Diploma of Building and Construction (Building) and Certificate IV in Building and Construction (Building) – Commercial Contracts Pack 3

CPC40108
CPC50208

Learner’s Resource
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Telephone: 08 6212 9789
Email: sectorcapability.ip@dtwd.wa.gov.au
Website: www.dtwd.wa.gov.au
Pack 3 documents

<table>
<thead>
<tr>
<th>ID number</th>
<th>Document name</th>
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<tbody>
<tr>
<td>1</td>
<td>Document list</td>
<td>Version 1, 2010</td>
</tr>
<tr>
<td>2</td>
<td>Meeting minutes</td>
<td>Version 1, 2010</td>
</tr>
<tr>
<td>3</td>
<td>Construction meeting 01</td>
<td>Version 1, 2010</td>
</tr>
<tr>
<td>4</td>
<td>Construction meeting 02</td>
<td>Version 1, 2010</td>
</tr>
<tr>
<td>5</td>
<td>Construction meeting 03</td>
<td>Version 1, 2010</td>
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<tr>
<td>6</td>
<td>Construction meeting 04</td>
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<tr>
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<td>11</td>
<td>Index of trade sections</td>
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<td>13</td>
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<td>14</td>
<td>Concrete</td>
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<td>26</td>
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<td>28</td>
<td>Painting</td>
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<td>32</td>
<td>Program</td>
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MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 01
Venue: Site Office
File Ref: .......... 

Date: ..........   Start .......... 

Att: Dist: Present: Company:
✓ ✓ BC Building Contractor
✓ ✓ BD Building Designer
☐ ✓ OR Owner
☐ ☐ 

NEW ITEMS

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**4.0 Consultants**

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### OUTSTANDING ITEMS

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Next meeting date: TBA.
**MINUTES OF MEETING**

**Project:** Proposed Office and Warehouse

**Meeting Type:** Construction Meeting 02  
**Date:** ...............  
**Venue:** Site Office  
**Start:** ...............  
**File Ref:** ...............  

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<td>☑</td>
<td>BC</td>
<td>Building Contractor</td>
</tr>
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<td>☑</td>
<td>BD</td>
<td>Building Designer</td>
</tr>
<tr>
<td>☑</td>
<td>☑</td>
<td>OR</td>
<td>Owner</td>
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### NEW ITEMS

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<td><strong>Generally</strong></td>
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<td>1.2</td>
<td>All clearances have been received by the surveyor and lodged to the Department of Planning and Landgate for Titles.</td>
<td>Noted</td>
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<td>✓</td>
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<td>1.3</td>
<td>BC to provide BD with Marked up Building License Drawings from Council</td>
<td>Noted</td>
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| 2.0  | **Authorities**                                                                                                                                                                                             |           |             |            |
| 2.2  | Legal Agreement Entered with local council, Building License received                                                                                                                                       | Noted     |             | ✓          |

| 3.0  | **Programme**                                                                                                                                                                                              |           |             |            |
| 3.2  | - Ground Floor Office and Warehouse Structural Steel  
      - Start First Floor Delta Core Panel lift                                                                                                                                                              | Noted     |             | ✓          |
| 3.3  | Amended Programme Required                                                                                                                                                                                  | BC        |             |            |
### 4.0 Consultants

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<td>Colour selection board</td>
<td>BD</td>
<td>✓</td>
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<td>4.2</td>
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### OUTSTANDING ITEMS

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<td>Architectural</td>
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<td>Structural</td>
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Next meeting date: ..................
MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 03  Date: ...............  
Venue: Site Office  Start  ...............  
File Ref: ............

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<td>☑</td>
<td>BC</td>
<td>Building Contractor</td>
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<td>☑</td>
<td>☑</td>
<td>BD</td>
<td>Building Designer</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
<td>OR</td>
<td>Owner</td>
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NEW ITEMS

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<td>Generally</td>
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<td></td>
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</tr>
<tr>
<td>1.4</td>
<td>The run of the Exhaust fans confirmed by BD, BC &amp; OR;</td>
<td>Noted</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Ground floor Amenities in Office 1 are to run in the ceiling space through the conc. dividing wall and up through the roof of Warehouse 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Upper floor Amenities in Office 1 are to run up through Office roof.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Amenities in Warehouse 2 are to run up the concrete wall and through Warehouse roof</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.5</td>
<td>All concrete panel capping’s to be zincalume with a paint finish to match the wall colour.</td>
<td>Noted</td>
<td></td>
<td>✓</td>
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<tr>
<td>1.6</td>
<td>The Deposited Plan is now in for dealings at Landgate. Application needs to be made by a settlement agent within 2 years dating from the 22/09/09 as informed by the surveyor</td>
<td>OR</td>
<td></td>
<td></td>
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2.0  Authorities

| 2.2  | Legal Agreement Entered with local council, Building License received                                                                                                                                   | Noted     |             | ✓          |
### 3.0 Programme

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| 3.2     | - All Structural steel complete  
          - Delta Core topping being poured  
          - Brickwork to Amenities in the Ground Floor of Office 1 Complete  
          - Brickwork to Amenities on the Upper Floor of Office 1 and Warehouse 2 to be complete by next week  
          - Warehouse 1 and 2 roof fully sheeted offices to follow  
          - Window installation starting by the end of the week |

- Noted

### 3.3 Amended Programme Required

- BC

### 4.0 Consultants

<table>
<thead>
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<th>Section</th>
<th>Description</th>
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| 4.1     | Architectural  
          - Colour selections confirmed  
            - Roller Shutters  
            - Ultrabond  
          - Wall Paint Colours to be confirmed  
          - Tile & Cabinet selections to be confirmed |

- BD

### OUTSTANDING ITEMS

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<th>Item</th>
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| 1.0  | Generally  
      1.1  | BC to provide BD with Marked up Building License Drawings from Council |

- Noted

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<td>Programme</td>
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<td>Consultants</td>
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<td>4.1</td>
<td>Architectural</td>
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<td>4.2</td>
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Next meeting date: ......................
MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 04
Venue: Site Office
File Ref: 

Date: Start:

Att: Dist: Present: Company:
☑ ☑ BC Building Contractor
☑ ☑ BD Building Designer
☑ ☑ OR Owner

NEW ITEMS

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<td>1.6</td>
<td>The Deposited Plan is now in for dealings at Landgate. Application needs to be made by a settlement agent within 2 years dating from the 22/09/09 as informed by the surveyor</td>
<td>OR</td>
<td></td>
<td>✓</td>
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<tr>
<td>1.7</td>
<td>A/C Quotes received from subcontractor 1 and Sub contractor 2. BD to asses and advise BC to proceed</td>
<td>BD</td>
<td>✓</td>
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2.0 Authorities

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## Meeting minutes

### 3.0 Programme

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<td>Brickwork to both Units complete</td>
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<td></td>
<td>Warehouse and Office Roof sheeting complete</td>
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<td></td>
<td>✔</td>
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<td></td>
<td>Window installation to be complete late next week</td>
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<td></td>
<td>Delayed Pours in Warehouse complete</td>
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<td>Roller Shutters Installed</td>
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<td>Concrete Panel Patching complete</td>
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<td>Mastic joints to concrete panels complete</td>
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<td>Amended Programme Required</td>
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### 4.0 Consultants

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<td></td>
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<td>Roller Shutters</td>
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<td>✔</td>
<td></td>
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<td>Ultrabond</td>
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<td>Tile &amp; Cabinet selections to be confirmed</td>
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#### 4.2 Structural

### OUTSTANDING ITEMS

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| 2.0  | Authorities |        |             |            |

<p>| 3.0  | Programme   |        |             |            |</p>
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<th>Action By</th>
<th>Target Date</th>
<th>Date Comp.</th>
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<tbody>
<tr>
<td>4.0</td>
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<td>4.1</td>
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<td>4.2</td>
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</table>

Next meeting date: .................
Document 6

MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 05
Venue: Site Office
File Ref: ..............

Date: ..............
Start ..............

Att: Dist: Present:
☑ ☑ BC Building Contractor
☑ ☑ BD Building Designer
☑ ☑ OR Owner

NEW ITEMS

<table>
<thead>
<tr>
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<td>1.0</td>
<td>Generally</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>The Deposited Plan is now in for dealings at Landgate. Application needs to be made by a settlement agent within 2 years dating from the 22/09/09 as informed by the surveyor</td>
<td>OR</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>1.8</td>
<td>A/C Quote accepted from subcontractor 1 for a ducted system to Office 1 (Proposal 1). -Office 2 to have split systems installed after Council have signed the Building Off. -Exhaust system on hold, awaiting instructions from Mechanical Engineer.</td>
<td>BD</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Noted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>BC to speak to adjoining neighbour regarding new dividing fence.</td>
<td>Noted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.10</td>
<td>Hardstand to be ramped up to meet the height of the adjoining neighbours level. BD to issue BC with the revised levels. (BD to discuss levels with BC before proceed)</td>
<td>BD</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

2.0 Authorities

Reproduced with the permission of Commercial Design Management.
### 3.0 Programme

3.2
- External Painting to Concrete panels complete
- Window Frames fully Installed
- Glazing approx. 60% complete
- Soffits to Warehouse Awnings complete Office to follow
- Bollard’s to Warehouse Openings Installed paint finish to follow
- Brick retaining wall on boundary rendered ready for paint finish
- Internal Brick walls fully plastered ready for white set/tiles
- Ultradone framework 90% complete panels to follow
- External Warehouse Doors installed
- Downpipe protectors in the Warehouse installed

3.3 Amended Programme Received | BC | ✓

### 4.0 Consultants

4.1 Architectural

4.1.4 Paving Layout and Selections | BD | ✓ | ✓

4.1.5 Provide OR with a couple of fencing options for the boundary dividing fence. BD to confirm selection with BC. | BD | ✓

4.1.6 Confirmation that the 4 columns fixed to the top of the polished concrete panel is to be “Dulux” Ferrador St Enoch (Light Grey) as per the Colour Schedule. | BC |

4.2 Structural

### OUTSTANDING ITEMS

<table>
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</tr>
<tr>
<td>1.1</td>
<td>BC to provide BD with Marked up Building License Drawings from Council</td>
<td>Noted</td>
<td></td>
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Next meeting date: .....................
MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 06
Venue: Site Office
File Ref: ............

Att: Dist: Present: Company:
☑ ☑ BC Building Contractor
☑ ☑ BD Building Designer
☑ ☑ OR Owner

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<td>OR</td>
<td>22/09/09</td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>Exhaust system design completed by the Mechanical Engineer. BC to speak to adjoining neighbour regarding new dividing fence. We propose a 1.8m Colorbond Fence (colour to match Roller Shutter).</td>
<td>BD</td>
<td>02/11/09</td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>Hardstand to be ramped up to meet the height of the adjoining neighbours level. BC discussed levels with BD and agreed to proceed</td>
<td>Noted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.10</td>
<td>The dividing fence on the Boundary is required to be 1m High Colorbond (Colour to match Roller Shutter) to act as a balustrade. Fence to be fixed into the top of the brick retaining wall.</td>
<td>Noted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.11</td>
<td>OR confirmed the Original Stair tread nosing detail to remain in lieu of alternative options.</td>
<td>Noted</td>
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<td>3.0</td>
<td>Programme</td>
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</tbody>
</table>
| 3.2  | • Glazing Complete  
|      | • Ultra Bond panels installation 90%  
|      | • Tiling to Wet Areas 75%  
|      | • Cabinets on site and 60% installed  
|      | • Stair Treads installed  
|      | • Upper Floor soffit lining complete |           |             |            |
| 4.0  | Consultants |           |             |            |
| 4.1  | Architectural |           |             |            |
| 4.1.7 | Confirmation that the 4 columns fixed to the top of the polished concrete panel is to be “Dulux” Ferrador Natural (Charcoal) | BC |             |            |
| 4.1.8 | Internal Colour scheme complete. Colorbond Surf mist throughout | Noted |             |            |
| 4.1.9 | Letter box to be painted Colorbond Ironstone to match roller shutter. | Noted |             |            |
| 4.1.10 | BWK boundary retaining wall to be painted the same colour as the adjoining concrete panel wall. | Noted |             |            |
| 4.1.11 | Paint to Red Feature panel to return back to Warehouse walls as per discussion with BC | Noted |             |            |
| 4.1.12 | Internal painting to Upper Office 2 must run through Warehouse wall at a height of 2.7m AFL and finish at the dividing wall between the stairs and amenities. | Noted |             |            |
| 4.2  | Structural   |           |             |            |
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Next meeting date: ............................

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Version 1, 2010
MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 07                  Date: ..................
Venue: Site Office                                    Start: ..................

File Ref: .............

Att:                  Dist:                  Present:                  Company:
☑ ☐ BC                ☑ ☐ Building Contractor
☐ ☑ BD                ☑ ☐ Building Designer
☐ ☐ OR                ☑ ☐ Owner

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## 2.0 Authorities

<table>
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<tr>
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</table>

## 3.0 Programme

### 3.2
- Paving to proceed Wednesday the 25th of November
- Kerbing to Car Park to start today bitumen to follow
- External Light fitting installed to Soffits
- Internal light Fittings and Ceiling Panels 60%
- Door Hardware to Amenities 85%
- Fixtures and Fittings installed to Wet Areas
- Colorbond Custom Orb cladding installed to wall in Office 2
- Aluminium strips installed to timber stair treads 70% complete
- Tiling to wet areas 90% complete

## 4.0 Consultants

### 4.1 Architectural

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<td>BC</td>
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Next meeting date: .........................
MINUTES OF MEETING

Project: Proposed Office and Warehouse

Meeting Type: Construction Meeting 08
Venue: Site Office

Date: Start

Att: Dist: Present:
☑ ☐ BC Building Contractor
☑ ☐ BD Building Designer
☑ ☐ OR Owner

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<td></td>
<td></td>
</tr>
<tr>
<td>1.13</td>
<td>BC to provide price for mesh cages around carpark ground lights</td>
<td>BC</td>
<td></td>
<td></td>
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<tr>
<td>1.14</td>
<td>BC to provide price for ducted skirting</td>
<td>BC</td>
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<tr>
<td>1.15</td>
<td>BC to advise BD when the building is ready to for a final building inspection.</td>
<td>BC/BD/ OR</td>
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<tr>
<td>Item</td>
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<td>BC to organise with council a final Building inspection</td>
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</tr>
<tr>
<td>3.2</td>
<td>• Paving around Office 1 complete Office 2 to follow. Scheduled to be finished by Friday</td>
<td>✓</td>
<td></td>
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<tr>
<td></td>
<td>• Internal light Fittings and Ceiling Panels complete</td>
<td></td>
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<tr>
<td></td>
<td>• All external lighting installed</td>
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<tr>
<td></td>
<td>• Timber treads and nosing complete ready for balustrade</td>
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<tr>
<td></td>
<td>• Tiling to wet areas complete</td>
<td></td>
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<td>✓</td>
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<tr>
<td></td>
<td>• Site Clean to commence Wednesday</td>
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<tr>
<td></td>
<td>• External Windows complete. Internal frames installed Glass to follow.</td>
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<tr>
<td></td>
<td>• Carpark line marking to commence early next week</td>
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<td><strong>Consultants</strong></td>
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Next meeting date: .........................
INDEX OF TRADE SECTIONS

A  PRELIMINAIRES
B  DEMOLITION, EARTHWORKS & SITEWORKS
C  CONCRETE
D  STRUCTURAL STEELWORK
E  METALWORK
F  BRICKWORK
G  CARPENTRY
H  HARDWARE AND IRONMONGERY
I  JOINERY AND CABINETWORK
J  ROOFING, ROOF INSULATION AND ROOF PLUMBING
K  DRAINAGE AND PLUMBING
L  ELECTRICAL SERVICES
M  MECHANICAL SERVICES
N  PLASTERING AND SUSPENDED CEILINGS
O  WALL AND FLOOR TILING
P  GLAZING
Q  PAINTING
R  CLEANING AND FINISHING TRADES
A. PRELIMINARIES

A.1 GENERALLY

A.1.1 Proprietor
A.1.2 Contract Documents
A.1.3 The Building Designer
A.1.4 The Works
A.1.5 Date for Possession
A.1.6 Date for Practical Completion
A.1.7 Definitions
A.1.8 Rise and Fall
A.1.9 Goods and Services Tax
A.1.10 By-Laws, Regulations and Fees

A.2 DOCUMENTS
A.2.1 Cross References
A.2.2 Wording of Agreement
A.2.3 Intention of the Documents.

