Sum	\$
TOTAL OF TENDER:					\$
GST:					\$
TOTAL OF TENDER INCLUDING GST:					\$

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....



### 3 SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT

(SUBMIT WITH TENDER FORM)

Provide brief details of all imported materials and equipment to be supplied or incorporated into the Works, and country of manufacture or origin. Do not include goods manufactured in New Zealand.

The value of the imported content must be the estimated duty paid value inclusive of the value of any services (eg. overseas freight and insurance, software in computer tenders, consultancy or engineering fees) or any charges of overseas origin, together with customs clearing charges.

This is not a Schedule of Rates within the meaning of the Construction Contract Conditions. See also Preliminaries Clause - **Australian and New Zealand goods.**

Description	Country of Origin	Value A\$
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

#### 4 SCHEDULE OF ALTERNATIVES TO IMPORTED GOODS

(SUBMIT WITH TENDER FORM)

Provide brief details of materials and equipment of Australian and/or New Zealand manufacture as alternatives to imported materials and equipment as listed in the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT, or give reasons why such alternatives cannot be provided.

The Principal may accept a tender specifying all or any of the items listed below, with an adjustment to the contract price based on the difference between the prices listed in this Schedule and the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT.

Description of Australian and/or New Zealand manufactured Alternatives	Value A\$
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....

Signed for the Tenderer by: ..... Date:.....  
 Name (in block letters): ..... (Authorised Officer)  
 In the Office Bearer capacity of: .....

## 5 SCHEDULE OF NSW COUNTRY MANUFACTURED GOODS

(SUBMIT WITH TENDER FORM)

Complete the Schedule if you wish to seek preference under the NSW Country Industry Preference Scheme (CIPS.). The preference may be given only to a Tenderer who is a NSW manufacturer registered under the scheme.

State your CIPS. registration number. Give details of the materials and equipment to be supplied or incorporated into the Works, the place of manufacture, the percentage(s) applicable for preference purposes and the value added content at the Tenderer's works for the material or equipment manufactured by the Tenderer for incorporation in the Works.

This is not a Schedule of Rates within the meaning of the Construction Contract Conditions.

C.I.P.S. Registration No.: .....

Description	Place of Manufacture	% Applicable	Value Added Content \$
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

[illegible]

## 7 SCHEDULE OF FINANCIAL ASSESSMENT INFORMATION

(SUBMIT WHEN REQUESTED BY PRINCIPAL OR FINANCIAL ASSESSOR)

Provide documents and information listed below in accordance with Clause Conditions of Tendering - **Financial assessment.**

1. Financial Statements for last three years for the entity under consideration, including:

- i) Balance Sheets;
- ii) Profit and Loss Statement;
- iii) detailed Profit and Loss Statement;
- iv) statement of Cash Flows;
- v) notes to and Forming Part of the Accounts;
- vi) an Accountant's Report; and
- vii) where existing, Auditor's Reports.

Consolidated accounts of a parent organisation or group to which the entity belongs are not acceptable.

2. Where latest financial statement is more than 6 months old, the latest management report showing:

- i) a trading statement;
- ii) a profit and loss statement; and
- iii) a trial balance.

3. Where the company is required to lodge audited financial statements with ASIC, copies of these statements for the last three years.

4. Where any financial statement supplied is not audited, copies of the entity's tax returns for last three years.

5. A letter from the Tenderer's banker providing details of overdraft and guarantee facilities including:

- i) Bank, Branch, and Account Names,
- ii) type and limit of bank overdraft facility,
- iii) type and limit of bank guarantee facility,
- iv) current bank overdraft balance,
- v) number and amount of bank guarantees outstanding; and
- vi) details of other bank funding facilities available to the Tenderer, such as term loans, lines of credit, commercial bills and other debt instruments.

6. Current and projected cash flows for all work on hand.

7. Forecast budget for forthcoming financial year including Revenue and Profit and Loss.

8. Names and contact numbers of:

- i) major suppliers; and
- ii) major subcontractors.

9. Details relating to the Tenderer's history and Directors Profiles.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

**8 UNDERTAKING TO COMPLY WITH THE NSW CODE OF PRACTICE FOR PROCUREMENT .**

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(SUBMIT WHEN REQUESTED BY PRINCIPAL)

The Tenderer, if awarded the Contract, will comply with the *NSW Government Code of Practice for Procurement*.

Signed for the Tenderer by: ..... Date:.....  
Name (in block letters): ..... (Authorised Officer)  
In the Office Bearer capacity of: .....

**END OF SECTION –TENDER SCHEDULES**





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# **SPECIFICATION**



# 1 GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

## GENERAL CONDITIONS OF CONTRACT - MINOR WORKS

### 1 DEFINITIONS

- 1.1** The Principal is as stated in the Annexure.
- 1.2** The Principal's Representative is as stated in the Annexure and is the person appointed by the Principal to act with its full authority in all matters relating to the Contract.
- 1.3** The Principal's Agent is as stated in the Annexure.
- 1.4** The Works means the whole of the work to be carried out and materials and services to be provided under the Contract.
- 1.5** The Contract Sum means:
- (a) where the Principal accepted a lump sum, the lump sum;
  - (b) where the Principal accepted rates, the amount calculated by firstly multiplying the rates by their respective quantities in the schedule of rates and then adding those products;
- but excluding any additions or deductions which are made under the Contract.
- 1.6** day means calendar day.
- 1.7** Site means the lands and other places made available to the Contractor by the Principal for the purpose of the Contract.
- 1.8** Text within the following format denotes a definition:

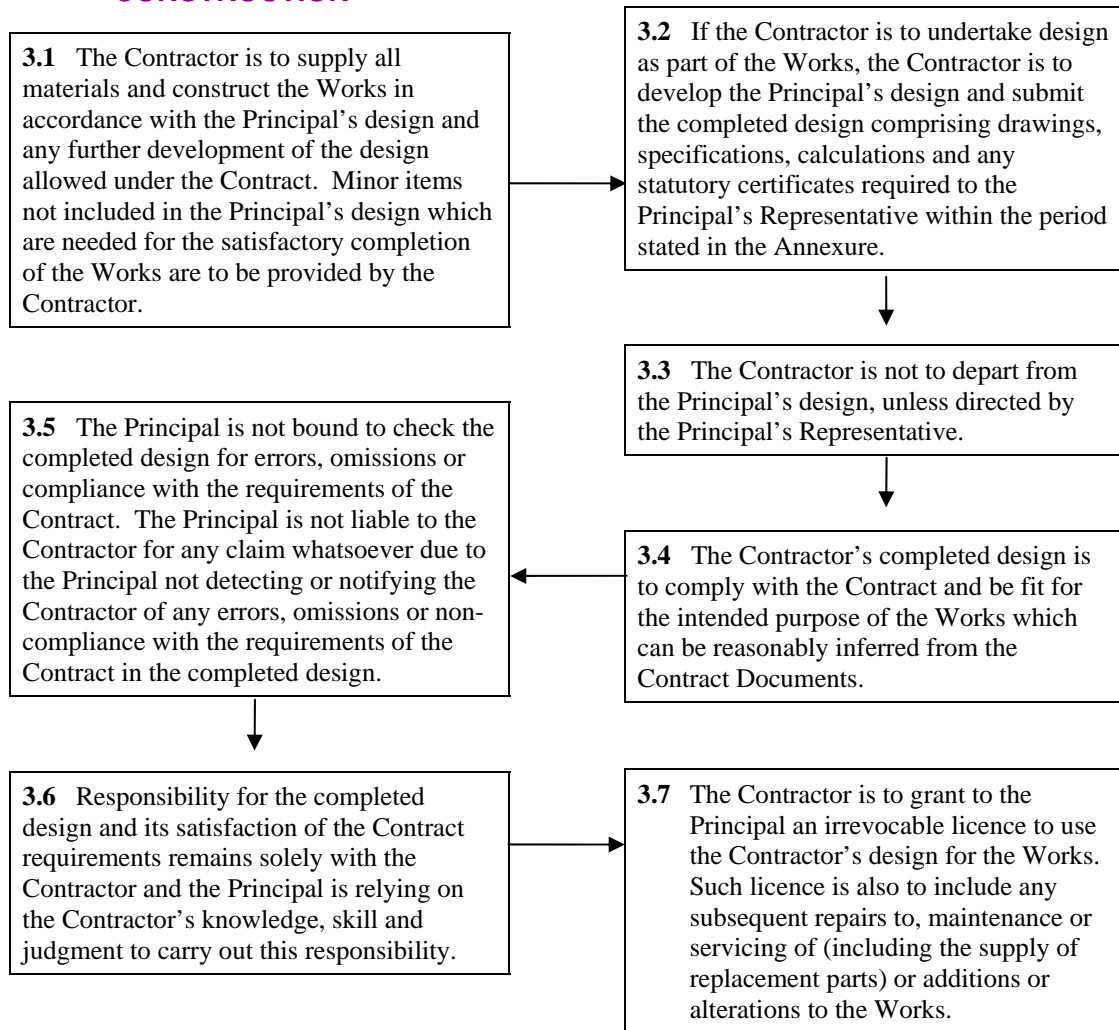


### 2 CONTRACT

**2.1** The written agreement between the Principal and the Contractor for the performance of the Works, including all documents and parts of documents to which reference may properly be made to determine the rights and obligations of the parties (the Contract Documents) shall evidence the Contract.

**2.2** The Contract Documents shall be taken as mutually explanatory and anything contained in one but not in another shall be treated as if contained in all.

**2.3** If the Contractor finds any discrepancy, error or ambiguity in or between the Contract Documents, the Contractor is to inform the Principal's Representative before starting such work and follow the directions given by the Principal's Representative.

**3 DESIGN AND CONSTRUCTION**

#### 4. CARE OF THE WORKS AND OTHER PROPERTY

**4.1** From and including the date the Site is made available to the Contractor to the date of Completion of the Works, the Contractor is responsible for the care of the Works, constructional plant and things entrusted to the Contractor by the Principal for the purpose of the Works.

The Contractor is to make good at the Contractor's expense any damage which occurs to the Works while responsible for their care.

The Contractor is also liable for damage caused by the Contractor during the Defects Liability Period.

**4.2** The Contractor is to indemnify and keep the Principal indemnified against any loss or damage to the property of the Principal (including existing property in, about or adjacent to the Works) and against any legal liability for injury, death or damage to property of others arising from the performance of the Works.

**4.3** Nothing in Clause 4 relieves the Principal from liability for the Principal's own default and defaults of others for whom the Principal is liable.

## 5. INSURANCE

**5.1** On acceptance of the tender, the Contractor is to hold or take out an insurance policy covering Workers' Compensation in the State of NSW and shall also ensure that every subcontractor, who is not taken to be a worker employed by the Contractor in accordance with the Workplace Injury Management and Workers Compensation act 1998 Schedule 1, must hold or take out insurance covering Workers' Compensation.



**5.3** If insurance has been arranged by the Department of Commerce, (see the Annexure) then, on acceptance of the tender, a policy of insurance for the Contract Works and public liability issued through insurance broker, Marsh Pty Ltd, will automatically come into effect covering the Contractor, Principal, and all subcontractors employed on the Works.

The Contractor is to pay all necessary premiums within 14 days of receipt by the Contractor of an invoice from Marsh Pty Ltd.

Go to **5.4**

**5.2** If insurance is to be arranged by the Contractor, (see the Annexure) then, before commencing work on the Site, the Contractor is to hold or take out policies of insurance covering the Contractor, Principal and subcontractors for:

(a) Public Liability to an amount of not less than \$5,000,000 for any single occurrence; and

(b) loss or damage to the Works, any temporary works and all materials, constructional plant and other things that are brought onto the Site by or on behalf of the Contractor or are entrusted to the Contractor by the Principal. The amount insured is not to be less than the Contract Sum.

The Principal is to be named as an insured in the policies.

Go to **5.4**

**5. INSURANCE (Cont'd)**

**5.4** If the Works include work described in (a) or (b) below, the Contractor is to take out the following additional insurance policies before starting such work:

- (a) For the use of water-borne craft in excess of 8 metres in length; Marine Liability Insurance;
- (b) For design of the Works undertaken by the Contractor; professional indemnity insurance.

The policy under (a) is to be in the name of the Contractor with the Principal as an additional name insured and is to cover the Contractor, the Principal, and all subcontractors employed from time to time in relation to the Works for their respective rights and interests and cover their liabilities to third parties. The policy is to be for an amount not less than \$5,000,000 for any one occurrence and shall include a cross-liability clause in which the insurer agrees to waive all rights of subrogation or action against any of the persons covered.

The policy under (b) is to cover the Contractor for liability to the Principal for a minimum amount of \$500,000 or 20% of the Contract Sum, whichever is greater, to a maximum of \$5,000,000 for loss (whether economic loss only or other loss) in a single occurrence arising from errors or omissions in design of the Works carried out by the Contractor or any subcontractor.

**5.6** If asbestos liability insurance has been arranged by the Department of Commerce (see the Annexure) and the Works include asbestos decontamination, including stripping, encapsulation or removal, the Contractor is to take out within 30 days of asbestos decontamination work commencing, a policy of insurance in the terms of Policy No. EL 82911 issued through insurance broker Marsh Pty Ltd covering the Contractor, Principal and all subcontractors employed on the Works. The Contractor is to pay all necessary premiums within 14 days of receipt by the Contractor of an invoice from Marsh Pty Ltd..

Payment must be made in accordance with the instructions on the invoice and must include a statement of the Contract Number

Go to **5.8**

**5.5** If the Contractor is to arrange asbestos liability insurance (see the Annexure) and if the Works include asbestos decontamination, including stripping, encapsulation or removal, the Contractor must effect asbestos liability insurance.

Go to **5.7**

**5.8** The Contractor is to maintain all required insurance policies until the end of the Defects Liability Period, or Completion if there is no Defects Liability Period.

**5.7** The required policies are to be with insurers and in terms approved by the Principal's Representative. Approvals will not be withheld unreasonably.

Go to **5.8**

**5.9** If, when required in writing by the Principal to do so, the Contractor fails to produce evidence of having paid insurance premiums and other compliance with insurance obligations under General Conditions Clause 5, to the satisfaction of the Principal, the Principal may effect or maintain the insurance and pay any premiums. The Contractor is to pay the Principal the amount of any premiums paid by the Principal plus an amount of \$250 to cover the Principal's costs.

## 6. SITE AND POSSESSION

**6.1** The Principal is to give the Contractor possession of the Site by the time stated in the Annexure.

**6.2** The Principal is to give the Contractor sufficient possession to allow the Contractor to perform the Works but is not required to give the Contractor sole or uninterrupted possession of or access to the Site.

**6.3** The Contractor is to begin work on the Site as soon as practicable after being given possession of the Site by the Principal.

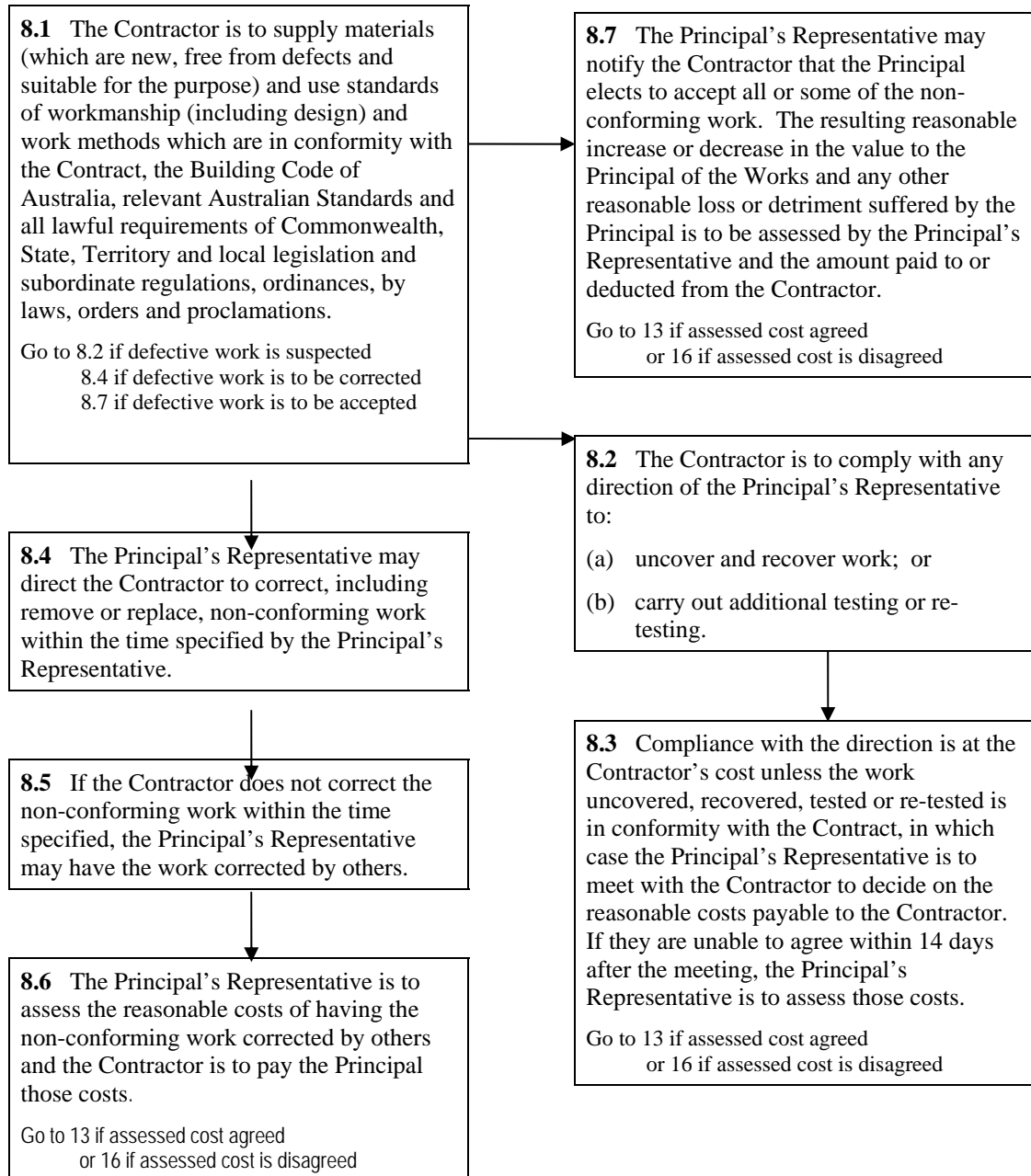
**6.4** The Contractor is to give the Principal's Representative, agents and contractors reasonable access to the Site for any purpose.

## 7. SITE CONDITIONS

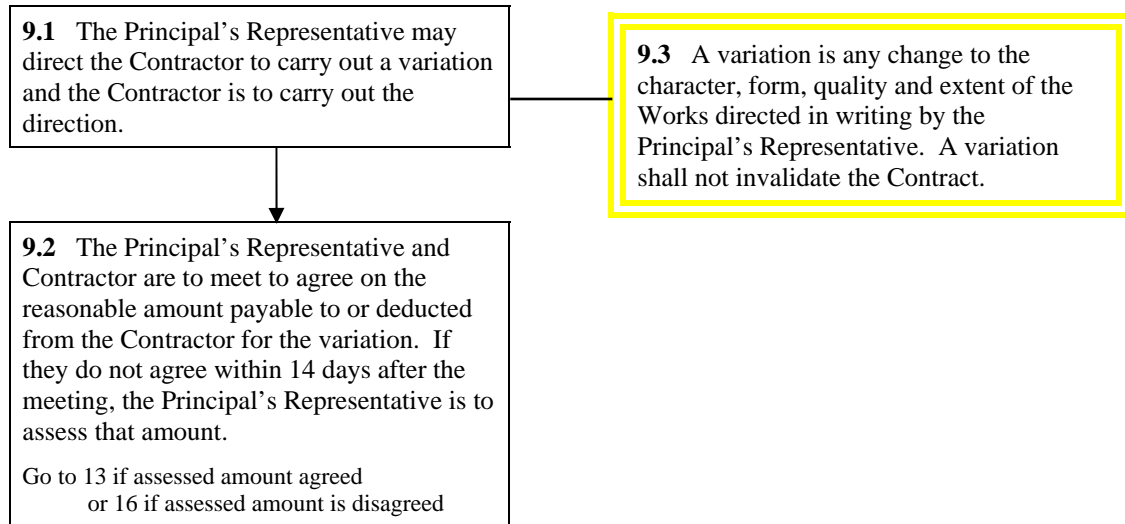
**7.1** If the Contractor discovers that the conditions on, about or below the Site differ from what ought to have reasonably been anticipated at Tender time the Contractor is to inform the Principal's Representative immediately and, where possible, before the conditions are disturbed.

**7.2** The Contractor is not entitled to any extra payment for the different Site conditions. If the different conditions are such that the Principal's Representative directs the Contractor to carry out a variation, the procedure in Clause 9 is then to be followed.

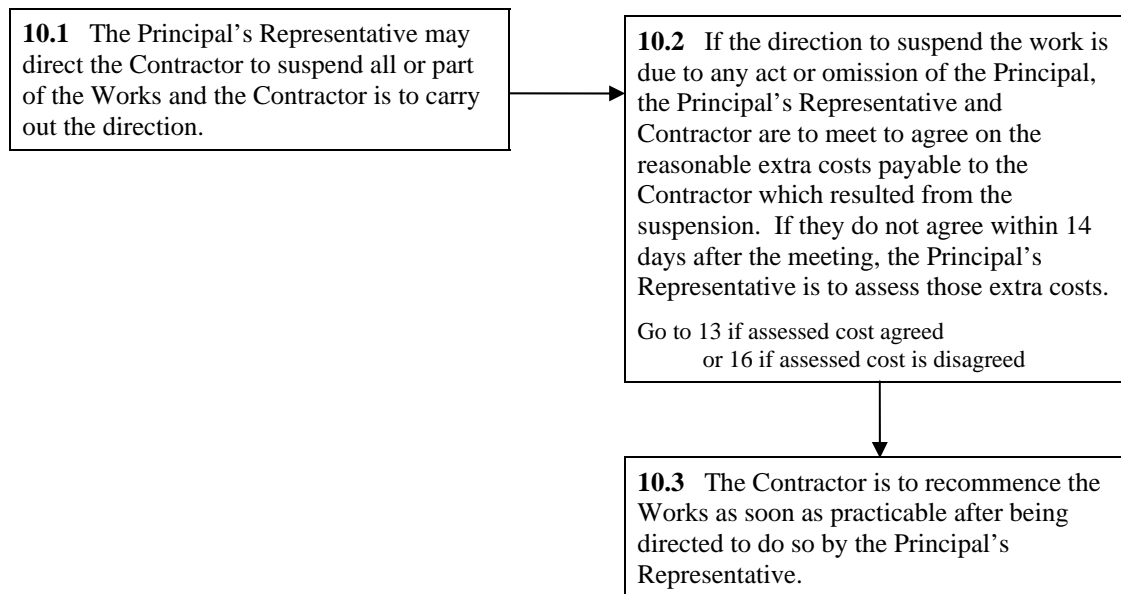


**8. NON-CONFORMING WORK**

## 9. VARIATIONS



## 10. SUSPENSION



**11. COMPLETION OF THE WORKS**

**11.1** The Contractor is to Complete the Works within the period stated in the Annexure which starts on the date of being given possession of the Site.

**11.2** The Contractor is to inform the Principal's Representative when, in the Contractor's opinion the Works have reached Completion.

**11.3** The Principal's Representative is to:

- (a) determine if the Works have reached Completion, and if so, the date of Completion; and
- (b) give the Contractor written notice of the determination.

**11.4** The Works have reached Completion and are Complete when the Works are capable of use for their intended purpose, and should be free from any omissions or defects, and the Contractor has made good the Site and its surroundings.

**12. DELAY IN COMPLETION**

**12.1** If the Contractor is delayed in reaching Completion then the Contractor is to notify the Principal's Representative within 14 days after the commencement of the delay and to meet with the Principal's Representative to determine the cause of delay. Where such a delay is caused by:

- (a) a direction given by the Principal's Representative except under:
  - Clause 8; or
  - Clause 10 where the event giving rise to the direction was not beyond the control of the Contractor; or
- (b) a breach of the Contract by the Principal; or
- (c) any event beyond the control of the Contractor,

the period for Completion is to be extended.

**12.2** If the Principal's Representative and the Contractor do not agree on an extension to the period for Completion within 14 days of the meeting to determine the cause of delay, the Principal's Representative is to assess a reasonable extension of time. The Principal's Representative may for any reason and at any time extend the period for Completion.

Go to 16 if assessed extension of time is disagreed.

**12.3** If the Contractor does not Complete the Works by the last day of the period for Completion then the Contractor is to pay to the Principal liquidated damages from, but excluding that date, to and including the date the Works are Complete at the rate stated in the Annexure.

### 13. PAYMENT AND RETENTION

**13.1** *If the Contract has substantial Demolition and the 'Amount of Security' in the Annexure is >\$0:*

Before commencing any work on the Site, the Contractor is to provide security in the amount stated in the Annexure and in the form as detailed in Schedule - Unconditional Undertaking.

**13.2** *If the Contract requires the Contractor to pay the Contract Sum to the Principal:*

Before commencing any work on the Site, the Contractor is to pay the Principal the Contract Sum.

**13.3** *If the Contract requires the Principal to pay the Contract Sum to the Contractor:*

The Contractor is to give the Principal's Representative a written claim for payment when a Milestone stated in the Annexure is reached. The claim is to identify the Milestone, the amount claimed, how the amount is calculated, deductions to which the Principal is entitled and, when additions are claimed, the legal and factual basis of the claim. Additions are extra costs or other amounts to which the Contractor is entitled under or in connection with the subject matter of the Contract.

When a Milestone is reached the amount which the Contractor is entitled to claim, and be paid, is the sum of:

- for work for which the Principal accepted rates, an amount calculated by applying the rates to the quantities of work carried out to that date;
- for work for which the Principal accepted a lump sum, the percentage stated in the Annexure for the Milestone;
- for any additions for which the Principal has approved an amount in writing or for which an amount has been finally determined by an Expert under Clause 16, the amount approved or determined;

less payments previously made (including under Clause 16), costs payable by the Contractor to the Principal and deductions to which the Principal is entitled under or in connection with the subject matter of the Contract, including but not limited to retention moneys, liquidated damages and other damages whether liquidated or unliquidated.

With each claim for payment, and at any other time as requested by the Principal's Representative, the Contractor is to give the Principal's Representative a completed statutory declaration, as detailed in Schedule - Statutory Declaration.

Within 10 business days after receipt of the Contractor's payment claim, the Principal is to provide to the Contractor a payment schedule identifying the progress claim to which it relates and stating the payment, if any, which the Principal will be making. If the payment is to be less than the amount claimed by the Contractor the payment schedule is to indicate why it is less. For the purposes of this clause a business day is any day other than a Saturday, Sunday, public holiday or 27, 28, 29, 30 or 31 December.

**13.3 (Continued)**

Payment is to be made within 21 days of the Contractor's written claim or 7 days after the statutory declaration is provided, whichever is the later. If the Contractor breaches the requirement to submit a completed statutory declaration the Principal is not obliged to make any payment to the Contractor while the breach continues.

Any claim by the Contractor on the Principal is to be made within 28 days after the date of the Principal's Representative's written notice of Completion under Clause 11.3. All claims whatsoever by the Contractor against the Principal made after that time are barred. However, if the contract includes a Defects Liability Period, and the Contractor has a claim against the Principal under Clause 14.4 or because of an event which occurred during the Defects Liability Period, the Contractor may make that claim up to 28 days after the end of the Defects Liability Period. If the claim is made after that time it is barred.

All payments by the Principal to the Contractor are to be made by Electronic Funds Transfer to a bank, building society or credit union account nominated by the Contractor. No payment is due to the Contractor until details of the nominated account (name of financial institution, account name and account number) are notified in writing to the Principal's Representative. The Contractor is to promptly notify the Principal's Representative in writing of any changes to the nominated account and the Principal is not responsible for any payments made into a previously nominated account before notification of such change is received by the Principal's Representative.

Payment is not evidence of the value of work or an admission of liability or that the work is satisfactory but is a payment on account only.

**13.4** *When the Works are Complete and the Contract requires Security:*

When the Contractor has provided an Unconditional Undertaking for Security (Annexure 13.1) the Principal is to return the Unconditional Undertaking, less any amounts the Contractor is to pay the Principal, within 14 days of Completion.

**13.5** *When the Works are Complete and the Contract has a Defects Liability Period:*

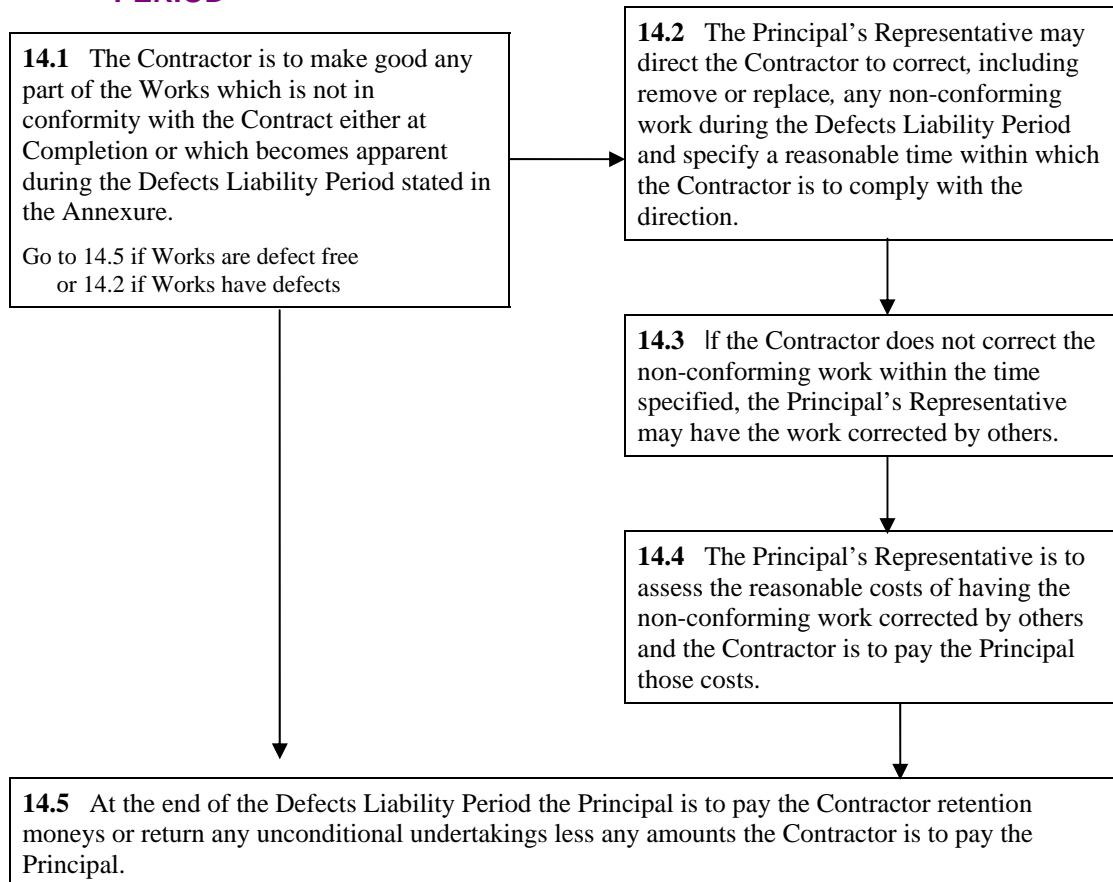
An amount of 2.5% of the Contract Sum is to be retained by the Principal against the due and proper performance of the Contract, except when there is no Defects Liability Period.

The Contractor may, instead of the retention, provide security in the amount of the retention in the form as detailed in Schedule – Unconditional Undertaking.

