

# TAYLOR CONSTRUCTION PTY LTD



# **Remediation Action Plan**

11-13 Mannix Parade, Warwick Farm NSW

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## Table of Contents

Page Number

1.	ΙΝΤΙ	RODUCTION	1
	1.1	Background	1
	1.2	Proposed Development	1
	1.3	Remediation Objectives	1
	1.4	Scope of Work	2
	1.5	Legislative Framework	2
2.	SIT	E SETTING	4
	2.1	Site Identification, Location and Physical Setting	4
	2.2	Regional Setting	4
3.	PRE	VIOUS INVESTIGATIONS	6
4.	REN	IEDIATION OPTIONS ASSESSMENT	9
	4.1	Extent of Remediation Required	9
	4.2	Remediation Technology Review	9
	4.3	Preferred Remediation Technology	12
	4.4	Category of Works	12
		4.4.1 Development Consent and Control Plans	12
		4.4.2 Other Licence Requirements	12
	4.5	Timing of the Work	13
5.	REM	IEDIATION CRITERIA	14
	5.1	Soil Criteria	14
	5.2	Waste Classification	14
	5.3	Groundwater Criteria	15
6.	REN	IEDIATION METHODOLOGY	16
	6.1	Site Preparation	16
	6.2	Site Demolition	16
	6.3	Asbestos Management Plan	17
	6.4	Soil Remediation and Waste Management	17
		6.4.1 In Situ Waste Classification Sampling	17
		6.4.2 Stockpile Waste Classification Sampling	17
	65	6.4.3 Waste Classification Procedure – All Material	17
	0.5		10
7.	EN\	IRONMENTAL MANAGEMENT AND MITIGATION	20
	7.1	Site Management	20
	7.2	Hours of Operation	21
	7.2 7.3	Hours of Operation Materials and Handling Management	21 21
	7.2 7.3 7.4	Hours of Operation Materials and Handling Management Mitigation Measures	21 21 22



8.	3. WORK HEALTH AND SAFETY 2		25
	8.1	Work Health and Safety Plan	25
	8.2	Personal Protective Equipment	26
	8.3	Asbestos Air Monitoring	26
9.	9. VALIDATION STRATEGY 28		
	9.1	Validation Sampling Plan	28
	9.2	Sampling, Analytical and Quality Plan	30
	9.3	Validation Reporting	35
10. CONCLUSION 36			36
11.	11. STATEMENT OF LIMITATIONS 37		
RE	REFERENCES		
AB	ABBREVIATIONS 40		

## Schedule of Tables

Table 1-1	Legislative Framework	2
Table 2-1	Site Identification, Location and Zoning	4
Table 2-2	Regional Setting Information	4
Table 3-1	Summary of Previous Investigations	4
Table 4-1	Review of Remediation Options	10
Table 4-2	Category Determination for Remediation	12
Table 5-1	Remediation Acceptance Criteria for Soil	14
Table 6-1	Remediation Contingency Measures	18
Table 7-1	Site Management Responsibilities	20
Table 7-2	Materials Handling and Management Requirements	21
Table 7-3	Mitigation Measures for Remediation	23
Table 7-4	Management of Environmental Incidents	23
Table 8-1	Remediation Hazards	23
Table 8-2	Criteria for Air Monitoring of Asbestos	23
Table 9-1	Validation Sampling Plan	29
Table 9-2	Validation Sample Collection and Handling Procedures	30
Table 9-3	Summary of Project Data Quality Objectives	32
Table 9-4	Data Quality Indicators	34

## Appendices

## **APPENDIX A - FIGURES**

- A.1 Site Locality Plan
- A.2 Remediation Area Plan
- A.3 Groundwater Exceedances Plan

### APPENDIX B – PROPOSED DEVELOPMENT

## APPENDIX C – TABLES OF INVESTIGATION RESULTS



## **APPENDIX D – UNEXPECTED FINDS PROTOCOL**



## 1. Introduction

## 1.1 Background

Taylor Construction Group Pty Ltd engaged EI Australia Pty Ltd (EI) to prepare a remediation action plan (RAP) for 11-13 Mannix Parade, Warwick Farm NSW ('the site').

Located 26km west of the Sydney central business district, within the Local Government Area of Liverpool City Council (**Figure A.1, Appendix A**), the site covers a total area of 1,283.6m<sup>2</sup> (**Figure A.2, Appendix A**). At the time of drafting this RAP it was comprised of two residential properties.

Site investigations were completed as part of an environmental due diligence process, in accordance with *State Environmental Planning Policy No.55 - Remediation of Land* (SEPP 55), supporting an application to Liverpool City Council to redevelop the land for medium to high density residential use. Asbestos-impacted soils were identified within the site, as well as saline soils, which subsequently required remediation during the proposed development.

### 1.2 Proposed Development

Based on the supplied survey and development plans (**Appendix B**), the proposed development involved demolition of the existing site structures, followed by the construction of a multi-storey, residential (apartment) building, overlying a single level basement. Construction of the basement required bulk excavation of soils across most of the available area, to depths of approximately 3m below ground level (BGL). Retained (deep) soil zones would occur along each of the site boundaries, for landscaping purposes.

El considered the proposed development represented a generic *residential with minimal soil access* land use scenario, with ecological considerations relevant for the retained soil (landscaping) areas.