A.3 THE SITE
A.3.1 Datum and Temporary Bench Mark
A.3.2 Protection of Site and Adjacent Property
A.3.3 Hoardings or Fencing
A.3.4 Temporary Services

A.4 SUBCONTRACT
A.4.1 Payment of Nominated Sub-Contractors
A.4.2 Schedule of Provisional Sums & Prime Costs
A.4.3 Nominated Sub-Contractors
A.4.4 Services and Facilities for Nominated Sub-Contractors
A.4.5 Builder's Work for Nominated Sub-Contractors
A.4.6 Approved Sub-Contractors

A.5 EXECUTION OF THE WORKS
A.5.1 Works Accommodation
A.5.2 Temporary Power Supply
A.5.3 Temporary Water Supply
A.5.4 Security of the Works
A.5.5 Construction Loads
A.5.6 Protection and Making Good
A.5.7 Setting Out
A.5.8 Protection of Persons and Property
A.5.9 Existing Services
A.5.10 Poisons and Other Injurious Substances
A.5.11 Environmental Protection
A.5.12 Materials and Workmanship
A.5.13 Council Conditions

A.6 SEPARATE CONTRACTS

A.7 LIABILITIES, INDEMNITIES AND INSURANCES
A.7.1 Amendments to JCC-D Contract
A.8 TIME
A.8.1 Works Program
A.8.2 Extra Time for Inclement Weather
A.8.3 Completion
A.8.4 Cleaning Up

A.9 PAYMENT AND ADJUSTMENT OF CONTRACT SUM

A.10 FINAL CERTIFICATE AND FINAL PAYMENT

A.11 DETERMINATION

A.12 DISPUTE RESOLUTION

A.13 NOTICES

A.14 SPECIAL CONDITIONS
A. PRELIMINARIES

A.1 GENERALLY

A.1.1 Proprietor

The name and address of the Proprietor to be inserted in Item B.1 of the Conditions of Contract shall be as advised in Notes to Tenderers.

A.1.2 Contract Documents

The Contract Documents to be listed in Item B.5 of the Conditions of Contract, and collectively forming the Agreement shall be:

- The Drawings numbered; See Note to Tenderers.
- This Specification;
- The Contract ie Building Works Contract JCC Without Quantities and amendments thereto.
- Any tender addendas or correspondence clarifying Tender Submissions.

A.1.3 Building Designer

The name and address of the Building Designer appointed by the Proprietor as such pursuant to the Conditions of Contract shall be nominated following the acceptance of Tender.

Where the word "Architect" or "Designer" appears in the Agreement it shall mean the Building Designer mentioned above.

A.1.4 The Works

The description of the Works to be inserted in Item B.4 of the Conditions of Contract shall be as set out in Notes to Tenderers.

A.1.5 Date for Possession

The date on or before which the Proprietor is to make the site available to the Builder shall be as notified at the time of acceptance of tender and inserted in Item B.8 of the Conditions of Contract.

A.1.6 Date for Practical Completion

The date on or before which the Builder is to bring the Works Practical Completion shall be the number of weeks after the Date for Possession as stated in Item B.9 of the Conditions of Contract.

A.1.7 Definitions

(a) "Conditions of Contract" in this specification shall mean the Building Works Contract JCC-D 1994 Without Quantities and amendments thereto, if any, specified herein.

(b) "Selected" shall refer to selection by the Proprietor.

(c) Words implying persons shall, where applicable, be construed as including corporations and/or partnerships.

(d) "Approved", "approval", "directed", "required", "rejected", and similar expressions, shall mean approved, directed, required rejected, and the like, by the Proprietor.

(e) "Give notice", "submit" "furnish", and similar expressions, shall mean given notice, submit, furnish, and the like, to the Proprietor.
(f) "Constructional Plant" means appliances and things used in the execution of the work under the Agreement, but not forming part of the Works or the Temporary Works.

(g) "Temporary Works" means works used for the execution of the work under the Agreement not forming part of the Works.

(h) PC, Prime Costs.

(i) PS, Provisional Sums.

A.1.8 Rise and Fall
The Contract shall have no provision for rise and fall variations, Builder shall allow for all rise and fall during the term of the Agreement.

A.1.9 Goods and Services Tax
The Builder shall allow for and pay all Goods and Services Tax (GST) an on all goods and materials subject to such tax by law for the term of the Agreement. PC and PS sums include GST where applicable.

The builder shall provide to the Proprietor a complete schedule of all GST paid itemised to allow the Proprietor to claim all input tax credit available.

A.1.10 By-Laws, Regulations and Fees
The Builder shall allow for and comply with all relevant Regulations, By-Laws and Authorities having jurisdiction over the works and pay all fees to relevant Authorities, excluding the Building Licence fee and the associated Training Levy.

A.2 DOCUMENTS

A.2.1 Cross References
Cross references are used in this Specification for convenience only and shall not have any significance in interpretation of the Specification.

A.2.2 Wording of Agreement
Wherever, in the Agreement, the imperative mood of a verb is used it shall be deemed to be part of the Agreement and to have the same intent as if the words "the Builder shall" were used.

A.2.3 Intention of the Documents.
Irrespective of the documents the Builder shall allow to carry out all necessary work to ensure the full completion of the project and with due respect to the intent and inference of the documents.

In the event of the documents being contradictory, the Designer will have final adjudication on the selected result prior to the commencement of such works.

The Designer shall be responsible for decisions on these issues.

Such decisions shall not incur additional costs providing that the intention of the documents is maintained.
A.3 THE SITE

A.3.1 Datum and Temporary Bench Mark
The Builder shall be wholly responsible in determining bench marks relating to the
datum level and maintaining the respective levels for the duration of the Agreement.

A.3.2 Protection of Site and Adjacent Property
Do everything necessary to ensure safety and freedom from injury, damage and
interference to all the adjacent public or private lands, properties, ways, services and all
other adjacent real or personal property whatsoever and of persons at any time in the
vicinity of the Site.

At all times take all reasonable steps to minimise nuisance to adjacent owners, their
tenants and others (including nuisance from noise, dust, debris and obstructions) arising
from the Works.

The Builder shall abide by any work conditions imposed on the Building Licence as
issued by the Local Authority.

A.3.3 Temporary Services
Provide and maintain temporary services necessary for the execution of the work under
the Agreement. Install such services in accordance with the requirements of the
relevant authorities. Pay charges in connection with the installation and use of such
services. Make such services available to subcontractors and nominated sub-
contractors. On completion, disconnect temporary services and clear away all traces.

A.4 SUBCONTRACT

A.4.1 Payment of Nominated Sub-Contractors
Nominated Sub-Contractor payments shall be in accordance with Conditions of Contract
Clause 4.09.02, the first option shall apply, delete the second option.

A.4.2 Schedule of Provisional Sums & Prime Costs
Refer to Notes to Tenderers Item (d) for Provisional Sums to be included in the Contract
Sum. The Proprietor reserves the right to select the location of PC items purchased.

A.4.3 Nominated Sub-Contractors
Certain part/s of the Works shall be executed by Nominated Subcontractors, whose
names shall be available to the Builder prior to the signing of contracts. The Builder
shall advise immediately should he have reasonable objection to the Nominated
Subcontractor or Supplier, or to any of the terms or conditions of those Subcontracts.

The Builder shall enter in standard sub-contract agreements with all nominated sub-
contractors, therefore, binding the nominated sub-contractor under normal contract
conditions of this contract.

The Builder shall be fully responsible for any nominated subcontractors upon acceptance
of that contractor.

A.4.4 Services and Facilities for Nominated Sub-Contractors
The Builder shall allow for administering, coordinating, supervision and generally
attending upon the execution of work by each Nominated Subcontractor.

The Builder shall provide for each Nominated Subcontractor all normal facilities for the
proper performance of the nominated subcontract work under their Contract including
the following:
• access to the site
• storage areas
• use of water (Nominated Subcontractors shall provide their own hoses and fittings)
• use of electric light and power supply (Nominated Subcontractors shall provide their own cables and portable lamps)
• use of scaffolding and hoisting facilities as provided for the Builder's own use while in position and at reasonable times including operations, but not the labour for loading or unloading such hoisting facilities (Nominated Subcontractors shall pay the Builder for the use of such scaffold and hoisting facilities at rates agreed between them)
• sanitary conveniences
• statutory amenities for drinking water, messing and changing
• first aid and safety measures
• rubbish removal from site.

Any additional facilities required and any cutting of holes, chases, making good or other builders work required in connection with the work of any Nominated Subcontractor, shall be the responsibility of the Nominated Subcontractor concerned, unless otherwise specified or shown on the drawings.

A.4.5 Builder's Work for Nominated Sub-Contractors
(a) If requested by a Nominated Subcontractor to alter Builder's work already executed, the Builder shall confirm such requirements with the Designer before proceeding.
(b) If requested by a Nominated Subcontractor to execute Builder's work not being part of the Agreement, the Builder shall promptly inform the Designer and obtain instructions.

A.4.6 Approved Sub-Contractors
The Builder shall not without the written approval of the Designer, which approval shall not be unreasonably withheld, subcontract any part of the work under the Agreement for which the Agreement requires that the subcontractor be approved.

A.5 EXECUTION OF THE WORKS
A.5.1 Works Accommodation
Provide statutory and necessary amenities and sanitary facilities for workers and other persons lawfully upon the site and remove them on completion of the Works.

A.5.2 Temporary Power Supply
The Builder shall arrange and pay all fees associated with temporary power supply during the construction period.

A.5.3 Temporary Water Supply
The Builder shall arrange for and pay all fees associated with a temporary water supply during the construction period.

A.5.4 Security of the Works
(a) The Builder shall be wholly responsible for the proper and adequate safeguarding of the Works and of fixed and unfixed materials on the site during both working and non working hours, until completion.
(b) Security and After Hours Work:

The Builder and/or his subcontractors shall include in their tender for all overtime required to perform and complete all work under the Agreement including that which in the opinion of the Designer is, or is liable to cause annoyance by means of noise, dust, fumes, vibration, etc to the Occupier of any adjoining sites.

There will be no claims for overtime or weekend work approved, whatsoever.

A.5.5 Construction Loads

The Builder shall ensure that no excessive loads are placed on any apart of the structure erected. The Proprietor will on request, supply to the Builder details of the loads for which the various parts of the structure were designed.

Competently computed safe, temporary supports shall be provided to transfer all excess loads from the permanent structure. If so requested, the Builder shall produce his computations for the temporary supports.

A.5.6 Protection and Making Good

Care of the Works:

The Builder shall be solely liable for the care of the Works, the Temporary Works, Constructional Plant and all materials and other things brought on to the Site for the purpose of the carrying out of the work under the Agreement by or on behalf of the Builder or any of his subcontractors.

The Builder shall at his own cost make good any loss or damage to the Works, the temporary Works, Constructional Plant and the aforesaid materials and other things resulting from any cause when such making good is necessary for the satisfactory completion of the Works.

A.5.7 Setting Out

The Builder shall employ a Licensed Surveyor to carry out the following:

- Set out the building within the boundaries of the site
- Provide datum and check floor levels
- Certify that the works are within the site and set out in accordance with the drawings (certificate required after the ground floor concrete pour stating the building is located inside the site boundaries).

The Builder in not complying with the above shall be wholly responsible in ensuring the above requirements are conformed to.

A.5.8 Protection of Persons and Property

General:

The Builder shall provide, erect and maintain all barricades, guards, fencing, temporary roadways, footpaths, signs and lighting and provide and maintain all watching and traffic flagging lawfully required by any public or other authority or necessary for the protection of the Works or of other property or for the safety and convenience of the public and others, and shall remove the same when no longer required.

The Builder shall avoid obstruction or damage to roadways and footpaths, drains and water courses and public utility and other services on or adjacent to the site which are visible, or the location of which can be ascertained by the Builder from the appropriate authority or from the Agreement. The Builder shall remove any obstruction immediately and make good any damage at his own cost, in default of which the Proprietor may employ and pay others to execute the work and recover the cost as a debt due to the Proprietor from the Builder under the Agreement.
The Builder shall avoid interference with or damage to property on or adjacent to the site, and shall provide temporary protection and shall repair and reinstate all damage caused thereto by him either directly or indirectly.

Prevent nuisance to the owners, tenants or occupiers of properties adjacent to the Site and to the public generally.

**A.5.9 Existing Services**

Existing services (such as drains, water courses, public utility and other services) if encountered, obstructed, or damaged in the course of performing the work under the Agreement, shall be dealt with by notifying the Designers immediately upon the discovery of services or obstructions not shown on the Designer’s drawings or drawings referred to thereon ie Statutory Authority drawings and the like.

**A.5.10 Poisons and Other Injurious Substances**

Take proper precautions to keep poisons and other injurious substances in places secured against access by unauthorised persons.

**A.5.11 Environmental Protection**

(a) Noise Control:

The Builder shall, at all times, take adequate measures to control noise on the site and comply with the requirements nominated by the Local Authority, EPA and applicable Government bodies.

(b) Site Control:

Comply with all statutes, regulations and by-laws relating to the protection of the environment.

Flammable or explosive products shall be stored in accordance with the relevant Statutes and current Dangerous Goods Regulations.

(c) Soil Erosion:

Take all proper precautions to prevent soil erosion from any land used or occupied by the Builder in the execution of the work under the Agreement.

(d) Dust, Dirt, Water and Fumes:

Prevent any nuisance occurring through the discharge of dust, dirt, water, fumes and the like on to persons or property.

(e) Vehicles:

All debris, spoil, rubbish or materials shall be suitably contained and covered in vehicles during transportation to or from the Site to prevent spillage or contamination of adjoining and other areas of property.

Maintain vehicles, wheels and tracks in a suitable clean condition to prevent transfer of mud onto adjacent streets or other areas.

(f) Refuse Disposal:

All site refuse (including foodstuffs) shall be handled and disposed of in accordance with the requirements of relevant statutes.
A.5.12 Materials and Workmanship

(a) Standards:
Unless otherwise specified in the Agreement and where applicable, materials and workmanship shall be in accordance with the relevant standard of the Standards Association of Australia.

(b) Testing:
Unless otherwise specified, any testing required by the Agreement to be an independent authority shall be carried out by an approved member of the National Association of Testing Authorities Australia (NATA).

(c) Guarantees:
The Builder shall obtain, and shall ensure that the Proprietor will have the benefit of, warranties or guarantees as specified in the Agreement, including warranties or guarantees that are obtained by the subcontractors of the Builder.

A.5.13 Council Conditions

The Builder shall adhere to the following conditions as set out by the Local Authority:

(a) Sound levels created shall not exceed the provisions of the Environmental Protection Act 1986 and the Environmental Protection (Noise) Regulations 1997

(b) The construction work must be carried out in accordance with control of noise practices described in section (6) of AS2436-1981 “Guide to Noise Control on Construction, Maintenance and Demolition Sites”

(c) The equipment used for construction is the quietest reasonably available.

(d) Construction work is not to commence before 7.00am, after 7.00pm or on Sundays or Public Holidays unless a noise management plan has been approved by the Local Authority prior to commencement of construction.

A.6 SEPARATE CONTRACTS

Section 7 of the Conditions of Contract contains all the requirements of the Agreement in respect to Separate Contracts.

A.7 LIABILITIES, INDEMNITIES AND INSURANCES

A.7.1 Amendments to JCC-D Contract

The first alternative Section 8 in the Standard JCC-D 1994 Contract Without Quantities shall be deleted and the second alternative Section 8 shall apply to these works.

Refer also Appendix to the Conditions of Contract at rear of the Specification Preliminaries.
A.8 TIME

A.8.1 Works Program
Provide to the Proprietor, within two weeks of acceptance of tender unless otherwise agreed by the Proprietor, a Works Program showing:

- Practical Completion on or before the due date.
- Date for commencement of work on site.
- Commencement and completion dates for each trade referred to in trade section headings in this Specification.
- Provide to the Proprietor such further information as necessary to enable the Works Program to be maintained as a true and up-to-date statement of program.

A.8.2 Extra Time for Inclement Weather
The Builder shall take account in his detailed works program the number of inclement days set out below for each calendar month or part thereof between the Date of Possession and the Date for Practical Completion. For the purpose of this clause only, assume that the Date for Possession will be two weeks after the closing date of tenders, if not otherwise specified or otherwise known during the tender period.

April 4  August 9  December 2
February 2  June 9  October 6
January 2  May 7  September 7
March 2  July 9  November 3

The number of inclement days above shall be the number of days on which the Works shall be delayed due to rain, heat, dust and wind and shall be allowed for in the Works Program. No extension of the Date for Practical Completion will be granted for reasons arising from inclement weather unless the builder provide evidence that the number of days on which the Works were actually delayed due to rain or heat exceeded the number given above for any calendar month. Rain delays shall be taken to mean rainfall in excess of daily averages for that period as set out by the Bureau of Meteorology with a minimum of 5mm rainfall at the Bureau of Meteorology being required for a claim of time extension.