**13.6** *If an Unconditional Undertaking is required:*

All Undertakings must be provided by a financial institution acceptable to the Principal.

## 14. DEFECTS LIABILITY PERIOD



**15. DEFAULT AND INSOLVENCY**

**15.1** Without prejudice to any other rights which the Principal has, if the Contractor commits a substantial breach of the Contract, including:

- (a) failing to carry out a direction of the Principal's Representative within the time specified or if no time is specified, within a reasonable time;
- (b) not progressing Works at a reasonable rate,

the Principal may, in writing, specify the breach and ask the Contractor to give reasons why the Principal should not take further action.

**15.3** If the Contractor either fails to give a written response within 7 days of receiving the Principal's notice, or fails to give reasons satisfactory to the Principal, then:

Go to 15.5 for Termination option  
or 15.4 for Takeover option

**15.5** The Principal, may immediately terminate the Contract by notice in writing to the Contractor, in which case the respective rights and liabilities of the parties shall be the same as they would be at common law if the Contractor had wrongfully repudiated the Contract.

**15.7** If the calculation results in a shortfall to the Principal, the Contractor is to pay the amount of the shortfall to the Principal within seven days of a written demand for payment.

**15.2** If the Contractor is wound up or declared insolvent then:

**15.4**

- (a) The Principal may immediately take over the uncompleted Works by notice in writing; and
- (b) suspend payments due or which would become due under Clause 13; and
- (c) have the Works Completed by others.

**15.6** The Principal's Representative is to calculate the difference between:

- (a) the costs of having the Works Completed by others; and
- (b) the amount of suspended payments and retention moneys held by the Principal.

Go to 15.7 Contractor to pay  
or 15.8 Principal to pay

**15.8** If the calculation results in an excess to the Principal, the Principal is to pay the amount of the excess to the Contractor.

**16. DISPUTES**

**16.1** If either party is dissatisfied with an act or omission of the other party in connection with the Contract, including assessment of a claim, failure to agree, or an instruction, that party is to notify the Principal's Agent and the other party in writing of a dispute within 14 days of the act or omission. The notifying party is to provide particulars, including the factual and legal basis of any claimed entitlement.

If a party gives notice of a dispute but not within the time provided by this Clause 16.1, then it is not entitled to interest for the period before the party gave notice.

**16.2** Within 7 days of the giving of the notice, the Contractor and Principal's Agent are to meet to attempt to resolve the dispute.

**16.3** If the dispute is not resolved within 14 days after the notice providing particulars of the dispute, the parties are to appoint an independent Expert.

If the parties fail to agree upon an Expert, either may request the Chief Executive Officer of the Australian Commercial Disputes Centre Ltd Sydney to nominate an Expert. If there is no Chief Executive Officer or the Chief Executive Officer fails to make a nomination within a reasonable time, the Principal is to nominate an Expert.

**16.4** The person nominating the Expert is not to nominate:

- an employee of the Principal or Contractor,
- a person who has been connected with the Contract, or
- a person upon whose appointment the Principal and the Contractor have previously failed to agree.

**16.5** When the person to be the Expert has been agreed on or nominated, the Principal, on behalf of both parties is to appoint the expert in writing, with a copy to the Contractor, setting out:

- the dispute being referred to the Expert for a decision,
- the Expert's fees,
- the procedures detailed in this Clause 16, and
- any other matters which are relevant to the engagement.

**16.6** The Principal and the Contractor are to share equally the Expert's fees and out-of-pocket expenses, including security deposit if required. Each party is to otherwise bear their own costs and share equally any other costs of the process.



**16.7** Each party is to make written submissions to the Expert and provide a copy to the other party as follows:

- (a) Within 7 days after the appointment of the Expert, the notifying party is to submit details of the claimed act or omission.
- (b) Within 14 days after receiving a copy of that submission, the other party is to submit a written response. That response can include cross-claims.

**16.8** The Expert is to decide whether the claimed event, act or omission did occur and, if so:

- when it occurred,
- what term of the Contract or other obligation in law, if any, requires the other party to pay the claimant money in respect of it, and
- the merits in law of any defence or cross-claim raised by the other party.

The Expert then decides the amount, if any, which one party is legally bound to pay the other on account of the event, act or omission.

The Expert is also to decide any other questions required by the parties, as set out in the dispute referred to the Expert at Clause 16.5.

**16.9** In making the decision, the Expert acts as an expert and not as an arbitrator and is:

- (a) not liable for acts, omissions or negligence;
- (b) to make the decision on the basis of the written submissions from the parties and without formalities such as a hearing;
- (c) required within 35 days of appointment to give the decision in writing, with brief reasons, to each party; and
- (d) bound by the rules of natural justice.

**16.10** If the Expert decides that one party is to pay the other an amount exceeding \$250,000 (calculating the amount without including interest on it), and within 14 days of receiving the decision of the Expert, either party gives notice in writing to the other that the party is dissatisfied, the decision is of no effect and either party may then commence litigation.

**16.11** Unless a party has a right to commence litigation under Clause 16.10:

- (a) The parties are to treat each determination of the Expert as final and binding and give effect to it.
- (b) If the Expert decides that one party owes the other party money, that party is to pay the money within 14 days of the receiving the decision of the Expert.

## 17. TERMINATION FOR THE PRINCIPAL'S CONVENIENCE

**17.1** The Principal may terminate the Contract by giving notice with effect from the date stated in the notice, for its convenience and without the need to give reasons. The Contractor must leave the Site by the date stated in the termination notice and remove all plant, equipment and amenities it has brought onto the Site for the construction of the Works.

If the Contract is terminated for the Principal's convenience, the Principal must pay the Contractor:

- the value of all work carried out (as determined in clause 13) up to the date of the termination notice takes effect; plus
- 2% of the difference between the Contract Sum, adjusted by any amounts agreed or assessed under clause 9.2 or finally determined under clause 16, and the total of all amounts paid and payable to the contractor for payment claims.

The payments referred to in this Clause are full compensation under this Clause, and the Contractor has no claim for damages or other entitlement whether under the Contract or otherwise.

The Contractor must, wherever possible, include in all subcontracts and supply agreements an equivalent provision to this Clause.

**SCHEDULE 1**

**APPROVED FORM OF UNCONDITIONAL UNDERTAKING**

*[To be submitted on a Financial Institution's letterhead and show, at a minimum, the Financial Institution's name and address]*

At the request of ..... ('the Contractor')  
and in consideration of ..... ('the Principal')  
accepting this undertaking in respect of the contract for  
..... ('the Contract'),  
..... ('the Financial Institution')  
unconditionally undertakes to pay on demand any sum or sums which may from time to time be  
demanded by the Principal to a maximum aggregate sum of  
.....(\$.....)('the Sum').

*The undertaking is to continue until notification has been received from the Principal that the Sum is no longer required by the Principal or until this undertaking is returned to the Financial Institution or until payment to the Principal by the Financial Institution of the Sum or such part as the Principal may require. The Principal must not assign the unconditional undertaking without the prior **written** agreement of the Financial Institution, which must not be unreasonably withheld.*

*Should the Financial Institution be notified in writing, purporting to be signed by or for and on behalf of the Principal that the Principal requires payment to be made of the whole or any part or parts of the Sum, it is unconditionally agreed that the Financial Institution will make the payment or payments to the Principal forthwith without reference to the Contractor and notwithstanding any notice given by the Contractor not to pay same.*

*Provided always that the Financial Institution may at any time without being required so to do pay to the Principal the Sum less any amount or amounts it may previously have paid under this undertaking or such lesser sum as may be required and specified by the Principal and thereupon the liability of the Financial Institution hereunder shall immediately cease.*

DATED at ..... this ..... day  
of ..... 20 .....

[Signature]

[Print name of person signing the Undertaking]

[Position / Title]

**SCHEDULE 2****Statutory Declaration**Oaths Act (NSW)  
Ninth Schedule**Definitions**

*The Principal is* .....

*The Contractor is* .....

ACN/ABN.....

*The Contract is* Contract No. ....

Contract Title.....

dated .....(Date of Contract) between the party identified as the Principal and the party identified as the Contractor.

**Declaration**

*Full name* **I,** .....

*Address* of .....

do hereby solemnly declare and affirm that:

*Insert position title of the Declarant* **1** I am the representative of the Contractor in the Office Bearer capacity of .....

**2** I am in a position to make this statutory declaration about the facts attested to.

**REMUNERATION OF CONTRACTOR'S EMPLOYEES ENGAGED TO CARRY OUT WORK IN CONNECTION WITH THE CONTRACT**

- 3** All remuneration payable to the Contractor's relevant employees for work done in connection with the Contract to the date of this statutory declaration has been paid and the Contractor has made provision for all other benefits accrued in respect of the employees.
- Relevant employees are those engaged in carrying out the work done in connection with the Contract.

Remuneration means remuneration or other amounts payable to relevant employees by legislation, or under an industrial instrument, in connection with work done by the employees [s127(6) of the Industrial Relations Act 1996].

**REMUNERATION OF THE EMPLOYEES OF SUBCONTRACTORS ENGAGED TO CARRY OUT WORK IN CONNECTION WITH THE CONTRACT**

- 4** The Contractor is/is not a principal contractor for the work done in connection with the Contract, as defined in section 127 of the Industrial Relations Act 1996.
- 5** Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement in its capacity of principal contractor under section 127(2) of the Industrial Relations Act 1996 by each subcontractor in connection with that work stating that all remuneration payable by each subcontractor to the subcontractor's relevant employees for work done in connection with the Contract to the date of this declaration has been paid, and each subcontractor has made provision for all other benefits accrued in respect of each subcontractor's employees.
- 6** I am aware that the Industrial Relations Act 1996 requires any written statement provided by subcontractors must be retained for at least 6 years after it was given and declare that the Contractor has accordingly made arrangements for the secure retention of the written statements.

Delete the words  
*in italics* that are  
not applicable.

**WORKERS COMPENSATION INSURANCE OF THE CONTRACTOR'S WORKERS**

- 7 All workers compensation insurance premiums payable by the Contractor to the date of this statutory declaration in respect of the work done in connection with the Contract have been paid. This statutory declaration is accompanied by a copy of any relevant certificate of currency in respect of that insurance.

**WORKERS COMPENSATION INSURANCE FOR WORKERS OF SUBCONTRACTORS**

- 8 The Contractor is / is not a principal contractor for work done in connection with the Contract, as defined in section 175B of the Workers Compensation Act 1987.
- 9 Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement under section 175B of the Workers Compensation Act 1987 in the capacity of principal contractor in connection with that work to the intent that all workers compensation insurance premiums payable by each subcontractor in respect of that work done to the date of this statutory declaration have been paid, accompanied by a copy of any relevant certificate of currency in respect of that insurance.
- 10 I am aware that the Workers Compensation Act 1987 requires any written statement provided by subcontractors and any related certificate of currency must be retained for at least 7 years after it was given and declare that the Contractor has accordingly made arrangements for the secure retention of the written statements.

Delete the words *in italics* that are not applicable.

**EMPLOYER UNDER THE PAY-ROLL TAX ACT**

- 11 The Contractor is registered as / is not required to be registered as an employer under the Pay-roll Tax Act 1971.
- 12 All pay-roll tax payable by the Contractor in respect of wages paid or payable to the relevant employees for work done in connection with the Contract to the date of this statutory declaration has been paid.
- 13 The Contractor is / is not a principal contractor for work done in connection with the Contract, as defined in section 31G of the Pay-roll Tax Act 1971.
- 14 Where the Contractor is also a principal contractor for work done in connection with the Contract, the Contractor has been given a written statement under section 31H of the Pay-roll Tax Act 1971 in the capacity of principal contractor in connection with that work to the intent that all pay-roll tax payable by each subcontractor in respect of the wages paid or payable to the relevant employees for that work done to the date of this statutory declaration has been paid.
- 15 I am aware that the Pay-roll Tax Act requires any written statement provided by subcontractors must be retained for at least 5 years after it was given and declare that the Contractor has accordingly made arrangements for the secure retention of the written statements.

Delete the words *in italics* that are not applicable.

Delete the words *in italics* that are not applicable.

**PAYMENTS TO SUBCONTRACTORS**

- 16 The Contractor has paid every subcontractor, supplier and consultant all amounts payable to each of them by the Contractor as at the date of this statutory declaration with respect to engagement of each of them for the performance of work or the supply of materials for or in connection with the Contract.
- 17 The provisions of clause "SECURITY OF PAYMENT", if included in the Contract, have been complied with by the Contractor.
- 18 The Contractor has been informed by each subcontractor and consultant to the Contractor (except for subcontracts and agreements not exceeding \$25,000 at their commencement) by written statement in equivalent terms to this declaration (made no earlier than the date 14 days before the date of this declaration):
- .1 that their subcontracts with their subcontractors, consultants and suppliers comply with the requirements of clause "SECURITY OF PAYMENT", if included in the Contract, as they apply to them; and

## 1. GENERAL CONDITIONS OF CONTRACT AND ANNEXURE

.2 that all of their employees, subcontractors, consultants and suppliers, as at the date of the making of such a statement have been paid all remuneration and benefits due and payable to them by, and had accrued to their account all benefits to which they are entitled from, the subcontractor or consultant of the Contractor or from any other of their subcontractors or consultants (except for their subcontracts and agreements not exceeding \$25,000 at their commencement) in respect of any work for or in connection with the Contract.

19 I am not aware of anything to the contrary of any statutory declaration referred to in paragraph 18 of this declaration and on the basis of the statements provided, I believe the matters set out in paragraph 18 to be true.

20 And I make this solemn declaration, as to the matters aforesaid, according to the law in this behalf made, and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signature of  
Declarant

.....  
declared at

Place

.....  
on.....

Date

before me

Signature of legally  
authorised person\*  
before whom the  
declaration is made

.....

Name and title of  
person\* before  
whom the declaration  
is made

.....  
.....

### Notes:

#### 1. In this declaration:

- (a) the words “principal contractor”, “employee”, “employees” and “relevant employees” have the meanings applicable under the relevant Acts;
- (b) the word “subcontractor” in paragraphs 5, 6, 9, 10, 14 and 15 has the meaning applicable under the relevant Act; and
- (c) otherwise the words “Contractor”, “subcontractor”, “supplier” and “consultant” have the meanings given in or applicable under the Contract.

#### 2. \* The declaration must be made before one of the following persons:

- (a) where the declaration is sworn within the State of New South Wales:
  - (i) a justice of the peace of the State of New South Wales;
  - (ii) a solicitor of the Supreme Court of New South Wales with a current practising certificate;
  - (iii) a notary public; or
  - (iv) another prescribed person legally authorised to administer an oath under the Oaths Act (NSW);or
- (b) where the declaration is sworn in a place outside the State of New South Wales:
  - (i) a notary public; or
  - (ii) any person having authority to administer an oath in that place.

## **ANNEXURE TO GENERAL CONDITIONS OF CONTRACT - MINOR WORKS**

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### **Clause**

#### **1.1**

The Principal is the Minister for Commerce for the State of NSW.

#### **Notices and Submissions to the Principal**

Notices and Submissions to the Principal must go to the Principal's Representative.

#### **1.2**

The Principal's Representative is : Daniel Rose Consultants Pty Ltd  
and is located at: 129 Parramatta Rd, HABERFIELD NSW 2045

If no name is stated the Principal is to name the person in writing within 7 days after accepting the tender. The Principal may at any time change the person for any reason whatsoever by giving written notice.

#### **1.3**

The Principal's Agent is : Manager, Dispute Resolution, Department of Commerce  
and is located at: McKell Building, 2-24 Rawson Place, SYDNEY NSW 2000

If no name is stated the Principal is to name the person in writing within 2 days of the Contractor giving written notice of a dispute under Clause 16. The Principal may at any time change the person for any reason whatsoever by giving written notice.

#### **3.2**

The period to submit the completed design is: Not Applicable before its use for construction.

If no period is stated it is 7 days before its use for construction.

#### **5.3**

The Principal has arranged Contract Works and public liability insurance with:

Vero Insurance Limited through insurance broker Marsh Pty Ltd.

The Policy number is CR003365ZF.

#### **5.6**

The Principal has arranged asbestos liability insurance with:

Insurance broker Marsh Pty Ltd.

The policy number is EL 82911.

#### **6.1**

The time to give possession of Site  
is: 7 days after the Principal accepted the tender.

If no time is stated it is 7 days after the Principal accepted the tender.

**11.1**

The period for Completion is: 30 calendar weeks.

If no period is stated a reasonable period is to apply.

**12.3**

The rate per day of liquidated damages is: \$ 200.00

If no rate is stated common law damages are to apply.

**13.1**

The amount of Security is: » \$ .....

If no amount is stated then no Security applies.

**13.3**

The Milestones and Percentages are as below:

Milestone	Percentage	Total %
Site Establishment	5 % item	5 %
Footings	2 % per house	10 %
Ground Floor	2 % per house	10 %
Framing	4 % per house	20 %
Lock-up	5 % per house	25 %
Handover	5 % per house	25 %
Site Works	1 % per house	5 %

If no Milestones and Percentages are stated the Milestone is Completion of the Works and Percentage is 100%.

**14.1**

The Defects Liability Period, which commences at Completion of the Works is: 26 weeks

If no Period is stated then no Defects Liability Period applies.

**END OF SECTION – GENERAL CONDITIONS OF CONTRACT AND ANNEXURE**



## 2 PRELIMINARIES

### 1 ADMINISTRATION AND CONTRACTING

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#### 1.1 ELECTRONIC COMMUNICATIONS

The parties agree and consent that notices and communications may be by electronic communication in accordance with the Electronic Transactions Act 2000.

#### 1.2 COLLUSIVE ARRANGEMENTS

##### Requirement

The Contractor warrants and represents to the Principal and agrees with the Principal that it is a condition precedent to the agreement between itself and the Principal that:

- the Contractor has no knowledge of the tender price of any other Tenderer for the Contract;
- except as disclosed in the tender, and by agreement in writing with the Principal, it has not entered into any contract, arrangement or understanding to pay or allow any money directly or indirectly to a trade or industry association (above the published standard fee) or to or on behalf of any other Tenderer in relation to its tender or this Contract entered into consequent thereon, nor paid or allowed any money on that account, nor will it pay or allow any money on that account;
- in the event of the Contractor paying or allowing to or on behalf of a trade or industry association or another Tenderer any money in breach of these conditions, the Contractor shall immediately give the Principal written notice of such an event and such money shall be held on trust for and become immediately payable to the Principal. The Principal shall be entitled to withhold from any payment due to the Contractor on any account an equivalent sum as liquidated damages.

#### 1.3 EXCHANGE OF INFORMATION BETWEEN GOVERNMENT AGENCIES

The Contractor authorises the Principal and its employees and agents to make information concerning the Contractor available to other NSW government departments or agencies or local government authorities. Such information may include, but is not limited to, any information provided by the Contractor to the Principal and any information relating to the Contractor's performance under the Contract.

The Contractor acknowledges that any information about the Contractor from any source, including substantiated reports of unsatisfactory performance may be taken into account by the Principal and NSW government departments and agencies in considering whether to offer the Contractor future opportunities for NSW government work.

The Principal regards the provision of information about the Tenderer to any NSW government department or agency or local government authority as privileged under Section 22 of the Defamation Act 1974. The Principal and the State of NSW will reject claims in respect of any matter arising out of the provision or receipt of such information, including any claim for loss to the Tenderer arising out of the communication.

## 1.4 GOODS AND SERVICES TAX

### Definitions

In this clause the expressions “adjustment note, consideration, Goods and Services Tax, GST, input tax credit, supply, tax invoice, recipient, Recipient Created Tax Invoice and taxable supply” have the meanings given in the “A New Tax System (Goods and Services Tax) Act 1999” and the expression “net dollar margin” has the meaning given in the guidelines issued by the Australian Competition and Consumer Commission.

### Reimbursable Expenses

If this agreement requires a party to pay for, reimburse or contribute to any expense, loss or outgoing (“reimbursable expense”) suffered or incurred by another party, the amount required to be paid, reimbursed or contributed by the first party must be the sum of:

- the amount of the reimbursable expense net of input tax credits (if any) to which the other party is entitled in respect of the reimbursable expense; and
- if the other party’s recovery from the first party is a taxable supply, any GST payable in respect of that supply.

### Recipient Created Tax Invoices

The following paragraphs referring to Recipient Created Tax Invoices apply notwithstanding any other provision unless:

- the Contractor is not required to be registered for GST under the GST Act and is not registered for GST, and has so notified the Principal before entering into the Contract; or
- the Contractor and the Principal enter into a Voluntary Agreement for the withholding of Pay as You Go taxation

The Contractor will be registered for GST before it submits any claim for payment and will notify the Principal if it ceases to be registered for GST.

The Principal acknowledges that it is registered for GST and that it will notify the Contractor if it ceases to be registered or if it ceases to satisfy any requirements for the issue of Recipient Created Tax Invoices.

The Principal will be responsible for issuing Recipient Created Tax Invoices, and Adjustment Notes in respect of adjustment events known to the Principal.

The Contractor must notify the Principal of details of any adjustment event not otherwise known to the Principal.

Progress or payment certificates or schedules issued under the contract will be issued in the form of Recipient Created Tax Invoices on behalf of the Principal, and no document issued before the certificate will be an invoice creating a GST liability on the Contractor to pay GST in respect of that payment.

### Pay as You Go

If the Contractor does not quote its ABN in its Tender or on its claims or invoices, or otherwise advise the Principal of its ABN relating to the service, the Principal will withhold tax from payments in accordance with the *A New Tax System (Pay As You Go) Act 1999*.

## 1.5 PASSING OF PROPERTY AND RISK

### Responsibility

Unless otherwise provided, items supplied by the Contractor become the property of the Principal when unloaded as required in the Contract. Such items remain at the risk of the Contractor until property therein passes to the Principal.

## 1.6 QUALITY ASSURANCE

### Preparation

For each of the activities listed in the INSPECTION AND TEST PLANS SCHEDULE below, prepare an Inspection and Test Plan (ITP) plus any necessary associated checklists, in accordance with the requirements of Department of Commerce Guidelines for Preparation of ITP'S (Document PWD-0607). Submit to the Principal's Representative at least 7 days prior to commencing work on that activity.

Show on ITPs the mandatory "Hold" and "Witness" points listed in the ITP Schedule as requiring attendance by the Principal's Representative. Show any mandatory "Hold" or "Witness" points for tests or inspections required by the Contract to be carried out by the Contractor. Show any mandatory "Hold" and "Witness" points that are required by Statutory Authorities. Also show "Hold" and "Witness" points that are considered necessary for the Contractor to verify work to be carried out by employees and subcontractors.

Include in the ITPs all work and materials required by the Contract to be inspected or tested, by whom and at what stage or frequency.

A "Hold" point (denoted by H on ITPs) is defined as a point beyond which work may NOT proceed without authorisation by the appropriate party (who may be the Principal's Representative, a Statutory Authority or the Contractor). Give notice to the appropriate party that the particular stage of the work will be reached.

A "Witness" point (denoted by W on ITPs) is defined as a point at which a particular activity, or state of completion or readiness, is to be observed by the appropriate party. Give notice to the appropriate party, but work may proceed past this point if that party fails to attend.

Required notice is 24 hours unless otherwise specified.

In addition to "Hold" and "Witness" points requiring the Contractor's verification of work performed, show where work is to be self inspected by the person performing the work (denoted by X) and where surveillance (monitoring) will be provided by the Contractor (denoted by S).

Note that surveillance (monitoring) by the Principal's Representative will apply to all work associated with the contract not otherwise covered by a "Hold" or "Witness" point. Prepare the ITPs to reflect this.

The required ITPs must include any checklists that are necessary to summarise a number of activities, attributes or standards that need to be verified at a particular inspection or test.

### Verification

For each work activity requiring an ITP, divide the required work into "work areas" or "lots". A "work area" or "lot" is a discrete section or quantity of the total work usually defined by location, which, for that activity, will be completed before moving on to another area.

A copy of the approved ITP (and associated checklists) for each activity is assigned to each work area to allow progressive verification of the inspections and tests carried out.

Checklists may be completed by those who perform or directly supervise the identified activity.

Nominate experienced personnel who are authorised by the Contractor to verify, by notation on the ITPs, that the quality of the work inspected or tested is as specified.

The Principal's Representative will endorse mandatory "Hold" points, and may endorse "Witness" points when attended, at each work area. Such endorsement allows the Contractor to continue with following work but does not release the Contractor from the obligations to achieve the specified requirements of the Contract.

## Records

Implement a system to control records to provide a complete verification history of the work under the Contract, including

- maintain records in safe storage until Completion or expiry of the Defects Liability Period, whichever is the later
- ensure records are secure against deterioration, damage and loss
- file and index records so that they are retrievable by all parties who may need to reference them.

Verification Records include but are not limited to:

- ITPs and checklists:
- Quality or test records obtained from manufacturers and suppliers
- Test results obtained from testing laboratories etc.
- Work as executed documents if required under the Contract.

## Payment Claims

Prepare payment claims based only on work that has been verified and has associated records duly completed by the Contractor.

## Failure to Comply

If the Contractor fails to comply with the requirements of this clause, the Principal may implement such inspections and tests that the Principal's Representative determines and the cost incurred by the Principal shall be a debt due from the Contractor.

## Inspection and Test Plans Schedule

Prepare and use Inspection and Test Plans for the following activities. Incorporate the listed Hold and Witness points which require attendance by the Principal's Representative.

Activity requiring inspection & test plan	Stage of work requiring inspection or test	H or W point (for attendance by {P} Principal's Representative or {C} Council)
Site Preparation	--	--
Drainage	Prior to backfilling	H{C}, W{P}
Concrete piers	Prior to pouring concrete	H{C}, W{P}
Wall frame	Prior to internal lining	H{P, C}
Roof frame	Prior to internal lining	H{P, C}
Wet area flashings	Prior to linings	H{C}, W{P}
Pre-painting inspection	Prior to painting	H{P}
Pre-handover inspection	--	H{P, C}

## 1.7 AUSTRALIAN AND NEW ZEALAND GOODS

### Requirement

Do not supply or incorporate into the Works any items imported into Australia.

This provision does not apply to:

- items manufactured in New Zealand;
- items included in the - **Schedule of Imported Materials and Equipment** lodged with the tender and accepted by the Principal;
- a single item with an imported content valued at less than 2% of the Contract Sum or \$20,000, whichever is the lesser. If an item is one of a group of similar items, the group shall be considered as one single item.

## 1.8 SECURITY OF PAYMENT

### General

In this clause “subcontract” includes an agreement for supply of goods or services (including professional services and plant hire) or both and “subcontractor” includes a supplier of goods or services (including professional services and plant hire) or both.

The Contractor shall ensure that each subcontract, whether written or oral, entered into by the Contractor or any subcontractor in respect of the work under the Contract and which has a value of \$25,000 or more at the commencement of the subcontract, includes provisions in the form or to the effect of the form, as the case may be, of those contained in this clause, including the provisions of this subclause.

### Options as to Form of Security

Each subcontract which -

- requires the subcontractor to provide a cash security to its principal;
- allows the subcontractor’s principal to deduct retention moneys from any payment made by it to the subcontractor; or
- provides for both of the above

shall allow the subcontractor the option at any time to provide an unconditional undertaking or unconditional undertakings in lieu of a cash security or retention moneys. To the extent that the subcontractor provides an unconditional undertaking or undertakings, the subcontractor’s principal shall not deduct retention moneys and shall forthwith release to the subcontractor any retention moneys or cash security then held.

### Trust for Cash Security and Retention Moneys

Each subcontract shall include a provision having the effect that:

- When a party receives or retains security in cash or converts security to cash, that security is held in trust by the security holder from the time of receipt, retention or conversion, as the case may be, and the security holder must forthwith deposit the money into a trust account in a bank selected by that party;
- the moneys shall be held in trust for whichever party is entitled to receive them until they are paid in favour of that party and the security holder shall maintain proper records to account for such moneys; and
- any interest earned by the trust account shall not be held in trust, and shall be owned by the party holding the security.

If the party holding security has a policy of insurance protecting subcontract payments due to the other party which is equivalent to the HIA Security of Payment Bond, then compliance with the above of this subclause is not required.

Whenever requested by the Principal to provide evidence verifying that the Contractor is holding in trust an amount which the Contractor should be holding in trust, the Contractor shall provide evidence to the reasonable satisfaction of the Principal that the amount is held in trust. If the Contractor fails to do so then, in addition to any other remedy which the Principal may have against the Contractor, the Principal may withhold an equivalent amount from payments to the Contractor.

### Payments

Each subcontract shall include:

- an obligation for the subcontractor's principal to pay the subcontractor regular progress payments of 100% of the value of work, goods or services provided by the subcontractor less only retention moneys, if any, paid into the trust account referred to in subclause TRUST FOR CASH SECURITY AND RETENTION MONEYS.
- an entitlement to progress payments within a period not exceeding,
  - in the case of the Contractor's subcontractors, 28 days;
  - in the case of all other subcontractors, 35 days,
  - after the date upon which a progress claim, which includes work, goods or services provided under the subcontract, is lodged by the Contractor with the Principal's Representative.
- provisions equivalent to the next two paragraphs of this subclause.
  - Nothing in this subclause shall be read so as to prevent the Contractor from paying a subcontractor an amount in excess of that claimed from the Principal, or before the time stipulated in this subclause;
  - If any provision of the first paragraph of this subclause is inconsistent with any other provision in a subcontract, the provisions of the first paragraph shall prevail to the extent of the inconsistency.

### Alternative Dispute Resolution

Each subcontract shall include provisions incorporating the dispute resolution procedures outlined in the Contract except that, in each case, it shall not be mandatory for the subcontractor to pursue the contractual dispute resolution mechanism if the only remedy sought by the subcontractor is an order that the subcontractor's principal pay to it an amount which is not disputed to be due and payable under the subcontract.

### Documents to be Provided to Subcontractors

Each subcontract shall include a provision which requires the subcontractor's principal to provide to the subcontractor, before the subcontractor commences work under the subcontract, a copy of the following provisions of the contract between the subcontractor's principal and its principal:

- the provision equivalent to this Preliminaries clause - **Security of Payment**; and
- the clauses relating to proof of payment of subcontractors, times for payment claims and payment and alternative dispute resolution.

### Register of Subcontracts

Maintain a register of all subcontracts which have a value of \$25,000 or greater showing brief details of the subcontract work, the name, address and telephone number of the subcontractor, and provide an up to date copy of the register when requested by the Principal's Representative.

If further requested by the Principal's Representative, provide an unpriced copy of the subcontract agreement within 14 days of such request.

## 1.9 ADDITIONAL SECURITY AND OBLIGATIONS FOR TRUSTEES

If the Contractor is a trustee:

- before commencing any work on the site, the Contractor must give the Principal an unconditional undertaking as security for any amount previously agreed in writing by the parties. The unconditional undertaking must be in the form detailed in SCHEDULE 1-APPROVED FORM OF UNCONDITIONAL UNDERTAKING. All undertakings must be provided by a financial institution acceptable to the Principal.
- The security will be retained by the Principal against the due and proper performance of the Contract by the Contractor. Unless the Principal has made or intends to make a demand against the unconditional undertaking, the Principal will return the unconditional undertaking within 14 days after the date of Completion of the Works determined or agreed by the Principal.
- The Contractor must not prevent the Principal making any demand against the unconditional undertaking, or prevent the provider of an unconditional undertaking complying with the unconditional undertaking or any demand by the Principal, but the Contractor may seek damages if the Principal makes a demand in breach of the Contract.
- The Contractor must ensure that, for the duration of the Contract, the total value of the trust beneficiaries' loans to the trustee is always greater than the total value of trust beneficiaries' loans from the company.

## 1.10 ABORIGINAL PARTICIPATION

### Specification and Statutory Requirements

Tenderers must demonstrate their commitment and capacity to plan and facilitate Aboriginal participation in employment in accordance with Section 4 Employment Strategy.