Claims for such extensions shall be submitted for each separate month and in the first two weeks of the month following the delay.

No extension of the Date for Practical Completion for reasons of wet or hot weather shall be made after the works have been roofed.

A.8.3 Completion
Practical Completion:
Without prejudice to meanings which may be stated or implied elsewhere in the Agreement, 'Practical Completion' shall mean that stage in the execution of the work under the Agreement when such documents and other information required under the Agreement which, are essential for the use, operation and maintenance of the Works have been supplied, and the Works are substantially complete and fit for occupation except for minor items.

Without limiting the generality of the foregoing, the following particular requirements shall have been met:

- sanitary facilities, fire sprinkler services and hydrants and hose reels inspected and passed and being fully operational
- air-conditioning and ventilation system are balanced and working
the testing of mechanical, electrical, hydraulic (lift) and security systems have been satisfactorily completed
partition work is complete
the Builder's hoist, crane scaffolding and other major items of Constructional Plant have been removed from the Works
Keys have been labelled appropriately and handed over
the requirements of statutory authorities have been satisfied
access to the site provided (not temporary)
cabinet works complete
premises painted and cleaned

A.8.4 Cleaning Up
Keep the work under the Agreement clean and tidy as it proceeds and regularly remove from the site rubbish and surplus material arising from the execution of the work including any work performed during the Defects Liability Period or any operational maintenance period specified. On completion of the Works clean the inside of the building and both sides of glazing.

Prior to the date of Practical Completion, remove Temporary Works, Constructional Plant, buildings, workshops and equipment not forming part of the Works, except such as are required for work during the Defects Liability Period or any operational maintenance period specified and which shall be removed on completion of that work.

A.9 PAYMENT AND ADJUSTMENT OF CONTRACT SUM
Section 10 of the Conditions of Contract contains all the requirements of the Agreement in respect to Payment and Adjustment of the Contract Sum.

A.10 FINAL CERTIFICATE AND FINAL PAYMENT
Section 11 of the Conditions of Contract contains all the requirements of the Agreement in respect to the Final Certificate.

A.11 DETERMINATION
Section 12 of the Conditions of Contract contains all the requirements of the Agreement in respect to Determination of the Agreement.

A.12 DISPUTE RESOLUTION
Section 13 of the Conditions of Contract contains all the requirements of the Agreement in respect to dispute resolutions.

A.13 NOTICES
Section 14 of the Conditions of Contract contains all the requirements of the Agreement in respect to Notices.

A.14 SPECIAL CONDITIONS
Details to be inserted in Appendix.
The following is a copy of all items in the Appendix to the Conditions of Contract, with information to show the details which will be inserted in the blank spaces in the printed form of the Agreement, before signing of the Agreement.
<table>
<thead>
<tr>
<th>Item</th>
<th>A.</th>
<th>Date of Agreement</th>
<th>On signing of contracts</th>
</tr>
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<tbody>
<tr>
<td>B1</td>
<td>1.2.1</td>
<td>Proprietor</td>
<td>............</td>
</tr>
<tr>
<td>B2</td>
<td>1.2.2</td>
<td>Builder</td>
<td>............</td>
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<td></td>
<td></td>
<td>Licence No.</td>
<td></td>
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<tr>
<td>B3</td>
<td>1.2.3</td>
<td>Designer</td>
<td>............</td>
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<td>B4</td>
<td>1.2.4</td>
<td>Contract Documents</td>
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<td>The Drawings(s) numbered: ............</td>
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<td>The Specification(s) marked ............</td>
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<td>Other documents, namely any Addendas or Amendments issued hereafter.</td>
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<tr>
<td>B5</td>
<td>1.2.5</td>
<td>The Works</td>
<td>The whole of the work to be executed and completed by the Builder, namely</td>
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<td></td>
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<td>The construction of Office/Warehouse as per the drawings and specification.</td>
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<td>as shown, described or referred to in this Agreement and including all Variations provided for by this Agreement.</td>
</tr>
<tr>
<td>B6</td>
<td>1.2.6</td>
<td>The Site</td>
<td>............</td>
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<td>Shire</td>
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<tr>
<td>B7</td>
<td>1.2.7</td>
<td>The Contract Sum</td>
<td>To be advised</td>
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<td>or such other sum as shall become payable hereunder at the times and in the manner specified in this Agreement.</td>
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<td>B8</td>
<td>1.2.8</td>
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<td>At signing of contracts</td>
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<td>B9</td>
<td>1.2.10</td>
<td>Date for Practical Completion</td>
<td>25 weeks from award of contract.</td>
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<td>Western Australia.</td>
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</tbody>
</table>
D 2.3.1 Precedence

.1 This Document
.2 The Drawings
.3 The Specification

E 6.8 Defects Liability Period

52 weeks.

F 7.1 Separate Contracts

Any specialist contract that may be nominated by the Designer during the Contract.

G. Insurance alternative adopted

That the Builder take out Contractor’s Risks and Public Liability Insurance upon the Site being made available.

G1 8.3.2 Costs of demolition and removal of debris

10%.

G1 8.3.3 Percentage to cover fees of Designer and other Consultants

10%.

G1 8.3.4 Value of materials and things to be supplied by Proprietor

$ N/A.

G1 8.3.5 Percentage to be added to cover escalation costs

5%.

G2 8.4 Public liability insurance not less than

$10,000,000.

G3 Excesses

Nil.

H 9.3 Additional days on which the site will be closed

Saturday, Sunday and Statutory Public Holidays

J 10.1 Interval between Progress Claims

One Calendar Month

K 10.04 Time for Payment of Progress Certificates

10 days

L 10.5 Interest on Overdue Payments

10% per annum compounding monthly

M1 10.6 Labour rates

Carpenter $..40.......................... per ordinary hour
Bricklayer $..40.......................... per ordinary hour
Plumber $..40.......................... per ordinary hour
Plasterer $..40.......................... per ordinary hour
Painter $..40.......................... per ordinary hour
Labourer-skilled $..30.......................... per ordinary hour
Specification – medium-rise commercial

M2 10.6  Unit Prices
N/A...................................................................................................................................
...................................................................................................................................

N 10.6  Basic Rate for Variations
10.8  and Provisional Sums  10%

P 10.10.2 Liquidated and Ascertained Damages  N/A.

Q1 10.11  Limit of Retention
10.13.3  (if any)
10.14.1  5%

Q2 10.17.1 Security by Proprietor  Nil

R 10.14.1 Retention Percentage (until limit reached)  10%

S 11.1  Period for Detailed Statement  14 days
B. EARTHWORKS & SITEWORKS

B.1 GENERALLY
B.1.1 General Conditions
B.1.2 Items Specified in Other Trade Sections
B.1.3 Levels, Datum and Boundaries
B.1.4 Contours
B.1.5 Site Conditions
B.1.6 Protection from Dust, etc.

B.2 MATERIALS
B.2.1 Filling and Backfill

B.3 WORKMANSHIP AND DETAILED INSTRUCTIONS
B.3.1 Site Clearance
B.3.2 Removal of Rock
B.3.3 Grading
B.3.4 Excavation for Footings
B.3.5 Excavation for Service Trenches
B.3.6 Maintaining Excavations
B.3.7 Compaction
B.3.8 Filling and Backfilling
B.3.9 Surplus Materials

B.4 LIMESTONE RETAINING WALLS
B.4.1 Generally

B.5 HOT MIX BITUMINOUS PAVING
B.5.1 Rock Base
B.5.2 Tack Coating
B.5.3 Hot Mix Bituminous Plant Mix / Thicklift
B.5.4 Delivery
B.5.5 Spreading
B.5.6 Compaction
B.5.7 Joints and Junctions
B.5.8 Protection
B.5.9 Extent (As shown on drawings)
B.5.10 Finish

B.6 PAINTING CARBAYS, ROAD SIGNAGE AND ARROWS

B.7 CROSSEOVERS

B.8 KERBING

B.9 WATERPROOF MEMBRANE
B. EARTHWORKS & SITEWORKS

B.1 GENERALLY

B.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

B.1.2 Levels, Datum and Boundaries
(a) The datum is shown on the drawings.
(b) Engage a Licensed Land Surveyor to verify boundary locations, site dimensions, corner pegs and encroachments. Notify the Proprietor of any discrepancies between information shown in contract documents and information supplied by the Surveyor. The Builder shall pay all associated survey fees.
(c) The Surveyor shall be engaged by the Builder to establish the building set out, any discrepancies shall be referred to the Proprietor.

B.1.3 Contours
Contours on drawings are for guidance only and have been obtained by interpolation of spot levels.

B.1.4 Site Conditions
(a) As soon as possible after possession of site, verify the location of existing services. Notify the Proprietor of any discrepancy between actual location and information shown on contract documents.
(b) If excavations reveal rock notify the Proprietor, who will measure rock prior to further excavation and instruct the Builder accordingly.
(c) Rock less than 0.5 cu.m. volume in each case in post-holes, column footing excavations, sumps and similar minor excavations shall not be deemed a variation to the works.

B.2 MATERIALS

B.2.1 Filling and Backfill
(a) For filling and backfill use only clean sand or an approved well graded granular material or other approved material.
(b) Material excavated from the site may be approved if free from vegetable matter, clay and debris.

B.3 WORKMANSHIP AND DETAILED INSTRUCTIONS

B.3.1 Site Clearance
(a) Clear the site over the area shown on drawings.
(b) Remove topsoil to a depth of approximately 150 mm from the area to be covered by building plus all areas to be paved, and including all landscaping and garden areas.
(c) Remove all excess topsoil from the site.
(d) Remove trees, stumps and other vegetable matter whether dead or alive to a depth of approximately 300 mm from the area to be covered by building plus all areas to be paved.

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Version 1, 2010
Page 18 of 86
B.3.2 Grading
(a) Cut and fill the areas indicated on drawings to correspond with levels shown.
(b) Accurately form cuttings and banks to even slopes.
(c) Make allowance for floor and paving thicknesses. Form paved areas to grade to sumps, gardens etc., as shown on the site plan.
(d) After cutting and filling, accurately machine grade to final levels and to finish smooth without undue changes of levels.

B.3.3 Excavation for Footings
(a) Accurately excavate for footings. Form bottoms of excavations smooth and level.
(b) Step down excavations to maintain minimum cover of 150 mm over footings and to suit brick coursing.

B.3.4 Excavation for Service Trenches
(a) Unless specified otherwise, all services shall be responsible for the excavating of the appropriate service trenches.
(b) Lay a sand bed under pipes on rock.
(c) Do not excavate service trenches within an angle of 30° down from bottom corners of footings.

B.3.5 Compaction
(a) Remove topsoil before commencing compaction.
(b) Do not place filling against retaining walls in less than 14 days after construction of works, unless authorised by the Designer.
(c) Compact ground under the complete building area and paved hardstand area within 1.2m of the total perimeter to withstand 7 blows per 300 mm of a standard 9.1 kg x 15.8 mm diameter falling weight penetrometer. Compaction test to be carried out to 900mm deep or the depth of the fill which ever is the greater.

B.3.6 Filling and Backfilling
(a) Fill and backfill under buildings and paved areas to the degree of compaction previously specified.
(b) Unless otherwise specified or approved place filling and backfilling in layers not more than 300mm thick. Spread each layer evenly and compact before placing next layer.
(c) Fill holes resulting from removal of stumps, roots and other obstructions. Where occurring under building and paved areas fill with material previously specified and compact to the degree specified.

B.3.7 Surplus Materials
(a) Build up garden areas to levels indicated with clean excavated excess soil.
(b) Remove surplus excavated material from the site.
B.4 CONCRETE FILLED BRICK RETAINING WALLS

B.4.1 Generally
Allow the construction of brick retaining walls to the extent shown on the drawings and the structural Engineers details.

Refer to F5 of Brickwork & Stonemason section of this specification.

B.5 HOT MIX BITUMINOUS PAVING

B.5.1 Rock Base
Shall be fine crushed with sand binder laid to a minimum compacted depth as shown on drawings. Grade the base to follow the finished levels so that the specified compacted depth is maintained everywhere.
The base material shall conform to the following gradings (MRD Standard).

<table>
<thead>
<tr>
<th>AS 1152 Sieve passing, grading limits</th>
<th>Percentage by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.5 mm</td>
<td>100</td>
</tr>
<tr>
<td>19.0 mm</td>
<td>95 - 100</td>
</tr>
<tr>
<td>4.75 mm</td>
<td>45 - 65</td>
</tr>
<tr>
<td>2.36mm</td>
<td>30 - 50</td>
</tr>
<tr>
<td>425.0 mm</td>
<td>12 - 30</td>
</tr>
<tr>
<td>75.0 mm</td>
<td>3 - 12</td>
</tr>
</tbody>
</table>

The ratio of the portion passing the 75mm sieve to the portion passing the 425mm sieve shall fall between the range of 40% - 60% and the portion of the total retained on the 19mm sieve shall not exceed 5% of the total.

Material passing AS sieve 425mm shall have the following properties:
- Liquid Limited not greater than 25%
- Linear Shrinkage not greater than 1.5%
- Plasticity Index 0% - 5%

Minimum dry compressive strength shall not be less than 1725 kPa.

Carry out compaction when the base material is at optimum moisture content and if necessary water during rolling to obtain maximum compaction.

Consolidate the crushed rock base material to 98% modified maximum dry density as determined by in situ density testing.

Make good all irregularities, grade to correct cross section and profile and finish the surface smooth with uniform falls to stormwater sumps or channels as indicated.

B.5.2 Tack Coating
Sweep the base clean and lightly water if necessary.
Spray a tack coating of bitumen emulsion diluted to 60/40 at the rate of 0.8 litres/m².
Run the bitumen emulsion along the joins between the base and walls, floor slabs, steps, pits and kerbs etc. then add bitumen coated 5mm screenings and compact by hand tamping.
B.5.3 **Hot Mix Bituminous Plant Mix / Thicklift**

Mix shall be nominal 5mm, dense graded mix composed of graded aggregates, fillers and bituminous binder, laid to a consolidated thickness as shown on the drawings and conforming to the following grading.

<table>
<thead>
<tr>
<th>AS 1152 Sieve</th>
<th>Percentage by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.7 mm</td>
<td>100</td>
</tr>
<tr>
<td>4.75mm</td>
<td>85 - 100</td>
</tr>
<tr>
<td>2.36mm</td>
<td>55 - 75</td>
</tr>
<tr>
<td>1.18mm</td>
<td>38 - 57</td>
</tr>
<tr>
<td>600.0 mm</td>
<td>26 - 43</td>
</tr>
<tr>
<td>200.0 mm</td>
<td>15 - 28</td>
</tr>
<tr>
<td>150.0 mm</td>
<td>8 - 18</td>
</tr>
<tr>
<td>75.0 mm</td>
<td>4 - 8</td>
</tr>
</tbody>
</table>

The mix proportions shall be such as to result in the following properties:

- Minimum stability of compacted flow - 4kN Marshall
- Marshall flow - 2 - 4%
- Range of voids in compacted mix - 4 - 6%
- Bitumen content - not less than 5.4% by weight

Bituminous concrete shall be obtained from an approved readymix company and shall be batched in accordance with NAASRA Specification “Principles and Practice of Bituminous Surfacing Vol 2 - Plant Mix Works”.

The bitumen shall conform to the requirements of AS 2008 “Residual Bitumen for Pavements”.

Percentage wear of the aggregate shall not be greater than 20% when tested in accordance with AS 1141 (Los Angeles Test).

B.5.4 **Delivery**

The hot bituminous concrete shall be delivered to the point of spreading in end tipping trucks, having clean steel lined bodies which have been lightly oiled.

Each load shall be covered with canvas or other suitable material of sufficient size to protect from rain and prevent loss of heat from the mixture.

The temperature of the hot bituminous concrete as delivered to the point of spreading shall not vary more than plus or minus 30°C from load to load, provided always that it shall be within the limits of 130°C - 160°C. Any loads which are outside the allowable temperature range or which have become wet by rain will be rejected.

B.5.5 **Spreading**

Bituminous hot mix shall not be placed during rain, or when the weather conditions are generally unsuitable.

The mix shall be spread and tamped to a dry clean base in one layer by a power driven spreading machine commencing at the highest level of the cross section of the paving.

B.5.6 **Compaction**

As soon after spreading as it will bear the roller without lateral displacement, the hot mix shall be rolled uniformly and thoroughly with a self propelled 5 tonne, smooth, steel shell tandem roller making a minimum of 8 passes. Secondary rolling shall be carried out using a self-propelled multi-tyred roller.