Tenders must complete returnable Tender Schedule 6 "Schedule of Employment proposed". Failure to lodge this schedule with the tender will render the tender non-conforming and the tender will not be considered.

## 1.11 PROTECTION OF CHILDREN AND OTHER VULNERABLE PEOPLE – NOT USED

## 1.12 AUDIT AND REVIEW

Make available, on request, all records, including those of or relating to Subcontractors or suppliers, relevant to compliance with requirements of the Contract, for the purposes of audit, review or surveillance. Provide all reasonable assistance during the audits or reviews including attendance by the Contractor.

Promptly implement effective corrective action on matters disclosed by audit or review.

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## 2 SITE AND WORKS

### 2.1 WORKING HOURS AND WORKING DAYS

#### Generally

Unless the Contract otherwise provides, the working hours on Site shall be up to 9 hours per day worked between 7 a.m. and 5 p.m., and the working days shall be Monday to Friday inclusive, but excluding public holidays and one day every 4 weeks, usually a Monday which is a rostered day off.



### Approval

In approving a variation to the working hours or working days the Principal's Representative may attach conditions. Such conditions may include but are not limited to a prohibition of or restriction on the performance of work which requires supervision and may also include a requirement that the Contractor meets the costs of supervision, by or on behalf of the Principal, of work during times approved by the Principal's Representative.

## 2.2 EXISTING SERVICES

### Locating of Existing Services – Dial Before You Dig

The Contractor is responsible for locating services.

Before commencing excavation the Contractor must obtain, from the Dial Before You Dig information service or relevant public authorities or owners of underground services, written confirmation of the exact positions of all underground services at and around the Site, and verify and prominently mark the locations of the underground services on the Site.

### Dealing with Existing Services

Existing services (such as drains, watercourses, public utilities, telecommunications and other services) obstructing the Works or if damaged in the course of the Contract, must be dealt with as follows:

- if the service is to be continued: repair, divert, relocate as required;
- if the service is to be abandoned: cut and seal or disconnect and make safe as required;

### Cost and Delay

Where an existing service obstructs the Works and requires diversion or relocation, the Contractor shall bear all resulting costs and delays.

Where an existing service is damaged by the Contractor for any reason whatsoever, the Contractor shall bear all costs and any delays for repairing or disconnecting the service.

### Notification

Notify the Principal's Representative immediately upon the discovery of services obstructing the Works not shown in the Contract documents.

## 2.3 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS

### Specification and Statutory Requirements

The Contractor's health and safety management must comply with the NSW Government "OHS Management Systems Edition 4 Guidelines"

The Occupational Health and Safety (OHS) requirements of this Specification:

- may be in addition to, but are not in substitution for, any statutory requirements; and
- do not limit the powers of the Principal or the liabilities and responsibilities of the Contractor.

When any part of the Site is made available to, or occupied by, anyone authorised by the Principal, ensure a report, containing the information employers and controllers of premises are required to provide under *Clauses 13(3) and 38 of the NSW Occupational Health and Safety (OHS) Regulations 2001*, is provided to the Principal and that person before they use the Site. The report must include all the available information about the hazards and risks not eliminated and the controls in place. Such information must also be included in operation and maintenance manuals, or equivalent, provided for the Works.



### Principal Contractor

The Contractor is appointed the principal contractor and controller of the Site and other work sites of the Contractor for the construction work being carried out on behalf of the Principal, to exercise such authority and control as is necessary to enable the Contractor to discharge the responsibilities imposed on a principal contractor and controller by the NSW OHS Regulation 2001.

Provide a sign on the Site, clearly visible from outside the Site, showing the name and contact telephone numbers (including after hours emergency numbers) of the principal contractor.

Notify any other contractors engaged by the Principal on the Site of the appointment and that any appointment of them as a principal contractor is withdrawn. Cooperate with and coordinate any such contractors and any others involved in the construction work to ensure all OHS responsibilities are discharged in a coordinated manner. As the principal contractor, to ensure this coordination, issue instructions to such contractors and any others, and ensure the instructions do not require these contractors to contravene or exceed their responsibilities under the OHS Regulation 2001 or commit the Principal to any additional expense.

### Certification of Formwork

In this clause **Occupational Health and Safety**, the terms “qualified engineer” and “formwork” have the meanings given in Clause 209 of the *NSW OHS Regulation 2001*. “Related Entities” means businesses, one of which is owned wholly or in part by the other or that have proprietors, directors, officers, shareholders or employees in common.

Inspection and certification of formwork, if required by Clause 233 of the *NSW OHS Regulation 2001*, must be carried out by a qualified engineer who is not a proprietor, director, officer, or employee either of the entity carrying out the formwork erection or a Related Entity to that entity. In addition, if the Contractor carries out the design of the formwork, then the qualified engineer must not be a proprietor, director, officer or employee either of the Contractor or a Related Entity to the Contractor.

If such inspection and certification are required, the Contractor and any subcontractors involved must include the inspection and certification as actions in Safe Work Method Statements for the erection and use of formwork, and they must be hold points in the Contractor’s and subcontractors’ Inspection and Test Plans.

Submit formwork certification before commencing the use of the formwork. Do not use the formwork before this certification is submitted.

### Site-specific Safety Management Plan

Document, implement and maintain a Site-specific Safety Management Plan, and ensure that each subcontractor documents, implements and maintains an appropriate Site-specific Safety Management Plan, and each consultant that is able to influence health and safety outcomes implements an OHS management plan. The plans must comply with the *OHS Management Systems Guidelines*.

Site-specific Safety Management Plans must address the provisions outlined below for such Plans. The consultant OHS management plans must comply with the *OHS Management Systems Guidelines* management plan requirements for design and/or other applicable consultant services, and address the elements outlined in the next paragraph to suit the consultant services involved.

When the Contractor’s Site-specific Safety Management Plan identifies and assesses the OHS hazards/risks associated with the work of a subcontractor/consultant, and provides complete and commonly applicable provisions for statements of responsibilities, design and other consultant services, OHS induction and training, incident management, risk/hazard identification/assessment and control, consultation, Safe Work Method Statements and Site Safety Rules (as applicable); the subcontractor/consultant may adopt the Contractor’s Plan, and submit only Safe Working Method Statements for the work activities assessed as having health and safety risks.

Submit the Contractor's Site-specific Safety Management Plan, less Safe Work Method Statements, no later than 14 days before the design or construction work for which it applies commences, at least covering that work. Do not start the work before complying documents are submitted. Submit revisions to the Plan.

Ensure that certification of the provision and compliance of other Site-specific Safety Management Plans, consultant OHS management plans and the Safe Work Method Statements (with copies of those dealing with the applicable risks identified in subclause GUIDANCE ON PREPARATION OF PLANS AND SAFE WORK METHOD STATEMENTS below) are submitted no later than 14 days before the design or construction work for which they apply commences, at least covering that work. Do not start the work before complying documents are submitted. Submit revisions to the certification following reviews, revisions and amendments.

### **Guidance on Preparation of Management Plans and Safe Work Method Statements**

Guidance on OHS management plans and Safe Work Method Statements, extracted from the "OHS Management Systems Guidelines" is contained in NSW Government publication: "How to prepare Site-specific Safety Management Plans and Safe Work Method Statements", which is available on request from the Principal or from the internet web site at:

<http://www.construction.nsw.gov.au/ohs/index.html#Publications>

Such guidance is also available in the WorkCover "Subby Pack".

As part of the Plan implementation, inspect the work sites and identify hazards arising from the sites. Assess the risk of harm to health and safety of any person arising from any hazard identified, and eliminate or control all such risks to health and safety.

In reviewing and assessing risks, take into account, but do not only rely on, any hazard identification or risk assessment or risk management information provided by the Principal. Do not rely on any omissions from this information or any mention of a hazard as evidence of the absence of any hazard.

The Safe Work Method Statements must cover all health and safety risks, be regularly reviewed and amended when conditions change. They must as a minimum where applicable be submitted for, cover and be certified as covering the control of risks with, all work involving electrical installations and power tool (including explosive tool) use; scaffolding, formwork and temporary supports; moving plant and work near traffic; unloading materials and equipment; excavations and trenching, particularly deeper than 1.5 metres; work at heights, particularly over 3 metres; confined spaces; hazardous substances, including handling asbestos; demolition work; use of explosives; gas installations; work near public places; and work involving drowning risks.

### **Design**

Periodically review and revise designs prepared under the Contract to ensure that all reasonably foreseeable hazards and risks to health and safety, both in the execution of the design, and in the use, maintenance, repair, operation and demolition of the design product are identified, assessed and, where practicable, eliminated. Where it is not practicable to eliminate risks, to the extent practicable, effectively control the risks by design or, where this is not practicable, by operational requirements. Document and report on, as part of regular design reports, the review and the identification of hazards and controls, including any operational requirements.

### **Site Safety Rules**

Site safety rules must, as a minimum, effectively identify and implement the provisions shown below. Site safety rules must make it a condition of entry to the applicable work site that all employees and visitors comply with the provisions:

- **Industry OHS Induction.** All persons working on the work site must complete, and display evidence of completing, Industry OHS Induction prior to commencing work on the work site.

- **Site Induction.** All persons working on or visiting the work site must attend a Site Induction prior to entering the work site. Visitors may enter a work site if accompanied by a person who has attended a Site Induction.
- **Safe Work Method Statements.** Before works starts Safe Work Method Statements must be prepared and used for all work activities assessed as having health and safety risks. They must be revised when conditions change.
- **Safety Helmets and Footwear.** Safety helmets and footwear must be worn by all supervisors, employees, and visitors in building and construction areas at all times. The helmets must comply with AS 1801: footwear must comply with AS 2210.
- **Safety Vests.** Safety vests must be worn by all supervisors, employees and visitors in construction areas at all times when plant and equipment is in operation at the work site or at other times as directed by the Principal Contractor.
- **Alcohol and Drugs.** The consumption of alcohol, during working hours, and illegal drugs is prohibited.
- **Accidents and Incidents.** Accidents and injuries must be reported immediately to the Contractor's and applicable subcontractor's site representative in charge
- **First Aid.** All persons requiring first aid treatment must contact the first aid officer who will administer the treatment and record the injury in the WorkCover Register of Injuries, including; the person's name and the nature of the injury.
- **Fire Prevention.** Fire prevention must be employed by all persons on the work site, and an appropriate fire extinguisher must be on hand for all hot work.
- **Housekeeping.** Work areas must be kept clean and tidy, with rubbish and other safety hazards, cleaned up promptly. All protruding nails shall be removed immediately from timber.
- **Electrical.** All temporary electrical work and electrical plant must comply with the *Code of Practice for Electrical Practices for Construction Work* and AS/NZS 3000:2000 Wiring Rules.
- **Leads and Power Tools.** Every owner must ensure all leads and power tools are inspected and tagged by a licensed electrician prior to their use and thereafter at monthly intervals. All details of their inspection must be recorded in a site log book. Details on the tags and in the log book must include the licence number of the electrician, date of the inspection and the owners plant number of the item inspected. The maximum length of any power lead must not exceed 30 metres.
- **Mobile Plant.** Every owner of plant must ensure that it is registered with WorkCover when required and operators are appropriately qualified. Mobile plant must be fitted with working hazard lights/reversing lights and beepers.
- **Hazardous Substances.** Chemicals and other hazardous substances must be used and stored in compliance with Material Safety Data Sheets (MSDS) and details must be recorded on the Register of Hazardous Substances.
- **Working at Height.** Working at heights above 2 metres must be in accordance with WorkCover requirements, including OHS Regulation 2001, clause 233, regarding formwork certification.
- **Security and Public Access.** Security measures, including perimeter fencing, will be used to prevent unauthorised access to building and construction areas, and ensure safe access and passage for all those on and adjacent to the work site.
- **Toolbox Talks.** There must be regular discussions between and consultation with those working on the work site on site health and safety matters.

### Accident and Incident Management

Before commencing any work on the Site, nominate to the Principal the persons who will be responsible for investigating accidents and incidents and initiating corrective actions outside normal working hours. Nominate procedures for contacting them. Notify promptly any changes to such nominations and procedures.

### Serious Incident Reports

Immediately notify WorkCover and the Principal of any serious incident. Then formally notify WorkCover in accordance with the NSW OHS Regulation 2001 (Part 12.1), using the prescribed form, and immediately supply an additional copy to the Principal. If requested, supply a written report to the Principal in the form directed.

### Prohibition and Improvement Notices (PIN's) and On-The-Spot Fines

Immediately notify the Principal of any PIN or on-the-spot fine issued by WorkCover for a breach. Provide the Principal with a copy of the PIN or fine notice and written details of the corrective action taken by the Contractor and the applicable subcontractor to rectify the breach and to prevent recurrence.

### Construction Work Site Checklist

Supply to the Principal at each regular site meeting a completed copy of a Construction Work Site Checklist covering all work involving health and safety risks, and reviewing the reasonable health and safety precautions taken. Copies of Checklists (Form PWF-0667) are available from the Principal for this purpose. Rectify all non-conformance indicated by the completed Checklists and prevent recurrences.

### Failure to Comply

If at any time the Contractor has not carried out its obligations under this clause **Occupational Health and Safety**, then notwithstanding any other provisions of the Contract, no payment will be due to the Contractor until the 7<sup>th</sup> day after the required action has been carried out.

## 2.4 HAZARDOUS SUBSTANCES

### Definition

Hazardous Substance means a substance that is listed in the document entitled *List of Designated Hazardous Substances* published by Worksafe Australia; or a substance that fits the criteria for a hazardous substance set out in the document entitled *Approved Criteria for Classifying Hazardous Substances* published by Worksafe Australia.

Asbestos, material containing asbestos, polychlorinated biphenyl (PCB) and lead based paints are recognised as hazardous substances. Other substances in certain situations are also considered hazardous and therefore require controlled handling. Examples are glues, solvents, cleaning agents, paints, and water treatment chemicals.

Work involving stone, rock, concrete, masonry and such materials containing silica, is work under the Contract whether explicitly identified in the Specification or not. The Contractor is responsible for the control of any hazard which may arise from the presence of silica.

### Response to Unexpected Discovery

If any hazardous substance not specified in work under the Contract is discovered on the Site the Contractor must suspend all work which may result in exposure to such hazardous substance and notify the Principal's Representative immediately of the type of substance and its location.

With the initial notification, or as soon as practicable thereafter, submit details, including:

- the additional work and additional resources the Contractor estimates to be necessary to deal with the substance so that work and subsequent use of the Works may proceed safely and without risk to health

- the time the Contractor anticipates will be required to deal with the substance and the expected delay in achieving Completion;
- the Contractor's estimate of the cost of the measures necessary to deal with the substance; and
- other details reasonably required by the Principal's Representative

The Contractor must, in planning and carrying out any work dealing with the substance take all reasonable steps:

- to carry out the work concurrently with other work wherever possible; and
- to otherwise minimise effects of the work on the Contractual Completion Date.

### **Responsibility For Decontamination**

Control and decontamination of any hazardous substances is the responsibility of:

- the Principal, in respect of any such substances not identified in the Contract Documents, which are discovered on the Site; and
- the Contractor, in respect of any such substances identified in the Contract Documents.

### **Decontamination By Principal**

Where the Principal is responsible for the control and decontamination of any hazardous substances, the Principal's Representative may suspend the whole or any part of the Works until the hazardous substances are isolated or removed.

### **Decontamination By Contractor**

Where the Contractor is responsible for the control and decontamination of the Site following the discovery of hazardous substances, handle, use, isolate, remove and dispose of such substances in accordance with statutory requirements.

The Environment Protection Authority or Waste Service NSW may advise of suitable disposal sites.

## **2.5 ASBESTOS DECONTAMINATION**

### **Requirement**

Where the Contractor is responsible for asbestos decontamination work, including stripping, encapsulation or removal, comply with and carry out all work in accordance with the relevant statutory requirements, standards, codes and guidelines including but not limited to the following, where applicable:

- Occupational Health and Safety Act 2000
- Occupational Health and Safety Regulation 2001
- WorkCover Authority of NSW requirements
- WorkSafe Australia - Asbestos: Code of Practice and Guidance Notes
- Environmentally Hazardous Chemicals Act 1985
- Waste Avoidance and Resource Recovery Act 2001

Where the regulations require registration or a licence for the asbestos decontamination work, submit a copy of the current licence or registration certificate.

### **Notification**

Notify the local office of WorkCover and the Principal's Representative of the intention to commence any asbestos decontamination not less than seven days prior to such work commencing.

### **Work Method**

In addition to any other occupational health and safety provisions of the Contract, provide also the following details of the proposed work:

- description of work to be done, proposed methods and work area
- description and location of decontamination units and changing areas
- location of drains to be used and type of liquid waste filters
- type of respirators or air hoods
- description of what will take place if an asbestos fibre leak occurs
- what emergency plans including communications will be in place.

Notwithstanding any other provisions of the Contract, submit a program which outlines how requirements of this subclause will be met.

### **Monitoring**

Provide dust monitoring by an independent testing authority on each day during decontamination and on completion of each area where decontamination occurred.

## **2.6 ENVIRONMENTAL MANAGEMENT SYSTEMS**

### **Specification and Statutory Requirements**

Contractors must comply with the NSW Government *Environmental Management Systems Guidelines* (EMS Guidelines)

The environmental management requirements contained in this Specification and the *EMS Guidelines*:

- may be in addition to, but are not in substitution for, any statutory requirements; and
- do not limit the powers of the Principal's Representative or Principal or the liabilities and responsibilities of the Contractor.

### **Project Environmental Management Plan**

Adopt and implement the Project Environmental Management Plan attached as PRELIMINARIES SCHEDULE - PROJECT ENVIRONMENTAL MANAGEMENT PLAN.

Complete all incomplete information in PRELIMINARIES SCHEDULE - PROJECT ENVIRONMENTAL MANAGEMENT PLAN and submit a completed copy no later than 7 days before construction work commences. Submit revisions to the Plan.

### **Failure to comply**

If at any time the Contractor has not carried out its obligations under this Clause, then notwithstanding any other provisions of the Contract, no payment is due to the Contractor until the 7<sup>th</sup> day after the required action has been carried out.

## 2.7 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

### Restricted Timbers

Do not use the following timbers or their products for work under the Contract:

- rainforest timbers, unless certification is provided that they are plantation grown;
- timber from Australian high conservation forests.

## 2.8 WASTE MANAGEMENT

### Requirement

Recycle and divert from landfill surplus soil, rock, and other excavated or demolition materials, wherever this is practical. Also separately collect and stream quantities of waste concrete, bricks, blocks, timber, metals, plasterboard, paper and packaging, glass and plastics and offer them for recycling where practical.

Ensure that no waste from the site is conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.

### Monitoring

Monitor waste volumes and record their method and location of disposal and whether or not that location was a place that could lawfully be used as a waste facility for that waste. Submit a progress report every two months, and a summary report before Completion, on the implementation of waste management measures, including the total quantity of material - purchased, quantity purchased with recycled content and the total quantity of waste - generated, total quantity recycled, total quantity disposed of and the method and location of disposal in the form of *WRAPP and Waste Disposal Report PWF-2201* available on

<http://www.dpws.nsw.gov.au/sps/doc/pwf2201.doc>

Report immediately the details of any waste from the site which has been conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.

## 2.9 PEST CONTROL

### Restrictions

Do not use any chemical pesticides and termiticides for new construction work. Use preventive treatment by physical means to minimise the risk of pest infestations.

Chemical treatments may be used in existing buildings only as a last resort for the eradication of pest and termite infestations. Chemical pesticides used for this purpose must be registered by the National Registration Authority for Agricultural and Veterinary Chemicals and applied by a Pest Control Operator licensed by WorkCover.

Pest preventive methods must comply with AS 3660.1-2000 Protection of Buildings From Subterranean Termites except for references to chemical soil barriers), as well as supplementary standards for existing buildings.

## 2.10 WORK METHOD

If the Contract prescribes a particular work method or the Principal or Principal's Representative directs that a particular work method must be used to the exclusion of the other work methods, then that work method is part of the Contract.

Otherwise, the work method is not part of the Contract and the Contractor is free to use any work method. This is so even though, before or after acceptance of the tender, the Contractor made known to the Principal the Contractor's proposed work method and the Principal accepted or approved it.



If the work method is not part of the Contract, the fact that the proposed work method is impractical or impossible or the Contractor, with or without the approval of the Principal's Representative, uses another work method will:

- not entitle the Contractor to make a claim on the Principal;
- not be grounds for an extension of time for Completion;
- not cause the Contract to be frustrated.

## 2.11 STANDARDS

Where the Contract requires compliance with a standard or Code, unless otherwise specified that Standard or Code shall be the one current at the closing date for tenders, except for the Building Code of Australia, which shall be the one current at the Date of Completion.

Where the Contract refers to an *Australian Standard* it does not preclude the adoption of a relevant international standard.

## 2.12 CLEANING UP

### Requirement

All visible external and internal surfaces, including fittings, fixtures and equipment, must be free of marks, dirt, dust, vermin and unwanted materials, at Completion.

## 2.13 PROPRIETARY ITEMS

### Implication

Identification by the Principal of a proprietary item does not necessarily imply exclusive preference for the item so identified, but indicates the required properties of the item.

### Alternative Offer

The Contractor may offer an alternative to any proprietary item. Apply in writing for approval to use the alternative. The request must be accompanied by all available technical information and shall describe how, if at all, the alternative differs from the proprietary item and how it will affect other parts of the Works and performance of the Works.

Except to the extent that the approval, if any, of the Principal's Representative includes a contrary provision, the approval shall be deemed to include the conditions that:

- the variation must not directly or indirectly result in any increase in the cost to the Principal of the Works;
- the Contractor must indemnify the Principal against any increase in costs;
- the variation must not directly or indirectly cause any delay to the Works and if it does, the Contractor will compensate the Principal for any loss which the delay causes.

## 2.14 GUARANTEES

### Generally

Obtain and ensure that Moree ACDP will have the benefit of warranties or guarantees as specified in the Contract or offered by suppliers, including warranties or guarantees that are obtained by, or offered to the subcontractors of the Contractor.

## 2.15 SELECTED SUBCONTRACTS – NOT USED



**2.16 SCHEDULE TO PRELIMINARIES - ENVIRONMENTAL MANAGEMENT PLAN**

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
<b>General</b>						
Vehicles and plant	Exhaust emissions are minimised	No vehicles or plant producing excessive exhaust emissions will be used				
Emergencies - Incident reporting.	All environmental incidents are reported to the Principal's Representative. immediately	All environmental incidents will be reported to the Principal's Representative immediately				
Emergencies - Spills	Spills are contained, damage to the eco-system minimised and rectification organised	Emergency procedures to handle spills including oil and chemicals will be established before delivery begins				
Other environmental emergencies	Damage to the eco-system from environmental emergencies is minimised	Emergency procedures to handle other foreseeable environmental emergencies will be established				
Compliance Audit	Compliance with environmental requirements and, if breaches are detected, rectification of defects	The Contractor will: <ul style="list-style-type: none"> <li>• Cooperate with periodic environmental audits; and</li> <li>• Rectify any environmental breaches identified within the time frame specified in the audit</li> </ul>				
Noise	Minimal detrimental impact	Adherence to EPA, Council and other noise limits will be mandatory  Equipment will be kept in good repair and condition  The Contractor will contact, co-operate and coordinate with neighbouring facility operators				

## 2. PRELIMINARIES

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
Waste - Quantity of materials	Minimal quantity of waste materials generated as a consequence of the Contract	Development and implementation of a strategy to reduce the quantity of waste generated as a consequence of the Contract				
Waste Disposal	<p>Appropriate and lawful disposal of waste associated with the Contract including:</p> <ul style="list-style-type: none"> <li>• Packaging materials;</li> <li>• Replaced or redundant parts or materials;</li> <li>• Chemicals;</li> <li>• Oils and grease from machinery;</li> <li>• Paints and solvents including the cleaning of equipment, tools and brushes;</li> <li>• Cleaning materials and rags;</li> <li>• Trade Waste;</li> <li>• Materials unsuitable for re-use; and</li> <li>• Other waste</li> </ul>	<p>Identify lawful places for disposal of all types of waste generated as a consequence of the Contract.</p> <p>Ensure that no waste from the site is conveyed to or deposited at any place that cannot lawfully be used as a waste facility for that waste.</p> <p>Record, for all waste, the method and location of disposal, and whether or not that location was a place that could lawfully be used as a waste facility for that waste.</p> <p>Submit to the Principal's Representative reports, including the record of waste disposal and method and location of disposal; and immediate reports of the details of any waste from the site which has been conveyed or deposited at any place that cannot lawfully be used as a waste facility for that waste.</p>				

## 2. PRELIMINARIES

ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
Records	Sufficient records to demonstrate appropriate environmental management  Notifications and Fines from the EPA and the resulting Corrective Action	This Environmental Management Plan and modifications to suit this Contract will be submitted to the Principal's Representative  The Environmental Management Plans will be updated as required  Appropriate progress and other reports will be submitted to the Principal's Representative  The Principal's Representative will be notified of all EPA action and Fines from the EPA and the resulting Corrective Action  All records will be securely filed using an effective document retrieval system				
<b>Delivery</b>						
Vehicle access	Damage to the ecosystems on Site is minimised	All vehicles and plant will access the site along designated routes				
Parking of vehicles and plant.	Damage to the ecosystems on Site is minimised	All vehicles and plant will park in designated areas				
Movements of Pedestrians, materials and equipment	Damage to the ecosystems on Site is minimised	All pedestrian materials and equipment movement from and to vehicles will be along approved access routes				
Wash down of vehicles and plant.	Stormwater is not polluted by residues from wash down	Vehicles and plant will be washed down only in areas approved by the Principal's Representative for this purpose				

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2. PRELIMINARIES

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ISSUE	OBJECTIVE	HOW THE OBJECTIVE WILL BE ACHIEVED. ACTIONS REQUIRED TO ACHIEVE THE OBJECTIVE	WHEN THE ACTIONS WILL BE TAKEN	WHO WILL ENSURE THAT THE OBJECTIVE IS ACHIEVED	ACTION ACTUALLY TAKEN TO ACHIEVE THE OBJECTIVE	OTHER RECORDS AND WHERE THEY ARE KEPT
<b>Removal and Making Good</b>						
Reinstatement	Re-instatement of damaged eco-systems to their previous condition	Relevant areas of Site will be cleaned and re-instated				

**END OF SECTION - PRELIMINARIES**

# 3 GENERAL

## 1 GENERAL

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### 1.1 SCOPE OF WORKS

Work under this contract includes the construction of 4No. new houses and associated siteworks on individual sites in Mehi Crescent, Moree.

### 1.2 ACCESS TO PROPERTIES

All sites are occupied and site access is to be organised with Daniel Rose

### 1.3 WORK SEQUENCE

The sequence of giving possession of the sites to the contractor is to be by prior arrangement with the Principals Representative.

### 1.4 MONTHLY REPORTS

The contractor shall submit monthly Project Construction Reports during the course of the works. The reports are to be submitted to the Principals Representative generally by the end of the third week of the month or with monthly progress claims.

The report is to include the following information:

1. Description of the physical progress
2. Level and type of Community members' employment, in working days.
3. Actual time performance against the approved construction program.
4. Progress payments summary and variations summary.

### 1.5 HANDOVER MANUALS

The Contractor is to submit the following documentation to be incorporated into Handover Manuals which will be prepared by the Principals Representative.

- Schedule of contractors and subcontractors with names, addresses, telephone and facsimile numbers.
- Copies of all notices issued by Council.
- Schedules of operation and maintenance requirements for all new equipment including stoves, fireplaces, hot water systems, pumps, smoke detectors, etc.
- Manufacturers guarantees for all new equipment.
- Copies of other certification required including wet area waterproofing, electrical work, essential services (eg. Smoke detectors)
- 'As-built' plans including architectural details and drainage plans for sewer and stormwater.

A separate set of the above documentation is to be submitted for each house *plus two (2) additional sets*.

**1.6 ABORIGINAL EMPLOYMENT**

Refer to Section 4 'Employment Strategy Mehi Village'. Tender Schedule No. 6 'Schedule of Employment Proposed' is to be submitted with the Tender Form. Failure to submit this Schedule will render the tender non-conforming.

**1.7 INSURANCE**

Home Owners Warranty Insurance is exempt for this project.

**END OF SECTION - GENERAL**

## **4 EMPLOYMENT AND TRAINING STRATEGY**

### **MEHI CRESCENT**





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## **MOREE ACDP MAJOR WORKS**

### **EMPLOYMENT AND TRAINING STRATEGY**

The Contractor is required to provide employment opportunities to the local Aboriginal community as detailed in this section. Notwithstanding these requirements, it remains the Contractor's responsibility to ensure time, cost and quality requirements of the tender documents are met.

If the Contractor is unable to ensure these requirements are met under the employment strategy, they will immediately discuss the issue with the Principal's Representative and agree on a course of action to overcome the deficiencies.

#### **1. EMPLOYMENT ARRANGEMENTS WITH MEHI RESIDENTS**

There are a number of residents at Mehi Crescent that may be able to work for the Contractor in the form of labourers, partly qualified or qualified tradesmen. Alex Gillon (10 Mehi Crescent ph.0415 586 109) is the contact person to advise Contractors on availability.

There are a number of work packages that may be able to be carried out by Mehi residents under the supervision of the Contractor. Such work may be continuous or on demand. The work packages that may be available include

- Fencing;
- Site Filling;
- Preparation and laying of turf;
- Installation of clothes lines;
- Forming and installation of paths;
- Forming and installation of driveways;
- Building rubbish removal.

For Mehi residents employed, the Contractor shall meet all requirements for workers compensation, superannuation, long service leave payment scheme etc. The Contractor will ensure workers employed have a "General Induction Certificate for Construction Work" issued by WorkCover as appropriate.

If suitable arrangements cannot be made with the Mehi residents to carry out any of the above work packages, the Contractor is to arrange for the work to be carried out by other labourers or qualified sub-contractors or staff.

The Tenderer shall detail proposed Aboriginal employment in the Returnable Schedule.

#### **2. LOCAL TRADESPEOPLE**

The Contractor shall employ local suitably qualified tradespeople where possible. However, this must not affect the quality of the works being undertaken for the duration of the construction works.

#### **3. MONTHLY REPORTS**

Monthly reports are to be submitted to Daniel Rose Consultants Pty Ltd detailing the number of local indigenous employment/training personnel engaged as well as the use of local suppliers and equipment.



# 5 DEMOLITION

## 1 OUTLINE OF DEMOLITION REQUIREMENTS

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Work under the Contract includes:

- Fencing, hoardings and warning notices;
- Demolition of all specified buildings and other structures to the level of the external ground, with the exception of items required by authorities for the continuation of services and items listed in DEMOLITION SCHEDULE.
- Removal from the Site of all rubbish, debris, rubble, stockpiled materials, hazardous substances and other items not salvaged or preserved.

## 2 DEMOLITION GENERALLY

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### Standard

Perform the demolitions necessary to carry out the work under the Contract, to AS 2601. Keep on Site a copy of AS 2601.

### Demolition Schedule:

*The demolition works include but are not limited to all items shown on the drawings and/or scheduled below:*

- *Electrical Supply: - Power lines are to be disconnected and re-directed to the new residences as required.*
- *11 Mehi Crescent: - Demolish existing structures, fences, paths and trees as indicated on the drawings.*
- *35 Mehi Crescent: - Demolish existing structures, fences, paths and trees as indicated on the drawings.*
- *46 Mehi Crescent: - Demolish existing structures, fences, paths and trees as indicated on the drawings.*
- *48 Mehi Crescent: - Demolish existing structures, fences, paths and trees as indicated on the drawings.*

### Items to be Salvaged by the Principal:

The following items will be salvaged and removed from the Site by the Principal before commencement of work under the Contract:

- Nil

## 3 REQUIREMENTS OF AUTHORITIES

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Note requirements under General Compliance or Statutory Requirements of the General Conditions of Contract. Such requirements include, but are not limited to:

- NSW Occupational Health and Safety Regulation 2001;
- Relevant Workcover Codes of Practice and Guidance Notes.

### **Evidence of Compliance**

Before commencing demolition, submit evidence that

- requirements of authorities relating to the work under the Contract have been ascertained;
- a permit to demolish has been obtained from the appropriate authority;
- a scaffold permit has been obtained from the appropriate authority (if scaffolding is proposed to be used);
- all precautions necessary for protection of persons and property have been taken and suitable protective and safety devices provided to the approval of the relevant authority;
- treatment for rodent infestation has been carried out and a certificate has been obtained from the appropriate authority;
- all fees and other costs have been paid.

## **4 INSPECTION**

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### **Notice**

Give sufficient notice so that inspection may be made of the following:

- Site after removal of demolished materials.

Minimum notice required: 5 working days

### **Notice of Completion**

Give not less than 7 working days' notice of completion of demolition so that adjacent structures can be inspected following such completion.

## **5 INVESTIGATING AND PLANNING**

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### **Requirement**

Carry out the investigations of the structure and the site and prepare and document a work plan to AS 2601- 2001, Clause 2.3. Include in the work plan the following additional information:

- The method of protection and support for adjacent property.
- Locations and details of necessary service deviations and terminations.
- If removal of asbestos or of material containing asbestos is required, the information specified in the 'National Occupational Health and Safety Commission Code of Practice for the Safe Removal of Asbestos (2002)', Clause 1.2.

### **Records**

Keep the records of the investigations on site and available for inspection until the appropriate Completion Date of the Contract.

### **Work Plan**

Obtain approval of the work plan by the regulatory authority before commencing demolition or stripping work. Submit to the Principal a copy of the approved work plan.

### **Site Copy**

Keep on site a copy of the approved work plan including changes, if any, approved in accordance with AS 2601- 2001, Clause 2.5.

## **6 ADJOINING PROPERTIES**

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### **Requirement**

Make allowance for any restriction arising from the existence, occupancy and use of adjoining properties. Fully respect the rights of adjacent owners and exercise caution when performing work directly or indirectly affecting adjacent premises, owners and tenants.

### **Notice**

Give at least 10 days notice to owners of adjoining properties in respect of any work which may affect their property, themselves or tenants, including proposed safeguards if necessary.

## **7 EXPLOSIVES**

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### **Requirement**

Do not use explosives in demolition unless approved. No claim shall arise should approval be refused.

### **Approval Conditions**

Approval, if given, shall be subject to compliance with AS 2187, Parts 1 and 2, and to such conditions as the Principal may impose, which may include changes to the Contractor's proposals.

## **8 METHODS**

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### **Demolition Methods**

Use methods and sequences specified in the work plan. Obtain prior approval before deviating from the requirements of the approved work plan.

## **9 DEMOLISHED MATERIALS**

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### **Ownership**

Except for materials to be salvaged or otherwise specified to remain the property of the Principal, demolished materials shall be the property of the Contractor.

### **Encroachment**

Prevent the encroachment of demolished materials on to adjoining property, including public places.

### **Removal**

Remove demolished materials from the site except for items required to be salvaged or required to be stockpiled, or items permitted to be re-used in the Works.

**END OF SECTION - DEMOLITION**



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## **6. TECHNICAL SPECIFICATION**

### **ARCHITECTURAL**

Note: Refer also to separate specification clauses at the end of this section for Earthworks, Concrete Formwork, Concrete Reinforcement, Insitu Concrete and Light Timber Framing. These clauses have been prepared by the Structural Engineer and are to be read in conjunction with the other Technical Specification clauses. Any discrepancies are to be brought to the Principals Representative's notice during tender time for clarification.





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## **6. TECHNICAL SPECIFICATION**

### **STRUCTURAL**



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## **TENDER SCHEDULES**

**1 TENDER FORM**

Location and Fax No. of  
Tender Closing Office: Level 3, McKell Building, 2-24 Rawson Place, Sydney NSW 2000

Facsimile: 02/9372.8974

Name of Tenderer  
(in block letters): .....

A.B.N.  
(if applicable): .....

Address: .....

Telephone number: .....

Facsimile number: .....

e-mail address: .....

hereby tender(s) to perform the work for

MOREE ACDP MAJOR WORKS – CONSTRUCTION OF 4NO.  
REPLACEMENT HOUSES AT MEHI CRESCENT, MOREE  
(PACKAGE 2)

(Contract No. 0500804)

in accordance with the following documents:

TENDER DOCUMENT VOL. 1 SPECIFICATION

TENDER DOCUMENT VOL. 2 DRAWINGS

and Addenda Numbers: .....

For the lump sum of: .....

(\$.....) including GST.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 2 SCHEDULE OF RATES AND LUMP SUM ITEMS

(SUBMIT WITH TENDER FORM)

Complete the Schedule by inserting the tendered rates under RATE or where Lump Sum appears, by inserting the tendered lump sum for the items of work under AMOUNT. Where a rate is tendered, insert under AMOUNT the amount arrived at by multiplying the tendered rate by the quantity. The rates and lump sums tendered shall form part of the Contract. The correct extended amounts and total shall be used to assess tenders.

Item No.	Description	Quantity	Unit	Rate	Amount
1.	All work and obligations under the Contract NOT INCLUDED ELSEWHERE in this Schedule.		Item	Lump Sum	\$
2.A	Schedule of Lump Sum items:				
2.A1	Construction of 4No. Replacement Houses at Mehi Crescent, Moree excluding items 2.A2 – 2.A5 scheduled below:				
	No. 11 Mehi Crescent, Moree		Separate price per house		\$
	No. 35 Mehi Crescent, Moree		Separate price per house		\$
	No. 46 Mehi Crescent, Moree		Separate price per house		\$
	No. 48 Mehi Crescent, Moree		Separate price per house		\$
2.A2	Fencing		Item	Lump Sum	\$
2.A3	Clothes Lines		Item	Lump Sum	\$
2.A4	Driveways		Item	Lump Sum	\$
2.A5	Landscaping		Item	Lump Sum	\$
TOTAL OF TENDER:					\$
GST:					\$
TOTAL OF TENDER INCLUDING GST:					\$

Signed for the Tenderer by: ..... Date:.....  
 Name (in block letters): ..... (Authorised Officer)  
 In the Office Bearer capacity of: .....

### 3 SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT

(SUBMIT WITH TENDER FORM)

Provide brief details of all imported materials and equipment to be supplied or incorporated into the Works, and country of manufacture or origin. Do not include goods manufactured in New Zealand.

The value of the imported content must be the estimated duty paid value inclusive of the value of any services (eg. overseas freight and insurance, software in computer tenders, consultancy or engineering fees) or any charges of overseas origin, together with customs clearing charges.

This is not a Schedule of Rates within the meaning of the Construction Contract Conditions. See also Preliminaries Clause - **Australian and New Zealand goods**.

Description	Country of Origin	Value AS
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....
.....	.....	\$ .....

Signed for the Tenderer by: ..... Date:.....  
 Name (in block letters): ..... (Authorised Officer)  
 In the Office Bearer capacity of: .....

#### 4 SCHEDULE OF ALTERNATIVES TO IMPORTED GOODS

(SUBMIT WITH TENDER FORM)

Provide brief details of materials and equipment of Australian and/or New Zealand manufacture as alternatives to imported materials and equipment as listed in the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT, or give reasons why such alternatives cannot be provided.

The Principal may accept a tender specifying all or any of the items listed below, with an adjustment to the contract price based on the difference between the prices listed in this Schedule and the SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT.

Description of Australian and/or New Zealand manufactured Alternatives	Value A\$
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....
.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

## 5 SCHEDULE OF NSW COUNTRY MANUFACTURED GOODS

(SUBMIT WITH TENDER FORM)

Complete the Schedule if you wish to seek preference under the NSW Country Industry Preference Scheme (CIPS.). The preference may be given only to a Tenderer who is a NSW manufacturer registered under the scheme.

State your CIPS. registration number. Give details of the materials and equipment to be supplied or incorporated into the Works, the place of manufacture, the percentage(s) applicable for preference purposes and the value added content at the Tenderer's works for the material or equipment manufactured by the Tenderer for incorporation in the Works.

This is not a Schedule of Rates within the meaning of the Construction Contract Conditions.

C.I.P.S. Registration No.: .....

Description	Place of Manufacture	% Applicable	Value Added Content \$
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....
.....	.....	.....	\$ .....

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....





## 7 SCHEDULE OF FINANCIAL ASSESSMENT INFORMATION

(SUBMIT WHEN REQUESTED BY PRINCIPAL OR FINANCIAL ASSESSOR)

Provide documents and information listed below in accordance with Clause Conditions of Tendering - **Financial assessment.**

1. Financial Statements for last three years for the entity under consideration, including:

- i) Balance Sheets;
- ii) Profit and Loss Statement;
- iii) detailed Profit and Loss Statement;
- iv) statement of Cash Flows;
- v) notes to and Forming Part of the Accounts;
- vi) an Accountant's Report; and
- vii) where existing, Auditor's Reports.

Consolidated accounts of a parent organisation or group to which the entity belongs are not acceptable.

2. Where latest financial statement is more than 6 months old, the latest management report showing:

- i) a trading statement;
- ii) a profit and loss statement; and
- iii) a trial balance.

3. Where the company is required to lodge audited financial statements with ASIC, copies of these statements for the last three years.

4. Where any financial statement supplied is not audited, copies of the entity's tax returns for last three years.

5. A letter from the Tenderer's banker providing details of overdraft and guarantee facilities including:

- i) Bank, Branch, and Account Names,
- ii) type and limit of bank overdraft facility,
- iii) type and limit of bank guarantee facility,
- iv) current bank overdraft balance,
- v) number and amount of bank guarantees outstanding; and
- vi) details of other bank funding facilities available to the Tenderer, such as term loans, lines of credit, commercial bills and other debt instruments.

6. Current and projected cash flows for all work on hand.

7. Forecast budget for forthcoming financial year including Revenue and Profit and Loss.

8. Names and contact numbers of:

- i) major suppliers; and
- ii) major subcontractors.

9. Details relating to the Tenderer's history and Directors Profiles.

Signed for the Tenderer by: ..... Date:.....

Name (in block letters): ..... (Authorised Officer)

In the Office Bearer capacity of: .....

**8 UNDERTAKING TO COMPLY WITH THE NSW CODE OF PRACTICE FOR PROCUREMENT .**

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(SUBMIT WHEN REQUESTED BY PRINCIPAL)

The Tenderer, if awarded the Contract, will comply with the *NSW Government Code of Practice for Procurement*.

Signed for the Tenderer by: ..... Date:.....  
Name (in block letters): ..... (Authorised Officer)  
In the Office Bearer capacity of: .....

**END OF SECTION –TENDER SCHEDULES**

Signed for the Tenderer by: ..... Date:.....  
Name (in block letters): ..... (Authorised Officer)  
In the Office Bearer capacity of: .....

## 1 GENERAL REQUIREMENTS

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### 1.1 GENERAL

#### Interpretation

Owner: Means the same as “principal” or “proprietor”.

Builder: Means the same as “contractor”.

Supply: Means “supply only” - do not install.

Provide: Means “supply and install”.

Required: Means required by the contract documents or by the local council or statutory authorities.

Proprietary: Means identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.

#### Standards

Use referenced Australian or other standards (including amendments) which are current one month before the date of the contract except where other editions or amendments are required.

#### Manufacturers' or suppliers' recommendations

Select, store, handle and install proprietary products or systems in accordance with the current published recommendations of the manufacturer or supplier.

#### Bushfire protection

If required, provide protection to AS 3959-1999 (*Construction of buildings in bushfire prone areas*).

### 1.2 CONTRACTS AND FINANCE

#### Payment and adjustment of contract sum

At commencement of the building work, submit a schedule of anticipated progress claims which will be made throughout the contract.

Progress claims break-down: With each progress claim, submit a statement of amounts claimed in respect of each worksection or trade heading designated in the specification.

### 1.3 AUTHORITIES AND ESTABLISHMENT

#### Prior applications and approvals

- ❖ *Council Development Application and Construction Certificate Applications have been lodged by the Principal's Representative.*

#### Existing services

Attend to existing services as follows:

- If the service is to be continued, repair, divert or relocate as required. If such a service crosses the line of a required trench, or will lose support when the trench is excavated, provide permanent support for the existing service.
- If the service is to be abandoned, cut and seal or disconnect, and make safe.

#### Temporary services and works

Provide temporary toilet accommodation. Connect to the sewer main if required by the Local Authority.

#### Use of existing services

Existing services may be used as temporary services for the performance of the contract.

#### Signs

Provide a signboard displaying the owner's name, the lot number and the builder's name, address and licence number.

### 1.4 EXECUTION AND COMPLETION

#### Survey marks

Preserve and maintain the owners survey marks in their true positions.

Rectification: If the proprietor's survey marks are disturbed or obliterated, immediately give notice and rectify the disturbance or obliteration.

**Hours of work**

As directed by Council

**Removal of temporary work, services and plant**

Remove temporary work services and construction plant within 10 working days after practical completion.

Rectification: Clean and repair damage caused by the installation or use of temporary work and services and restore existing facilities used during construction to original condition.

**Final cleaning**

Remove rubbish and surplus material from the site and clean the work throughout.

**Warranties**

Name the owner as warrantee and give the owner copies of manufacturers' warranties.

**Instruction manuals**

Give the owner manufacturers' instruction manuals.

**Operation**

Ensure moving parts operate safely and smoothly.

**Surveyor's certificate**

Give the owner a certificate which confirms that the work, including boundary fences, has been correctly located.

**Services layout**

Give the owner a plan which shows the location of underground services.

**Authorities' approvals**

Give the owner evidence of approval of the local council and statutory authorities whose requirements apply to the work.

**Keys**

Give the owner two keys for each set of locks keyed alike and two keys for each lock keyed to differ.

**1.5 TERMITE PROTECTION****General**

Standard: To AS 3660.1-2000 (*Termite management - New buildings*).

**Termite protection schedule**

Location	Method
Under suspended floors	<i>Ant caps and strips</i>
Timber poles, posts and framing	<i>Preservative treated</i>

Chemical soil barriers - reticulation systems: Submit evidence that the system has been type tested to AS 3660.1-2000 (*Termite management - New buildings*) Appendix E.

Termite barrier notice: Provide a durable notice permanently fixed in a prominent location to BCA Volume 2 clause 3.1.3.2 (b) (*Installation of termite barriers*) and AS3660.1 – 2000 (*Termite Management – New Buildings*) Appendix A.

**1.6 TIMBER GENERALLY****Unseasoned timber**

If unseasoned timber is provided, or variations in moisture content is likely, make allowance for shrinkage, swelling and differential movement.

**Durability**

General: Provide timbers with natural durability appropriate to the conditions of use or preservative treated timbers of equivalent durability.

Minimum requirement: To the **Natural and treated timber durability table**.

- Natural durability classification: To AS 1604.1 2000 (*Specification for preservative treatment - Sawn and round timber*) Table F2.
- Preservative treatment: To the AS 1604 series (*Specification for preservative treatment*).

**Natural and treated timber durability table**

Untreated natural durability class in AS 1604.1 Table 2	Preservative treated hazard class to AS 1604 series	Exposure	Situation and uses
Class 4	H1	Inside, above ground. Completely protected from the weather. Well ventilated.	Protect treated timber from termites.
Class 3	H2	Inside, above ground. Protected from wetting with nil leaching. Well ventilated.	Framing, flooring, joinery in dry situations. Protect untreated timber with a finish and maintain well.
Class 2	H3	Above ground, exposed to weather. Periodic moderate wetting and leaching.	Weatherboard, fascia, pergolas (above ground), window joinery, framing and decking
Class 1	H4	In-ground. Severe wetting and leaching.	Fence posts, greenhouses, pergolas (in-ground) and landscaping timbers
	H5	In-ground contact with or in fresh water. Extreme wetting and leaching.	Retaining walls, piling, house stumps, building poles, cooling tower fill.

## 1.7 STEEL GENERALLY

### Durability

General: Provide metals with inherent durability appropriate to the conditions of use or proprietary metallic and/or organic coatings of equivalent durability.

Minimum external requirements: To the **Stainless and coated steel table**.

**Stainless and coated steel table**

External environment Includes cavity wall and roof spaces not protected from moisture penetration by sheathing or sarking	Heavy steel members including lintels more than 3.2 mm thick	Light steel framing, wall ties, connectors and accessories less than 3.2 mm thick	Steel cladding, lining, trims and flashings
<b>Low corrosivity</b> - More than 10 km from salt water with breaking surf - More than 1 km from salt water without breaking surf	Galvanize after fabrication 300 g/m <sup>2</sup>	Galvanize after fabrication 300 g/m <sup>2</sup> Metallic coated sheet Z600/AZ200	Metallic-coated sheet AZ150
<b>Medium corrosivity</b> - 1 – 10 km from salt water with breaking surf - More than 50 m from salt water without breaking surf - Non-heavy industrial areas	Galvanize after fabrication 600 g/m <sup>2</sup>	Galvanize after fabrication 470 g/m <sup>2</sup> Galvanised wire 470 g/m <sup>2</sup>	Metallic-coated sheet AZ200
<b>Severe marine</b> - 200-1000 m from salt water with breaking surf - 0 – 50 m from salt water without breaking surf - Heavy industrial areas	Stainless steel 316 or 316L	Stainless steel 316 Engineered polymer	Metallic-coated sheet AZ200 plus organic coating

## 2 SITE PREPARATION

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### 2.1 GENERAL

#### Standard

Groundworks for slabs and footings: To AS 2870-1996 (*Residential slabs and footings – Construction*).

#### Interpretation

Rock: Monolithic material with volume greater than 0.5 m<sup>3</sup> which cannot be removed until broken up by mechanical means such as rippers or percussion tools.

Bad ground: Ground unsuitable for the work, including fill liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances and ground which is, or becomes, soft, wet or unstable.

Line of influence: A line extending downward and outward from the bottom edge of a footing, slab or pavement and defining the extent of foundation material having influence on the stability or support of the footings, slab or pavement.

Subgrade: The trimmed or prepared portion of the formation on which the pavement or slab is constructed.

#### Immediate notice

If rock or bad ground is encountered, advise the owner immediately.

#### Explosives

Do not use explosives.

### 2.2 DEMOLITION – REFER SPECIFICATION SECTION 5 - DEMOLITION

### 2.3 TREES TO BE RETAINED

#### Existing trees, plants and shrubs

Trees, plants and shrubs to be removed: - *All within 3 metres of the building line unless noted otherwise*

#### Marking

Mark trees which are required to be retained using suitable non-injurious, easily visible and removable means of identification. Remove the identification on completion.

#### Protection

Protect from damage trees which are required to be retained. Do not remove topsoil from the area within the dripline of the trees and keep this area free of construction material and debris.

#### Excavation

If excavating near trees required to be retained, use hand methods to locate, expose and cleanly remove the roots on the line of excavation.

### 2.4 ENVIRONMENTAL PROTECTION

#### Erosion control

Avoid erosion, contamination, and sedimentation of the site, surrounding areas, and drainage systems.

#### Dewatering

Keep the site free of water and prevent water flow over new work.

### 2.5 SITE CLEARING

#### Extent

Limit clearing to areas to be occupied by construction, paving or landscaping.

#### Clearing operations

Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble. Remove grass to a depth just sufficient to include the root zone.



### **Grubbing**

Grub out or grind stumps and roots over 75 mm diameter to a minimum depth of 500 mm below subgrade under construction, and 300 mm below the finished surface in unpaved areas.

### **Removal of topsoil**

General: Remove the topsoil layer of the natural ground which contains substantial organic matter over the areas to be occupied by construction and paving.

Maximum depth: 100 mm.

### **Topsoil stockpiles**

Stockpile site topsoil required for re-use. Protect stockpiles from contamination by other excavated material, weeds and building debris.

### **Surplus material**

Take possession of surplus material and remove it from the site.

## **2.6 EXCAVATION**

### **Extent**

Excavate to give the levels and profiles required for construction, site services, paving, and landscaping. Allow for compaction or settlement.

### **Foundations**

After excavation, confirm that the bearing capacity is adequate.

### **Under-floor access**

Provide a minimum clearance to underside of timber bearers of 400 mm.

### **Bearing surfaces**

Provide even plane bearing surfaces for load-bearing elements including footings. Step for level changes. Make the steps to the appropriate courses if supporting masonry.

### **Reinstatement**

If excavation exceeds the required depth, or deteriorates, reinstate with fill to the correct depth, level and bearing value.

### **Existing footings**

If excavation is required below the line of influence of an existing footing, use methods which maintain the support of the footing and ensure that the structure and finishes supported by the footing are not damaged.

### **Grading**

Grade the ground surface externally and under suspended floors to drain ground or surface water away from buildings without ponding.

## **2.7 SURFACE PREPARATION**

### **General**

Before placing fill, ground slabs or load-bearing elements, remove loose material, debris and organic matter and compact the ground to achieve the required density.

### **Placing fill**

Place fill in layers and compact each layer to achieve the required density.

### **Moisture content**

If necessary to achieve the required density or moisture content, adjust the moisture content of the fill before compaction.

## **2.8 PILING**

*Excavate for bored pile footings as detailed on the Structural Engineer's drawings.*

## **2.9 SERVICE TRENCHES**

### **Excavation**

Generally, make trenches straight between manholes, inspection points and junctions, with vertical sides and uniform grades.

### **Trench widths**

Keep trench widths to the minimum consistent with the laying and bedding of the relevant service and construction of manholes and pits.

**Backfilling**

General: Backfill service trenches as soon as possible after laying the service. Place backfill in layers. Compact each layer to a density sufficient to minimise settlement.

Backfill material: Excavated spoil or well graded inorganic material with maximum particle size of 75 mm.

- Next to services: Do not place any particles greater in size than 25 mm within 150 mm of services.
- Under paved areas: Coarse sand, controlled low strength material or fine crushed rock.
- In reactive clay sites classified M, H or E to AS 2870-1996 (*Residential slabs and footings – Construction*): Impervious material.

### 3 CONCRETE CONSTRUCTION

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Refer to GHD Specification which takes precedence and is bound into the rear of this specification.

#### 3.1 GENERAL

##### Cross reference

Refer to the *General requirements* worksection for termite protection.

Refer to the *Paving and roads* for paths and drainage.

##### Standards

Concrete structures generally: To AS 3600-2000 (*Concrete structures*).

Ground slabs and footings: To AS 2870-1996 (*Residential slabs and footings - Construction*).

#### 3.2 GROUND SLAB VAPOUR BARRIER

##### Material

General: Provide a proprietary vapour barrier which consists of high impact resistant polyethylene film minimum 0.2 mm thick which has been pigmented and branded by the manufacturer.

Type: - 200 micron Fortecon

##### Base preparation

Blind the surface with sufficient sand to cover any hard projections. Wet the sand just before placing the vapour barrier.

#### 3.3 REINFORCEMENT

##### Minimum lap

Splice as follows:

- Mesh generally: 225 mm.
- Trench mesh: 500 mm.
- Bars: Greater of either 500 mm or 25 x bar diameter.
- Strip footing intersections and corners: For full width of intersecting reinforcement.

##### Minimum cover

Unprotected by membrane on ground or external surfaces: 40 mm.

Protected by membrane on ground: 30 mm.

Internal surfaces: 20 mm.

Aggressive soil or salty environment: 65 mm.

#### 3.4 CONCRETE

##### Ready mixed supply

Standard: To AS 1379-1997 (*Specification and supply of concrete*).

Maximum slump: 100 mm.

##### Concrete placing

Depth: If concrete is deeper than 350 mm, place it in layers so that each succeeding layer is blended into the preceding one by the compaction process.

Slabs and pavements: Place concrete uniformly over the width of the slab so that the face is generally vertical and normal to the direction of placing.

##### Compaction

Vibrate concrete to remove entrapped air, but avoid over-vibration that may cause segregation.

##### Curing

Protection: Protect concrete from premature drying and from excessive hot, cold and/or windy conditions.

Method: Cure concrete by

- using a proprietary curing compound; or
- keeping it covered and moist for the following periods:
  - In-ground footings: 2 days.
  - Exposed footings, beams and slabs: 7 days.

#### **Formwork removal**

Remove timber formwork.

#### **Stripping times**

Leave formwork for suspended structures in place after pouring concrete for the following periods:

- Vertical surfaces: 2 days.
- Bottom surfaces: 7 days with shoring and backprops left in position for 21 days.

### **3.5 JOINTS**

#### **Construction joints**

Joint preparation: Roughen and clean the hardened concrete joint surface, remove loose or soft material, free water and foreign matter. Dampen the surface before placing the concrete.

#### **Slip joints**

If concrete slabs are supported on masonry, provide proprietary pre-lubricated slip joints.

### **3.6 CONCRETE BEARER SUPPORTS – NOT USED**

### **3.7 SCHEDULE OF CONCRETE WORKS**

*The concrete works include but are not limited to all items shown on the drawings and/or scheduled below:*

- Bored pile footings
- Paths, driveways – refer also to Paving and Roads Section of this specification.
- Concrete plinths to rainwater tanks and hot water units (100mm thick reinforced with F82 mesh)

## 4 TIMBER AND STEEL CONSTRUCTION

Refer to GHD Specification which takes precedence and is bound into the rear of this specification.

### 4.1 GENERAL

#### Cross references

Refer to the following worksections:

- *General requirements*, for termite protection and timber durability.
- *Concrete construction*, for concrete bearer supports.
- *Brick and block construction*, for clearance for timber frame shrinkage and masonry bearer supports.
- *Block and tile finishes*, for waterproofing of wet areas.
- *Painting*, for priming of steel and timber before fixing, and repair of zinc-coated steel after cutting and welding.

#### Standards

Timber framing and flooring: To AS 1684.4-1999 (*Residential timber-framed construction - Simplified - Non-cyclonic*) or AS 1720.1-1997 (*Timber structures – Design methods*).

Structural steelwork: To AS 4100-1998 (*Steel structures*).

Cold-formed steel framing: Provide a proprietary system designed to AS 3623-1993 (*Domestic metal framing*).

Preparation of metal surfaces: To AS 1627- Various (*Metal finishing - Preparation and pretreatment of surfaces*).

### 4.2 MATERIALS AND COMPONENTS

#### Cold-formed steel framing

Cold-form sections from metallic-coated steel to AS 1397-2001 (*Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated*)/Z200 or AZ175.

Corrosion protection: To BCA Volume 2 clause 3.4.2.2 (*Acceptable construction - Framing - Steel framing – General*).

#### Self-drilling screws

Standard: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries - General requirements and mechanical properties*).

Corrosion resistance: Class 2 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries -Corrosion resistance requirements*), Table 1.

#### Flashings and damp-proof courses

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

#### Timber fasteners

Metal washers: Provide washers to the heads and nuts of all bolts and coach screws.

Steel straps: Metallic-coated steel to AS 1397-2001 (*Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated*), minimum size 25 x 1 mm or 30 x 0.8 mm.

#### Galvanizing

Galvanize mild steel components (including fasteners) to AS 1214-1983 (*Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)*) or AS/NZS 4680-1999 (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*), as appropriate, if

- exposed to weather;
- embedded in masonry; or
- in contact with chemically treated timber.

#### Timber roof trusses

Type: - *Either treated Radiata or galvanised steel.*

#### 4.3 CONSTRUCTION GENERALLY

##### **Welding**

Standard: To AS/NZS 1554.1-1995 (*Structural steel welding - Welding of steel structures*).

##### **Grommets**

Provide grommets to isolate piping and wiring from cold-formed steel framing.

##### **Swarf**

Remove swarf and other debris from cold-formed steel framing immediately after it is deposited.

##### **CCA (copper chrome arsenic)-treated timber**

Greasing: Before placing bolts in contact with CCA-treated timber, coat the shank of the bolt in grease or a bituminous coating.

Steel framing: Do not fix CCA-treated timber in contact with cold-formed steel framing.

##### **Priming steel**

Before fixing, prime steel which is not galvanized or metallic-coated.

#### 4.4 FLOORS

##### **General**

Standard: To AS 1684.4-1999 (*Residential timber-framed construction – Simplified – Non-cyclonic*).

##### **Particleboard flooring**

Standards: To AS/NZS 1860.1-2002 (*Particleboard - Specifications*) and install to AS 1860-1998 (*Installation of particleboard flooring*).

Junctions: Sand junctions lightly to a smooth, level surface.

Thickness: 19mm

##### **Fibre cement flooring**

Compressed sheets: To AS/NZS 2908.2-2000 (*Cellulose-cement products - Flat sheets*), Type A, Category 5.

Minimum thickness:

- Joist spacing up to 450 mm: 15 mm.
- Joist spacing 450 - 600 mm: 18 mm.

Extent: Provide 18mm compressed FC floor sheeting to all wet areas including bathroom, laundry and WC

##### **Plywood flooring**

Standard: To AS/NZS 2269-1994 (*Plywood – Structural*), bond type A, tongue and grooved, H3 grade treated pine.

Minimum thickness (F8):

- Joist spacing up to 450 mm: 14 mm.
- Joist spacing 450 - 600 mm: 19.5 mm.

Minimum thickness (F11):

- Joist spacing up to 450 mm: 13 mm.
- Joist spacing 450 - 600 mm: 18.5 mm.

Note: Provide 1:100 fall to all tongue and groove flooring to porches, verandahs and sleepouts.

##### **Floor Framing**

Supply, fabricate and erect a BHP Duragal Proprietary Lightweight Steel flooring system as detailed on the drawings. Refer to drawings for details of areas that are to be set down.

#### 4.5 WALL FRAMING

##### **Timber wall framing**

Provide gauged timbers for studs, noggings and plates in double-faced walls.

- Studs 90mm x 45mm @ 450mm centres for all walls
- All timber to be preservative treated radiata
- Top and bottom plates 90mm x 45mm trenched for studs.

**Additional support**

General: Provide additional support in the form of noggings, trimmers and studs for fixing lining, cladding, hardware, accessories, fixtures and fittings as necessary.

Maximum spacing of noggings: 1000 mm centres.

**Damp-proof courses**

Clad-frame walls: Provide damp-proof courses under the bottom plate of external clad-frame walls built off slabs or masonry dwarf walls.

**Flashings**

Provide flashings to external openings sufficient to prevent the entry of moisture.

**4.6 ROOF AND CEILING FRAMING AND TRUSSES**

**Wall plates**

Fixing: Fix timber wall plates to masonry, with either straps or bolts.

**Nailing strips**

Where timber joists, rafters or purlins bear on steel members, provide 50 mm thick nailing strips bolted to the flange of the steel member at 450mm maximum centres.

**Strutted framing**

General: Construct traditional timber pitched roof framing consisting of rafters and ceiling joists supported at intermediated points by a system of underpurlins strutted off walls or strutting beams and braced by collar ties, and ceiling hanging beams.

**Beam framing**

General: Construct framing for flat or pitched roofs where the ceiling follows the roof line, consisting of rafters or purlins acting as beams to support both ceiling and roof covering.

Blocking: Where the depth of rafters or purlins is at least 4 x width, provide solid blocking between them at the support points and at 1.8m maximum intervals between supports.

Ridge Straps: Butt ends of rafters together at the ridge, and strap each pair together with 900mm long steel strap passing over the ridge, triple-nailed to each rafter.

**Roof trusses**

General: Factory-assemble trusses.

Camber: 10 mm upward in bottom chord.

Connections: Connector plates pressed to contact with the truss members. No knots in plate area.

Joints: No gaps greater than 2 mm.

Overhangs: Free from spring or splits.

Installation: To AS 4440-1997 (Installation of nailplated timber trusses).

Support: Support trusses on bottom chord at two points only, unless designed for additional support.

Vertical movement: Over internal walls provide at least 10 mm vertical clearance and use bracing methods which allow for vertical movements.