All areas shall be finished to a hard smooth surface with even grades. Hand finish all inaccessible areas.

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The surfaces shall be finished to the levels indicated within the tolerances previously specified. Rollers shall not remain stationary on recently compacted work.

**B.5.7 Joints and Junctions**

All longitudinal and transverse joints shall be well bonded and sealed. Hot longitudinal joints are preferred. Junctions between old and new pavements and joints between successive days' work shall be carefully made in such a manner as to ensure a thoroughly and continuous bond between the old and new surfaces and to provide a smooth riding connection across the junction or joint.

Transverse joints shall be at right angles to the direction of spreading and cut to a straight vertical face for the full depth of the layer.

Where it is necessary to resheet an existing asphalt surface in order to provide a smooth riding surface across the junction the section of tapering thickness asphalt shall end at a chase cut into the existing asphalt. This chase shall be approximately 20mm deep and 40mm wide unless otherwise directed by the Engineer. When necessary, removal of coarse particles from tapering thickness asphalt will be allowed using hand raking.

**B.5.8 Protection**

Adequately protect all buildings, kerbs and other adjoining surfaces against staining during bitumen sealing operations. Any bitumen materials coming into contact with them shall be completely removed by a suitable solvent. Make good any damage.

**B.5.9 Extent** (As shown on drawings)

Generally: 150mm finished thickness compacted limestone base

40mm finished thickness “Thicklift”.

**B.5.10 Finish**

The bitumen paving shall be standard black bitumen.

**B.6 PAINTING CARBAYS, ROAD SIGNAGE AND ARROWS**

(a) Car parking area as shown on site plan shall have painted carbays, bay numbers and symbols and shown.

**B.7 CROSSOVERS**

(a) Construct new crossovers to the widths and locations nominated as shown on drawings.

(b) Required levels to be nominated by the Local Authority.

(c) Constructions shall be in accordance with Local Authority requirements and to an appropriate standard for the project.
B.8 KERBING

Concrete kerbing shall be extruded and semi-mountable as nominated on the drawings laid on the primer seat swept free of loose material and with all grease removed.

Concrete for kerbing shall have a minimum compressive strength of $F'c = 20\, \text{MPa}$ standard cylinder test at twenty eight (28) days, and a maximum slump of 50mm, when tested in accordance with the requirements of AS 1012.

Kerbing shall be laid to line and level as shown on the drawings by persons experienced in the use of a paddle type kerb extruding machine.

The construction tolerance shall be such that when a 3m straight edge is laid on the upper face surface of the kerbing, the surface shall not vary more than 5mm from the straight edge, except at curves of grade changes.

Joints shall be cut in the kerbing at intervals of 2.4m through the full section of the kerb within 24 hours of extrusion. Joints shall be cleaned and packed with flexible foam and sealed with a butyl rubber sealant.

B.9 WATERPROOF MEMBRANE

Apply a “Bitec” or similar waterproof membrane to concrete tilt panels below ground.
C. CONCRETE

C.1 GENERALLY
C.1.1 General Conditions
C.1.2 Site Inspections

C.2 MATERIALS
C.2.1 Concrete Generally
C.2.2 Admixtures
C.2.3 Membrane Underlay

C.3 FOOTINGS & SLAB ON GROUND

C.4 FORMWORK
C.4.1 Responsibility
C.4.2 Generally
C.4.3 Uniformity of Concrete Colour
C.4.4 Stripping Formwork

C.5 PREPARATION FOR CONCRETE WORK
C.5.1 Concrete Pour Restrictions
C.5.2 Reinforcement Generally
C.5.3 Material for Reinforcement
C.5.4 Fixing Reinforcement
C.5.5 Building In
C.5.6 Preparation for Concrete Placing

C.6 CONCRETE WORK
C.6.1 Generally
C.6.2 Ready-Mixed In-Situ Concrete
C.6.3 Placing Concrete
C.6.4 Compaction of Concrete
C.6.5 Tolerances, Generally
C.6.6 Curing of Concrete

C.7 FLOOR FINISHES
C.7.1 Concrete Floor Finishes

C.8 CONCRETE PRECAST PANELS
C.8.1 Generally
C.8.2 Fire Rated Jointing
C. **CONCRETE**

C.1 **GENERALLY**

C.1.1 **General Conditions**
Refer to the “Preliminaries” section, which forms an integral part of this section.

C.1.2 **Site Inspections**
The Builder shall have the Engineer – ...................... - inspect (at his cost) the works at the following stages:
- Pad footings and strip footings prior to pour.
- At least once during tilt panel pouring/construction.
- At completion of steel erection.

C.2 **MATERIALS**

C.2.1 **Concrete Generally**
All concrete shall be pre mixed and delivered to site by an approved concrete company, “CSR Readymix, BGC, Boral” or similar.
All concrete shall be to the strengths nominated on the Structural Drawings as included in the Contract Documents. Concrete shall conform to the requirements of Australian Standard 3600.
The concrete supply company shall issue certificates to verify that the required strength concrete has been delivered.

C.2.2 **Admixtures**
(a) Do not use admixtures in structural concrete without written approval from the Designer.
(b) Admixtures used for structural concrete shall conform to Australian Standard 1478 and be used in accordance with Australian Standard 1479. Details of composition and quantities shall be approved before use.

C.2.3 **Membrane Underlay**
(a) Membrane underlay shall be black polythene, minimum 0.2 mm thick, with joints lapped 300 mm. Seal punctures and around penetrations with pressure sensitive tape.
(b) Lay membrane under all floor areas (including the warehouse area) and turn up and under the wall finishes.

C.3 **FOOTINGS & SLAB ON GROUND**
Refer to section C7 Concrete Work of this specification and the attached structural Engineers drawings for footing size, slab thickness and reinforcement required.

C.4 **FORMWORK**

C.4.1 **Responsibility**
Assume responsibility for the design and construction of framework. Ensure that it is sound and strong enough for the purpose for which it is used and to resist pressure from vibrators and compactors.
C.4.2 Generally
(a) Use formwork wherever necessary to confine the concrete and shape it to the required lines and shape. Construct and erect formwork in accordance with Australian Standard 3610.
(b) Unless otherwise specified or approved, clean and treat forms in accordance with Australian Standard 3610, before placing concrete.

C.4.3 Uniformity of Concrete Colour
Maintain uniformity of colour by ensuring that the time concrete remains in forms does not vary by more than 3 hours.

C.4.4 Stripping Formwork
Construct formwork so that it can be removed without damage to any permanent part of the works. Do not cause sudden loading on any part of the structure. Do not strip formwork unless the concrete is strong enough to carry loads, which may be imposed on it.

C.5 PREPARATION FOR CONCRETE WORK
C.5.1 Concrete Pour Restrictions
The Builder shall not allow any concrete to be poured on days where the ambient temperature exceeds 33C, days lost because of excessive heat will constitute an extension of time providing the Designer is notified the morning of the deferred pour.

C.5.2 Reinforcement Generally
(a) Reinforcement shall be free from scale, loose rust, paint, grease or other matter which may impair the bond to the concrete or cause disintegration of the concrete.
(b) Bend, bundle, securely tie and tag with identification before delivery to site. Bend reinforcement so that strength and durability are not impaired.
(c) On site, stack reinforcement free of the ground and in a manner to avoid distortion.

C.5.3 Material for Reinforcement
(a) Reinforcement shall be as detailed and described on the Structural Engineers’ drawings.
(b) Reinforcing bars shall comply with Australian Standard 1302 and reinforcing fabric with Australian Standard 1304.

C.5.4 Fixing Reinforcement
(a) Prevent displacement when placing concrete. Wire reinforcement together with soft wire or clips.
(b) Use plastic-tipped metal chairs, metal hangers, metal spaces or other plastic, metal or concrete accessories to secure and support the reinforcement.
(c) Where accessories will be visible in the surface of off-form concrete, the visible portions shall be plastic and colour-matched to the concrete.
(d) Lap mesh and twisted deformed bars to dimensions set out in the drawings.
(e) Provide the concrete cover indicated on the drawings.
C.5.5 Building In
(a) Place conduits and pipes above the bottom steel and below the top steel and to avoid interference with reinforcement.
(b) Where conduits and pipes cross control joints, provide slip joints or other method of absorbing movement without fracturing.
(c) Provide all sleeves, openings, inserts, anchors and other items to be built into concrete or required for adjoining work or its support. Place these accurately in position before pouring.
(d) Do not cast into concrete steel fixings that are not hot-dip galvanised or other approved corrosiveproof treated.

C.5.6 Preparation for Concrete Placing
Well dampen surfaces on or against which concrete is to be placed, prior to placing concrete.

C.6 CONCRETE WORK
C.6.1 Generally
Use only Readymix, Boral, BGC or similar “ready-mixed” concrete unless otherwise approved.

C.6.2 Ready-Mixed In-Situ Concrete
Ready-mixed concrete shall conform to Australian Standard 1379.

Concrete Strength -
Concrete shall have a minimum strength grade of:
- OFFICE / SHOWROOM SLAB N25 at 28 days by standard cylinder test.
- WAREHOUSE SLAB N40 at 28 days by standard cylinder test.
- FOOTINGS N25 at 28 days by standard cylinder test.

Concrete Slump -
Concrete shall have a maximum of 80mm slump (standard cone test) which will be tested at random by an independent testing laboratory appointed by the Designer. Concrete found to fail the slump tests will be rejected and any concrete poured between tests will be declared substandard and must be removed.

C.6.3 Placing Concrete
(a) Refer to the Structural Engineers drawings.
(b) During placing, keep skilled tradesmen on hand to re-fix immediately any item displaced accidentally or otherwise. Place concrete in accordance with Australian Standard 1480. A concrete section as referred to therein shall be an area bounded by construction, expansion or contraction joints.
(c) As far as practicable, deposit concrete directly in the work from the truck. Do not cause concrete to flow or be worked in any manner that will cause segregation of fine and coarse aggregate.
(d) Place concrete at such a rate that previously placed concrete being integrated with fresh concrete is still plastic. Do not place any partially-hardened or contaminated concrete.
(e) Do not place concrete during heavy rain.
C.6.4 Compaction of Concrete
Consolidate concrete by mechanical vibration and by spading or rodding, to the maximum practicable density and to remove air pockets. Use immersion-type vibrators, operated slowly in a near-vertical position. Insert and withdraw them slowly.

C.6.5 Tolerances, Generally
(a) Permitted tolerances shall be as follows.
(b) Concrete surfaces exposed to view: Not more than 6 mm greater than and not less than the true positions as detailed on drawings and not deviating from a 2 m straight edge by more than 3 mm in any direction.
(c) Structural members and slabs: Not more than 6 mm greater than and not less than required size.

C.6.6 Curing of Concrete
Concrete curing shall be carried out in accordance with this document and the accepted procedures that the specified curing implies,
Requirement:
Prevent rapid drying out at the end of the curing period. Protect concrete surfaces from sun and drying winds and cure for at least 7 days, using an approved concrete curing agent applied in accordance with manufacturers recommendations.

C.6.7 Cutting Floor Joints
Cut floor joints shall be done at the earliest practical time after the pour but but longer than 24 hours after.
Cuts shall be to a depth of 1/3rd the slab depth.
Infill pour strips shall be cut in a similar manner.

C.7 FLOOR FINISHES
C.7.1 Concrete Floor Finishes
Office Internally:
After screeding, bring floor to a uniform fine smooth surface finish with a steel trowel, particular attention should be paid to maintaining a consistent well trowelled surface finish suitable for vinyl or carpet application.

Warehouse Internally:
(a) After screeding, bring floor to a uniform fine smooth surface finish with a steel trowel, particular attention should be paid to maintaining a consistent well trowelled surface finish. Concrete trowelled after heavy rain will be rejected.

C.8 CONCRETE PRECAST PANELS
C.8.1 Generally
(a) All works to be in accordance with AS3850 Parts 1, 2 & 3.
(b) Concrete to conform to AS3600 and specifications noted in other relevant parts.
(c) Vertical panel joints to be 16mm + 5mm.
(d) Refer to structural drawings for other relevant notes.
C.8.2 Fire Rated Jointing

(a) All external wall joints shall be filled with an approved FRL 90/90/90 fire rated “mastic” system. The contractor shall supply a Certificate of Compliance.

(b) All dividing wall joints shall be filled with an approved FRL 90/90/90 fire rated “mastic” system. The contractor shall supply a Certificate of Compliance.

C.8.3 Panel Erection

a) Panel erection shall be performed by experienced, qualified trades only.

b) Any damage to panels will cause the affected panel to be rejected and a new panel provided at the Builders cost, replacement of damaged panels does not qualify as an extension of time.

c) Joints shall be even and not to exceed 25mm wide, panels shall be corrected “packed” and shall be pump and true in all directions.
D. STRUCTURAL STEELWORK

D.1 GENERALLY
D.1.1 Conform to Australian Standards
D.1.2 General Conditions
D.1.3 Items Specified in Other Trade Sections
D.1.4 Contract Drawings
D.1.5 Shop Drawings
D.1.6 Dimensions
D.1.7 Site Inspections

D.2 MATERIALS
D.2.1 Generally
D.2.2 Steel
D.2.3 Bolts

D.3 FABRICATION
D.3.1 Fabrication Generally
D.3.2 Assembly
D.3.3 Welding
D.3.4 Fixings

D.4 PROTECTIVE TREATMENTS
D.4.1 General
D.4.2 Hot Dip Galvanising
D.4.3 Inorganic Zinc Coatings

D.5 HANDLING AND ERECTION
D.5.1 Generally
D.5.2 Grouting under Column Base-plates
D. STRUCTURAL STEELWORK

D.1 GENERALLY

D.1.1 Conform to Australian Standards
Structural steel fabrication shall conform to AS 4100.

D.1.2 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

D.1.3 Contract Drawings
(a) Structural and architectural drawings being part of the contract and referring to work specified in this section are listed in the Preliminaries.
(b) The structural drawings do not necessarily show complete details and shall be read in conjunction with other drawings.

D.1.4 Shop Drawings
(a) The Builder shall be responsible for providing shop drawings of steel to be fabricated, these drawings shall be constructed in conjunction with the information provided on the Contract Drawings, shop drawings shall be submitted to the Designer for approval.
(b) Clearly show on shop drawings information to describe the complete fabrication, assembly and erection of the structural steel work, including location marks.
(c) Show in detail proposed splices and joints. Splices shall be full strength welded.
(d) Approval of shop drawings shall mean that the drawings generally comply with the contract requirements. The Builder shall be responsible for dimensions including column sets-outs, levels and other details and errors therein, shown on the shop drawings, notwithstanding approval.

D.1.5 Dimensions
(a) See also Preliminaries, “Dimensions and Scales on Drawings”.
(b) Unless otherwise shown on drawings, dimensions shall apply to structural surfaces and not to finished surfaces.
(c) Inform the Designer immediately upon discovery of discrepancies between dimensions on structural drawings and dimensions on other contract drawings.

D.2 MATERIALS

D.2.1 Generally
All steel shall be in accordance with the Contract Drawings.

D.2.2 Steel
(a) Steel shall be mild steel type for structural purposes, unless otherwise specified.
(b) Cold formed sections should be formed from steel strip, hot dip zinc coated to AS1397, minimum coating mass 275g/m².

D.2.3 Bolts
(a) Bolts shall be as noted on drawings or otherwise specified.
(b) Bolts exposed to corrosion shall be hot dipped galvanised.
D.3 **FABRICATION**

D.3.1 **Fabrication Generally**

(a) Comply with requirements of Australian Standard 4100.

(b) Weld members in a manner to ensure freedom from distortion after welding.

(c) Stagger joints in long members over two or more spans.

(d) Seal boxed sections, joints and tube ends by welding mild steel plate not less than 5mm thick.

(e) Clean loose scale and ruts from steel before assembly.

D.3.2 **Assembly**

(a) Accurately fit meeting faces together before bolting or welding.

(b) Design connection to transmit load equivalent to the full strength of the intersection members.

(c) Cut tubes to fit the shape of associated members. Do not shear tubes.

(d) Assemble members in such a manner that they are free from distortion and damage and to maintain specified cambers.

(e) Distinctly mark members with identification to aid accurate erection.

D.3.3 **Welding**

Comply with the current Australian Standard Welding Code AS1554 or any amendment or revision thereafter.

D.3.4 **Fixings**

(a) Drill holes and shop-fix cleats, lugs, ties and other fixings before applying protective coatings.

(b) Shop form holes unless otherwise approved.

(c) Weld mild steel masonry ties to steel columns abutting walls.

D.4 **PROTECTIVE TREATMENTS**

D.4.1 **General**

(a) Touch up surfaces damaged before final over-coating by matching original coating.

(b) Internal and Warehouse steelwork and steel shall be treated with inorganic zinc silicate.

(c) External steel shall be treated in inorganic zinc silicate.

D.4.2 **Inorganic Zinc Coatings**

Steelwork shall be sand blasted to Class 2.5 finish of AS1627, followed immediately by one coat of Inorganic Zinc Phosphate or equivalent approved material to a thickness of no less than 75 microns.

D.5 **HANDLING AND ERECTION**

D.5.1 **Generally**

(a) Handle and erect steelwork to comply with Australian Standard 1250. Do not exceed design loads on any member or connection.
(b) Provide experienced tradesmen to control erection. Immediately on completion of erection check bolts, nuts, washers and connections to ensure correct positions and that connections are fully tight.

(c) Stack and protect steelwork to avoid water penetration into pockets and seams.

(d) Do not fix damaged steelwork except with approval and after making good as directed.

(e) Fix temporary bracing to support steelwork until other sections of work are built up, then remove braces and make good to surfaces.

D.5.2 Grouting under Column Base-plates

(a) Scabble the top of the footing concrete before positioning columns. Insert steel wedges under base-plates

(b) After accurately positioning columns, ram a stiff grout of sand, cement and a mortar expanding additive under the base-plates

(c) Do not remove wedges after grouting.
E. METALWORK

E.1 GENERALLY
E.1.1 General Conditions
E.1.2 Items Specified in Other Trade Sections
E.1.3 Fabrication Generally
E.1.4 Protective Treatments Generally
E.1.5 Protective Treatment of Aluminium

E.2 METAL DOORS, ROLLER DOORS & ROLLER SHUTTERS
E.2.1 Steel Door Frames
E.2.2 Roller Shutters

E.3 ALUMINIUM WINDOWS & DOORS
E.3.1 Generally
E.3.2 Materials
E.3.3 Performance
E.3.4 Fabrication
E.3.5 Sheet Flashings
E.3.6 Moulds
E.3.7 Anchors and Fasteners
E.3.8 Caulking and Sealants

E.4 HARDWARE
E.4.1 Generally

E.5 MISCELLANEOUS METALWORK
E.5.1 Generally
E. METALWORK

E.1 GENERALLY

E.1.1 General Conditions
Refer to “Preliminaries” section, which forms an integral part of this section.

E.1.2 Items Specified in Other Trade Sections
(a) Steel lintels: “Brickwork”
(b) Drainage gratings: “Drainage and Plumbing”
(c) Hardware other than for aluminum doors and windows: “Hardware and Ironmongery”
(d) Shop drawings generally: “Preliminaries”
(e) Stainless steel sanitary ware: “Drainage and Plumbing”

E.1.3 Fabrication Generally
(a) Accurately manufacture and assemble metalwork true to shape and size and free from warps, hammer marks, burrs, distortion and other imperfections.
(b) Fill joints as necessary and polish to a surface to match surrounding metal.
(c) Seal the visible ends of steel tubing.
(d) Relevant clauses in “Structural Steelwork” shall apply in this section if not inconsistent with descriptions herein.
(e) Assemble anodized members with mechanical type fixings concealed where possible.
(f) Contact between aluminum and stainless steel, zinc, cadmium, chromium or small areas of white bronze will be permitted. Isolate other metals from aluminum with durable non-absorptive tapes, gaskets, polyurethane coating or other approved materials. Isolate aluminum from concrete, mortar and plaster. Avoid drainage of water from non-compatible metals on to aluminum.
(g) Bolts not otherwise specified shall be hot dip galvanised steel.

E.1.4 Protective Treatments Generally
Have applicators touch up surfaces damaged before final over-coating by matching the original coating. Touch up site-fixed bolts, nuts and washers to match adjacent surfaces.

E.1.5 Protective Treatment of Aluminium
Aluminium shall be Powder Coat finished in accordance with the Australian Standards.

E.2 METAL DOORS, ROLLER DOORS & ROLLER SHUTTERS

E.2.1 Steel Door Frames
(a) As detailed in the drawings supply and fix standard zinc-annealed steel door frames. Door frame profile to be architectural. No joints, rivets or screws will be allowed.
(b) Corners shall be mitred, welded and cleaned off smooth.
(c) Three sided frames shall have a floor spreader made from 16 gauge 15mm x 12mm channel. Frames of more than 1500mm width shall have a double galvabond finish made good with cold galvanising.
(d) External frames shall be zinc-silicate coated.

(h) Provisions for Hardware

The hardware schedule (Section U) provides details of the hardware to be fitted to the door frames and doors.

Jambs and frames shall be prepared to take fittings, hinges, locks, striking plates etc, shall finish flush with metal jambs, fixed with metal thread screws to 10mm thick m.s. backing plates welded to the frame and provided with metal cover protectors or mortar guards.

Frames shall be recessed where striking plates occur to allow them to finish flush.

Frames with door closers at head of frame shall have 6mm m.s. backing pieces 300mm (min) long and tapped to suit. The backing pieces shall be spot welded to a 150mm length of 2mm steel material of frame thickness in turn spot welded to the head of the frame.

Frames shall be strengthened where hinges occur. Countersinking shall be provided where screws occur.

Where sliding bolts are scheduled, frames shall have holes pre drilled and mortar guards to the back.

(i) Grout Up Door Frames

Frames shall be solidly grouted in and anchored with the fixing lugs built into the walls.

E.2.2 Roller Shutters

(a) Provide and install powder coat finished “Anvil Metals” roller shutters with heavy duty 3 phase electric opening motors.

(b) Provide approved Windlock side guides and approved Windlock end clips every 2nd slat as recommended by the manufacturer.

(c) The roller shutter installation shall be carried out in total accordance with the manufacturer’s recommendations.

E.3 ALUMINIUM WINDOWS & DOORS

E.3.1 Generally

Aluminium shopfronts to be Capral Architectural Suite front glazed 102 x 44mm with all appropriate sections and seals.

(a) Supply and install aluminum windows and doors, hereinafter referred to as units, shown on the drawings.

(b) Design, fabricate and install units in accordance with Australian Standard CA53 unless otherwise specified.

(c) Manufacture units in accordance with shop drawings, which shall be submitted as specified in “Preliminaries”.

(d) Glaze units as specified in “Glazing”.

(e) The Units shall be supplied and installed by a reputable contractor to the highest industry standards.

(f) All components shall be powder coat finish; powder coating shall be to the appropriate Australian Standards, colour to be selected from the standard “Dulux” powder coat colour range.
E.3.2 Materials
(a) All external shop front windows shall be fabricated from CAPRAL ALUMINIUM front glazed 102 mm x 44mm Architectural Suite, or similar unless otherwise noted.
(b) All sections to be powdercoat finish colour to be selected from the standard “Dulux” powder coat colour range.
(c) Build in all frames with matching angle Mouldings neatly mitred around reveals.
(d) Window fixing shall be sufficient to take associated wind loads.

E.3.3 Performance
(a) Standard Tests: Installed units shall have the standards for static load, dynamic load, water penetration and air infiltration listed in Australian Standard CA53 as minimum requirements of this specification.
(b) Distortion: Members shall be of sufficient weight and size to transmit reactions without causing any distortion.
(c) Thermal Movement: Allow for thermal movement as required.
(d) Water Ingress: Where water or condensate can be otherwise entrapped, provide drainage holes to approval.

E.3.4 Fabrication
Except for glazing beads and trim, do not use sections less than 2.4 mm thick. Match butting edges of members to produce positive watertight hair-line joints. Keep exposed screws and other fixings to a minimum. Design units to allow neat and positive reception of abutting building finishes.

E.3.5 Sheet Flashings
(a) Flash with 0.7 mica and bitumen coated aluminum sheet at junctions of units with building structure, unless otherwise specified.
(b) Dress higher flashings over lower flashings. Flash in continuous lengths 150 mm wide to heads and jambs and 300 mm wide to sills. Extend head and sill flashings beyond jambs at least 150 mm.
(c) Provide at least 18 mm width of flashing in contact with and securely fixed to units by means of 4 mm galvanised gutter bolts at 200 mm centres with 25 mm diameter galvanised washers.

E.3.6 Moulds
(a) Unless otherwise specified or approved, caulk units externally and fix mitred aluminum angles over caulking.
(b) Fix mitred aluminum angles internally between units and abutments.
(c) Use snap-in type moulds wherever possible and in other situations fix moulds neatly with raised head counter- sunk stainless steel screws. Finish on moulds shall match finish on units.

E.3.7 Anchors and Fasteners
(a) Use stainless steel, hot dip galvanised steel or cadmium plated steel non-magnetic anchors and fasteners for attachment of units to the building structure. Visible anchors and fasteners shall be stainless steel. Position visible screws neatly and symmetrically.
E.3.8 Caulking and Sealants
(a) See “Glazing” for glazing sealants.
(b) Seal units at junction with other materials and other units with non-hardening caulking or sealant compound, compatible with aluminum, chemically stable and resistant to ultraviolet radiation if exposed to sunlight.

E.4 HARDWARE
E.4.1 Generally
(a) Hardware to be concealed shall have provision for maintenance and replacement. Securely fix hardware to units. Do not use metal-thread or PK screws unless the wall thickness of member is at least 2 mm. Do not use aluminum rivets.
(b) Do not permit aluminum-to-aluminum contact between members or hardware components moving relative to one another while in contact.
(c) Provide and fix to aluminum doors hardware as indicated on door schedule.

E.5 MISCELLANEOUS METALWORK
E.5.1 Generally
(a) Bollards: 160mm dia. galvanised pipe bollards to be set in a 800 mm x 800 mm x 600mm concrete pad footing, fill pipe with “garden crete” rodding well to remove air pockets. Position and number of bollards shown on the drawings. Smooth round concrete at top of bollard. Paint “Safety Yellow”
(b) The Builder shall allow for the installation of stainless steel wall mounted grab rails in accordance with Australian Standard 1428, rail should be approximately 1.4m long overall constructed of 30 O.D. diameter light wall stainless steel, refer to drawings.
(c) Provide SCP toilet roll holders to each WC pan enclosure to male, female and disabled toilet facilities.
(d) Install toilet signage.
(e) Provide weather deflectors over external doors in concrete panels as shown on the drawings.
F. BRICKWORK

F.1 GENERAL
F.1.1 General Conditions
F.1.2 Items Specified in Other Trade Sections

F.2 MATERIALS
F.2.1 Clay Bricks - Generally
F.2.2 Pedestrian Concrete Pavers
F.2.3 Mortar Generally
F.2.4 Materials for Mortar
F.2.5 Mortar Mixing
F.2.6 Ties

F.3 WORKMANSHIP
F.3.1 Brickwork Generally
F.3.2 Gauge
F.3.3 Bond
F.3.4 Joints
F.3.5 Weep-holes
F.3.6 Damp-Proof Courses
F.3.7 Flashings
F.3.8 Steel Lintels
F.3.9 Building In

F.4 DETAILED INSTRUCTIONS
F.4.1 Walls
F.4.2 Pedestrian Paving
F. BRICKWORK

F.1 GENERALLY

F.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

F.1.2 Items Specified in Other Trade Sections
Early ordering of materials: “Preliminaries”.

F.2 MATERIALS

F.2.1 Clay Bricks - Generally
Bricks shall be nominal 290mm x 290mm x 90mm modular clay bricks of N20 strength complying with Australian Standard 1255.

F.2.2 Pedestrian Concrete Pavers
(a) Allow the PC amount of $25/m² in the works for the supply of concrete pavers, which shall be selected by the Designer. The Builder shall allow for the laying and any materials required.
(b) It shall be assumed that all paving shall be 220 x 220 x 60mm thick BLOCKPAVE compressed concrete pavers.
(c) It shall be the Builder’s responsibility to attain samples to enable appropriate set downs to be achieved.

F.2.3 Mortar Generally
(a) Use mortar-containing cement within 1 hour of initial adding of water to mix.
(b) Do not retemper mortar except within 1 hour of initial mixing.
(c) Do not use lime putty mixed off site or mortar mixed off site without approval.
(d) Use pre-mixed mortar only within the period of retardation guaranteed by the supplier.
(e) Transport and handle mortar in such a way to avoid segregation, contamination and loss of water.

F.2.4 Materials for Mortar
(a) Cement shall be of one brand within each mortar batch and shall have been tested and passed to the Australian Standard 1315 within 3 months of use. Cement shall be delivered to the site in branded and sealed bags. Store on site to prevent deterioration.
(b) Hydrated lime shall be from fresh well-burnt lime, be delivered to the site in branded sealed bags and comply with Australian Standard A4.
(c) Sand shall be clean yellow, coarse, sharp, free from excess deleterious matter and of a gauge suitable for brickwork mortar.
(d) Water shall be fit for human consumption, free from acids, vegetable matter and sugars.
(e) Do not use mortar plasticisers in this contract.
F.2.5 Mortar Mixing
(a) Volume-measure materials. Mechanical mix to even colour and consistency.
(b) Mix the mortars in the following proportions by volume, specified hereunder:
   Strong Mortar: 5 Part of sand to which has been added 1 part neat cement, 1 part Lime.
   Cement Mortar: 1 part cement, 1 part Lime, to 3 parts sand. To be used in the case of brick arches or lintels.

F.2.6 Ties
(a) Ties shall be formed from galvanised steel wire not less than 2.5mm diameter.
(b) Ties for retaining walls with cavities exceeding 60 mm shall be of increased length to ensure sufficient bond.
(c) Build in the slide masonry ties to brickwork abutting steel framing and alike.
(d) Ties shall have drips over centre of cavities.
(e) Where brickwork abuts concrete panel ties shall be fixed to concrete panels via “HILTI” explosive fixings every four courses.

F.3 WORKMANSHIP
F.3.1 Brickwork Generally
(a) Set out work plumb, level and properly bonded, with no part rising more than 1 m about adjacent unfinished brickwork.
(b) Protect freshly laid work from rain.

F.3.2 Gauge
Brickwork shall be the modular brick coursing of nominally 200mm per two courses of standard.

F.3.3 Bond
Build walls in “Third bond” unless otherwise detailed. Use “Longreach” bricks to complete coursing and bond as required.

F.3.4 Joints
(a) Lay bricks on full beds of mortar. Fill perpends solidly.
(b) Leave joints full. Cut off flush in walls not exposed to view and not to be rendered or plastered.
(c) Brickwork noted as face brickwork on the drawings shall have rolled joints.

F.3.5 Weep-holes
Form weep-holes by leaving open every fourth vertical joint above flashings and cavity fill. Leave every second perp joint open to the first course above the footing. Keep weep-holes clear of mortar.

F.3.6 Damp-Proof Courses
(a) Provide damp-proof courses, previously specified under “Materials”, in the following positions.
(b) At bottoms of internal walls.
(c) At bottoms of internal leaves of cavity walls.
(d) At bottoms of external leaves of cavity walls (2nd course).
(e) Where an internal wall is extended vertically to become an external wall.
(f) Lay damp-proof mortar course to full width of walls and to thickness of other joints, in a horizontal joint within the levels of the adjacent floor slab, turned up each side of wall and in a horizontal joint behind the skirting level to form a continuous barrier around one course of brickwork.

F.3.7 Flashings
(a) Build in flashings, previously specified under “Materials”, to ensure watertight construction at junctions of brickwork and other materials.
(b) Secure to joinery frames in long lengths. Lap unavoidable joints at least 150 mm.
(c) Provide maximum flashing width of 100 mm at jambs, heads and sills.
(d) Flash horizontally above cavity interruptions, step up 2 courses from external leaf and across cavity and build into other leaf at least 40 mm.
(e) Build in flashings as shown on drawings.

F.3.8 Steel Lintels
This section is in addition to the Structural Consultants drawings, which shall take priority.
(a) Build in mild steel lintels inorganic zinc silicate finished over all openings over openings in external and internal leaves of cavity walls, as required.
(b) Provide 230 mm bearing to lintels spanning more than 2 m and 150 mm bearing to other lintels.
(c) Size lintels in accordance with the following table, with the greater dimension of angles in the vertical legs, unless otherwise shown.