**Supports for water containers**

Where a water container or heater is located in the roof space, provide a support platform to AS/NZS 3500.4.2-1997 (*National Plumbing and Drainage - Hot water supply systems - Acceptable solutions*) clause 4.5.

**Additional support**

Provide a frame member behind every joint in fibre cement sheeting or lining.

**Anti-ponding boards**

Standard: To AS/NZS 4200.2-1994 (*Pliable building materials and underlays - Installation requirements*).

**4.7 TIMBER ROOF TRIM**

**Priming timber**

Prime exposed timber all round before fixing and re-prime cut edges if trimmed in-situ.

**Fascia, valley gutter and barge boards**

Minimum thickness:

- Fixed at 600 - 900 mm centres: 32 mm.

**4.8 OTHER FIXTURES AND FITMENTS**

*Other fixtures and fitments include, but are not limited to all items shown on the drawings and/or scheduled below:*

**Bathroom Grab rails**

*Supply and install 40mm diameter 600 long stainless steel grab rails over each bath and into each shower. Provide additional back plates/noggings as required.*

**Stairs**

*Construct stairs with Steel Duragal 150 x 50 stringers with cleats to support timber treads.*

**Wood Heaters**

*Supply and install new freestanding wood heaters to each unit. The heaters are to comply with current emission regulations and be equal to Norseman Nevada.*

*The installation of the new wood heaters is to include providing new full height shielded flues and tiled hearths. All tiles to hearth are to be mounted on 18mm thick compressed FC. Wall protection is to be provided as required by the heater manufacturer.*

*Allow to fit flashings to flue. Flue is to have proprietary weatherproof and bird proof cap.*

**Clothes Line**

*Supply and install a new Hills powder coated hoist clothes line with galvanised steel wires. Install as per manufacturers recommendations.*

**Exhaust Fans**

*Supply and install exhaust fans to the bathrooms and WC's located as shown on the drawings. Refer also to Electrical Installation for kitchen range hood ducted to the exterior. Allow to fit flashings and cowls to ducting.*

**Letter Boxes**

*Supply and install a new steel lockable letterbox mounted on a 50mm diameter steel post to each residence.*

**Mirrors**

*Provide a 1500mm x 900mm aluminium powder coated framed mirror to each bathroom above the vanity.*

**Ancillary**

*Supply and install soap holders, toilet roll holders, 3No. 900mm long 25mm diameter towel rails and 1No. hand towel ring. Units to be selected from the 'Conserv' range in chrome finish.*

**Curtain rods and hooks**

*Supply and install 20mm diameter white finished curtain rods on heavy duty hooks to each window in each house. Curtain rods spans that exceed 900mm are to include a central support to the middle of the rod. Hook supports for curtain rods are to be fixed to the wall into studs or noggings. Screw fixed into the plasterboard only will NOT be accepted.*

**Laundry Racks**

*Fabricate and install steel framed racks using 25mm x 25mm SHS powder coated frame with 50mm x 50mm powder coated weldmesh shelves.*

**Proprietary Steel Vents Gables**

*Supply and install louvre vents to gables at locations as indicated on the drawings. Vents are to be manufacture equal to 'Duraflo' gable vents. Vents are to include a moulded-in insect screen. The diameters of the vents are to be equal to the largest size manufactured by 'Duraflo'*

**Window Awnings**

*Fabricate and install window awnings as detailed on the drawings.*

**Underfloor mesh screens**

*Fabricate and install underfloor mesh screens as detailed on the drawings.*

**Balustrade/handrails to steps, stairs and verandahs**

*Fabricate and install handrails to verandahs, steps and stairs as detailed on the drawings.*



### **Sleepouts**

*Construct sleepouts as shown on the drawings using fabricated powder coated aluminium framed security screen gauzed panels with intermediate rail at 900mm high. Fix gauzed panels between continuous equal angles on each side. Screw fix on the inside to enable the removal for replacement in the future. Panels below 900mm are to be patterned textured aluminium sheets sandwiched over solid core. Verandah posts are to be 100mm x100mm Duragal posts.*

*Intermediate posts at each panel to be 50mm x 50mm SHS at maximum 1000mm spacing.*

*Additional corner posts, where required, to be 75mm x 75mm SHS. Provide security screen door with matching solid bottom panel as indicated on the drawings. Provide blocking or cover strips as necessary at floor and ceiling level to make the sleepout vermin and insect proof.*

### **Hot water system enclosures**

*Supply and install powder coated galvanised framed weldmesh enclosure to each hot water unit.*

*These enclosures are to be constructed on 25mm x 25mm angle frames with nominal 50mm x 50mm weldmesh panels welded into the frames. Each frame is to be securely bolted to the external walls of the residence and is to have a front swing gate section to provide access for electrician and plumber at future times. Each gate is to be securely fixed with a pad bolt including a high quality Lockwood padlock. All keys to the padlock are to be labelled as the 'Hot Water Enclosure' and are to include the street address. These keys are to be handed to the Principal's Representative.*

### **Shower Curtain Rails and Shower Curtains**

*Supply and install shower curtain rails to all showers in each residence. Rails are to be 25mm diameter aluminium rods installed with all hanging rods, fixing brackets and curved corners as required.*

*Shower curtains are to be flame resistant and anti-bacterial polyester. The curtain length is to suit the height of the shower curtain rail.*

**5 BRICK AND BLOCK CONSTRUCTION – NOT USED**

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## 6 INSULATION AND SARKING

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### 6.1 GENERAL

#### Interpretation

Sarking-type material: Flexible membrane material normally used for waterproofing, vapour retarding or thermal reflective insulation.

### 6.2 MATERIALS AND COMPONENTS

#### Bulk insulation

Cellulosic fibre (loose fill): To AS/NZS 4859.1-2002 (*Materials for the thermal insulation of buildings - General criteria and technical provisions*) Section 5.

Mineral wool blankets and cut pieces: To AS/NZS 4859.1, Section 8.

Polystyrene (extruded rigid cellular sheets): To AS 1366.4-1992 (*Rigid cellular plastics sheets for thermal insulation - Rigid cellular polystyrene - Extruded (RC/PS-E)*).

Polystyrene (moulded rigid cellular sheets): To AS 1366.3-1992 (*Rigid cellular plastics sheets for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS - M)*).

Wool: To AS/NZS 4859.1, Section 6.

#### Sarking material

Standard: To AS/NZS 4200.1-1994 (*Pliable building materials and underlays – Materials*).

Floor insulation: Provide perforated material.

#### Insulation types and ratings

Wall:	R2.0 100mm glasswool wall batts
Roof:	R1.5 50mm glasswool anitcon roofing blanket
Ceiling:	R2.5 145mm glasswool ceiling batts.

### 6.3 INSTALLATION

#### Bulk insulation

Standard: To AS 3999-1992 (*Thermal insulation of dwellings - Bulk insulation - Installation requirements*).

Batts: Fit tightly between framing members. If support is not otherwise provided, secure nylon twine to the framing and stretch tight.

Loose fill: Provide boxing to retain loose fill on external edges, cavities and penetrations, and to prevent spilling.

#### Sarking material

Standard: To AS/NZS 4200.2-1994 (*Pliable building materials and underlays – Installation requirements*).

#### Wall sarking

General: Provide vapour-permeable sarking under *all* wall cladding.

Type: Sarking shall be a double sized aluminium foil sarking conforming to AS 1736

Installation: Apply to the outer face of external stud walls from the top plate down over the bottom plate and flashing. Run across the studs and lap at least 150 mm at joints.

#### Roof sarking

Location: Provide sarking to *all* areas of the roof.

Ridge ventilation: Finish sarking at least 50 mm clear of ridges.

## 7 ROOFING

### 7.1 GENERAL

#### Cross reference

Refer to the *Insulation and sarking* worksection for roof sarking requirements.

### 7.2 MATERIALS AND COMPONENTS

#### Flashing material

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

Tiled roofs: 20 kg/m<sup>2</sup> lead.

#### Fasteners

Self-drilling screws: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries - General requirements and mechanical properties*).

Corrosion resistance: Class 3 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries - Corrosion resistance requirements*), Table 1.

Exposed fasteners: Provide fasteners which are prefinished with a coating to match the roofing material, or provide matching purpose-made plastic caps.

#### Roof lights

Type: 400 mm diameter 'Solatube'

Location: As shown on drawings.

Generally the Solatubes are to be installed mid way along hallways. The exact location of each Solatube is to be confirmed on site with the Principal's Representative.

The Solatubes are to include a ceiling diffuser, highly polished duct, reflector and cowl to the roof, and fully flashed to the particular roof sheeting type.

### 7.3 TILING – NOT USED

### 7.4 METAL ROOFING

#### Design and installation

Standard: To AS 1562.1-1992 (*Design and installation of sheet roof and wall cladding – Metal*).

Roof material: Colorbond corrugated Custom Orb

Manufacturer: BHP

Roof colour: To be advised by the Architect

Ridge capping colour: To be advised by the Architect

#### Visible accessories

Provide material with the same finish as roofing sheets, including cappings and flashings.

#### Eaves

Treat ends of sheets as follows:

- Generally: Close off ribs at tops and bottoms of sheets by mechanical means or with purpose-made fillers or end caps.
- At gutters: Project sheets 50 mm into gutters.

#### Swarf

Remove swarf and other debris as soon as it is deposited.

### 7.5 ROOF PLUMBING

#### Selection and installation of rainwater goods

Standard: To AS/NZS 3500.3.2 (*National Plumbing and Drainage - Stormwater drainage - Acceptable solutions*).

PVC rainwater goods and accessories: To AS/NZS 2179.2 (Int) -1998 (*Specifications for rainwater goods, accessories and fasteners - PVC rainwater goods and accessories*)

Sealing: Seal fasteners and mechanically fastened joints with silicone sealant.

### **Flashings and cappings**

General: Flash projections above or through the roof with two part flashings consisting of an apron flashing and an over-flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Wall abutments: Where a roof abuts a wall, provide overflashings as follows:

- Masonry: Stepped and built into the full width of the leaf.
- Planked cladding: Stepped.
- Other: Raking.

### **Gutters**

Minimum slope of eaves gutters: 1:200.

Minimum width overall of valley gutters: 400 mm.

Guttering and downpipe prefinish colour: *To be advised by the Architect*

Type: *Colorbond high front slotted quad gutter on standard roofs as detailed.*

### **Downpipes**

Type: *- 100mm diameter Colorbond steel downpipes generally to all areas.*

- 100mm diameter PVC downpipes to tank inlet where elevated a minimum 2400mm above ground level.*

## **7.6 HEIGHT SAFETY EQUIPMENT**

*The Contractor is to provide and install anchor points and the necessary equipment to comply with WorkCover regulations for safe working on roofs for commercial, industrial or residential as applicable.*

*The equipment is to be attractive and unobtrusive and integrated into the existing structural elements of the roof connected to either the main frames or purlins.*

*The system may include a series of individual roof anchor points carefully positioned and fastened to the roof members to comply with the relevant Workcover requirements.*

*The contractor is to establish a design for the fixing and the location of these anchor points with an approved authority and on completion of the work, provide documentation certifying that the system is in accordance with the relevant Workcover requirements.*

## 8 CLADDING

### 8.1 GENERAL

#### Cross references

Refer to the following worksections:

- *General requirements*, for timber durability.
- *Insulation and sarking*, for wall sarking requirements.

### 8.2 MATERIALS AND COMPONENTS

#### Flashing material

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

#### Fasteners

Steel nails: Hot-dip galvanized to AS 4680- (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*).

Self-drilling screws: To AS 3566.1-2002 (*Self-drilling screws for the building and construction industries - General requirements and mechanical properties*).

Corrosion resistance: Class 3 to AS 3566.2-2002 (*Self-drilling screws for the building and construction industries - Corrosion resistance requirements*), Table 1.

### 8.3 HARDBOARD CLADDING

#### General

Standard: To AS/NZS 1859.4 (Int)-2001 (*Reconstituted wood-based panels – Specifications - Wet-processed fibreboard*).

Exterior cladding: Exterior hardboard.

Manufacturer:	<i>'Weathertex'</i>
Prefinish colour:	<i>To be advised by Architect</i>
Profile:	<i>Rusticated Smooth</i>

#### Plank cladding

General: Provide a proprietary system of hardboard planks 9.5 mm thick.

Joints and edges: UPVC extrusions.

External corners:	<i>50 x 50mm x 2mm continuous aluminium angles fixed to frame with countersunk screws. All spaces between angle and weathertex boards are to be filled with mastic filler. All to receive paint finish.</i>
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Internal corners:	<i>Scribe.</i>
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### 8.4 TIMBER BOARD CLADDING – NOT USED

### 8.5 FIBRE CEMENT CLADDING

#### Standard

General: To AS/NZS 2908.2-2000 (*Cellulose-cement products - Flat sheets*) Type A Category 3.

#### Eaves lining

Type: Provide a proprietary system of single-faced fibre cement sheets 6.0 mm thick nailed at minimum 200 mm centres to bearers at maximum 600 mm centres.

Minimum bearer size: For rafter overhang:

- 300 - 600 mm: 50 x 38 mm.
- 600 - 1500 mm: 75 x 38 mm.

Joints: UPVC extrusions.

**8.6 METAL CLADDING – NOT USED**

**8.7 PLASTIC CLADDING – NOT USED**

**8.8 AAC CLADDING – NOT USED**

## 9 DOORS AND WINDOWS

### 9.1 GENERAL

#### Cross references

Refer to the following worksections

- *Lining*, for architraves.
- *Painting*, for priming of frames and doors before installation.

### 9.2 MATERIALS AND COMPONENTS

#### Flashings

Standard: To AS/NZS 2904-1995 (*Damp-proof courses and flashings*).

#### Metal finishes

Zinc plating: To AS 1789-1984 (*Electroplated coatings - Zinc on iron or steel*), at least service condition number 2.

Anodising: To AS 1231-2000 (*Aluminium and aluminium alloys – Anodic oxidation coatings*), at least class AA10.

Thermoset powder coating: To AS 3715-2002 (*Metal finishing - Thermoset powder coatings for architectural applications of aluminium and aluminium alloys*).

#### Glass

Selection and installation: To AS 1288-1994 (*Glass in buildings - Selection and installation*).

#### Doorsets

Timber doors: To AS 2688-1984 (*Timber doors*).

Timber frames and jamb linings: To AS 2689-1984 (*Timber doorsets*).

Security screen doors: To AS/NZS 2803.1-1994 (*Doors - Security Screen – Hinged*) or AS/NZS 2803.2- (*Doors - Security Screen – Sliding*).

#### Windows

Selection: To AS 2047-1999 (*Windows in buildings - Selection and installation*).

#### Preglazing

If possible, preglaze doors and windows.

#### Windows and sliding external doors

Manufacturer:	<i>Versalite or equivalent</i>
Material:	<i>Aluminium</i>
Type:	<i>Sliding</i>
Prefinish type:	<i>Powder coated</i>
Prefinish colour:	<i>To be advised by Architect</i>
Glass:	<i>Generally Clear, obscure to bathrooms and WC's.</i>
Insect screen:	<i>Aluminium powder coated security screens with Clearguard or Crimsafe mesh (no aluminium decorative panels). Bedroom windows to have an escape function to security screens.</i>

#### Main entrance door

Manufacturer:	<i>Corinthian or equivalent</i>
Type:	<i>Solid core decorative weatherproof paint quality doors with Raven brush weather seal</i>
Glass:	<i>Not applicable</i>
Thickness:	<i>40mm</i>

#### Other external doors

Manufacturer:	<i>Corinthian or equivalent</i>
Type:	<i>Solid core decorative weatherproof paint quality doors with Raven brush weather seal</i>



Glass:	<i>Clear half glass panel to laundry door only</i>
Thickness:	<i>40mm</i>
<b>Security screen doors</b>	
Manufacturer:	<i>Versalite or equivalent</i>
Type:	<i>Aluminium powder coated with Clearguard or Crimsafe mesh (no aluminium decorative panels) with Raven brush seal.</i>
Prefinish colour:	<i>To be advised by Architect</i>
Location:	<i>To all external door openings</i>

### 9.3 CONSTRUCTION GENERALLY

#### Standards

Doorset installation: To AS 1909-1984 (*Installation of timber doorsets*).

Window installation: To AS 2047-1999 (*Windows in buildings - Selection and installation*).

Security screen doors installation: To AS/NZS 2804.1-1995 (*Installation of security screen doors – Hinged*) or AS/NZS 2804.2 –1996 (*Installation of security screen doors – Sliding*)

#### Flashings and weatherings

Install flashings, weather bars, drips, storm moulds, caulking and pointing so that water is prevented from penetrating the building between frames and the building structure.

#### Installation

Install door sets and windows so they:

- are plumb, level, straight and true;
- are adequately fixed or anchored to the building structure; and
- will not carry building loads, including loads caused by structural deflection or shortening.

#### Fixing

Packing: Pack behind fixing points with durable full width packing.

Prepared masonry openings: If fixing of timber windows to prepared anchorages is by fastening from the frame face, conceal the fasteners by sinking the heads below the surface and filling the sinking flush with a material compatible with the surface finish.

#### Linings

Provide reveal and jamb linings as necessary.

### 9.4 TIMBER DOORS

#### Door thickness

Generally: 35 mm.

External doors and doors over 900 mm wide: 40 mm.

#### Door construction

External doors: Solid construction.

Internal doors: Flush panel *solid* core.

Medium density fibreboard doors: Board designated by the manufacturer as having a moisture resistance which is suitable for the exposure of the door.

#### Timber Internal doors

Manufacturer:	<i>Corinthian or equivalent</i>
Type:	<i>Solid core paint quality doors</i>
Glass:	<i>Not applicable</i>
Thickness:	<i>35mm</i>

#### Priming

Prime timber doors on top and bottom edges before installation.

#### Door stops

Supply and install *one piece* door stops to prevent door furniture striking the wall or other surface.

**Hinge table**

Provide 3 hinges for external doors and door leafs over 2040 mm in height or 820 mm in width or larger and as follows:

Thickness of door (maximum)	Weight of door (maximum)	Number of hinges (per door leaf)	Size of hinges (steel)
35 mm	35 kg	3	85 x 60 x 1.6 mm
40 mm	68 kg	4	100 x 75 x 1.6 mm

**9.5 SLIDING INTERNAL DOORS****General**

Suspend sliding doors from overhead tracks and wheel carriages appropriate to the size and mass of the doors.

**Accessories**

General: Provide overhead track supports and head and jamb linings appropriate to the arrangement of the door, and removable pelmets at the head to allow access to the wheel carriages for adjustment.

Wheel carriages: Fully adjustable precision ball race type providing smooth, quiet operation.

**9.6 WARDROBES****Wardrobe door panels**

Manufacturer:	<i>Corinthian or equivalent</i>
Type:	<i>Solid core paint quality doors</i>
Glass:	<i>Not applicable</i>
Location:	<i>To all wardrobes in each residence.</i>

**9.7 GARAGE DOORS – NOT USED****9.8 LOCKSETS****External doors**

Provide a push-button key and knob set and a double-cylinder dead bolt to each door.

**Internal doors**

Generally: Passage sets.

*Bedrooms: Entrance Sets*

Bathrooms, showers and toilets: Privacy sets.

Sliding patio doors and windows: Provide key-lockable surface mounted bolts.

**Door lockset mounting heights**

To centreline of spindle: 1 m above finished floor.

**Keying**

Key doors (excluding garage doors) alike and key windows alike.

**Lockset schedule**

Door	Lockset manufacturer	Lockset type
<i>Door hardware is to be Lockwood 930 Series</i>		
<i>External Doors</i>	<i>Lockwood</i>	<i>001 double cylinder automatic dead latch</i>

*Keys: Provide 4No. sets of keys for each residence. All keys are to be tagged and labelled.*

### **9.9 STEEL DOOR FRAMES**

*Provide and fix double rebated steel door frames to all door openings fixed into stud frames by clipping galvanised brackets to frame stiles at 600mm maximum centres and fasten to the stud frame.*

*Provide for fixing hinges using 4mm back plates and lugs. Screw fix the hinges into tapped holes in the back plates.*

### **9.10 TIMBER DOOR FRAMES**

*Provide and fit single rebated timber door frames to wardrobes and linen cupboards up to 600mm deep.*

## 10 LINING

### 10.1 GENERAL

#### Cross reference

Refer to the *Block and tile finishes* worksection for waterproofing of wet areas.

### 10.2 MATERIALS AND COMPONENTS

#### Plasterboard

Standard: To AS/NZS 2588-1998 (*Gypsum plasterboard*).

Sheet thickness: 10mm

Location: Ceiling linings generally.

Sheet thickness: 13mm thick CSR Impactchek.

Location: All internal walls except wet areas.

#### Fibre cement

Standard: To AS/NZS 2908.2-2000 (*Cellulose-cement products - Flat sheets*), Type B Category 2.

Sheet thickness: 9mm with set joints

Location: All internal walls to wet areas

Sheet Thickness: 6mm

Location: Eaves and ceilings to wet areas.

### 10.3 SHEET LINING

#### Supports

Install timber battens or proprietary cold-formed galvanized steel furring channels *to all ceiling areas*.

*Furring channels to be fixed using adjustable clips.*

#### Installation

Plasterboard: To AS/NZS 2589.1-1997 (*Gypsum linings in residential and light commercial construction - Application and finishing - Gypsum plasterboard*)

Framed construction: Screw or nail or combine with adhesive.

Wet areas: Do not use adhesive.

#### Joints

General: Provide recessed edge sheets and finish flush with perforated reinforcing tape.

External corner joints: Make over metallic-coated steel corner beads.

Wet areas: Provide the flashings, trim and sealants necessary to ensure wet areas are waterproofed.

Joints in tiled areas: Do not apply a topping coat after bedding perforated paper tape in bedding compound.

Control joints: Install purpose-made metallic-coated control joint beads to coincide with structural movement joints.

- Plasterboard: 12m
- Fibre Cement: 7.2m

### 10.4 TONGUE AND GROOVE LINING – NOT USED

### 10.5 TRIM

#### General

Provide timber or medium density fibreboard trim, such as beads, skirtings, architraves, mouldings and stops, where necessary to make neat junctions between components and finishes.

#### Cornice

Types: 55mm plasterboard cove cornice

**Skirtings**

Types:

*Ex 75mm x 25mm MDF*

**Architraves**

Types:

*Ex 50mm x 25mm MDF*

**11 TROWELLED COATINGS – NOT USED**

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## 12 BLOCK AND TILE FINISHES

### 12.1 GENERAL

#### Standards

Follow the guidance given in AS 3958.1-1991 (*Ceramic tiles - Guide to the installation of ceramic tiles*) and AS 3958.2-1992 (*Ceramic tiles - Guide to the selection of a ceramic tiling system*).

### 12.2 MATERIALS AND COMPONENTS

#### Exposed edges

If available, provide purpose-made border tiles with the exposed edge (whether round, square or cushion) glazed to match the tile face.

#### Accessories

If available, provide tile accessories such as round edge tiles, cove tiles, step treads and nosings to stairs, landings, and thresholds, skirtings, sills, copings and bath vents, which match the surrounding tiles, composition, colour and finish.

#### Adhesives

Standard: To AS 2358-1990 (*Adhesives - For fixing ceramic tiles*).

PVA (polyvinyl acetate)-based adhesives: Do not use in wet areas or externally.

#### Mortar materials

Cement: To AS 3972-1997 (*Portland and blended cements*), type GP.

Sand: Fine aggregate with a low clay content selected for grading.

#### Bedding mortar

Proportioning: Select proportions from the range 1:3 to 1:4 cement:sand to obtain satisfactory adhesion. Provide minimum water.

#### Grout

Cement-based proprietary grout: Mix with water. Fine sand may be added as a filler in wider joints.

Portland Cement based grout: Mix with fine sand. Provide minimum water consistent with workability.

Proportioning:

- for joints up to 3mm: 1:2 cement: sand
- for joints over 3mm: 1:3 cement: sand

#### Preparation

Prepare the substrates, including the following:

- Remove deleterious and loose material and leave the surface dust-free and clean.
- For mortar bedding, wet the substrate as necessary to achieve suitable suction. Alternatively, apply a proprietary bonding agent to the substrate to improve adhesion.

#### Block and tile schedule

##### Location

Floors	<i>Full areas to laundry, bathroom, toilets</i>
Laundry	<ul style="list-style-type: none"> <li>- <i>Skirting tile to all areas</i></li> <li>- <i>1350mm high tiles to back and side of washing machine space</i></li> <li>- <i>500mm splashbacks above benches and tub.</i></li> </ul>
Bathroom	- <i>2100mm high tiles to all walls</i>
WC	- <i>Skirting tile to all areas</i>
Kitchen	<ul style="list-style-type: none"> <li>- <i>Full height between bench tops and overhead cupboards</i></li> <li>- <i>Wall behind stove</i></li> <li>- <i>500mm splashback above benches where there are no overhead cupboards</i></li> </ul>

<b>Location</b>		
Hearth	-	Selected from the RAK floor range
	-	Trim around the hearth is to be aluminium with 45° bends at each corner.
Wall Tiles	-	Selected from the Johnson 'Waringa' Range
	-	200mm x 100mm laid stretcher bond
Floor tiles	-	Selected from the RAK 200mm x 200mm floor range
	-	Laid square
Refer to drawings for other rooms to have floor tiles.		

### 12.3 WATERPROOFING WET AREAS

#### Standard

General: To AS 3740-1994 (*Waterproofing of wet areas within residential buildings*).

#### Membrane

Provide a proprietary liquid applied or sheet membrane system which

- has a current Australian Building Products and Systems Certification Scheme certificate; or
- has a current appraisal report issued by the CSIRO Building Products and Systems Appraisals stating that the system is suitable for use as a waterproofing system for use in wet areas, shower recess bases and associated floors and wall/floor junctions which are to be tiled.

#### Installation

Floor wastes: Turn membrane down onto the floor waste puddle flanges, and adhere.

Hobs: Extend membrane over the hob and into the room at least 50 mm. For hobless showers extend 1800 mm into the room.

External tiling: Provide a waterproof membrane under external floor tiling, to balconies and over habitable rooms, which forms a drained tank suitable for continuous immersion. Do not run under bounding walls.

Curing: Allow membrane to cure fully before tiling.

Floors: In addition to the requirements of AS3740, the entire floor area of bathrooms, WC and laundry are to be sealed with a waterproof membrane.

### 12.4 TILING

#### Cutting and laying

Cut tiles neatly to fit around fixtures and fittings, and at margins where necessary. Drill holes without damaging tile faces. Rub edges smooth without chipping. Return tiles into sills, reveals and openings. Butt up to returns, frames, fittings, and other finishes.

#### Variations

Distribute variations in hue, colour, or pattern uniformly, by mixing tiles or tile batches before laying.

#### Protection

Keep traffic off floors until the bedding has set and attained its working strength.

#### Setting out

General: Set out tiles to give uniform joint widths within the following limits:

- Internal ceramic tiling: 1.5 - 3 mm.
- Mosaic tiling: As dictated by pattern.
- Quarry tiles: 6 - 12 mm.
- Vitrified floor tiles: 3 - 5 mm.

Joint alignment: Set out tiling with joints accurately aligned in both directions and wall tiling joints level and plumb.

Joint position: Set out tiles from the centre of the floor or wall to be tiled and, if possible, ensure cut tiles are a half tile or larger.

Fixtures: If possible, position tiles so that holes for fixtures and other penetrations occur at the intersection of horizontal and vertical joints or in the centre of tiles.



**Falls and levels**

General: Grade floor tiling to even and correct falls generally, and to floor wastes and elsewhere as required. Make level junctions with walls. If falls are not required, lay level.

Minimum fall generally: 1:100.

Minimum fall in shower areas: 1:60.

Change of finish: Maintain finished floor level across changes of floor finish including carpet.

*All tiled wet areas are to have a set down of 50mm to achieve falls.*

**Preparation of tiles**

Adhesive bedding: Fix tiles dry.

Mortar bedding: Soak porous tiles in water for half an hour and then drain until the surface water has disappeared.

**Floor finish dividers**

Finish tiled floors at junctions with differing floor finishes with a corrosion-resistant metal dividing strip fixed to the substrate. If changes of floor finish occur at doorways, make the junction directly below the closed door.

**Bath ventilation**

Ventilate the space below fully enclosed baths with at least 2 ventilating tiles.

**Sealed joints**

Fill joints with silicone sealant and finish flush with the tile surface where tiling joins sanitary fixtures, *kitchen benches*, *laundry benches* and at corners of walls in showers. *Provide plastic corner moulds to external tiled corners.*

## 13 FLOOR COATINGS AND COVERINGS

### 13.1 MATERIALS AND COMPONENTS

#### Hardboard underlay

Standard: To AS/NZS 1859.4 (Int)-2001(*Reconstituted wood-based panels – Specifications - Wet-processed fibreboard*).

Classification: General purpose medium board manufactured as flooring underlay.

#### Resilient underlay alternatives

Needled underfelt: Provide a felt composed of 60% animal fibre and 40% jute, reinforced with polypropylene scrim with a minimum mass of 50 g/m<sup>2</sup>, or hessian fabric with a minimum mass of 150 g/m<sup>2</sup>.

Synthetic foam underlay: Provide a high density synthetic latex flat cushion foam sandwiched between reinforced carrier fabric.

Rubber underlay: Provide a heavy-duty natural rubber, waffle pattern, with a backing of reinforcing fabric, either hessian, spun nylon, or polyester.

#### Hot-melt adhesive tape

Provide a glass fibre and cotton thermoplastic adhesive-coated tape 60 mm wide on a 90 mm wide metal foil base and backed with silicon-coated release paper.

#### Carpet

Manufacturer: *Godfrey Hurst Carpets 'L.A'*

Colour: *To be advised by Architect*

Underlay: *Rubber*

#### Resilient finish

Manufacturer: *Tarkett Sommer Century Excel – Cosmos/ Mika Range*

Colour: *To be advised by Architect*

### 13.2 SUBSTRATE

#### Substrate preparation

Prepare the substrate including the following:

- Stripping and cleaning: Remove deleterious and loose material, including existing floor coverings and any surface treatment which could adversely affect adhesion.
- Repairs: Make good to the surface finish as necessary. Fill depressions with a suitable filler, and remove high spots and projections. If necessary lay a steel-trowelled underlay to concrete substrate.
- Fixtures and fittings: Remove door stops and other fixtures, and refix in position undamaged on completion of the installation.
- Basic sanding: Produce an even plane sanded surface on strip flooring to be covered with carpet or resilient sheet or tile. Lightly sand the junctions of sheet flooring.
- Fine sanding: If flooring is to be clear finished, stop with matching filler and produce a smooth sanded surface free from irregularities and suitable to receive the finish.

### 13.3 LAYING CARPET

#### Standard

General: To AS/NZS 2455.1-1995 (*Textile floor coverings - Installation practice – General*).

#### Setting out

General: Lay the carpet in continuous lengths without cross joins in the body of the area. Make unavoidable cross joins at doorways under the closed door.

Joints in underlay: Ensure joints in underlay do not coincide with carpet joints. Do not carry underlay over carpet grippers or edge strips.

**Seaming methods**

Woven carpet: Machine or hand sew.

Tufted carpet: Provide hot-melt adhesive tapes.

**Fixing**

Gripper strip: Provide preformed gripper strip and tackless edge strip. Space fixings at 150 mm maximum centres.

Permanent stick method: Immediately after laying, and again one hour later, roll the carpet from the centre diagonally towards each edge using a 65 kg multi-wheeled roller. Do not roll foam-backed carpet.

**Edge strip**

Provide a proprietary aluminium edge strip at exposed edges of the carpet. If edge strips occur at doorways, make the junction underneath the closed door.

**13.4 LAYING RESILIENT FINISHES**

**Standard**

General: To AS 1884-1985 (*Floor coverings - Resilient sheet and tiles - Laying and maintenance practices*).