(d) | Max. Span | Lintel Size and Section to support maximum wall thickness of 120 mm |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1020 mm</td>
<td>76 mm x 8 mm flat bar</td>
</tr>
<tr>
<td>1220 mm</td>
<td>76 mm x 76 mm x 6.5 mm angle</td>
</tr>
<tr>
<td>1830 mm</td>
<td>102 mm x 76 mm x 8 mm angle</td>
</tr>
<tr>
<td>2440 mm</td>
<td>127 mm x 76 mm x 8 mm angle</td>
</tr>
<tr>
<td>2770 mm</td>
<td>152 mm x 89 mm x 8 mm angle</td>
</tr>
<tr>
<td>3050 mm</td>
<td>152 mm x 102 mm x 10 mm angle</td>
</tr>
</tbody>
</table>

(e) | Max. Span | Lintel Size and Section to support maximum wall thickness of 150 mm |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1520 mm</td>
<td>76 mm high x 127 mm x 8 mm angle</td>
</tr>
<tr>
<td>2130 mm</td>
<td>127 mm x 127 mm x 8 mm angle</td>
</tr>
<tr>
<td>3050 mm</td>
<td>152 mm x 152 mm x 10 mm angle</td>
</tr>
</tbody>
</table>

(e) Set vertical legs of angles within cavities and in single leaf walls flush with wall faces.
F.3.9 Building In
(a) Build in downpipes as detailed as the work proceeds.
(b) Set frames plumb, level and without wind.
(c) Fill with mortar backs of jambs and heads of metal frames as the work proceeds.

F.4 DETAILED INSTRUCTIONS

F.4.1 Walls
Internal:
Internal walls shall be laid to take float and set unless noted otherwise.

External:
External screen walls shall be laid to take sand render finish unless noted otherwise.

F.4.2 Pedestrian Paving
(a) Lay all paving on clean well compacted yellow sand.
(b) Screed falls into paving to achieve the levels indicated on the drawings, all falls and grades shall be even and true.
(c) The edges of all paving areas (including those abutting walls) shall be laid in a header pattern with a 1:3 cement mortar mix bed to the full width of all headers.
G. CARPENTRY

G.1 GENERALLY
G.1.1 General Conditions
G.1.2 Items Specified in Other Trade Sections
G.1.3 Sizes

G.2 MATERIALS
G.2.1 Metal Fastenings
G.2.2 Fibro-Cement Soffit Linings
G. CARPENTRY

G.1 GENERALLY

G.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

G.1.2 Items Specified in Other Trade Sections
(a) Formwork: “Concrete”.
(b) Joinery: “Joinery and Cabinet Work”.
(c) Early ordering of materials: “Preliminaries”.

G.1.3 Sizes
Cross section timber sizes specified are actual sizes required, unless otherwise stated. Timber shall be square and true to the specified sizes.

G.2 MATERIALS

G.2.1 Metal Fastenings
(a) Metal fastenings shall be cadmium plated or hot dipped galvanised mild steel, unless otherwise specified.
(b) Do not use bolts less than 9 mm diameter unless specified.

G.2.2 Fibro-Cement Soffit Linings
(a) Soffit linings to Roller Shuter Awnings shall be Hardies 6mm fibro sheeting with expressed 10mm joints fixed in accordance with Manufacturer’s recommendations.
(b) Soffit linings to external walkways and curved soffits shall be Hardies Building Products “Versilux 6mm thick” fixed in accordance with Manufacturer’s recommendations. Joints shall be expressed 10mm. Refer to Hardies standard details for fixing and finishing requirements.
H. HARDWARE AND IRONMONGERY

H.1 GENERALLY
H.1.1 General Conditions
H.1.2 Items Specified in Other Trade Sections
H.1.3 Finishes
H.1.4 Removal for Painting of Backgrounds

H.2 DOOR HARDWARE
H.2.1 Generally
H.2.2 Hinges
H.2.3 Keying
H.2.4 Door Grilles and Sundries
H. HARDWARE AND IRONMONGERY

H.1 GENERALLY

H.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

H.1.2 Items Specified in Other Trade Sections
(a) Taps and cocks: “Plumbing”.
(b) Early ordering of materials: “Preliminaries”.

H.1.3 Finishes
(a) Unless otherwise specified metal exposed to view shall be satin chrome plated.
(b) Finish to exposed fixings such as screws shall match the finish on the metal fixed.

H.1.4 Removal for Painting of Backgrounds
Before painting backgrounds to which hardware has been fixed, remove hardware and replace after completion of painting.

H.2 DOOR HARDWARE

H.2.1 Generally
All door furniture shall be selected from “Lockwood” 3000 series or equal commercial grade.

H.2.2 Hinges
Refer to section I.4.5 of Joinery & Cabinetwork of this specification.

H.2.3 Door Grilles and Sundries
Allow to install all door grilles and other hardware that may be required.
I. JOINERY & CABINETWORK

I.1 GENERALLY
   I.1.1 General Conditions
   I.1.2 Items Specified in Other Trade Sections
   I.1.3 Sizes
   I.1.4 Dimensions

I.2 MATERIALS
   I.2.1 Metal Fastenings
   I.2.2 Particle Board
   I.2.3 Other Materials in Joinery and Cabinet Work

I.3 JOINERY & CABINET WORK GENERALLY
   I.3.1 Detailed Instructions

I.4 DOORS & FRAMES
   I.4.1 Door Frames and Jamb Linings
   I.4.2 Doors Generally
   I.4.3 Door Schedule
   I.4.4 Flush Doors
   I.4.5 Door Hinges
I. JOINERY & CABINETWORK

I.1 GENERALLY

I.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

I.1.2 Items Specified in Other Trade Sections
(a) Hardware: “Hardware and Ironmongery”.
(b) Early ordering of materials: “Preliminaries”.

I.1.3 Sizes
(a) Cross section timber sizes specified are actual sizes required, unless otherwise stated. Timber shall be square and true to the specified sizes.
(b) Mouldings sizes specified are “ex-nominal” sizes.

I.1.4 Dimensions
Check on site dimensions for joinery and cabinet work.

I.2 MATERIALS

I.2.1 Metal Fastenings
(a) Metal fastenings shall be steel, unless otherwise specified.
(b) Other metal fastenings and washers exposed to weather, mortar, water paints, karri or other corrosive situations shall be non-ferrous metal or hot dip galvanised steel.
(c) Fastenings for hardware shall match the hardware finish.
(d) Screw fix door closers and members to which closers are attached.

I.2.2 Particle Board
Particle board, shall be MDF “Customwood” or equal, unless otherwise specified, shall be a smooth, flat, waterproof, termite-proof board of uniform thickness with a density, and shall comply with Australian Standard 0115.

I.2.3 Other Materials in Joinery and Cabinet Work
(a) Laminated plastic: shall be “Wilsonart” or “Formica” or equal to colours selected by the Designer.
(b) Adhesives: Use the adhesives recommended by the manufacture, in accordance with the producers specifications.

I.3 JOINERY & CABINET WORK GENERALLY

I.3.1 Detailed Instructions
(a) Manufacture joinery and cabinet work in an approved shop. Accurately and neatly frame up members, mitred at shoulders, mortised and tenoned, tightly wedged and properly glued, with all necessary fixings. Assemble all work in a first class manner.
(b) Brace frames before delivery to site. Remove after building in.
(c) Finish timbers whether visible or not to smooth and even surfaces without mill marks.
(d) Carefully select timber to be clear finished to ensure uniformity of colour, grain and texture.

I.4 DOORS & FRAMES

I.4.1 Door Frames and Jamb Linings
Metal frames and shop fronts are previously specified in “Metalwork”.

I.4.2 Doors Generally
For types, sizes and locations of doors see the Door Schedule to follow.

I.4.3 Door Schedule
Refer to schedule at the end of the specification.

I.4.4 Flush Doors
All internal doors shall be pre-primed flush panel hardboard doors, doors nominated as solid core shall be solid particle board or plaster fill core, as available from “M & B Sales” or equal. Doors shall be 35 mm thick unless noted otherwise in the Schedule.

I.4.5 Door Hinges
(a) Shall be as supplied on metal door frames.
(b) Use galvanised hinges externally.
(c) Use fixed pin hinges for external doors and loose pin hinges internally.
J. ROOFING, ROOF INSULATION & ROOF PLUMBING

J.1 GENERALLY
   J.1.1 Items Specified in Other Trade Section

J.2 WORKMANSHIP GENERALLY
   J.2.1 Mastic
   J.2.2 Protection of Contact Surfaces
   J.2.3 Penetrations in Roofing
   J.2.4 Roof Flashings
   J.2.5 Debris

J.3 ROOF INSULATION
   J.3.1 Materials
   J.3.2 Insulation Locations

J.4 METAL ROOFING AND WALL CLADDING
   J.4.1 Ribbed Metal Sheeting

J.5 TRANSLUCENT ROOF SHEETING

J.6 ROOF GUTTERS
   J.6.1 Expansion Joints in Gutters
   J.6.2 Colorbond Box & Eave Gutters

J.7 DOWNPIPES
J. ROOFING, ROOF INSULATION & ROOF PLUMBING

J.1 GENERALLY

J.1.1 Items Specified in Other Trade Section
(a) Early ordering of materials: “Preliminaries”.
(b) Guarantees generally: “Preliminaries”.

J.2 WORKMANSHIP GENERALLY
(a) Make up gutters, downpipes and flashings in the longest practicable lengths. Make joints in the direction of flow of water.
(b) Wherever possible shop-fabricate and machine form shaped materials.
(c) Allow for all joints and joining materials, collars, straps and fastenings necessary to complete the work.
(d) Fix gutters and flashings so as to permit thermal movement to occur in their full lengths including ends with due allowance for timber shrinkage and deflection of structural members.

J.2.1 Mastic
Mastic shall be approved silicon rubber type. Use only strictly as recommended by the manufacturer, taking all necessary cleaning precautions to ensure proper bond.

J.2.2 Protection of Contact Surfaces
Prevent electrolytic corrosive action. Use fixings compatible with the materials fixed. Unless otherwise shown or specified, flash with the same material as the item being flashed. Avoid puncturing or destruction of surface finishes. Avoid forming condensation traps between metal surfaces.

J.2.3 Penetrations in Roofing
In “Colorbond” and zincalume steel sheeting use “Deck-tite” collars, fitted to the manufacturers specifications.

J.2.4 Roof Flashings
(a) Provide and fix all flashings shown on the drawings, specified and necessary to render the roofs and roof plumbing watertight.
(b) Cut for and caulk flashings into brickwork or concrete using the recommended mastic, coloured as necessary.

J.2.5 Debris
On completion clean down roof surfaces and remove debris from roof and gutters.

J.3 ROOF INSULATION

J.3.1 Materials
Installation shall comply with Australian Standard CA42 unless otherwise specified
(a) Roof.
Provide approved anti-condensation insulated sarking equal to 50mm “Anticon” faced on the outside with fire resistant reinforced double sided aluminum foil having a flammability index not greater than 10 and projected to form laps. Lay the insulation with the fibre up into the sheet ribs.
J.3.2 Insulation Locations
(a) 50mm Anticon on heavy duty galvanised safety mesh to the entire Office and Warehouse areas.

J.4 METAL ROOFING AND WALL CLADDING
J.4.1 Ribbed Metal Sheeting
(a) Office and Warehouse shall be a minimum of Trimdek Hi Ten 0.48mm zincalume or as noted on the drawings.
(b) Wall Cladding shall be “Lysaght” Custom Orb 0.48bmt in “Colorbond” finish the decking shall conform to AS1397 and G550.
(c) Fix sheets in single lengths for each roof plane, with high ends of sheets turned upwards and low end down.
(d) Fix the sheeting in accordance with manufacturers’ directions, using special tools recommended by them.
(e) Fix all necessary stop ends, capping, flashings and other accessories.
(f) Fix roof penetrations, such as vents, to correspond with rib sizes and positions wherever possible. Provide necessary extra support at ends of cut sheets.
(g) Permit thermal movement to occur.

J.5 TRANSLUCENT ROOF SHEETING
Provide “Laser Light” commercial grade translucent sheeting to locations shown on the drawings, with heavy duty safety mesh as required.

J.6 ROOF GUTTERS
J.6.1 Expansion Joints in Gutters
(a) Form expansion joints where indicated or otherwise to coincide with control joints or at 9 metres maximum centres.
(b) Form joints eaves gutters by allowing a 12 mm space between stop ends. Provide and turn down saddle flashings. Run gutter faces through continuously and lap or strap.
(c) Provide saddle flashings fixed on one side only.

J.6.2 Colorbond Box & Eave Gutters
(a) Provide 50 mm x 1 mm galvanised steel straps at 1200mm centres, secured to structure with 4mm “tech” screws.
(b) Fabricate gutters, sumps, stop ends and overflows from colorbond 0.6mm gauge.
(c) Gutters shall be size as detailed.

J.7 DOWNPIPES
(a) Provide and install all downpipes and rainwater heads where shown on the drawings. Any externally visible downpipes shall be “Colorbond” to match walls.
(b) Fix downpipes with purpose made straps at not more than 2000 mm centres.
K. DRAINAGE AND PLUMBING

K.1 GENERALLY
K.1.1 General Conditions
K.1.2 Items Specified in Other Trade Sections
K.1.3 Compliance and Testing

K.2 MATERIALS
K.2.1 Pipes
K.2.2 Mortar
K.2.3 Concrete

K.3 WORKMANSHIP: DRAINAGE
K.3.1 Laying Pipes
K.3.2 Jointing
K.3.3 Cover to Pipes
K.3.4 Backfilling
K.3.5 Inspection Openings
K.3.6 Disconnector Traps

K.4 SOIL DRAINS AND WASTE DRAINS
K.4.1 Generally
K.4.2 Connection To Ministers Sewer

K.5 SOIL PIPES, WASTES, TRAPS, VENTS
K.5.1 Soil Pipes
K.5.2 Wastes
K.5.3 Vent Pipes

K.6 COLD WATER SERVICE

K.7 WORKMANSHIP: PLUMBING
K.7.1 Dissimilar Materials
K.7.2 Piping Generally
K.7.3 Jointing of Copper Pipes and Fittings
K.7.4 Jointing of PVC Pipes
K.7.5 Fixing and Supporting Metal Pipes
K.7.6 Concealment
K.7.7 Exposed Metal Pipes
K.7.8 Access

K.8 PLUMBING FIXTURES
K.8.1 Materials

K.9 STORMWATER DRAINS
K.9.1 Generally
K.9.2 Downpipe Connections to Drains
K.9.3 Stormwater Sumps & Soakwells

K.10 HOT WATER SERVICE
K.10.1 Water Heaters
K.10.2 Pipes
K.10.3 Supply Points

K.11 COCKS & VALVES

K.12 FIRE SERVICE
K.12.1 Generally
K.12.2 Fire Service Connections
K.12.3 Fire Hose Reels
K. DRAINAGE AND PLUMBING

K.1 GENERALLY

K.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

K.1.2 Items Specified in Other Trade Sections
(a) Downpipes: “Roofing and Roof Plumbing”.
(b) Excavation for services: “Earthworks”.
(c) Electrical connections to water heater: “Electrical Services”.
(d) Early ordering of materials: “Preliminaries”.

K.1.3 Compliance and Testing
(a) All hydraulic work is to comply with AS/NZS 3500.
(b) All pipework is to be labelled in accordance with AS1345
(c) Test pipework before it is concealed and in sections at regular intervals during progress of the work
(d) All Plumbing work shall be tested and approved by all the appropriate authorities, including the Water Corporation.
(e) Provide backflow protection to AS3500.1

K.2 MATERIALS

K.2.1 Pipes
(a) Copper pipes: solid drawn tubes with pre-formed bends and conforming to Australian Standard 1432.
(b) PVC pipes: rigid PVC with fittings of the same manufacture and capable of withstanding the required pressure and suitable for solvent welding, ensure that the required grade of pipes are applied in the appropriate uses.
(c) All pipework is to be labelled in accordance with AS1345

K.2.2 Mortar
Mortar materials shall be as specified in Brickwork and hand mixed on a clean board, or machine mixed, and used within 1 hour of mixing.

K.2.3 Concrete
Concrete shall be used within 30 minutes of machine mixing in the following proportions: 1 part cement, 2 parts sand, 4 parts 9 mm aggregate.

K.3 WORKMANSHIP: DRAINAGE

K.3.1 Laying Pipes
Lay pipes to true and even grades. Bed pipe barrels firmly on trench bases. Swab out each pipe and check the invert before laying the next pipe. Lay sockets facing upstream.
K.3.2 **Jointing**
All PVC pipes shall be joined in a manner approved by the Water Corporation.

K.3.3 **Cover to Pipes**
Provide 1 m minimum cover above top of sockets in situations subject to vehicular traffic and in thoroughfares. Elsewhere provide not less than 310 mm of cover above top of sockets, or as required by the Water Corporation.

K.3.4 **Backfilling**
Do not backfill pipe trenches until pipes have been inspected, where necessary, passed by the Water Corporation. Pack at least 300 mm of soil free from rubble around pipes. Consolidate backfilling.

K.3.5 **Inspection Openings**
Set covers of inspection openings, cleaning eyes and rod ends in 1:5 cement mortar.

K.3.6 **Disconnector Traps**
Form disconnector traps ‘P’ traps set on a concrete pad 225 mm x 225 mm x 100 mm deep. Take extension pipes up to ground level finish with concrete surrounds 225 mm x 225 mm finishing 75 mm above ground and 300 mm below ground. Cement render visible concrete to a smooth sand finish. To top of extension fit a PVC grating.

K.4 **SOIL DRAINS AND WASTE DRAINS**

K.4.1 **Generally**
Lay PVC drains as required. Provide all necessary rod ends, cleaning eyes, bends, junctions, disconnector traps and vents.

K.4.2 **Connection To Ministers Sewer**
All wast lines shall be connected to the Ministers Sewer in strict accordance with the Water Corporation requirements.

The Contractor shall make all applications and pay all fees (including headworks fees) to enable the completion of the works.

K.5 **SOIL PIPES, WASTES, TRAPS, VENTS**

K.5.1 **Soil Pipes**
(a) Provide PVC soil pipes with bends, junctions and inspection openings. Fix covers to cleaning and inspection openings with screws or bolts.

K.5.2 **Wastes**
(a) Provide PVC wastes to fixtures except urinal.

(b) Provide an approved diameter urinal wastes with removable, domed, grated c.p. outlets.

(c) Floor wastes, provide PVC pipes with non-return flap. Set gratings flush with floor finishes.

(d) Unless otherwise specified provide PVC traps to sanitary fixtures, except the urinal which shall be bronze.
K.5.3 Vent Pipes
(a) Provide PVC vents where required, to minimum height required by by-laws.
(b) Where possible, combine vents before passing through roof.
(c) Fit PVC insect-proof cowls at vent tops.

K.6 COLD WATER SERVICE
Contractor to apply for and pay all fees to have a 20mm/30 litre/minute water service to the site from the Water Corporation main service.
- From the boundary service provide a 20 mm diameter copper supply line (or equivalent water pressure/volume in high pressure pvc) to the nearest practical location. Install a water submeter to each unit.
- Cold water supply shall be in copper pipes, conforming to all relevant Australian Standards and the requirements of the Water Corporation.

K.7 WORKMANSHIP: PLUMBING

K.7.1 Dissimilar Materials
Separate pipes form electrolytically dissimilar materials, in cases where they would otherwise be in contact, with at least four thicknesses of black polyethylene tape nearly and tightly wrapped round the pipes.

K.7.2 Piping Generally
Do not cut holes without approval in finished work. Provide sleeves to avoid such cutting. During progress of work temporarily close ends to prevent entry of foreign matter into pipes. Keep hot and cold pipes apart. Fabricate pipes in the longest lengths practicable, without short off-cuts. All pipework is to be labelled in accordance with AS1345.

K.7.3 Jointing of Copper Pipes and Fittings
(a) Fit valves by screwing to a tube bush brazed to pipe on the inlet side and connect to a flare-type union on the outlet side. Do not braze stop valves to pipes. Provide brass unions on outlet sides of control valves.
(b) Form all bend, joins etc. on sit do not use pre-made fittings unless approved.
(c) Do not use ‘Conetite’ fittings.
(d) Do brazing with a silver alloy containing not less than 15% and 6% phosphorous, using the same brand of alloy throughout.
(e) Do not use bronze welding.
(f) Thoroughly clean all materials at joints.
(g) Use non-corrosive flux and remove residual flux from completed joints.

K.7.4 Jointing of PVC Pipes
Join PVC pipes to PVC pipes and fittings by solvent welding so that lifting and gaps do not occur.

K.7.5 Fixing and Supporting Metal Pipes
(a) Fix pipes clear of structure with clips either screwed to plugs or bolted to securely fixed tails or hangers. Provide easy access to each section of pipe.
(b) Fix pipes at 2 m maximum centres.
(c) Do not braze pipes to each other.
(d) Where pipes terminate in walls, e.g., at traps or taps, braze suitable anchors to the pipes and secure anchors to the walls.
(e) Do not use corrosive clips and fastenings.

K.7.6 Concealment
Conceal pipework from view, unless otherwise approved, directed or shown.

K.7.7 Exposed Metal Pipes
Use chromium plated pipes in internal work wherever exposed to view. Use chromium plated flanges where such pipes enter walls and chromium plated accessories and fittings to pipes exposed.

K.7.8 Access
Provide approved inspection openings and covers wherever shown or required, is sizes and positions to give full access to rodding points, cleaning eyes and similar parts necessitating access.

K.8 PLUMBING FIXTURES
K.8.1 Materials
Provide and fix the following fixtures where shown, with all necessary brackets, bolts, screws and overflows:
(a) Where colour choice is available, colour shall be white unless otherwise specified.
(b) Metal work shall be SCP finish unless otherwise specified and unless of stainless steel.
(c) WC suite shall be “Caroma” Uniset close coupled with a duo flush cistern, and heavy duty seat and flap.
(d) Vanity basins shall be “Caroma” Cameo recessed.
(e) Unisex/Disabled Persons toilet shall be installed in accordance with manufacturers & AS 1428 requirements.
(f) The Builder shall allow for the installation of stainless steel wall mounted grab rail in accordance with Australian Standard 1428, rail should be approximately 1.4m long overall constructed of 30 OD diameter light wall stainless steel, refer to drawings.

K.9 STORMWATER DRAINS
K.9.1 Generally
(a) REFER TO HYDRAULIC ENGINEERS DRAWINGS FOR STORMWATER.
(b) All stormwater connection points and piping shall be in accordance with the Drawings
(c) Provide all piping to sizes shown and connecting into soakwells or silt pits as indicated.
(d) Evenly fall all pipes to the set levels.
(e) Connect to Local Authority stormwater system in strict accordance with Hydraulic Engineers drawings and Local Authority requirements, including all fees etc required to complete the connection.

K.9.2 Downpipe Connections to Drains
(a) For downpipes, see “Roofing and Roof Plumbing”.
(b) Down pipes shall discharge on to “Galvin Concrete” or equal pre-cast concrete stormwater downpipe sump boxes which shall in turn connect to the stormwater system. The sump boxes shall be mounted at the appropriate ground level adjoining each downpipe.

K.9.3 Stormwater Sumps & Soakwells
(a) Refer to Hydraulic Engineers drawings for locations, tanks shall be Galvin Concrete or equal with heavy duty trafficable lids.
(b) Where nominated each well shall be provided with a cast iron heavy duty safety grate, raised to suit bitumen paving.
(c) All lids shall be heavy duty trafficable grade to suit heavy trucking application.

K.10 HOT WATER SERVICE
K.10.1 Water Heaters
Provide one 60 litre “Rheem” Electric storage hot water system to each unit. Refer to drawings for location.

K.10.2 Pipes
All pipes shall be a minimum of 12 mm diameter copper, to Water Corporation requirements. All hot water pipes shall be insulated.

K.10.3 Supply Points
Provide hot water outlets to the following:
(a) Male and Female Vanity Basins.
(b) Disabled WC and Hand Basin.
(c) Disabled Shower.

K.11 COCKS & VALVES
(a) Provide the following cocks and valves in c.p. finish and 12 mm diameter unless otherwise specified.
(b) To cisterns: c.p. mini- stops and c.p. connector pipe.
(c) External hose cocks: shall be c.p. hose cocks mounted 700 mm above the finished ground level.
(d) Provide inline temperature control valve to deliver hot water to outlets at no hotter than 45°C.

K.12 FIRE SERVICE
K.12.1 Generally
The hose reels shall be installed by the Builder.
Specification – medium-rise commercial

The installation shall be in complete compliance with the Building Code of Australia and Australia Standard 2118.

All equipment shall be approved by Water Corporation and Fire and Emergency Services Authority.

K.12.2 Fire Service Connections
Builder to provide necessary fire services supply system to comply all to Water Corporation and Fire and Emergency Services Authority requirements.

K.12.3 Fire Hose Reels
To the location shown on the drawings install “Galvins” type F1 swing arm fire hose reel and connect in accordance with Water Corporation and Fire and Emergency Services Authority requirements.

All hoses shall be a minimum of 36m long.
Document 22

L. ELECTRICAL SERVICES

L.1 GENERALLY
L.1.1 General Conditions
L.1.2 Building Work Documents
L.1.3 Sub-contractor
L.1.4 Supply Authority Requirements
L.1.5 Schedule of Light & Power Outlets
L.1.6 Main Supply
L.1.7 Distribution Board
L.1.8 Installation Generally

L.2 DETAILED INSTRUCTIONS
L.2.1 Mains & Sub-Mains
L.2.2 Circuits Generally
L.2.3 Power Circuits
L.2.4 Lighting Circuits
L.2.5 General Purpose Outlets and Light Switches
L.2.6 Light Fittings
L.2.7 Security Lighting
L.2.8 Warehouse High Bay Lighting
L.2.9 Main Distribution Frame
L. ELECTRICAL SERVICES

L.1 GENERALLY

L.1.1 General Conditions
Refer to the "Preliminaries" section, which forms an integral part of this section.

L.1.2 Building Work Documents
The electrical sub-contractor shall be conversant with details of building work described in the architectural drawings and the specification.

L.1.3 Sub-contractor
The electrical sub-contractor shall be a fully qualified electrician having knowledge of the requirements of the Supply Authority, and the Standards Association of Australia, in particular AS 3000 and AS 3008.1.

L.1.4 Supply Authority Requirements
Give the supply Authority notice of intention to start work. Make arrangements for connecting, supply and alterations or rearrangement to supply or equipment found necessary during course of subcontract. Issue provisional certificates for completed sections as required.
Inform the supply Authority when the work has been completed and obtain a Completion Certificate after all relevant Authorities have approved the sub-contract work.

L.1.5 Schedule of Light & Power Outlets
Refer to the drawings for all lighting and power circuitry layouts.

L.1.6 Main Supply
(a) Allow to connect from the closest available point underground power service to the main meter board, location shown on the drawing.
(b) All underground mains shall be a minimum of 600mm below ground and encased in a protective PVC sheath.
(c) The contractor shall ensure the minimum of 185 Amps per phase available at the main distribution board.

L.1.7 Distribution Board
The main distribution board shall be of sufficient size to take the required circuit breakers and a meter unit with 15 modules available space for mechanical services and future use.

L.1.8 Installation Generally
(a) Conduits shall be a minimum of 19mm size unless otherwise specified.
(b) Flexible conduit shall be of approved PVC.
(c) All wiring and conduits shall be concealed from sight, wherever possible. Run external wiring underground.
(d) Earth all fittings and all metalwork as required by the Supply Authority
(e) All power outlet wiring to be minimum CSA 2.5sq mm.
(f) All lighting circuit wiring to be minimum CSA 1.5sq mm.

(g) All cabling where exposed on walls within the warehouse area shall be installed-in conduit. Where the risk of mechanical damage exists - the cabling shall be protected by steel conduits or other suitable mechanical means as approved by the Builder.

(h) Where PVC/PVC cabling is installed and is exposed to possible mechanical damage or wear, the cable is to be protected by discontinuous PVC bushed galvanised steel conduits and suitably affixed with steel staples.

L.2 DETAILED INSTRUCTIONS

L.2.1 Mains & Sub-Mains
Main supply cable shall be suitable to take total load with sufficient size for 30% future increase in amperage requirements to the Main Distribution Board.

L.2.2 Circuits Generally
(a) All light and power circuits shall be numbered both at the main distribution board and on each outlet cover plate.

(b) Sub contractor shall provide an as constructed drawing, which shall be clearly displayed in the main distribution board.

L.2.3 Power Circuits
(c) Wire to general purpose outlets allowing a maximum of five per final sub-circuit. All general purpose power outlet circuits are to be protected by earth leakage circuit breakers.

(d) Provide 15amp power outlets to locations shown on the drawings.

(e) Provide separate circuits for Hot Water Services.

(f) Provide 3 phase power supply.

L.2.4 Lighting Circuits
(a) Balance the loading in all sections of the installation.

(b) All suspended type light fittings, including flush recess types mounted in suspended ceilings shall be fitted with 2000mm minimum 3C+ E 1.5 sq mm flexible lead and flat 3 pin type plugs.

(c) The light fittings are to be connected via Clipsal type 426 or similar plug sockets as detailed per the drawings.

L.2.5 General Purpose Outlets and Light Switches
(a) Provide approved 10amp flush-mounted outlets in locations and at levels shown on the drawings.

(b) Provide 10amp light switches of "Clipsal" or similar approved type at 1200 mm above floor unless otherwise scheduled.

(c) Outlet and switch plates shall be white.

L.2.6 Light Fittings
Provide and install all light fittings as shown on the drawings.
L.2.7 Security Lighting
   Automatic Switching:
   Supply and install a "National" type photo electric daylight sensitive switch unit in series
   with a "Digi 16" with relay for circuit. Locate timer in MDB.

L.2.8 Warehouse High Bay Lighting
   Supply and install high bay lighting as shown on the drawings.
   Install high bay lights as per manufacturers' recommendations.

L.2.9 Main Distribution Frame
   Provide and install a Krone 50 pair MDF in location shown on drawings. Contractor shall
   provide a 50mm PVC conduit to MDF from boundary as shown on drawings.
M. MECHANICAL SERVICES

M.1 Air Conditioning
Allow the Provisional Sum of $43,000 for the supply and installation of air conditioning, including Builders works.

M.2 Toilet Exhaust Fans
Supply and install an approved dual fan system to each toilet block, vented through to natural air.
NOTES

(a) DRAWING REGISTER

Building Designers
Job No .........., Sheets A1 – A12

Consulting Structural Engineers
Job No .........., Sheets S01 – S08

Hydraulics Engineer
Job No .........., sheets HS-01

Energy Efficiency Report
Sheets 1-14

(b) THE PROPRIETOR
The Proprietor is ....................  All enquiries should be directed to the office of
.............................................

(c) THE WORKS
The construction of Offices / Warehouses as per plans and specification at Lot
.............................................

(d) SCHEDULE OF PROVISIONAL SUMS, PRIME COST ITEMS & CONTINGENCY SUM
The following provisional sums are included in these documents:

Pedestrian Brick Paving
Clause F.2.2  PC Allowance $30/m²

Door Handles
Clause I.4.3  Refer to Door Schedule

Tiles Supply for Wall & Floor
Clause O.3.1  PC Allowance $40/m²

Mechanical Services (Nominated Sub Contractor)
Clause M  PS Allowance $10,000 + GST
N. PLASTERING & SUSPENDED CEILINGS

N.1 GENERALLY
N.1.1 General Conditions
N.1.2 Responsibility for Backgrounds
N.1.3 General Items

N.2 RENDERING & PLASTERING
N.2.1 Preparation of Surfaces Generally
N.2.2 Mixing
N.2.3 Application
N.2.4 Render for Internal Ceramic Tiling
N.2.5 Plaster

N.3 SUSPENDED CEILINGS GENERALLY
N.3.1 General Items
N.3.2 Ceiling Suspension
N.3.3 Suspended Ceilings

N.4 SUSPENDED FLUSH CEILINGS
N.4.1 General Items
N. PLASTERING & SUSPENDED CEILINGS

N.1 GENERALLY

N.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

N.1.2 Responsibility for Backgrounds
Ensure that backgrounds are suitable to receive subsequent finishes. Commencement of work on backgrounds implies acceptance by the Builder of the backgrounds on which finishes are applied and the edges up to which they finish.

N.1.3 General Items
(a) Materials in sheets or tiles shall be supplied by approved manufacturers, be true to thickness and be free from cracks, warps and other defects.
(b) Set surfaces evenly, plumb or level within a tolerance in any direction of (+) or (-) 2 mm in 3000 mm and (+) or (-) 4 mm in the total length of any line.
(c) Ensure air tightness of plenum areas.
(d) Remove fine dust from finished surfaces.

N.2 RENDERING & PLASTERING

N.2.1 Preparation of Surfaces Generally
(a) Make available adequate lighting for all applications of materials. Prepare surfaces to give adequate bond.
(b) Ensure sufficient “key” to brickwork.
(c) Prepare existing external rough face blockwork ie. removing all projections as required for flush finish.
(d) Saturate with water surfaces of bases and backgrounds.
(e) Supply and fix galvanised corner beading with 5 mm radius to external angles in internal plastering and rendering.
(f) Properly chase for and fix all conduits, boxes, switches services, etc., before commencing plastering or rendering. Where necessary to provide adequate key, provide suitable expanded metal mesh over pipes and fix with galvanized fasteners.
(g) Over joints between different materials, e.g., compressed sheet and brickwork, provide and fix expanded metal mesh lapping each material at least 200 mm.