**Sheet set out**

Set out sheets to give the minimum number of joints. Run sheet joints parallel with the long sides of floor areas.

**Tile set out**

Set out tiles from the centre of the area. Match edges and align patterns. Arrange the material so that variation in appearance is minimised.

**Joints**

Butt edges together to form tight neat joints showing no visible open seam and cold weld.

**Junctions**

Scribe neatly up to returns, edges, fixtures and fittings. Finish flush with adjoining surfaces.

**Cleaning and protection**

Keep traffic off floors until bonding has set or for 24 hours after laying, whichever period is the longer. Do not allow water in contact with the finish for 7 days.

## 14 PAINTING

### 14.1 GENERAL

#### Standards

Follow the guidance given in AS/NZS 2311-2000 (*Guide to the painting of buildings*) and AS/NZS 2312-2002 (*Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings*).

### 14.2 MATERIALS AND COMPONENTS

#### Combinations

Do not combine paints from different manufacturers in a paint system.

#### Delivery

Deliver paints to the site in the manufacturers' labelled containers. Ensure containers are marked with the APAS (Australian Paint Approvals Scheme) specification number.

### 14.3 PAINTING

#### Order of work

Complete clear timber finishes before commencing opaque paint finishes in the same area.

#### Protection

Remove door furniture, switch plates, light fittings and other fixtures before starting to paint, and refix in position on completion of painting.

#### Restoration

Clean off marks, paint spots and stains progressively. Touch up damaged decorative paintwork or misses with the paint batch used in the original application.

#### Substrate preparation

Provide a filler tinted to match the substrate if the finish is transparent.

#### Paint application

Apply the first coat immediately after substrate preparation and before contamination of the substrate can occur. Ensure each coat of paint or clear finish is uniform in colour, gloss, thickness and texture, and free of runs, sags, blisters, or other discontinuities.

#### Priming before fixing

Timber: Apply a first coat (two coats to end grain) to exposed roof trim, timber doors and window frames, tops and bottoms of doors, associated trims and glazing beads before fixing in position.

Steel: Apply a priming coat of zinc-rich organic binder to APAS 2916-2001 (*Organic zinc rich coating for protection of steel*).

#### Repair of galvanizing

If galvanized or zinc-coated surfaces have been cut or welded after galvanizing, prime the affected area with a zinc-rich organic binder to APAS 2916-2001 (*Organic zinc rich coating for protection of steel*).

#### Paint system description

If a system is referred to only by its final coat (for example by the manufacturer's brand name, the APAS specification code or the generic name) provide stains, primers, sealers and undercoats which are suitable for the substrate and are compatible with the finish coat and each other.

#### Paint final coat table

Provide paints as follows:

Final coat	Use paint to APAS specification
Interior	
Full gloss solvent-borne	APAS-0015/2-2001 ( <i>Full gloss alkyd enamel for interior use only (buildings)</i> )
Location:	Joinery including skirtings, architraves, door frames, doors.
Flat latex	APAS-0260/4-2001 ( <i>Washable flat finish for interior use (buildings)</i> )
Location:	Ceilings generally

Final coat	Use paint to APAS specification
Low gloss latex	APAS-0260/3-2001 ( <i>Low gloss interior latex paint in MCR (buildings) with anti mould additive</i> )
Location:	<i>Walls and ceilings to wet areas</i>
Exterior	
Gloss latex	APAS-0280/1-2001 ( <i>Gloss exterior latex paint in MCR (buildings)</i> )
Location:	<i>Joinery and trims</i>
Semi-gloss latex	APAS-0280/2-2001 ( <i>Semi gloss latex paint, exterior (buildings)</i> )
Location:	<i>Cladding</i>

#### Exterior painting schedule

Item	
Fascia	
Guttering	
Downpipes	
Under eaves	
Cladding	
Shutters	
Handrails	<i>3 coat system to all non prefinished surfaces. All colours to be advised.</i>
Balustrades	
Posts and beams	
Gable barge	
Gable panels	
Gable battens	
Finials	
Frieze horizontals	
Frieze verticals	
Decking Timber boarding:	<i>Coat with sealant equal to Haymes 'Simply Woodcare' decking oil.</i>

#### Windows and external doors painting schedule

Location	
Front door panel	
Front door frame	
Other door panels	
Other door frames	<i>3 coat system to all non prefinished surfaces. All colours to be advised.</i>
Garage door panel	
Garage door frame	
Window frames	
Window sashes	

**Interior painting schedule**

<b>Room/Item</b>	
Front entry	
Rear/side entry	
Hall (ground floor)	
Lounge	
Dining	
Room dividers	
Kitchen	
Family	
Rumpus room	
WC	<i>3 coat system to all non prefinished surfaces. All colours to be advised.</i>
Laundry	
Landing (first floor)	
Handrails	
Balustrades	
Bathroom	
Bedroom 1	
Ensuite	
Bedroom 2	
Bedroom 3	
Bedroom 4	
Bedroom 5	
Garage	
Store	

## 15 TIMBER FIXTURES

### 15.1 GENERAL

#### Cross references

Refer to the following worksections:

- *General requirements*, for timber durability.
- *Doors and windows*, for timber doors and reveal and jamb linings.

### 15.2 MATERIALS AND COMPONENTS

#### Moisture content

Make milled products from timbers seasoned

- to within 3% of the equilibrium moisture content appropriate to the timber and its intended conditions of use; and
- with no more than 3% difference between any 2 pieces in any one group.

#### Finished sizes

Provide milled timbers with actual dimensions which are at least the required dimensions, except for dimensions qualified by a term such as “nominal” or “out of” to which industry standards for finished sizes apply.

#### Hardboard

Standard: To AS/NZS 1859.4 (Int)-2001 (*Reconstituted wood-based panels – Specifications - Wet-processed fibreboard*).

#### Particleboard

Standard: To AS/NZS 1859.1 (Int)-2001 (*Reconstituted wood-based panels – Specifications - Particleboard*).

#### Medium density fibreboard

Standard: To AS/NZS 1859.2 (Int)-2001 (*Reconstituted wood-based panels – Specifications - Dry-processed fibreboard*).

#### Decorative overlaid wood panels

Standard: To AS/NZS 1859.3-1996 (*Reconstituted wood-based panels - Decorative overlaid wood panels*).

#### High pressure decorative laminate sheets

Standard: To AS/NZS 2924.1-1987 (*High pressure decorative laminates - Sheets made from thermosetting resins - Classification and specifications*).

#### High pressure decorative laminate sheet application table

Provide classes as follows:

Class to AS/NZS 2924-1987 (High pressure decorative laminates - Sheets made from thermosetting resins)	Application
HGS or HGP	Kitchen work-tops
VGS or VGP	Kitchen front panels
VLS	Other locations

*Edge Stripping: Vinyl edge stripping to all edges of all joinery*

#### Hardware

Handles:	150mm satin chrome bow handles
Locks:	Not required
Robe hanging rods:	25mm chrome plated.

### 15.3 CONSTRUCTION GENERALLY

#### General

Construction: Build components square and install plumb.

Joints: Provide materials in single lengths whenever possible. If joints are necessary, make them over supports.

### **Fasteners and adhesives**

General: Provide fasteners, adhesives or both to transmit the loads imposed and ensure the rigidity of the assembly. Do not split, discolour or otherwise damage timber or sheets.

Visibility: Do not provide visible fixings except in the following locations:

- Inside cupboards and drawer units.
- Inside open units, in which case provide proprietary caps to conceal fixings.

### **Finishing**

Junctions with structure: Scribe plinths, benchtops, splashbacks, ends of cupboards, kickboards and returns to follow the line of floors or walls.

## **15.4 TIMBER STAIRS**

### **Closed strings**

Trench for treads and risers.

### **Cut strings**

Profile for treads and risers. Mitre riser ends.

### **Treads**

Dress nosings to a pencil-round. Return nosings at cut strings. Groove for riser tongue in closed riser stair. Set riser 19 mm back from nosing.

### **Top tread**

Flush with finished floor, otherwise to match stair treads. Provide similar tread section as nosing to floor edges around stair well.

### **Risers**

Tongue to tread. Mitre to string in cut-string stairs.

### **Joints**

Glue joints in internal work. In closed riser stairs, wedge treads and risers to strings. Plant 2 glue-blocks behind each tread to riser junction. Trim floors to carry ends of stairs and around stairwell.

### **Fascia**

Of depth sufficient to overlap 19 mm below ceiling, and fixed to floor joists hard up under nosing.

### **Soffit lining**

Fix to 38 x 38 mm nailing battens notched and nailed to the underside of treads and risers of closed rise stairs at the centre of flights and at each side.

### **Newels**

Halve and bolt to strings.

## **15.5 DOMESTIC KITCHEN ASSEMBLIES**

### **Standard**

General: To AS/NZS 4386.1-1996 (*Domestic kitchen assemblies – Kitchen units*).

## **15.6 CUPBOARD AND DRAWER UNITS**

### **Plinths, carcasses, drawer fronts, shelves and doors**

Material: Provide melamine overlaid high moisture-resistant particleboard or melamine overlaid high moisture-resistant medium density fibreboard.

Minimum thickness: 16 mm.

Finish: Provide decorative laminated sheet if necessary

- to conceal fasteners; or
- to provide selected colours.

Installation: Secure plinths and carcasses to floors, walls, or both at not more than 600 mm centres.

Drawer fronts: Rout for drawer bottoms.

Adjustable shelves: Support on proprietary pins in holes bored at 32 mm centres vertically.



**Drawer and door hardware**

Hinges: Provide concealed all-metal hinges with the following features:

- Adjustable for height, side and depth location of door.
- Self-closing action.
- Hold-open function.
- Nickel plated.

Slides: Provide metal runners and plastic rollers with the following features:

- 30 kg loading capacity.
- Closure retention.
- White thermoset powder coating or nickel plated.

**15.7 BENCHTOPS****Laminated benchtops**

Material: Provide high moisture-resistant particleboard or medium density fibreboard.

Minimum thickness: 32 mm.

Finish: Decorative laminated sheet adhesive fixed *with 180° rolled edge*.

Sealing underside: Laminate undersides of benchtops if

- likely to be subject to excessive moisture from equipment such as dishwashers; or
- the benchtop is not restrained against warping by cupboard carcass or support framing.

Installation: Fix to carcass at least twice per 600 mm length of benchtop.

Joint sealing: Fill joints with sealant matching the finish colour and clamp with proprietary mechanical connectors.

Edge sealing: Seal to walls and carcasses with a sealant which matches the finish colour.

**15.8 CEILING AND UNDER FLOOR ACCESS****Ceiling**

Trim an opening and provide a loose access panel of minimum size 600 x 400 mm.

**Under floor**

Provide a frame and a door, minimum size 720 mm wide x 600 mm high, complete with padbolt.

**15.9 SCHEDULE****Joinery schedule**

Location/Item	Manufacturer	Material	Colour
<i>Refer to drawings for joinery details including:</i>			
<ul style="list-style-type: none"> <li>• Kitchen cupboards</li> <li>• Laundry cupboards</li> <li>• Robes to Bedrooms</li> <li>• Vanity to bathroom</li> <li>• Linen cupboard – construct with melamine shelving with 50mm x 25mm vinyl wrapped stiffening front rail. Provide 75mm x 50mm centre support post</li> </ul>			

## 16 PLUMBING AND DRAINAGE

### 16.1 GENERAL

#### Cross references

Refer to the following worksections:

- *Site preparation*, for service trenches.
- *Roofing*, for roof plumbing and rainwater tanks.
- *Block and tile finishes*, for waterproofing of wet areas.
- *Painting*, for priming steel or iron before installation and exposed piping required to be painted.

#### Standard

Plumbing and drainage products: To SAA MP52-2001 (*Manual of authorization procedures for plumbing and drainage products*).

#### Connections

Excavate to locate and expose the connection points and connect to the authorities' mains. On completion, backfill and compact the excavation and reinstate surfaces and elements which have been disturbed such as roads, pavements, kerbs, footpaths and nature strips.

### 16.2 MATERIALS AND COMPONENTS

#### Water supply pipes

Material: *Copper*

#### Drainage and Plumbing Pipes

Materials: *UPVC DWV solvent welded joints*

#### Traps

Materials: *S & P Combinations*

#### Kitchen sink

Tap holes: *Hot and cold with common spout and third tap for rainwater*

#### Water heater

Type: *Heat pump*

Manufacturer: *Quantum or Rheem*

Model/capacity: *340 litre – 4 bedroom residence  
270 litre – 3 bedroom residence*

#### Floor wastes

Type: *Stainless Steel*

#### Finishes

Finish exposed piping, including fittings and supports as follows:

- Internal locations such as toilet and kitchen areas: Bright chrome plate.
- Externally: Paint.
- Concealed but accessible spaces (including cupboards and non-habitable enclosed spaces): Leave unpainted except for required identification marking.

#### Valves

Finish valves to match connected piping.

**Sanitary ware and tapware schedule**

<b>Location</b>	<b>Details</b>
<b>Tapware:</b>	<ul style="list-style-type: none"> <li>➤ All tap ware including sinks with aerated spout, hand basins, laundry tub, bath, washing machine and cistern taps etc. are to be selected from the Enware 'Traditional' series with IN Jumper valves, Chrome Plated Finish.</li> <li>➤ Basin sets are to be IN306 Adjustable Basin Set with SP001 Fixed Aerated Spout, WELS 4-star rated.</li> <li>➤ Kitchen sets are to be IN307 Traditional Sink set with SP010 Swivel Aerated Spout, WES 3-star rated.</li> <li>➤ Shower Rose - Enware IN316 Traditional Shower set with SP261 Shower Rose WELS 3-star rated.</li> <li>➤ Bath sets to be Enware IN314 Traditional Bath Set with SP201 fixed Bath outlet.</li> <li>➤ Laundry sets are to be Enware IN347 Traditional Laundry Set with SP251 Laundry Arm WELS 3-star rated.</li> <li>➤ Washing Machine Taps are to be Enware IN313 Traditional Washing Machine Taps.</li> <li>➤ Cistern Taps are to be Enware IN303 Traditional Cistern Taps.</li> </ul>
<b>Kitchen Sink:</b>	Clark stainless steel 2012 (1538mm long)
<b>Laundry Tub</b>	Clark 70 litre Mk11 single rinse by pass stainless steel tub with cabinet. Provide swivel arm laundry tub spout.
<b>Bath</b>	Decina Modena 1500mm long
<b>WC:</b>	Caroma 'Smartflush' 4.5/3L dual flush cistern. Trident Sovereign 2000 Connector Toilet Suite
<b>Vanity Basins:</b>	Concorde 500 three tapware holes

**16.3 CONSTRUCTION GENERALLY****General**

Install piping in straight lines and to uniform grades. Arrange and support the piping so that it remains free from vibration and water hammer, while permitting thermal movement. Keep the number of joints to a minimum. Prevent direct contact between incompatible metals.

**Concealment**

If practicable, conceal piping and fittings requiring maintenance or servicing so that they are accessible within non-habitable enclosed spaces such as roof spaces, subfloor spaces and ducts. Keep pipelines in subfloor spaces at least 150 mm above ground and ensure access can be provided throughout for inspection. Provide at least 25 mm clearance between adjacent pipelines (measured from the piping insulation where applicable).

**Building penetrations**

If piping passes through building elements provide purpose-made metal or plastic sleeves formed from pipe sections. Prime steel or iron before installation.

**Pipe supports**

Materials: The same as the piping, or galvanized or non-ferrous metals, with bonded PVC or glass fibre woven tape sleeves where needed to separate dissimilar metals.

**Cover plates**

Where exposed piping emerges from wall, floor or ceiling finishes, provide cover plates of non-ferrous metal, finished to match the piping, or of stainless steel.

**16.4 STORMWATER****Standard**

General: To AS/NZS 3500.3.2-1998 (*National Plumbing and Drainage - Stormwater drainage - Acceptable solutions*) or AS/NZS 3500.5 (*National Plumbing and Drainage – Domestic installations*).

### **Cleaning**

During construction, use temporary covers to openings and keep the system free of debris. On completion, flush the system using water and leave it clean.

### **Pipelaying**

Lay pipelines with the spigot ends in the direction of flow.

### **Downpipe connections**

Turn up drain branch pipelines to finish 50 mm above finished ground or pavement level.

### **Subsoil drains**

Connection: Connect subsoil drains to the stormwater drainage system.

Trench width: Minimum 450 mm.

Subsoil drains: Provide proprietary perforated plastic pipe.

Filter fabric: Provide a polymeric fabric formed from a plastic yarn containing stabilisers or inhibitors to make the filaments resistant to deterioration due to ultraviolet light.

Filter sock: Provide a polyester permeable sock capable of retaining particles of 0.25 mm size. Securely fit or join the sock at each joint.

Backfilling: Backfill with 20 mm nominal size washed screenings, to the following depths:

- To the underside of the bases of overlying structures such as pavements, slabs and channels.
- To within 75 mm of the finished surface of unpaved or landscaped areas.

### **Pits**

Cover levels: Locate the top of covers or gratings, including frames as follows:

- In paved areas: Flush with the paving surface.
- In landscaped areas: 25 mm above finished surface.
- Gratings taking surface water runoff: Set to receive the runoff without ponding.

## **16.5 WASTEWATER**

### **Standards**

General: To AS/NZS 3500.2.2-1996 (*National Plumbing and Drainage - Sanitary plumbing and sanitary drainage - Acceptable solutions*) or AS/NZS 3500.5 (*National Plumbing and Drainage – Domestic installations*).

### **Cleaning**

During construction, use temporary covers to openings and keep the system free of debris. On completion, flush the system using water and leave it clean.

### **Septic tanks**

Precast concrete or glass fibre reinforced plastic septic tank: To AS/NZS 1546.1-1998 (*On-site domestic wastewater treatment - Septic tanks*).

Effluent disposal: To AS/NZS 1547-2000 (*On-site domestic wastewater management*).

### **Extent**

*Construct sewer drainage lines as indicated on the drawings. Connect to Council mains in accordance with Council requirements. Pay all drainage fees and arrange for inspections as per Council requirements.*

### **Vent pipes**

Staying to roof: If fixings for stays penetrate the roof covering, seal the penetrations and make watertight.

Terminations: Provide bird-proof vent cowls made of the same material and colour as the vent pipe.

Provide ventilation as per the local authority requirements and in accordance with the relevant Standards.

## **16.6 FRESHWATER**

### **Standards**

General: To AS/NZS 3500.1.2-1998 (*National Plumbing and Drainage - Water supply – Acceptable solutions*) and AS/NZS 3500.4.2-1997 (*National Plumbing and Drainage - Hot water supply systems – Acceptable solutions*) or AS/NZS 3500.5 (*National Plumbing and Drainage – Domestic installations*).

Copper pipe: To AS 4809-2003 (*Copper pipe and fittings – Installation and commissioning*).

**Tap positions**

Locate hot tap to the left of, or above, the cold water tap.

**Accessories**

Provide the accessories and fittings necessary for the proper functioning of the plumbing systems, including taps, valves, outlets, pressure and temperature control devices, strainers, gauges and pumps.

**Heater installation**

Location: Locate water heaters where they can be maintained or replaced without damaging adjacent structures, fixtures or finishes.

Oil-fired heaters: To AS 1691-1985 (*Domestic oil-fired appliances – Installation*).

Solid fuel heaters: To AS/NZS 2918-2001 (*Domestic solid fuel burning appliances – Installation*).

**Temperature**

*Maximum temperature at ablution outlets: Provide thermo-mixing or tempering valves to deliver water at temperatures as required by codes. Thermostatic mixing valves to be equal to Enware "Traditional" Series.*

**Isolating valves**

Provide isolation valves to water heaters.

**Cleaning**

On completion, flush the pipelines using water and leave them clean.

**16.7 RAINWATER TANKS**

**General**

Type: Provide a proprietary plastic tank with flat base and pitched roof for storage of rainwater.

Installation: To AS/NZS 3500.1.2-1998 (*National Plumbing and Drainage - Water supply – Acceptable solutions*).

Coated steel tank: Fully support the tank above ground level.

- Material: Hot-dipped zinc-coated steel or aluminium/zinc-coated steel.

*Plastic tank: Supply and install a 2700 litre poly tank as indicated on the drawings, manufacture equal to Bluescope 1200mm diameter. 2400mm height steel corrugated water tank. Provide pipework to a third tap over the kitchen sink. Connect the tank overflow to the stormwater drainage system. Provide all brackets to mount and support the tank.*

*Provide a pump (Davey or Grundfos), Colorbond pump cover and power point to pump water to the third sink tap in the kitchen.*

**16.8 GAS – NOT USED**

## 17 ELECTRICAL INSTALLATIONS

### 17.1 GENERAL

#### Cross references

Refer to the *Site preparation* worksection for service trenches.

#### Standard

Electrical installation: To AS/NZS 3018-2001 (*Electrical installations – Domestic installations*).

#### Interpretation

ED S&IR: The Electricity Distributor's Service and Installation Rules.

RCD: Residual Current Device.

### 17.2 COMPONENTS

#### Standards

Circuit breakers: To AS/NZS 3947.2-2002 (*Low-voltage switchgear and controlgear – Circuit-breakers*).

Electrical accessories: To AS/NZS 3100-2002 (*Approval and test specification General requirements for electrical equipment*).

Luminaires: To AS 3137-1992 (*Approval and test specification - Luminaires (lighting fittings)*)

Smoke detectors: To AS 3786-1993 (*Smoke alarms*).

Switchboards: To AS/NZS 3439.1-2002 (*Low-voltage switchgear and controlgear assemblies - Type-tested and partially type-tested assemblies*) or AS/NZS 3439.3-2002 (*Low-voltage switchgear and controlgear – Particular requirements for low-voltage switchgear and controlgear assemblies...*).

Telecommunications accessories: To AS/ACIF S008: 2001 (*Requirements for authorised cabling products*).

Television antenna: To AS 1417.1-1987 (*Receiving antennas for radio and television in the frequency range 30 MHz to 1 GHz - Construction and installation*) and AS 1417.2-1991 (*Receiving antennas for radio and television in the frequency range 30 MHz to 1 GHz – Performance*).

#### Telecommunications system

Telephony cable only - Speech and low band frequencies ( $\leq 100$  kHz)

#### Electrical appliances schedule

Type	Location	Make/Model
Stove:	Kitchen	Westinghouse PAJ 804W upright stove 600mm wide. Provide a separate isolation switch
Exhaust Fan/Rangehood	Kitchen	Kleenmaid 600mm wide with 3 speed fan and light. Ducted to the exterior including GPO in the cupboard above.
Hot Water system	Refer drawings	Refer also to Plumbing and drainage
Smoke Detectors	As per Australian Standards and BCA	
Telephone Outlets	Refer drawings	
Power Outlets	Refer drawings	Clipsal or equal
Television Outlets	Refer drawings	
Exhaust Fans	Bath, WC and Laundry	As approved – refer Mechanical Installation.
Ceiling Mounted Fans	Refer Drawings	Powdercoated white finish. Manufacture equal to Martec.

**Luminare schedule**

Type	Location
2 x 36w fluorescent light fitting.	Refer drawings. Provide a diffuser to the light in the kitchen.
Wall mounted light fitting (with motion detector where shown)	Refer drawings. Fitted with round white bunker fitting with guard. 100W, 240mm diameter.
Ceiling mounted light fitting.	Refer drawings. Fitted with Oriel Victoriana aluminium coolie shades. VIC 20 white with batten fix cover 200mm diameter. Provide fluorescent low energy 20W bulb.

**17.3 INSTALLATION****General**

Submit all necessary applications for electricity supply. Liaise with the electricity distributor and comply with the ED S&IR.

**Telecommunications installation**

Standard: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*) and the recommendations of SAA HB29-2000 (*Communications Cabling Manual, Module 2: Communications Cabling Handbook*).

Submissions: Submit required applications for telecommunications services to the telecommunications services carrier. Liaise with the carrier and submit the Telecommunications Cabling Advice (TCA1) to the Australian Communications Cabling Authority (ACA).

*The Contractor is to arrange for the provision of telephone lead in cabling from the street to the house as well as internal wiring to the outlets indicated on the drawings.*

**Consumers mains and metering**

Provide consumers mains and connect them to the electricity distributor mains.

Consumer mains phases: *Single -Provide underground cabling to the point of attachment pole located at the front boundary.*

Electricity distributor's requirements: Provide metering, protection, and control equipment as required by the ED S&IR.

Metering switchboard location: *External*

**Switchboards**

Distribution switchboard location(s): *Internal as approved by Principal's Representative*

Do not locate a switchboard in a position prohibited by AS/NZS 3018-2001 (*Electrical installations – Domestic installations*) or the ED S&IR. Verify that any proposed location complies, and if the location is not compliant, recommend a suitable location to the owner.

Construction: Enclosed type with a hinged lid. Provide circuit breakers and RCDs.

**Maximum demand and spare capacity**

Calculate the maximum demand of the installation in accordance with AS/NZS 3018-2001 (*Electrical installations – Domestic installations*) and give the owner a copy of the calculations.

Spare capacity: Provide

- > 10% spare capacity in mains and submains; and
- > 25% spare capacity in final subcircuits.

Load balancing: Spread electrical load equally across circuits to prevent overloading and inadvertent circuit breaker operation.

Fixed and stationary appliances: Treat socket outlets supplying fixed or stationary appliances likely to cause an RCD to trip due to earth leakage currents in accordance with AS/NZS 3018-2001 (*Electrical installations – Domestic installations*). Do not connect to circuits that supply socket outlets intended for hand held or portable appliances.

Spare spaces: Provide switchboards with  $\geq 2$  spare positions for future single phase circuit breakers.

**Electrical and telecommunications accessories**

Provide electrical accessories necessary for a complete installation including but not limited to switches, dimmers, socket outlets, and telecommunications outlets.

Mounting: Flush mount accessories to the wall (or ceiling) unless noted otherwise. Provide proprietary wall boxes in masonry and wall brackets in stud walls.

Wet areas: Position accessories in locations containing baths showers or other fixed water containers to comply with the requirements of AS/NZS 3018-2001 (*Electrical installations – Domestic installations*).

**Wiring**

Conceal cables and conduits. Provide conduits as necessary to allow wiring replacement without structural work or the removal of cladding, lining, plaster or cement rendering.

Sequence of work: Install conduits and cables before the installation of wall and ceiling linings, and before any external landscaping works.

Installation: Do not penetrate damp-proof courses. Arrange wiring such that it does not bridge the cavity in external masonry.

Conduit sizes: Provide conduits of sufficient internal diameter and arranged so that cables are not subject to undue mechanical stress during installation.

Minimum conduit diameter: 20 mm.

Conduits for future use: Provide a non-metallic drawstring having a breaking strain > 100 kg.

**Luminaires**

Non-specified luminaires: Provide a bayonet cap batten holder at each lighting point location where no luminaire is specified.

**Dimmers and control devices**

Locate dimmers and control devices for future access. Provide ventilation and acoustic treatment to suit the device characteristics.

**Telecommunications**

Installations requiring telephony only: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*).

Small office/home office installations: To AS/ACIF S009: 2001 (*Installation Requirements for Customer Cabling (Wiring Rules)*) and AS/NZS 3086-1996 (*Telecommunications installations - Integrated communications cabling systems for small office/home office premises*) and in accordance with the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*).

**Television and audio systems**

Installation and testing: To AS/NZS 1367-2000 (*Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations*).

Antennas: Provide and locate antennas to receive all locally available free-to-air television stations. Provide a coaxial cabling system.

Conduits for future cabling: ≥ 25 mm diameter with drawstrings.

**Smoke detection**

Installation and testing: To AS 1670.1-1995 (*Fire detection, warning, control and intercom systems - System design, installation and commissioning – Fire*).

Provision: Provide smoke detectors to the requirements of the Building Code of Australia. Connect smoke detectors to mains power.

**Testing and certification**

Electrical installations: Test to AS/NZS 3017-2001 (*Electrical installations - Testing and inspection guidelines*). Give the owner a certificate showing test results and certifying compliance with AS/NZS 3018-2001 (*Electrical installations – Domestic installations*).



Telecommunications cabling: To AS/NZS 3086-1996 (*Telecommunications installations - Integrated communications cabling systems for small office/home office premises*) and the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*). Test the cable link performance in accordance with the recommendations of SAA HB29-2000 (*Communications Cabling Handbook*) at the maximum frequency and data rate for the cable class, and the cable category. Give the owner a certificate showing test results and certifying compliance with AS/NZS 3086-1996 (*Telecommunications installations - Integrated communications cabling systems for small office/home office premises*).

Television and audio systems: To AS/NZS 1367-2000 (*Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations*). Test the complete television and audio system. Give the owner a certificate showing test results and certifying compliance.

## 18 MECHANICAL INSTALLATIONS

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### 18.1 GENERAL

#### Cross references

Refer to the *Electrical installations* worksection for electrical exhaust fan requirements.

Refer to the *Windows* worksection for external louvres.

#### Standards

Mechanical ventilation: To AS 1668.2-2002 (*The use of ventilation and airconditioning in buildings - Mechanical ventilation for acceptable indoor quality*) Grade 2 amenity.

### 18.2 EXHAUST FANS

*Supply and install exhaust fans to each laundry, bathroom and WC. Exhaust fans are to be switched with lights in both toilets only. Exhaust fans are to be installed in these positions in every residence. Exhaust fans are to be wall or ceiling mounted.*

*The exhaust fan is to be properly flashed and be fitted with a powder coated metal external grill.*

*Exhaust fans in the kitchen and bathroom are to be ducted to the exterior of the building.*

*The range hood in the kitchen is to be ducted to the exterior of the building.*

## 19 FENCES AND EXTERNAL WALLS

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### 19.1 GENERAL

#### Cross reference

Refer to the *General requirements* worksection for timber durability.

### 19.2 MATERIALS AND COMPONENTS

#### Galvanizing

Galvanize mild steel components as follows:

- Threaded fasteners: To AS 1214-1983 (Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)).
- Other components: To AS 4680-1999 (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*).

#### Concrete

Standard: To AS 1379-1997 (*Specification and supply of concrete*) or proprietary packaged mix.

#### Steel panel fencing

Self-drilling screws: To AS 3566-1988 (*Screws - Self-drilling - For the building and construction industries*) corrosion resistant class 3.

Steel framing: Metallic-coated steel to AS 1397-1993 (*Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated*) Z450 or AZ150.

Steel sheeting: Prepainted to AS/NZS 2728-1997 (*Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements*).

Height: *Nominal 1800mm high*

Prefinish Colorbond colour: *To be advised*

*50 diameter pipe posts (galvanised) at 2000 centres.*

*Roof batten top hats for rails.*

#### Steel posts

Galvanize to AS 4680-1999 (*Hot-dip galvanized (zinc) coatings on fabricated ferrous articles*).

#### Weldmesh fencing

*900mm high top galvanised weldmesh with 50mm diameter steel posts concreted into the ground.*

### 19.3 CONSTRUCTION GENERALLY

#### Clearing

Clear vegetation on the fence alignment. Grub out the stumps and roots of removed trees or shrubs and trim the grass to ground level, but do not remove the topsoil.

#### Excavation

Excavate footings so that they have vertical sides and a firm base.

#### Minimum footing size

Generally: 200 diameter x 600 mm deep.

In loose material: 250 diameter x 900 mm deep.

In rock: 250 diameter x 300 mm deep.

#### Line and level

Erect posts vertically to follow the contours of the natural ground.

#### Concrete footings

Place mass concrete around posts and finish with a weathered top falling from the post to ground level.

#### Steel panel fencing

Ensure bottom rails have drain holes and are at least 50 mm clear of the ground.

## **19.4 GATES**

### **General**

Construction: Construct gates as follows:

- Ledges and braces: To match fence rails.
- Pickets or palings: To match fencing.

Hardware: Provide the following:

- Drop bolt and ferrule to each leaf of double gates.
- Latch to one leaf of double gates.
- Provision for locking by padlock.
- Hinges to ensure smooth operation.

Hand access: Provide hand holes to give access from outside to reach locking provision.

Type and extent: *Refer to drawings*

## **19.5 BRICK FENCES - NOT USED**

## **19.6 FENCE LOCATIONS**

*Refer to drawings for the extent of colorbond sheet metal fences along the rear and side boundaries and*

*900mm high roll top weldmesh fencing to the street frontages and returns on side boundaries at the front. Provide gates and side cut-off fencing as indicated on the drawings.*

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## 20 LANDSCAPING

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### 20.1 GENERAL

#### Cross reference

Refer to the *General requirements* worksection for timber durability.

### 20.2 MATERIALS AND COMPONENTS

#### Concrete

Standard: To AS 1379-1997 (*Specification and supply of concrete*) or proprietary packaged mix.

### 20.3 PREPARATION

#### Weed eradication

Eradicate weeds using a non-residual glyphosate herbicide in any registered formulae, at the recommended maximum rate.

#### Surplus spoil

Remove surplus spoil from site. Do not burn vegetative material.

### 20.4 SUBSOIL

#### Ripping

General: If practicable, rip parallel to the final contours. Do not rip when the subsoil is wet or plastic. Do not rip within the dripline of trees and shrubs to be retained.

Ripping depths: Rip the subsoil to the following typical depths:

- Compacted subsoil: 300 mm.
- Heavily compacted clay subsoil: 450 mm.

#### Cultivation

Cultivate to a minimum depth of 100 mm. Do not disturb services or tree roots; if necessary, cultivate these areas by hand. During cultivation, thoroughly mix in materials required to be incorporated into the subsoil. Remove stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Trim the surface to the required design levels after cultivation.

#### Additives

General: Apply additives after ripping or cultivation and incorporate into the upper 100 mm layer of the subsoil.

Gypsum: Incorporate at the rate of 0.25 kg/m<sup>2</sup>.

### 20.5 TOPSOIL

#### General

Provide topsoil which is free from unwanted matter and is suitable for reuse on site as topsoil.

#### Source

If it is available, provide site topsoil.

#### Placing topsoil

Spread the topsoil on the prepared subsoil and grade evenly, making the necessary allowances so that:

- required finished levels and contours are achieved after light compaction; and
- grassed areas may be finished flush with adjacent hard surfaces such as kerbs, paths and mowing strips.

#### Consolidation

Compact lightly and uniformly in 150 mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which is:

- finished to design levels;
- smooth and free from stones or lumps of soil;
- graded to drain freely, without ponding, to catchment points;

- graded evenly into adjoining ground surfaces; and
- ready for planting.

**Topsoil depths**

Spread topsoil to the following typical depths:

- Planting areas: 225 mm.
- Irrigated grassed areas generally: 150 mm.
- Grass areas: 100 mm.

**20.6 TURFING**

**Turf**

Obtain turf from a specialist grower of cultivated turf. Provide turf of even thickness, free from weeds and other foreign matter.

**Supply**

Deliver the turf within 24 hours of cutting, and lay it within 36 hours of cutting. Prevent it from drying out between cutting and laying.

**Fertilising**

Mix fertiliser thoroughly into the topsoil before placing the turf.

**Laying**

Lay turf

- in “stretcher” pattern with the joints staggered and close butted;
- parallel with the long sides of level areas, and with contours on slopes; and
- to finish flush, after tamping, with adjacent finished surfaces of ground, paving edging, or grass seeded areas.

**Tamping**

Lightly tamp to an even surface immediately after laying. Do not use a roller.

**Watering**

Water immediately after laying until the topsoil is moistened to its full depth.

**Extent**

*Allow for 200m<sup>2</sup> of turf per residence. Allow to supply and lay Kikuyu turf. Areas to be confirmed on site with the Principal's Representative.*

**20.7 PLANTING**

**Excavation**

Excavate a plant hole for each plant large enough to accept the root ball plus 0.1 m<sup>3</sup> of backfilling with topsoil.

**Plants**

General: Provide plants which

- have large healthy root systems, with no evidence of root curl, restriction or damage;
- are vigorous, well established, free from disease and pests, of good form consistent with the species or variety; and
- are hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.

Trees: Provide trees which, unless required to be multi-stemmed, have a single leading shoot.

**Labelling**

Label at least one plant of each species or variety in a batch using a durable, readable tag.

**Planting conditions**

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

**Watering**

Thoroughly water plants before planting and immediately after planting.

**Fertilising**

In planting beds and individual plantings, place fertiliser pellets around plants at the time of planting.

## **20.8 MULCHING**

### **Mulch**

General: Provide mulch which is free of deleterious and extraneous matter such as stones, soil, weeds and sticks.

Application: Place mulch clear of plant stems, and rake to an even surface flush with the surrounding finished levels.

Depth: 75 mm.

## **20.9 STAKES AND TIES**

### **Stakes**

Material: Hardwood, straight, free from knots or twists, pointed at one end.

Installation: Drive stakes into the ground at least one third of their length, avoiding damage to the root system.

Stake sizes:

- For plants 1 to 2.5 m high: Two 50 x 50 x 1800 mm stakes per plant.
- For plants smaller than 1 m high: One 38 x 38 x 1200 mm stake per plant.

### **Ties**

General: Provide ties fixed securely to the stakes, one tie at half the height of the main stem, others as necessary to stabilise the plant.

Webbing: Provide 50 mm hessian webbing stapled to the stake.

## 21 PAVING AND ROADS

### 21.1 GENERAL

#### Cross reference

Refer to the *General requirements* worksection for timber durability.

#### Footpath crossing

Provide a footpath and kerb crossing to local council requirements.

### 21.2 MATERIALS AND COMPONENTS

#### Mortar materials

Sand: Use a fine aggregate with a low clay content selected for grading.

Cement: To AS 3972-1997 (*Portland and blended cements*), type GP.

#### Mortar

Mix proportions: 1:3 cement:sand.

### 21.3 CONSTRUCTION GENERALLY

#### Grading

General: Grade paving to even falls to drain away from buildings to drainage outlets without ponding. Minimum fall for drainage: 1:100.

### 21.4 BASE COURSE

#### Preparation

Prepare the subgrade to suit the thickness of the base course and paving. If necessary, loosen the ground to a depth of 200 mm and adjust the moisture content before compaction. Compact the ground to a firm, even surface using at least 2 passes of a vibrating plate compactor or roller. Remove and replace soft areas.

#### Base course material

Provide well-graded crushed rock or gravel, free of deleterious material, with a maximum particle size of 26.5 mm, uniformly graded and with a maximum clay content of 6% by mass.

#### Placing

Spread and compact the base course to a firm, tight, close textured surface using at least 3 passes of a vibrating plate compactor or roller. Adjust the moisture content as needed to facilitate compaction.

#### Base course minimum thickness table

Comply with the following minimum thicknesses:

	Site classification to AS 2870			
	Unit paving		Bituminous paving	
	A	S&M	A	S&M
Foot and bicycle traffic	0	0	50 mm	100 mm
Light domestic traffic occasionally up to 3 tonne gross	0	75 mm	100 mm	150 mm

### 21.5 ASPHALT PAVING – NOT USED

### 21.6 UNIT PAVING – NOT USED

### 21.7 IN SITU CONCRETE PAVING



**Concrete**

Standard: To AS 1379-1997 (*Specification and supply of concrete*).

Colour: *Natural*

Aggregate: *Standard 20mm*

**Minimum thickness**

Foot and bicycle traffic: *100mm reinforced with F82 mesh (refer also GHD specification).*

Light domestic traffic occasionally up to 3 tonne gross: *100 mm.*

**Preparation**

Trim the ground to suit the required thickness of concrete and compact to a firm, even surface.

**Control joints**

Form tooled joints at maximum 2 m spacing.

**Expansion joints**

Cast-in 10 mm thick bitumen impregnated fibreboard joint filler at maximum 6 m spacing.

**Abutment with building**

Where concrete paving abuts the wall of a building, provide a strip of 10 mm thick *Ableflex* between the paving and the wall.

**Finishing methods**

Broom finishing: Wood float and broom to an even textured slip-resistant surface with steel tooled margins. On gradients steeper than 10%, roughen the surface by scoring.

**Driveways**

*Provide reinforced concrete driveways and parking slabs as indicated on the drawings. The concrete is to be minimum 100mm thick reinforced with F82 mesh. Provide reinforced construction joints at 3 metre centres.*

*Construct footpath crossovers to Moree Plains Shire Council requirements. The thickness is to be 100mm reinforced with F82 mesh unless a thicker slab is required by Council. Refer to GHD Structural Details for details which will take precedence.*

**Paths**

*Provide paths as indicated on the drawings. Paths are to be 100mm thick reinforced with F82 mesh and are to have control joints at 2 metre centres.*

## 22 REFERENCED DOCUMENTS

AS 1214	1983	Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)
AS 1231	2000	Aluminium and aluminium alloys – Anodic oxidation coatings
AS 1288	1994	Glass in buildings - Selection and installation
AS 1324		Air filters for use in general ventilation and airconditioning
AS 1324.2	2003	Methods of test
AS 1366		Rigid cellular plastics sheets for thermal insulation
AS 1366.3	1992	Rigid cellular polystyrene - Moulded (RC/PS - M)
AS 1366.4	1989	Rigid cellular polystyrene - Extruded (RC/PS-E)
AS/NZS 1367	2000	Coaxial cable systems for the distribution of analogue television and sound signals in single and multiple unit installations
AS 1379	1997	Specification and supply of concrete
AS 1397	2001	Steel sheet and strip - Hot-dipped zinc-coated or aluminium/zinc-coated
AS 1417		Receiving antennas for radio and television in the frequency range 30 MHz to 1 Ghz
AS 1417.1	1987	Construction and installation
AS 1417.2	1991	Performance
AS/NZS 1546		On-site domestic wastewater treatment units
AS/NZS 1546.1	1998	Septic tanks
AS/NZS 1546.2	2001	Waterless composting toilets
AS/NZS 1546.3	2001	Aerated wastewater treatment units
AS/NZS 1547	2000	On-site domestic wastewater management
AS/NZS 1554		Structural steel welding
AS/NZS 1554.1	2000	Welding of steel structures
AS 1562		Design and installation of sheet roof and wall cladding
AS 1562.1	1992	Metal
AS/NZS 1562.3	1996	Plastic
AS/NZS 1571	1995	Copper - Seamless tubes for airconditioning and refrigeration
AS 1604		Specification for preservative treatment
AS 1604.1	2000	Sawn and round timber
AS/NZS 1604.2	2002	Reconstituted wood-based products
AS/NZS 1604.3	2002	Plywood
AS 1627	Various	Metal finishing - Preparation and pretreatment of surfaces
AS 1668		The use of mechanical ventilation and air-conditioning in buildings
AS 1668.2	2002	Ventilation design for indoor air contaminant control
AS 1670		Fire detection, warning, control and intercom systems – System design, installation, and commissioning
AS 1670.1	1995	Fire
AS 1670.6	1997	Smoke alarms
AS 1672		Limes and limestones
AS 1672.1	1997	Limes for building
AS/NZS 1677		Refrigerating systems
AS/NZS 1677.2	1998	Safety requirements for fixed applications
AS 1684		Residential timber-framed construction
AS 1684.3	1999	Cyclonic areas
AS 1684.4	1999	Simplified – Non-cyclonic
AS 1691	1985	Domestic oil-fired appliances - Installation
AS 1720		Timber structures
AS 1720.1	1997	Design methods
AS 1789	1984	Electroplated coatings - Zinc on iron or steel
AS/NZS 1859		Reconstituted wood-based panels - Specifications
AS/NZS 1859.1 (Int)	2001	Particleboard

MOREE ACDP MAJOR WORKS - CONSTRUCTION OF 4NO. REPLACEMENT HOUSES AT MEHI CRESCENT, MOREE  
(PACKAGE 2)

ASNZS 1859.2 (Int)	2001	Dry-processed fibreboard
AS/NZS 1859.3	1996	Decorative overlaid wood panels
ASNZS 1859.4 (Int)	2001	Wet-processed fibreboard
AS 1860	1998	Installation of particleboard flooring
AS/NZS 1860		Particleboard flooring
AS/NZS 1860.1	2002	Specifications
AS 1884	1985	Floor coverings - Resilient sheet and tiles - Laying and maintenance practices
AS 1909	1984	Installation of timber doorsets
AS 2047	1999	Windows in buildings - Selection and installation
AS 2049	2002	Roof tiles
AS 2050	2002	Installation of roofing tiles
AS 2159	1995	Piling - Design and installation
AS/NZS 2179		Specification for rainwater goods, accessories and fasteners
ASNZS 2179.2 (Int)	1998	PVC rainwater goods and accessories
AS 2185	1978	Fibrous plaster products
AS/NZS 2269	1994	Plywood - Structural
AS/NZS 2311	2000	The painting of buildings
AS/NZS 2312	2002	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS 2358	1990	Adhesives - For fixing ceramic tiles
AS/NZS 2455		Textile floor coverings - Installation practice
AS/NZS 2455.1	1995	General
AS/NZS 2588	1998	Gypsum plasterboard
AS/NZS 2589		Gypsum linings in residential and light commercial construction - Application and finishing
AS/NZS 2589.1	1997	Gypsum plasterboard
AS 2592	1983	Gypsum plaster for building purposes
AS 2601	2001	The demolition of structures
AS 2627		Thermal insulation of dwellings
AS 2627.1	1993	Thermal insulation of roof/ceilings and walls in dwellings
AS 2688	1984	Timber doors
AS 2689	1984	Timber doorsets
AS/NZS 2699		Built in components for masonry construction
AS/NZS 2699.1	2000	Wall ties
AS/NZS 2699.2	2000	Connectors and accessories
AS/NZS 2699.3	2002	Lintels and shelf angles (durability requirements)
AS/NZS 2728	1997	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
AS 2734	1984	Asphalt (hot-mixed) paving - Guide to good practice
AS/NZS 2803		Doors - Security Screen
AS/NZS 2803.1	1994	Hinged
AS/NZS 2803.2	1995	Sliding
AS/NZS 2804		Installation of security screen doors
AS/NZS 2804.1	1995	Hinged
AS/NZS 2804.2	1996	Sliding
AS 2870	1996	Residential slabs and footings - Construction
AS/NZS 2904	1995	Damp-proof courses and flashings
AS/NZS 2908		Cellulose-cement products
AS/NZS 2908.2	2000	Flat sheets
AS/NZS 2918	2001	Domestic solid fuel burning appliances - Installation
AS/NZS 2924		High pressure decorative laminates - Sheets made from thermosetting resins
AS/NZS 2924.1	1998	Classification and specifications
AS/NZS 3017	2001	Electrical installations - Testing and inspection guidelines
AS/NZS 3018	2001	Electrical installations - Domestic installations
AS/NZS 3086	1996	Telecommunications installations - Integrated communications cabling systems for small office/home office premises

MOREE ACDP MAJOR WORKS - CONSTRUCTION OF 4NO. REPLACEMENT HOUSES AT MEHI CRESCENT, MOREE  
(PACKAGE 2)

AS/NZS 3100	2002	Approval and test specification - General requirements for electrical equipment
AS 3137	1992	Approval and test specification - Luminaires (lighting fittings)
AS 3439		Low-voltage switchgear and controlgear
AS 3439.1	2002	Type-tested and partially type-tested assemblies
AS 3439.2	2002	Type-tested and partially type-tested assemblies
AS 3439.3	2002	Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use - Distribution
AS/NZS 3500		National Plumbing and Drainage
AS/NZS 3500.1.2	1998	Water supply – Acceptable solutions
AS/NZS 3500.2.2	1996	Sanitary plumbing and sanitary drainage - Acceptable solutions
AS/NZS 3500.3.2	1998	Stormwater drainage - Acceptable solutions
AS/NZS 3500.4.2	1997	Hot water supply systems - Acceptable solutions
AS/NZS 3500.5	2000	Domestic installations
AS 3566		Self-drilling screws for the building and construction industries
AS 3566.1	2002	General requirements and mechanical properties
AS 3566.2	2002	Corrosion resistance requirements
AS 3600	2000	Concrete structures
AS 3623	1993	Domestic metal framing
AS 3660		Termite management
AS 3660.1	2000	New buildings
AS/NZS 3666		Air-handling and water systems of buildings - Microbial control
AS/NZS 3666.1	2002	Design, installation and commissioning
AS 3700	2001	Masonry structures
AS 3715	2002	Metal finishing - Thermoset powder coatings for architectural applications of aluminium and aluminium alloys
AS 3727	1993	Guide to residential pavements
AS 3740	1994	Waterproofing of wet areas within residential buildings
AS 3786	1993	Smoke alarms
AS 3798	1996	Guidelines on earthworks for commercial and residential developments
AS/NZS 3823		Performance of electrical appliances –Airconditioners and heat pumps
AS/NZS 3823.1.1	(1998)	Non-ducted airconditioners and heat pumps - Testing and rating for performance
AS/NZS 3823.1.2	2001	Test methods - Ducted airconditioners and air-to-air heat pumps - Testing and rating for performance
AS/NZS 3947		Low voltage switchgear and controlgear
AS/NZS 3947.2	2002	Circuit-breakers
AS 3958		Ceramic tiles
AS 3958.1	1991	Guide to the installation of ceramic tiles
AS 3958.2	1992	Guide to the selection of a ceramic tiling system
AS 3959	1999	Construction of buildings in bushfire prone areas
AS 3972	1997	Portland and blended cements
AS 3999	1992	Thermal insulation of dwellings - Bulk insulation - Installation requirements
AS 4055	1992	Wind loads for housing
AS 4100	1998	Steel structures
AS/NZS 4200		Pliable building materials and underlays
AS/NZS 4200.1	1994	Materials
AS/NZS 4200.2	1994	Installation requirements
AS 4254	2002	Ductwork for air-handling systems in buildings
AS/NZS 4256		Plastic roof and wall cladding materials
AS/NZS 4256.3	1994	Glass fibre reinforced polyester (GRP)
AS/NZS 4256.4	1995	Unplasticized polyvinyl chloride (uPVC) wall cladding boards
AS/NZS 4256.5	1996	Polycarbonate
AS/NZS 4386		Domestic kitchen assemblies
AS/NZS 4386.1	1996	Kitchen units

AS 4440	1997	Installation of nailplated timber trusses
AS/NZS 4455	1997	Masonry units and segmental pavers
AS/NZS 4456		Masonry units and segmental pavers – Method of test
AS/NZS 4456.10	1997	Method 10: Determining resistance to salt attack
AS/NZS 4505	1998	Domestic garage doors
AS 4508	1999	Thermal resistance of insulation for ductwork used in building airconditioning
AS/NZS 4600	1996	Cold-formed steel structures
AS/NZS 4680	1999	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS 4809	2003	Copper pipe and fittings - Installation and commissioning
AS/NZS 4859		Materials for the thermal insulation of buildings
AS/NZS 4859.1	2002	General criteria and technical provisions
AS 5601	2002	Gas Installation Code
AS/ACIF S008	2001	Requirements for authorised cabling products
AS/ACIF S009	2001	Installation Requirements for Customer Cabling (Wiring Rules)
SAA HB28	1997	The design of residential slabs and footings
SAA HB29	2000	Communications Cabling Manual, Module 2: Communications Cabling Handbook
SAA HB33	1992	Domestic open fireplaces
SAA HB36	1993	Building in bushfire-prone areas – Information and advice
SAA HB40		The Australian Refrigeration and Air Conditioning Code of Good Practice
SAA HB40.1	2001	Reduction of Emissions of Fluorocarbon Refrigerants in Commercial and Industrial Refrigeration and Airconditioning Applications
SAA HB40.2	2001	Reduction of Emissions of Fluorocarbons in Residential Airconditioning Applications
SAA HB109	1998	Footings for reinforced masonry houses
SAA MP52	2001	Manual of authorization procedures for plumbing and drainage products
AIRAH DA9	1998	Load estimation and psychrometrics
APAS-0015/1	2001	Full gloss alkyd enamel for exterior and interior use (buildings)
APAS-0015/2	2001	Full gloss alkyd enamel for interior use only (buildings)
APAS-0115	2001	Lightly pigmented solvent borne ranch finish for exterior timber
APAS-0200/1	2001	One pack semi gloss pigmented solvent borne paving paint for concrete
APAS-0200/2	2001	One pack full gloss pigmented solvent borne paving paint for concrete
APAS-0205	2001	One pack clear moisture cured finish for timber
APAS-0260/1	2001	Interior gloss latex paint (buildings)
APAS-0260/2	2001	Semi gloss interior latex paint in MCR (buildings)
APAS-0260/3	2001	Low gloss interior latex paint in MCR (buildings)
APAS-0260/4	2001	Washable flat finish for interior use (buildings)
APAS-0280/1	2001	Gloss exterior latex paint in MCR (buildings)
APAS-0280/2	2001	Semi gloss latex paint, exterior (buildings)
APAS-0280/3	2001	Flat or low gloss exterior latex finish in MCR (buildings)
APAS-0280/5	2001	Heavily pigmented low gloss latex ranch finish for exterior timber
APAS-2916	2001	Organic zinc rich coating for protection of steel
ASTM C534	2002	Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form
BCA 2.6		Energy efficiency
BCA 3.1.3.2(b)		Acceptable construction – Site preparation – Termite risk management – Installation of termite barriers
BCA 3.3.3.2		Acceptable construction – Masonry – Masonry accessories – Wall ties
BCA 3.4.2.2		Acceptable construction – Framing – Steel framing - General
BCA 3.12.1		Acceptable construction – Energy efficiency – Building fabric
BCA 3.12.2		Acceptable construction – Energy efficiency – External glazing
BCA 3.12.3		Acceptable construction – Energy efficiency – Building sealing
BCA 3.12.5.3		Acceptable construction - Energy efficiency - Services - Heating and cooling ductwork
BCA Figure 3.3.3.1		Typical brick ties spacings in cavity and veneer construction
BCA Figure 3.3.3.5		Lintels supporting roofs and masonry walls

BCA Table 3.3.3.1		Corrosion protection for wall ties
BCA Table 3.4.1.2		Sub-floor ventilation and clearance
CBPI TN 21A	1985	The Design of Freestanding Clay-Brick Walls
CBPI TN 21B	1985	Brick Beam Garden Fences



## **7. DRAWINGS**





Drawing No.	Description of Drawing
<b>Architectural Drawings</b>	
R4802R WD29	Mehi Crescent Master Plan 1 - Part A
R4802R WD30	Mehi Crescent Master Plan 1 - Part B
<b>11 Mehi Crescent, Moree</b>	
R4802R WD31	Site, Roof & Floor Plans
R4802R WD32	Elevations, Section, Kitchen & BIU's
R4802R WD33	Framing & Electrical Services Plans
<b>35 Mehi Crescent, Moree</b>	
R4802R WD34	Site, Roof & Floor Plans
R4802R WD35	Elevations, Section, Kitchen & BIU's
R4802R WD36	Framing & Electrical Services Plans
<b>48 Mehi Crescent, Moree</b>	
R4802R WD43	Site, Roof & Floor Plans
R4802R WD44	Elevations, Section, Kitchen & BIU's
R4802R WD45	Framing & Electrical Services Plans
<b>46 Mehi Crescent, Moree</b>	
R4802R WD47	Site, Roof & Floor Plans
R4802R WD48	Elevations, Section, Kitchen & BIU's
R4802R WD49	Framing & Electrical Services Plans
<b>Typical Details</b>	
R4802R WD46	Typical Details
<b>Structural Engineers Drawings</b>	
41-12114-S071	Structural Notes - Sheet 1
41-12114-S072	11 Mehi Crescent - Foundation Plan & Bracing Plan
41-12114-S073	35 Mehi Crescent - Foundation Plan & Bracing Plan
41-12114-S074	46 Mehi Crescent - Foundation Plan & Bracing Plan
41-12114-S075	48 Mehi Crescent - Foundation Plan & Bracing Plan
<b>Hydraulic Services Drawings</b>	
41-12114-H201	Site Plans, Legend, Notes & Details
41-12114-H202	11 & 35 Mehi Crescent
41-12114-H203	46 & 48 Mehi Crescent

## **ARCHITECTURAL DRAWINGS**

# **STRUCTURAL ENGINEERING DRAWINGS**

## **HYDRAULIC SERVICES DRAWINGS**

## **8. APPENDICES**

**GEOTECHNICAL INVESTIGATION NO. 03-GI74A**

**DATED JULY 2003**

**PREPARED BY**

**THE NSW DEPARTMENT OF COMMERCE**

## **BASIX CERTIFICATES**



## **STRUCTURAL ENGINEER'S CERTIFICATES**



# 1. Earthworks

## 1.1 General

### 1.1.1 Cross References

#### General

Refer to the *General requirements* section.

#### Related sections

Refer to the following sections:

### 1.1.2 Interpretation

#### Definitions

General: To AS 1348.1.

Description and classification of soils: To AS 1726.

Bad ground: Ground unsuitable for the purposes of the works, including fill liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances and ground which is or becomes soft, wet or unstable.

Discrepancy: A difference between contract information about the site and conditions encountered on the site, including but not limited to discrepancies concerning

- » the nature or quantity of the material to be excavated or placed;
- » existing site levels; and
- » services or other obstructions beneath the site surface.

Line of influence: A line extending downward and outward from the bottom edge of a footing, slab or pavement and defining the extent of foundation material having influence on the stability or support of the footings, slab or pavement.

Rock: Monolithic material with volume greater than 0.5 m<sup>3</sup> which cannot be removed until broken up either by explosives or by rippers (attached to D6 bulldozer) or percussion tools.

Subgrade: The trimmed or prepared portion of the formation on which the pavement or slab is constructed.

Abnormal soil moisture conditions: Where the following situations are encountered:

- » Recent removal of an existing structure within the plan area of the proposed building;
- » Unusual moisture conditions caused by drains, channels, ponds, dams or tanks which are to be maintained or removed from the site;
- » Growth or removal of trees adjacent to the proposed building;
- » Poor site drainage.



### **1.1.3 Site Investigation**

#### **Notice**

If the following are encountered, give notice immediately and obtain instructions before carrying out any further work in the affected area:

- » Bad ground.
- » Abnormal soil moisture conditions

### **1.1.4 Records of Measurement**

#### **Excavation and backfilling**

Agreed quantities: Where there are variations to the contract levels or dimensions of excavations, do not commence backfilling or place permanent works in the excavation until the following have been agreed and recorded:

- » Depths of excavations related to the datum.
- » Final plan dimensions of excavations.
- » Quantities of excavations in rock.
- » Quantities of fill and topsoil, imports being recorded separately.

#### **Rock**

Level and class: If rock is to be measured for payment purposes, whether as extra over excavation of material other than rock or for adjustment of provisional measurements, do not remove the rock until the commencing levels and the classes of rock have been determined.

## **1.2 Quality**

### **1.2.1 Inspection**

#### **Witness points**

Give sufficient notice so that inspection may be made of the following:

- » Items to be measured as listed in Records of measurement.
- » Excavation completed to contract levels or founding material.
- » Subgrade before placing sub-base, base, working base, filter fabric or membrane, as applicable.

### **1.2.2 Tests**

#### **Testing authority**

Use NATA registered independent testing laboratory.

Level of responsibility to AS 3798 Appendix B: Level 2

#### **Testing**

Compaction (density): Test for compliance.



Retesting: Rework and retest areas which do not achieve the required density until that density is achieved.

### Test methods

Field dry density: To AS 1289.5.3.1, AS 1289.5.3.5 or AS 1289.5.8.1. If using AS 1289.5.8.1 calibrate the surface moisture-density gauge in accordance with AS 1289.5.8.4 before use.

Density index: To AS 1289.5.6.1.

Standard maximum dry density: To AS 1289.5.1.1.

Modified maximum dry density: To AS 1289.5.2.1.

Fill: Test to AS 1141 or AS 1289 as appropriate.

California bearing ratio: Sample and test to AS 1289.6.1.1, AS 1289.6.1.2 or AS 1289.6.1.3, as appropriate.

### Test schedule

Type of test	Test Frequency	Test Method
Compaction of filling	<b>At least (whichever requires the most tests):</b> <ul style="list-style-type: none"><li>- 1 test per layer or 200 mm thickness per 1000 m<sup>2</sup>.</li><li>- 1 test per 200 m<sup>3</sup> distributed evenly throughout full depth and area.</li><li>- 1 test per allotment per layer.</li></ul>	AS 1289.5.4.1
Select Fill		
• Particle size distribution	1 test for each type of imported filling.	AS 1289.3.6.1 (wet preparation)
• Atterberg limits	1 test for each type of imported filling	AS 1289.3.1.1, 3.3.1, 3.4.1

## 1.2.3 Submissions

### Tests

Imported fill: Submit certification or test results which establishes the compliance of imported fill with the contract.

### Materials

Submit details of materials proposed, including the following:

- » Sources of imported fill.

### Execution

Submit the methods and equipment proposed for the groundworks, including the following:

- » Excavation methods, stages, clearances, batters and temporary supports.
- » Placing and compaction methods and stages.



## 1.3 Excavating

### 1.3.1 Tolerances

#### Surfaces

Finish groundworks to reasonably smooth and uniform surfaces conforming to the required tolerances.

#### Subgrades

General: The tolerances in the **Subgrade tolerances table** apply to finished subgrade levels unless overridden by the specific requirements (including tolerances) for finished surface levels and thicknesses of covering materials.

- » Absolute level tolerance: Maximum deviation from design level.
- » Relative level tolerance: Maximum deviation from a 3 m straight edge laid anywhere on each plane surface.

#### Subgrade tolerances table

Item	Level tolerance (maximum)	
	Absolute	Relative
Cut subgrade in earth and fill subgrade	+ 0 - Unspecified	20 mm
Cut subgrade in rock	+ 0 - Unspecified	Unspecified

### 1.3.2 Removal of Topsoil

#### General

Extent: Remove the topsoil layer of the natural ground containing substantial organic matter, over the areas to be excavated or regraded, and areas to be occupied by structures, pavements, embankments and the like, and other areas designated to have topsoil removed.

Maximum depth: 200 mm.

Notice: If the topsoil extends to a depth greater than 200 mm give notice and obtain instructions.

#### Topsoil stockpiles

Stockpile site topsoil approved for re-use and imported topsoil where necessary. Establish stockpiles to sizes and in locations as directed, to heights not exceeding 1.5 m. Provide adequate drainage and erosion protection. Do not burn off or remove plant growth which may occur during storage. Do not allow traffic on stockpiles. If a stockpile is to remain for more than four weeks, sow with temporary grass. Protect the topsoil stockpiles from contamination by other excavated material, weeds and building debris.

### 1.3.3 Excavation

#### Extent

Site surface: Excavate over the site to give correct levels and profiles as the basis for construction, paving, filling and landscaping. Make allowance for compaction or settlement.



Footings: Excavate for footings, pits, wells and shafts, to the required sizes and depths. Confirm that bearing capacity is adequate.

#### **Proof rolling**

Extent: Proof roll excavations for pavements, filling and non-spanning slabs on ground to determine the extent of any bad ground.

Proof rolling method:

- » Roller type and size: > 10 tonne vibrating smooth drum
- » Number of passes: > 2
- » Settlement limit (mm): > Superintendent Approval

### **1.3.4 Explosives**

#### **General**

Do not use explosives.

### **1.3.5 Subgrades Affected By Moisture**

#### **General**

Where the subgrade is unable to support construction equipment, or it is not possible to compact the overlying pavement only because of a high moisture content, perform one or more of the following:

- » Allow the subgrade to dry until it will support equipment and allow compaction.
- » Scarify the subgrade to a depth of 150 mm, work as necessary to accelerate drying, and recompact when the moisture content is satisfactory.
- » Excavate the wet material and remove to spoil, and backfill excavated areas.