N.2.2 Mixing
(a) Unless otherwise approved, mix materials in a mechanical mixer until uniform colour and consistence are obtained using minimum water. Do not re-mix mixes showing signs of initial set. Keep measuring containers free from hardened materials.
(b) Do not use plasticizing additives without approval.

N.2.3 Application
(a) Apply mixes containing cement or hardwall plaster within one hour of adding these materials to the mix.

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(b) Apply top coats on each plane in one operation without joints or breaks.
(c) Render or plaster behind the full extent of unlined fittings.
(d) Where plastering abuts metal frames, form a neat, straight “vee” joint.

N.2.4 Render for Internal Ceramic Tiling
Apply a 9 mm minimum thickness float coat of either 1 part cement and 4 parts sand or 1 part masonry cement and 3 parts sand on walls to receive ceramic tiles.

N.2.5 Plaster
(a) External Render:
(b) External Render:
   Sand finish render to be applied to all paint finished external brick walls.
   Apply 10mm minimum thickness render composed of:
   1 part cement, 0.25 part lime and 4 parts and
   1 part masonry cement and 3.25 parts sand
   Finish with a wood float to an evenly textured fine sand face.
   Apply sand finish render and lightly sponge before setting takes place.

(c) Internal:
   All walls except wet areas shall be float and set.
   Wet areas other than tiled areas shall float and set, tiled areas shall be left free from set to take tiling.

N.3 SUSPENDED CEILINGS GENERALLY

N.3.1 General Items
(a) Include for the complete installation of ceiling suspensions and their applied finishes as shown on the drawings and specified herein by reputable and experienced suppliers and installers.
(b) Thicknesses of materials and spacing of members shall be as specified by the manufacturers, according to the required loads. Provide braces, struts and stiffeners to provide rigidity of the framework. Extend framing and fix to walls as required. Inspect and pack or straighten uneven framing before attaching finishes.
(c) Trim for openings, grilles and light fittings as required.

N.3.2 Ceiling Suspension
(a) For pre-finished boards, provide and fix a “Rondo-lock” exposed suspension system as recommended by CSR Bulletin 37, or a similar approved system, to ceiling areas shown on the drawings.
(b) Suspension members shall be white powder coat finish or similar.

N.3.3 Suspended Ceilings
Generally:
Ceiling panels to the suspended ceiling areas shall be 12mm thick Armstrong RH99 or similar approved in pre finished off white.
N.4 SUSPENDED FLUSH CEILINGS

N.4.1 General Items

Refer to drawings for the area of suspended flush Gyprock ceiling and bulkheads.
Supply and fabricate all materials required to create the details shown. Installation shall be carried out by experienced contractors and in accordance with the manufacturers recommendations.
O. WALL & FLOOR TILING

O.1 GENERALLY
O.1.1 General Conditions
O.1.2 Selection of Finishes

O.2 WORKMANSHIP
O.2.1 Generally
O.2.2 Preparation of Surfaces Generally
O.2.3 Finishes at Edges of Wall Tiles
O.2.4 Finish at Edges of Floor Tiles
O.2.5 Setting Out Generally
O.2.6 Cleaning
O.2.7 Falls in Floors

O.3 TILES & FIXING
O.3.1 Tiles
O.3.2 Fixing of Wall and Floor Tiles
O. WALL & FLOOR TILING

O.1 GENERALLY

O.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

O.1.2 Selection of Finishes
Give notice to the Proprietor so that he may select the brand, colour and texture of finishes for which this selection is not specified.

O.2 WORKMANSHIP

O.2.1 Generally
(a) Finishes shall be applied by experienced tradesmen and except where otherwise specified, in accordance with recommendations of the manufacturers.

(b) Deliver materials to the site in unbroken containers marked with the manufacturers’ identification and batch numbers.

(c) Cut materials neatly with due regard to the nature of the materials.

O.2.2 Preparation of Surfaces Generally
(a) Prepare background surfaces in accordance with the directions of the manufacturers of the finishing materials, unless otherwise specified.

O.2.3 Finishes at Edges of Wall Tiles
(a) Finish exposed edges neatly and true to line with positive adherence without pockets between finishes and backgrounds.

O.2.4 Finish at Edges of Floor Tiles
Unless noted otherwise stop tiles centrally under doors, finish edge with a brass angle set into the tiling.

O.2.5 Setting Out Generally
(a) Set out tiles to minimise cutting. Locate cuts in the least conspicuous positions.

(b) Accurately cut floor tiles around floor wastes and other obstructions.

O.2.6 Cleaning
Immediately after laying and again immediately prior to Practical Completion, sweep the tiles clean and apply an approved cleaner in such a way that their colour, performance and adhesion are not impaired.

O.2.7 Falls in Floors
(a) Seal floor wastes before commencing work.

(b) In floors having falls, finish floors level at walls.

(c) Finish the floor surface to fall uniformly in each direction towards outlets.
O.3 TILES & FIXING

O.3.1 Tiles
(a) The Builder shall allow the PC amount of $40/m² for the supply of wall and floor tiles.

(b) In addition to the PC amount the Builder shall allow in his contract sum all labour, glues, fixatives, grouts, strips, angles etc required to complete the works.

(c) The extent of the tiling is as set out on the drawings, allow for the laying of 200mm x 200mm tiles.

O.3.2 Fixing of Wall and Floor Tiles
Use reputable brand adhesives, such as “Ceramacrete”, mixed and applied to the manufacturers recommendations.
P. GLAZING

P.1 GENERALLY
P.1.1 General Conditions
P.1.2 Items Specified in Other Trade Sections
P.1.3 General Items

P.2 DETAILED INSTRUCTIONS
P.2.1 Shop Front Glazing
P.2.2 General Window Glazing
P.2.3 Glazing to Aluminium
P.2.4 Glass Mirrors
P. GLAZING

P.1 GENERALLY

P.1.1 General Conditions
Refer to the “Preliminaries” section, which forms an integral part of this section.

P.1.2 General Items
(a) Provide glass of first quality, clean, dry, free from defects and cut square to sizes allowing proper tolerance between glass edges and frames.
(b) Glazing carried out in accordance with requirements of Australian Standards unless otherwise specified.

P.2 DETAILED INSTRUCTIONS

P.2.1 Shop Front Glazing
All glazing to the shop front facade shall be GREY LAMINATE to thicknesses recommended in the Australian Standards, taking into due consideration the expected wind loads etc.

P.2.2 Glazing to Aluminium
(a) The shop drawings shall describe glazing methods and materials for approval. See “Metalwork”.
(b) Fix beads and provide glazing rebates with UV resistant, non-hardening, non-shrinking material made for glazing to aluminum.
(c) Dry-glazed-unit glazing rebates shall have drainage outlets externally.
(d) Support glass by neoprene blocks and by spacers or approved self-shimming continuous sealing strips mitred and vulcanised at corners, as and unless otherwise required by Australian Standard. Do not use PVC externally.

P.2.3 Glass Mirrors
Provide mirrors in sizes and locations as shown on drawings.
Fix each mirror with four heavy brass c.p. clips, “Alder” or similar approved. Insert fibre washers between mirror backs and mountings.
Q. PAINTING

Q.1 GENERALLY
Q.1.1 General Conditions
Q.1.2 Items Specified in Other Trade Sections
Q.1.3 Colour Schedule
Q.1.4 Responsibility for Backgrounds
Q.1.5 Materials Generally
Q.1.6 Preparatory Products
Q.1.7 Australian Standards

Q.2 WORKMANSHIP GENERALLY
Q.2.1 Protection
Q.2.2 Making Good and Touching Up
Q.2.3 Application

Q.3 PREPARATION OF SURFACES TO BE COATED
Q.3.1 Cement Surfaces and Plaster
Q.3.2 Metal Surfaces

Q.4 INTERNAL & EXTERNAL FINISHES
Q.4.1 Generally
Q.4.2 External Painting
Q.4.3 Internal Painting
Q. **PAINTING**

Q.1 **GENERALLY**

Q.1.1 *General Conditions*
Refer to “Preliminaries” section, which forms an integral part of this section.

Q.1.2 *Responsibility for Backgrounds*
Ensure that backgrounds are suitable to receive finishes. Commencement of work on backgrounds implies acceptance by the Builder of the backgrounds on which finishes are applied and the edges up to which they finish.

Q.1.3 *Materials Generally*
(a) All coats on each surface shall be of the same manufacture.
(b) Deliver materials to the site in the manufacturers’ labelled and unopened containers. Prevent deterioration of contents between time of opening containers and time of use.

Q.1.4 *Australian Standards*
Unless otherwise specified, materials and workmanship shall conform with Australian Standards.

Q.2 **WORKMANSHIP GENERALLY**

Q.2.1 *Protection*
(a) Protect surfaces not to be coated by means of masking tape, dust sheets, etc. Protect wet surfaces by use of screens, signs or other appropriate means.
(b) Remove and replace locks, bolts and other hardware.

Q.2.2 *Making Good and Touching Up*
(a) Make good, touch up or replace coatings damaged before Practical Completion.
(b) Make good, touch up or replace priming and sealing coats where necessary, with materials recommended by the manufacturer of the coating concerned.
(c) Re-coat the entire planes in which occur defects resulting from materials or workmanship not in accordance with the requirements of this Contract.

Q.2.3 *Application*
(a) Apply products at container consistency unless otherwise recommended by the manufacturer. Apply gloss or semi-gloss finish coats by brush unless otherwise specified, wall and ceilings shall be applied by roller, spay painting will not be accepted.
(b) Hand sand intermediate coats with wet and dry paper or as recommended by the coating manufacturers.
(c) Provide adequate ventilation and dust-free atmosphere.
(d) Apply coats to thoroughly dry surfaces unless otherwise recommended by the coating manufacturers. Do not apply external coats in conditions likely to affect the finish adversely. Observe drying times recommended by the coating manufacturers.
Q.3 PREPARATION OF SURFACES TO BE COATED

Q.3.1 Cement Surfaces and Plaster  
(a) Remove loose material, projections and extraneous matter. Rub down with blocks or paper. Fill holes, cracks and indentations with appropriate filler. Sand down to a surface uniform with the remainder. Remove any efflorescence. Rub down patches of excess gloss and dust off to produce a uniform surface.  
(b) Do not paint masonry with a moisture content of more than 5%.

Q.3.2 Metal Surfaces  
(a) Remove scale, rust, oil, grease and dust.  
(b) Clean down ferrous surfaces including zinc-coated steel with mineral turpentine immediately before priming. Allow to dry.

Q.4 INTERNAL & EXTERNAL FINISHES

Q.4.1 Generally  
All paints shall be “Dulux” and Taubmans or similar.

Q.4.2 External Painting

Q.4.2.1 Rendered Masonary / Concrete Panels.
Coating System:  
First Coat - Low Sheen Acrylic.  
Second Coat - Low Sheen Acrylic.

Q.4.2.2 Steelwork  
(a) Mild steel / Wrought Iron / Aluminium
Coating System:  
One coat Dulux All Metal Primer.  
Two coats Dulux Super Enamel High Gloss.

Q.4.2.3 Cement Sheeting for Soffit/Eaves Linings, Fascias
Preparation:  
Ensure surfaces are clean, dry and free from loose material. Deep holes and imperfections in masonry should be first filled with mortar or an acrylic based filler as directed. Fine holes should be undercut to aid adhesion. Priming is unnecessary before use. Pack firmly with filling knife. Dampen knife for a smoother finish. Deep cavities should be filled 1 cm at a time and allowed to dry between layers. Sand smooth and paint as required when dry.  
Coating System:  
Two coats Dulux Weathershield Low Sheen Acrylic.

Q.4.2.4 Timber:  
(a) Dressed Timber (Doors, Frames etc)
Coating System:  
One coat Dulux oil based Primer.  
Two coats Dulux Full Gloss Enamel.
Q.4.3 Internal Painting

Q.4.3.1 Generally
   a) Internal structural steel shall remain unpainted, it shall be left as inorganic zinc silicate.

   b) Internal concrete walls shall remain unpainted.
   Coating System:
   One coat Acrylic Sealer Undercoat.
   Two coats Wash & Wear Low Sheen Acrylic.
   Note: RH90 suspended ceiling panel are pre-finished.

Q.4.3.2 Dressed Timber includes Doors & Trim (Skirting, architraves, window frames)
   Coating System:
   One coat oil based Primer.
   Two coats Super High Gloss Enamel.

Q.4.3.3 Metal Door Frames
   Coating System:
   One coat Galvanised Iron Primer
   Two coats Super Enamel High Gloss.
R. CLEANING AND FINISHING TRADES

R.1 GENERALLY

R.2 THE SITE

R.3 THE BUILDINGS

R.4 KEYS & SECURITY SYSTEMS

R.5 WARRANTIES & GUARANTEES

R.6 OCCUPANCY CERTIFICATE
R. CLEANING AND FINISHING TRADES

R.1 GENERALLY
The works shall be cleaned by experience personnel using recognised trade practices and materials.

R.2 THE SITE
All driveways, parking areas shall be mechanically swept and left clean. Debris from around the building area shall be removed and the site shall be left suitable for immediate landscaping.

R.3 THE BUILDINGS
Clean all floors, walls, windows, tiles, doors, fixtures, fittings etc with recommended cleaning practices.

R.4 KEYS & SECURITY SYSTEMS
All locks shall be converted from construction key to the Proprietors key system including all master keying. Any operative security systems shall be reset for final operation in accordance with the Proprietors requirements.

R.5 WARRANTIES & GUARANTEES
Any warranty or guarantees that have been specified or apply to installed equipment, shall be handed over at Practical Completion neatly compiled in a binder.

R.6 OCCUPANCY CERTIFICATE
The Builder shall be fully responsible to apply to the Council for all necessary inspections etc to ensure the building fully complies with all aspects of the Building Licence and the issue of the “Certificate of Compliance”.
## Door Hardware Schedule

<table>
<thead>
<tr>
<th>Door</th>
<th>Location</th>
<th>Type</th>
<th>Size</th>
<th>Locking/Hardware Required</th>
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<tbody>
<tr>
<td>D01</td>
<td>Warehouse exit</td>
<td>Steel Clad Security door</td>
<td>870</td>
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<td>- Lockwood 2801/2904/90 SCP Levers</td>
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<td>WC</td>
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<td>- TS 77/3 PA Closers</td>
</tr>
</tbody>
</table>
Supply and install all sanitary fixtures as scheduled and specified hereinafter.

1. **Ground Floor:**

**Disable Unisex Toilets**

1 x Caroma Concorde white ‘S’ trap disabled pan with white Concorde dual flush cistern and white deluxe double flap seat.

2 x Grab rail as per Australian Standards

1 x Caroma 864015W Cosmo semi-recessed vanity basin

2 x Caroma 87144C5A Opus soft close basin mixer

Caroma 87143C Opus bath or shower mixer and Mystic hand shower 91010C3A

Caroma Caravelle 855100 shower base, 900 x 900mm

**Toilet**

2 x Caroma Trident 2000 white ‘S’ trap pan with Concorde inwall dual flush cistern.

2 x Caroma 864015W Cosmo semi-recessed vanity basin

2 x Caroma 87144C5A Opus soft close basin mixer

1 Steible Electric hot water system

**Tea Prep 1**

Clarke Benchmark 1234mm Single centre bowl sink s/s

Caroma 87148C4A Opus soft close sink mixer

1 Steible Electric hot water system
2. Warehouse 2:

**Disable unisex toilets**

1 x Caroma Concorde white ‘S’ trap disabled pan with white Concorde dual flush cistern and white
deluxe double flap seat.

2 x Grab rail as per Australian Standards

1 x Caroma 864015W Cosmo semi-recessed vanity basin

2 x Caroma 87144C5A Opus soft close basin mixer

Caroma 87143C Opus bath or shower mixer and Mystic hand shower 91010C3A

Caroma Caravelle 855100 shower base, 900 x 900mm

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1 x Caroma Trident 2000 white ‘S’ trap pan with Concorde inwall dual flush cistern.

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1 Steible Electric hot water system

**Tea Prep**

Clarke Benchmark 1234mm Single centre bowl sink s/s

Caroma 87148C4A Opus soft close sink mixer
Plumbing Schedule
ORDERING INFORMATION:
Tel: (08) 6212 9700  Fax: (08) 9227 8393  Email: sales@dhwd.wa.gov.au
Orders can also be placed through the website: www.vetinfonet.dhwd.wa.gov.au

Government of Western Australia
Department of Training and Workforce Development

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