### **1.3.6 Bearing Surfaces**

#### **General**

Provide even plane bearing surfaces for loadbearing elements including footings. Step to accommodate level changes. Make the steps to the appropriate courses if supporting masonry.

#### **Deterioration**

If the bearing surface deteriorates because of water or other cause, excavate further to a sound surface before placing the loadbearing element.

### **1.3.7 Reinstatement of Excavation**

#### **General**

Where excavation exceeds the required depth, or deteriorates, reinstate to the correct depth, level and bearing value.

#### **Particular**



Below or within the "line of influence" of footings, beams, or other structural elements: Concrete of strength equal to the structural element, minimum 15 MPa.

Below slabs or pavements: Provide selected filling compacted to the specified density. In cut subgrades if the over excavation is less than 100 mm, do not backfill, but make good by increasing the thickness of the layer above. Backfill rock depressions and over excavation of subsoil drains using coarse subsoil filter.

#### **Line of influence**

Angle from horizontal: > 45 deg.

### **1.3.8 Supporting Excavations**

#### **Removal of supports**

Remove temporary supports progressively as backfilling proceeds.

#### **Voids**

Guard against the formation of voids outside sheeting or sheet piling if used. Fill and compact voids to a dry density similar to that of the surrounding material.

### **1.3.9 Adjacent structures**

#### **Temporary supports**

General: Provide supports to adjacent structures where necessary, sufficient to prevent damage arising from the works.

Lateral supports: Provide lateral support using shoring.

Vertical supports: Provide vertical support where necessary using piling or underpinning or both.

#### **Permanent supports**

General: If permanent supports for adjacent structures are necessary and are not described, give notice and obtain instructions.

## **1.4 Placing and Compaction**

### **1.4.1 Fill**

#### **Fill material**

General: Inorganic, non-perishable material.

Sulphur content: Do not provide filling with sulphur content exceeding 0.5% within 500 mm of cement bound elements (for example concrete structures or masonry) unless such elements are protected by impermeable membranes or equivalent means.

#### **Sources**

Provide fill imported on to the site from suitable sources unless the fill type can be provided from spoil recovered from the excavations.



### Fill types

General fill: Well graded material, maximum particle size 75 mm, plasticity index  $\leq 55\%$ .

Select fill: Granular material complying with the following:

- » Maximum particle size: 75 mm.
- » Proportion passing 0.075 mm sieve: 25% maximum.
- » Plasticity index:  $\geq 2\%$ ,  $\leq 15\%$ .

### Subsoil filter

Subsoil filter: Coarse sand or crushed stone graded to the **Subsoil grading table**.

#### Subsoil grading table

Sieve aperture (mm)	Percentage passing (by mass)
	Fine filter
26.5	
19.0	
9.5	100
4.75	80 - 100
2.36	65 - 90
1.18	
0.60	
0.30	7 - 16
0.15	0 - 4

### Fill subgrades

Provide material in the top 150 mm which has a maximum particle size of 75 mm.

#### Fill materials schedule

Location	Type of fill	Depth or thickness
Under Buildings and pavements	Select	Max. 200mm per layer
Other Areas	General	Max. 200mm per layer

## 1.4.2 Preparation for Filling

### General

Prepare the ground surface before placing fill (including topsoil fill), ground slabs or load bearing elements. Remove loose material, debris and organic matter and compact the ground to achieve the required density.

### Benching





If fill is to be placed on a surface which slopes more than 1:4, bench the surface to form a key for the fill. As each of layer of fill is placed, cut the existing ground surface progressively to form a series of horizontal steps at least 1 m in width. Recompect the excavated material as part of the filling.

#### **Under earth mounds**

Cultivate the ground to a depth of 200 mm before mound formation.

#### **Under slabs, paving and embankments**

Compact the ground to achieve the densities specified for these locations. If necessary loosen the ground to a depth of 200 mm and adjust the moisture content before compaction.

### **1.4.3 Placing Fill**

#### **General**

Layers: Place fill in layers.

Extent: Place and compact fill to the designated dimensions, levels, grades, and cross sections so that the surface is always self draining.

#### **Placing at structures**

General: Place and compact fill in layers simultaneously on both sides of structures, culverts and pipelines to avoid differential loading.

Concrete: Do not place fill against concrete until the concrete has been in place for fourteen days.

#### **Tolerances**

Finish the surface to the required level, grade and shape within the following tolerances:

- » Under slabs and loadbearing elements: +0, -25 mm.
- » Other ground surfaces:  $\pm 50$  mm, provided the area remains free draining and matches adjacent construction where required. Provide smoothness as normally produced by a scraper blade.

### **1.4.4 Compaction**

#### **Density**

Compact each layer of fill to the required depth and density.

Top 150 mm of subgrade shall be compacted to 95% STANDARD M.D.D. Fill below structures to be compacted to 100% Standard M.D.D.

#### **Moisture content**

Adjust the moisture content of fill at the time of compaction within the range of 90 - 110% of the optimum moisture content determined by AS 1289.5.1.1 or AS 1289.5.2.1 as appropriate, in order to achieve the required density.



## **1.5 Gravel Pavements**

### **1.5.1 Materials**

Fill for subgrade: Refer section 1.4.

Basecourse: Well-graded crushed rock or gravel, free from deleterious material. Maximum particle size 26.5 mm. Uniformly graded. Maximum clay content 6% by mass.

#### **Stabilised gravel pavements**

Cement: Type GP to AS 3972.

Mix: 30:1 "Blue Metal" gravel:cement.

Gravel grading: Maximum particle size 10 mm, 30 - 40% passing 5 mm sieve.

### **1.5.2 Location**

Location: As shown on Landscape Drawings

### **1.5.3 Execution**

#### **Basecourse**

Placing: Spread and compact the basecourse, to finish 50 mm thick after compaction. Adjust the moisture content to facilitate compaction.

Minimum dry density ratio: 98% to AS 1289.5.2.1.

Thickness tolerance: + unspecified, -5 mm.

#### **Stabilised Gravel Pavements**

General: Lay the mix damp but not wet, to finish 100 mm thick after compaction, with an even surface, flush with edgings where provided.

Compaction: Compact to achieve a dry density ratio of 95% when tested to AS 1289.5.4.1 (standard compaction).



## 2. Concrete Formwork

### 2.1 General

#### 2.1.1 Cross References

##### General

Refer to the *General requirements* section.

Related sections

Refer to the following sections: > Insitu Concrete

#### 2.1.2 Standard

##### General

Formwork design and construction: To AS 3610.

### 2.2 Quality

#### 2.2.1 Inspection

Give sufficient notice so that inspection may be made of the following:

Witness points

- » Completed formwork before concrete placing.
- » Evaluation of the finish.
- » Used formwork, after cleaning and before reuse.

Hold points

- » Completed formwork including propping
- » and reinforcement prior to concrete placement

#### 2.2.2 Formwork

##### General

General: Design and construct formwork so that the concrete, when cast in the forms, will have the required dimensions, shape, profile, location and surface finish. Allow for dimensional changes, deflections and cambers resulting from the application of prestressing forces, applied loads, temperature changes and concrete shrinkage and creep.

Openings: In vertical forms provide form openings or removable panels for inspection and cleaning.

Cleaning: Remove free water, dust, debris and stains from the forms and the formed space before placing concrete.



Stripping of formwork: To AS 3600 where these requirements are more stringent than the relevant requirements of AS 3610.

Reshoring: Do not reshore.

#### **Release agent**

Before placing reinforcement, apply a release agent compatible with the contact surfaces, to the interior of the formwork, except where the concrete is to receive an applied finish for which there is no compatible release agent. Clean the reinforcement to remove all traces of release agent.

#### **Defective formwork**

Remove rejected concrete, form construction joints, reconstruct the formwork and recast the concrete.

#### **Permanent loading**

Do not place permanent loads, including masonry walls, on the concrete structure while it is still supported by formwork.

#### **Formwork removal**

Remove formwork, other than steel reinforcement decking, including formwork in concealed locations.

### **2.2.3 Dimensional tolerances**

#### **Dimensional tolerances**

Position: Construct formwork so that the position of finished concrete is within the tolerances stated in the **Position tolerances table**.

#### **Position tolerances table**

<b>Formwork class to AS 3610</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Maximum deviation from correct position (mm)	10	15	20	25

### **2.2.4 Formed surface finish**

#### **Visually Important Surfaces**

For concrete of surface finish classes 1, 2 or 3, set out the formwork to give a regular arrangement of panels, joints, bolt holes, and similar visible elements in the formed surface. Form 45° bevels, 25 mm on the face on corners and angles.

#### **Formed surfaces schedule**

<b>Surface finish class to AS 3610</b>	<b>Concrete element</b>
Class 1	N/A
Class 2	N/A
Class 3	Ground slab and beam exposed surfaces,
Class 4	N/A
Class 5	N/A



### **2.2.5 Lost Formwork**

#### **General**

Type: Permanent or lost formwork, chloride free which will not impair the structural performance of the concrete members.



## 3. Concrete Reinforcement

### 3.1 General

#### 3.1.1 Cross references

##### General

Refer to the *General requirements* section.

Related sections

Refer to the following sections: > Insitu Concrete

#### 3.1.2 Standards

##### General

Reinforcement: To AS /NZ 4671

### 3.2 Quality

#### 3.2.1 Inspection

##### Hold points

Give sufficient notice so that inspection may be made of the following:

- » Reinforcement fixed in place.
- » Cores and embedments fixed in place.

### 3.3 Reinforcement

#### 3.3.1 Reinforcement generally

##### General

Extent: Provide reinforcement, including tie wires, support chairs, spacers and accessories.

Identification: Supply reinforcement which is readily identifiable as to grade and origin.

##### Strength:

Supply reinforcement with the following characteristic yield stress:

- » 500 Mpa – All reinforcing bars and mesh unless noted otherwise
- » 250 Mpa – Round bars used for dowels

##### Shape & Ductility Class:

Unless noted otherwise all reinforcement shall comply with the following ductility class:

- » Individual reinforcing bars – Class N (Normal)



- » Mesh – Class L (Low)

### **Dowels**

Standard: To AS 1302 grade 250, galvanised.

General: Provide each dowel in one piece, straight, with square cut ends free from burrs. Apply 2 coats of bitumen emulsion to half the length of the dowel at one end. Embed the unpainted half of the dowels in the concrete placed first.

Tolerances:

- » Location: half the diameter of the dowel.
- » Alignment: 2 mm in 300 mm.

### **Welding**

General: Give notice before welding reinforcement. Do not weld reinforcement within 75 mm of a section which has been affected by bending or re-bending.

Standard: To AS 1554.3.

## **3.3.2 Protective coated reinforcement**

### **Extent**

For concrete elements containing protective coated reinforcement, provide the same coating type to all that element's reinforcement and embedded ferrous metal items, including tie wires, stools, spacers, stirrups, plates and ferrules, and protect other embedded metals with a suitable coating.

### **Galvanising**

Coating (minimum): 700 g/m<sup>2</sup>.

Preparation: Pickling to AS 1627.5.

### **Damage**

If damage occurs to the coating replace the damaged reinforcement.

### **Unencased reinforcement**

General: Provide protection for "starter bars" and other items projecting from cast concrete for future additions, and exposed to the weather.

Protection method: > Dulux Amerlock 400, dry film thickness 250 µm

## **3.3.3 Fixing reinforcement**

### **Fixing requirements**

General: Secure the reinforcement against displacement by tying at intersections with either annealed iron 1.25 mm diameter (minimum) wire ties, or clips. Bend the ends of wire ties away from nearby faces of forms so that the ties do not project into the concrete cover.

Mats: For bar reinforcement in the form of a mat, secure each bar at alternate intersections, and at other points as required.



Beams: Tie ligatures to bars in each corner of each ligature. Fix other longitudinal bars to ligatures at 1 m maximum intervals.

#### **Concrete cover**

General structures: To AS 3600. Refer Drawings

#### **Provision for concrete placement**

Notice: If spacing or cover of reinforcement does not comply give notice.

### **3.3.4 Reinforcement supports**

#### **Support types**

General: Provide purpose-made concrete, metal or plastic supports.

Exposure classification A1: Provide a protective coating to ferrous metal supports which extend to the surface of the concrete.

Exposure classifications more severe than A1: Provide either

- » plastic supports of adequate strength and of a shape appropriate to the location; or
- » concrete supports of the same concrete quality as the concrete element.

#### **Supports over membranes**

Prevent damage to waterproofing membranes or vapour barriers. Place a metal or plastic plate under each support to prevent puncturing.

#### **Support spacing**

Bars: 60 diameters.

Fabric:  $\leq 800$  mm.





## 4. Insitu Concrete

### 4.1 General

#### 4.1.1 Cross references

##### General

Refer to the *General requirements* section.

##### Related sections

Refer to the following sections: > Concrete Reinforcement

#### 4.1.2 Standards

##### General

Materials and construction: To AS 3600.

Concrete: To AS 1379.

#### 4.1.3 Interpretation

##### Definitions

Hot weather: Surrounding outdoor shade temperature > 32°C.

Contraction joint: An unreinforced joint with a bond-breaking coating separating the concrete joint surfaces.

Expansion joint: A dowelled joint with the joint surfaces separated by a compressible filler.

Control joint: A weakened plane contraction joint created by forming a groove, extending at least one quarter the depth of the section, either by using a grooving tool, by sawing, or by inserting a premoulded strip.

Isolation joint: A joint without keying, dowelling, or reinforcement, which imposes no restraint on movement.

### 4.2 Quality

#### 4.2.1 Inspection

##### Witness points

Give sufficient notice so that inspection may be made of the following:

- » Base or subgrade before covering.
- » Membrane or film underlay installed on the base.
- » Commencement of concrete placing.
- » Surfaces or elements to be concealed in the final work before covering.

##### Hold points

- > Completed formwork, and reinforcement, cores and embedments fixed in place prior to concreting



## **Rejection**

Remove rejected concrete from the site.

### **4.2.2 Concrete tests**

#### **Concrete testing methods**

Sampling and testing: To AS 1012. Sample the concrete on site.

Test authority: > NATA registered

#### **Test records**

Records and reports: To AS 1012.

#### **Performance tests**

General: Sample, test and assess the concrete for compliance.

Standard: To AS 1379.

Strength grade: Spread the site sampling evenly throughout the pour. For concrete in columns and bearing walls, take one sample per batch.

Slump: Test at least one sample from each batch before placing concrete from that batch in the work. Take the samples at the point of discharge on site.

#### **Performance tests schedule**

Mix type:	GP
Strength grade:	Refer Drawings
-	Characteristic compressive strength f'c (MPa): Refer Drawings
Slump (mm):	80 ± 10 mm
Maximum aggregate size (mm):	20
Project assessment:	On site testing required

#### **Embedded pressure pipes**

Leak tests: Before embedment, leak test pipes which will contain liquid or vapour at a pressure > 10 kPa.

## **4.3 Materials**

#### **Aggregates**

Standard: To AS 2758.1.

#### **Cement**

Standard: To AS 3972.

#### **Coloured concrete**

Standard: To AS 3610.



### **Polymeric film underlay**

Vapour barriers and damp-proofing membranes: To AS 2870.

### **Chemical admixtures**

Contents: Free of chlorides, fluorides and nitrates.

### **Curing compounds**

Standard: To AS 3799.

## **4.3.1 Polymeric film underlay**

### **General**

Under internal slabs on ground including integral ground beams and footings, provide a vapour barrier min. 200 µm thickness, or, in areas prone to rising damp or salt attack, a damp-proofing membrane.

### **Standard**

Vapour barriers and damp-proofing membranes: To AS 2870.

### **Base preparation**

According to base type, as follows:

- » Graded stone base: Blind with sufficient sand to create a smooth surface free from hard projections. Wet the sand just before laying the underlay.
- » Concrete working base: Remove projections above the plane surface, and loose material.

### **Installation**

Lay over the base, lap joints at least 200 mm and seal the laps and penetrations with waterproof adhesive tape. Face the laps away from the direction of concrete pour. Take the underlay up vertical faces as far as the damp proof course where applicable, and fix at the top by tape sealing. Locate vertical laps only on vertical or inclined surfaces. Patch or seal punctures or tears before pouring concrete.

## **4.3.2 Concrete**

### **Concrete schedule**

Location or designation	Refer Drawings
Class of concrete (to AS 1379)	Refer Drawings
Strength grade	Refer Drawings
Slump (mm)	Refer Drawings
Other requirements	Refer Drawings
Cement type	Refer Drawings

### **Ready mixed supply**

Method: Use the batch production process. Deliver in agitator trucks.

Admixtures: Do not provide admixtures containing significant chlorides.



Addition of water: Do not add water at the site.

Plastic cracking: Design the concrete mix to minimise plastic settlement and shrinkage cracking.

### **Elapsed delivery time**

Elapsed time between the wetting of the mix and the discharge of the mix at the site must not exceed the criteria in the **Elapsed delivery time table**.

#### **Elapsed delivery time table**

<b>Concrete temperature at time of discharge (°C)</b>	<b>Maximum elapsed time (hours)</b>
< 24	2.00
24 - 27	1.50
27 - 30	1.00
> 30	0.75

### **Site mixed supply**

Plant: Mix concrete in a plant located on the construction site.

Emergencies: Do not mix by hand.

## **4.4 Embedments, cores and fixings**

### **4.4.1 Fixings and embedded items**

#### **Adjoining elements**

For adjoining elements to be fixed to or supported on the concrete, provide for the required fixings. Where applicable provide for temporary support of the adjoining elements during construction of the concrete.

#### **Structural integrity**

Fix cores and embedded items to prevent movement during concrete placing. In locating embedded items, do not cut or displace reinforcement, or cut hardened concrete.

#### **Tolerances on placement**

Maximum deviation from correct positions:

- » Embedded items generally:  $\pm 10$  mm.
- » Fasteners, including anchor bolts:  $\pm 3$  mm.
- » Anchor bolt groups for structural steel: To AS 4100.

#### **Inserted fixings**

Methods: Do not insert fixings using drilling (including masonry anchors), or using explosive tools.



## **4.5 Placing and Curing**

### **4.5.1 Placing and compaction**

#### **Placing**

General: Use placing methods which minimise plastic settlement and shrinkage cracking.

Layers: Place concrete in layers such that each succeeding layer is blended into the preceding one by the compaction process.

Placing slabs and pavements: Place concrete uniformly over the width of the slab so that the face is generally vertical and normal to the direction of placing.

#### **Horizontal movement**

Use suitable conveyors, clean chutes, troughs or pipes. Do not use water to facilitate the movement.

#### **Vertical movement**

In vertical elements, limit the free fall of concrete to 1500 mm per 100 mm element thickness, up to a maximum free fall of 3000 mm, using enclosed chutes or access hatches in forms. As far as practicable keep chutes vertical and full of concrete during placement, with ends immersed in the placed concrete.

#### **Rain**

General: During placement and prior to setting do not expose concrete to rain.

Protection: Protect surface from damage by covering until hardened.

#### **Sequence of pours**

Minimise shrinkage effect by pouring the sections of the work between construction joints in a sequence such that there will be suitable time delays between adjacent pours.

#### **Compaction**

General: Remove air bubbles and fully compact the mix.

Methods: Use immersion and screed vibrators accompanied by hand methods as appropriate.

Vibrators: Do not allow vibrators to come into contact with partially hardened concrete, or reinforcement embedded in it. Do not use vibrators to move concrete along the forms. Avoid over-vibration that may cause segregation.

#### **Placing records**

Keep on site and make available for inspection a log book recording each placement of concrete, including the following:

- » Date.
- » The portion of work.
- » Specified grade and source of concrete.
- » Slump measurements.
- » Volume placed.



## 4.5.2 Cold weather placing

### General

### Cement

General: Do not use high alumina cement.

### Placing

Maintain the temperature of the freshly mixed concrete within the limits shown in the **Cold weather placing table**. "Outdoor" air temperature applies to the air temperature at the time of mixing and to the predicted or likely air temperature at any time during the subsequent 48 hours.

### Cold weather placing table

Outdoor air temperature	Temperature of concrete	
	Minimum	Maximum
$\geq 5^{\circ}\text{C}$	$10^{\circ}\text{C}$	$32^{\circ}\text{C}$
$< 5^{\circ}\text{C}$	$18^{\circ}\text{C}$	$32^{\circ}\text{C}$

### Additives

Do not provide calcium chloride, salts, chemicals or other material in the mix to lower the freezing point of the concrete.

### Frozen materials

Do not allow frozen materials or materials containing ice to enter the mixer, and keep free of frost and ice any forms, materials, and equipment coming in contact with the concrete.

### High early strength cement

Provide in severe weather conditions to enable the concrete to develop sufficient strength to permit formwork removal within the specified time. Do not provide as a substitute for the heating of materials or for adequate protection of placed concrete against low temperatures. Do not provide high alumina cement.

### Heating

General: Heat the concrete materials, other than cement, to the minimum temperature necessary to ensure that the temperature of the placed concrete is within the limits specified.

Maximum temperature of water:  $60^{\circ}\text{C}$  when it is placed in the mixer.

## 4.5.3 Hot weather placing

### Mixing

Surrounding outdoor shade temperature  $> 38^{\circ}\text{C}$ : Do not mix concrete.

### Handling

Prevent premature stiffening of the fresh mix and reduce water absorption and evaporation losses. Mix, transport, place and compact the concrete as rapidly as possible.

### Placing



Before and during placing maintain the formwork and reinforcement at 32°C using protection, cold water spraying, or other effective means. When being placed in the forms, the temperature of the concrete must not exceed the criteria in the **Hot weather placing table**.

#### **Hot weather placing table**

<b>Concrete element</b>	<b>Temperature limit</b>
Normal concrete in footings, beams, columns, walls and slabs	35°C
Concrete in large mass concrete sections; or concrete of strength 40 MPa or greater, in sections exceeding 600 mm in thickness	27°C

#### **Temperature control methods**

Select one or more of the following methods of maintaining the specified temperature of the placed concrete:

- » Use chilled mixing water.
- » Spray the coarse aggregate using cold water.
- » Cover the container in which the concrete is transported to the forms.
- » Cool the concrete using liquid nitrogen injection before placing.

#### **4.5.4 Curing**

##### **General**

Protection: Protect fresh concrete, during the curing period, from premature drying and from excessively hot or cold temperatures.

Curing period: Cure continuously until the total cumulative number of days or fractions of days, during which the air temperature in contact with the concrete is above 10°C, is at least the following:

- » Fully enclosed internal surfaces: 3 days.
- » Other surfaces: 7 days.

##### **Curing compounds**

Standard: To AS 3799.

Substrates: Do not use wax-based or chlorinated rubber-based curing compounds on surfaces forming substrates to concrete toppings and cement-based render.

Application: Provide a continuous flexible coating without visible breaks or pinholes, which remains unbroken at least seven days after application.

##### **Hot weather curing**

Do not use curing compounds. After placement, either



- » immediately cover the concrete using an impervious membrane, or hessian kept wet, until curing begins;  
or
- » if the temperature exceeds 25°C or if not protected against drying winds, protect the concrete using a fog spray application of aliphatic alcohol evaporation retardant.

#### **Visually important surfaces**

Produce uniform colour on adjacent surfaces.

#### **4.5.5 Protection**

##### **Loading**

Notice: Give notice before loading the concrete structure.

Protection: Protect the concrete from damage due to load overstresses, heavy shocks and excessive vibrations, particularly during the curing period. Do not place construction loads on self-supporting structures which will overstress them.

##### **Surface protection**

Protect finished concrete surfaces from damage.

#### **4.6 Joints**

##### **4.6.1 Construction joints**

###### **Location**

Do not relocate or eliminate construction joints, or make construction joints not shown on the drawings. This includes emergency construction joints made necessary by unforeseen interruptions to the concrete pour.

###### **Joint preparation**

Roughen and clean the hardened concrete joint surface, remove loose or soft material, free water, foreign matter and laitance. Dampen the surface just before placing the fresh concrete.

###### **Finish at construction joints**

Butt join the surfaces of adjoining pours. In visually important surfaces make the joint straight and true, and free from impermissible blemishes relevant to its surface finish class.

##### **4.6.2 Expansion joints**

###### **Jointing materials**

Type: Provide jointing materials compatible when used together, and non-staining to concrete in visible locations.

Foamed materials (in compressible fillers): Closed-cell or impregnated types which do not absorb water.

Bond breaking: Provide back-up materials for sealants, including backing rods, which do not adhere to the sealant. They may be faced with a non-adhering material.

###### **Joint filling**





Preparation: Before filling, dry and clean the joint surfaces, and prime.

Joint filling: Fill with jointing materials. Finish visible jointing material neatly flush with adjoining surfaces.

Watertightness: Apply the jointing material so that joints subject to ingress of water are made watertight.

#### **4.6.3 Dowels**

##### **Joint dowels**

Provide galvanised steel reinforcing rod dowels in expansion and contraction joints, where required. Embed dowels normal to the plane of the joint, so that half the dowel lies on each side of the joint. Heavily grease or bitumen coat one half and fit an expansion cap to that end.



## 5. Light Timber Framing

### 5.1 General

#### 5.1.1 Cross References

##### General

Refer to the *General requirements* worksection.

#### 5.1.2 Standard

##### General

Residential timber framing: To AS 1684 Parts 2, 3 or 4, as appropriate.

Design: To AS 1720.1, AS/NZS 1170.2 and AS 4055 as appropriate.

### 5.2 Quality

#### 5.2.1 Inspection

##### Witness points

Give sufficient notice so that the following may be inspected:

- Prefabricated items before priming or water-repellent treatment.
- Bolts after final tightening.
- Prefabricated fixtures before installation.

Hold points > Structural timber framing after erection but before it is sheeted.

#### 5.2.2 Submissions

##### Shop drawings

General: For items designed by the contractor, submit shop drawings certified by a structural engineer to AS 1720.1 for the span, spacing, and loading, and showing the following:

- Arrangement of members.
- Location of the members in the building.
- Loading parameters and bracing lengths assumed in the design.
- Species, stress grade, strength group and joint group of timber.
- Size of each member.
- Tolerances on member sizes.
- Joint details including connector plates.
- Lifting points.
- Method of fixing and bracing.



- Preservative treatment, if any.
- Long-term deflection.
- Moisture content at time of manufacture.
- Method of fabrication.

Trusses: Show the following additional information:

- Camber in bottom cord.

## **5.3 Materials And Components**

### **5.3.1 Timber**

#### **Timber grades**

Structural timbers: Appearance grade if exposed to view in the finished work. Otherwise stud grade or lintel grade, as appropriate.

#### **Structural timber grading standards**

Hardwood: To AS 2082.

Softwood: To AS 2858.

Mechanical stress grading: To AS/NZS 1748.

Machine proof-grading: To AS 3519.

All structural timbers to be treated with LOSP (Light Organic Solvent Preservative) to the appropriate level to suit its application.

#### **Identification**

Method: Identify timber using branding.

Branding: Brand structural timber, under the authority of a recognised product certification program applicable to the product. Locate the brand mark on faces or edges which will be concealed in the works. Include the following data:

- Stress grade.
- Method of grading.
- “Seasoned” or “s”.
- The certification mark of the product certification program.
- The applicable standard.

Recognised product certification programs:

- Pine framing: Pine Australia Quality Control Scheme.
- Finger jointed structural timber: Pine Australia Quality Control Scheme.



### **5.3.2 Sheet Products**

#### **Structural plywood**

Standard: To AS/NZS 2269.

Bond: Type A.

Flooring: Tongued and grooved.

Veneer quality to visible surfaces: C (minimum).

Application: > Bracing, Refer Drawings

#### **Identification**

Method: Identify plywood using branding.

Branding: Brand structural plywood, under the authority of a recognised product certification program applicable to the product. Locate the brand mark on faces or edges which will be concealed in the works.

Include the following data:

- Stress grade.
- Method of grading.
- The certification mark of the product certification program.
- The applicable standard.

Recognised product certification programs:

- Plywood: Plywood Association of Australia (PAA) Quality Control and Product Certification Scheme.
- Blockboard: Plywood Association of Australia (PAA) Quality Control and Product Certification Scheme.

### **5.3.3 Components**

#### **Fasteners**

Installation: Do not split or otherwise damage the timber.

Coating: Before placing bolts in contact with CCA treated timber, coat the shank of the bolt in a grease or bituminous coating.

## **5.4 Framing**

### **5.4.1 Wall Framing**

#### **Wall framing**

Gauging: Provide gauged timbers in studs, noggings and plates for double faced walls.

Refer Drawings for framing details.

#### **Additional support**

General: Provide additional support in the form of noggings, trimmers and studs for fixing lining, cladding, hardware, accessories, fixtures and fittings as required.



Maximum spacing of noggings: 1200 mm centres.

#### **Vermin barriers**

Brick veneer barrier: Close nail 10 mm steel wire mesh to the underside of the bottom plate of external stud walls, extending across the cavity for building into brickwork.

Stud wall barrier: Aluminium/zinc-coated steel sheet, 600 mm wide x 0.6 mm thick, fixed to each side of the external stud wall frame at the base. Lap joints 25 mm.

#### **Damp-proof courses**

Material: To AS/NZS 2904.

General: Provide damp-proof courses under the bottom plate of stud walls built off slabs or masonry dwarf walls, as follows:

- External walls (not brick veneer): Turn up at least 75 mm on the inside and tack. Project 10 mm beyond the external slab edge or dwarf wall and turn down at 45°.
- Walls of bathrooms, shower rooms and laundries: Turn up at least 150 mm on the “wet” side and tack to studs.

Installation: Lay in long lengths. Lap full width at angles and intersections and at least 150 mm at joints.

Junctions: Preserve continuity of damp-proofing at junctions of damp-proof courses, sarkings and waterproof membranes.

Location: At least 150 mm above adjacent finished ground level.

#### **Flashings**

Material: To AS/NZS 2904.

Location: Provide flashings to external openings sufficient to prevent the entry of moisture. Form trays at the ends of sill flashings.

Brick veneer construction: Extend across cavities and build into brickwork.

### **5.4.2 Shearwalls and Diaphragms**

Location > Refer Drawings

Description

Structural systems comprising sheeting fixed to structural timber framing to transmit lateral loads in shear.

### **5.4.3 Roof and Ceiling Framing**

#### **Supports for water containers**

Where a water container or heater is located in the roof space provide a support platform to AS 3500.4.2 clause 4.5.

#### **Additional support**

Provide a frame member behind every joint in fibre cement sheeting or lining.

#### **Anti-ponding boards**



Standard: To AS/NZS 4200.2.

#### **Fascia, barge and eaves boards**

Seasoned hardwood: AS 2796.1.

Grade: > Refer Drawings

Cypress pine: AS 1810.

Australian grown conifers, other than radiata pine and cypress pine: AS 1787.

### **5.4.4 Trusses**

#### **Fabrication**

Assembly: Factory assemble trusses.

Camber: 10 mm upward in bottom chord.

Connections: Connector plates pressed to contact with the truss members. No knots in plate area.

Joints: No gaps greater than 2 mm.

Overhangs: Free from spring or splits.

Bow in chords (maximum): Where L is chord length,  $L/200$  or 50 mm, whichever is less.

#### **Supports for water containers**

Where a water container or heater is located in the roof space provide a support platform to AS 3500.4 clause 4.5.

#### **Marking**

Permanently mark each truss, on faces or edges which will be concealed in the works, to show

- manufacturer;
- timber species;
- grade;
- location;
- pitch and span;
- support points; and
- trusses designed for additional loading such as water heater support.

#### **Installation**

General: To AS 4440

Support: Support trusses on bottom chord at two points only, unless designed for additional support.

Plumb: Within  $H/200$ , where H is the height.

Vertical movement: Over internal walls provide at least 10 mm vertical clearance and use bracing methods which allow for vertical movements.

#### **Roof truss schedule**

Refer to drawings for details.



## **5.5 Completion**

### **5.5.1 Completion**

#### **Tightening**

Tighten bolts, screws and other fixings so that joints and anchorages are secure at practical completion.