### 1.3 Remediation Objectives

The main objective of this RAP is to detail methods that will make the site suitable for the proposed land use. Secondary objectives include:

- Setting of remediation goals that are consistent with relevant guidelines and legislation;
- Propose actions to reduce the risk posed to future users of the site and surroundings, resulting from the presence of unacceptable asbestos contamination identified in site soils;
- Review the available options for site remediation, with consideration of the principles of ecologically sustainable development in line with Section 9 of the Contaminated Land Management Act 1997, including the minimisation of waste under the Waste Avoidance and Resource Recovery Act 2001;
- Confirm that the preferred remediation strategy is economically viable, as well as effective in reducing the contamination; and
- Ensure that site management plans and contingencies consider work health and safety (WHS) and environmental procedures relevant to the management of the identified contaminant.



## 1.4 Scope of Work

To achieve these objectives, the scope of the plan includes:

- An evaluation of the data collected during previous site investigations, to identify contamination risks to human health and/or the environment, as well as providing an understanding of the contamination status of the site;
- Identifying the remediation legislation, policies and guidelines and define the extent of remediation required;
- Assessment of the remediation options for the identified contamination and identification of the preferred remediation strategy;
- Setting remediation criteria that ensure the remediated site will be suitable for its current and/or proposed land use and which will not result in unacceptable risk to human health or the environment;
- Detailing the procedures and plans to be implemented at the site for the management and remediation of the land, including mitigation measures and safeguards for any potentially adverse environmental effects;
- Identification of the necessary regulatory approvals and/or licences required for the remediation work;
- Describing the validation strategy to confirm the remediation was effective in rendering the site suitable for the proposed use;
- Description of the procedures to carry out classification, handling and tracking requirements for all wastes;
- Provision of an unexpected find protocol; and
- Identifying the need for any long-term management or monitoring, following the completion of remediation.

#### 1.5 Legislative Framework

This RAP has been prepared with consideration of the documents listed in Table 1-1.

Table 1-1 Legislative Framework

Legislative Document	Summary of Scope / Requirements
Contaminated Land Management Act 1997	Promotes the effective management of contaminated land in NSW by setting out the roles and responsibilities of the EPA.
Protection of the Environment Operations Act 1997, including: POEO (Waste) Regulation 2014 POEO (UPSS) Regulation 2019	The objective of the POEO Act 1997 is to achieve the protection, restoration and enhancement of the quality of the environment. The POEO act gives rise to the POEO (Waste) and Underground Petroleum Storage Systems (UPSS) regulations, which outlines the requirements for all offsite disposals of waste, and removal of any underground storage tanks.
Environmental Planning and Assessment Act 1979	The EP&A Act 1979 determines the category of development, and gives rise to state environmental planning policies (SEPP) developed to assist regulators with the protection of human and environmental health.
State Environmental Planning Policy 55 - Remediation of Land	SEPP 55 requires that works related to contaminated land are conducted in accordance with the <i>Contaminated Land Planning Guidelines</i> (DUAP,1998) and any guidelines specified by the CLM Act 1997.



Legislative Document	Summary of Scope / Requirements
Work Health and Safety Act 2011 including WHS Regulations 2017	<ul> <li>Primary legislation for management and regulation of work health and safety, which gives rise to the NSW Government <i>Work Health and Safety Regulation 2017</i>, as well as:</li> <li>NSW WorkCover (2014) Managing Asbestos In or On Soil; and</li> <li>SafeWork NSW (2019) Code of Practice How to Safely Remove Asbestos</li> </ul>
Water Management Act 200) and Water Act 1912	Protects the health of rivers, streams and groundwater systems and gives rise to Water Sharing Plans and quality objectives for catchments within the state of NSW.
National Protection (Assessment of Site Contamination) Measure 1999 / Amendment Measure 2013	Outlines methodology for contaminated land assessment and provides risk-based criteria for ecological and human health receptors of site contamination. The site will be assessed in accordance with criteria specified by this document.
Standards Australia	<ul> <li>All activities should adhere to Australian Standards (AS) relevant to the activities, including:</li> <li>AS4482.1:2005 Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1: Non-volatile and Semi-volatile Compounds;</li> <li>AS1726 :2017 Geotechnical Site Investigations (for logging of soil);</li> <li>AS2601: 2001 The Demolition of Structures.</li> </ul>
Local Council Plans	Liverpool Local Environmental Plan 2008 Liverpool Development Control Plan 2008
Relevant Guidelines included (but not limited to)	<ul> <li>ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality</li> <li>DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination</li> <li>EPA (1995) Sampling Design Guidelines</li> <li>EPA (2014a) Waste Classification Guidelines;</li> <li>EPA (2014b) Technical Note : Investigation of Service Station Sites;</li> <li>EPA (2015) Guidelines on the Duty to Report Contamination Under the Contaminated Land Management Act 1997</li> <li>EPA (2020) Consultants Reporting on Contaminated Land</li> </ul>



## 2. Site Setting

## 2.1 Site Identification, Location and Physical Setting

The site identification details and associated information are presented in Error! Reference source not found.. The site locality and investigation area are illustrated in **Figures 1** and **2** (**Appendix A**).

Table 2-1 Site Identification. L	ocation	and	Zonina
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Attribute	Description
Street Address	11-13 Mannix Parade, Warwick Farm NSW
Local Government Area and Surrounds	The site was located within the Local Government Area of Liverpool City Council. McGirr Parade lined the northern boundary and Mannix Parade lined the eastern boundary. Land use activities of the site and surrounds were predominantly residential.
Geographical Coordinates	<ul> <li>Geographic co-ordinates for north-eastern corner of site (GDA2020-MGA56):</li> <li>Easting: 308776.526</li> <li>Northing: 6245619.639</li> <li>(Ref: <u>http://maps.six.nsw.gov.au</u>)</li> </ul>
Site Area	1,283.6m <sup>2</sup> (Ref: site survey plan in <b>Appendix B</b> )
Site Owner	Taylor Construction Group Pty Ltd
Lot and Deposited Plan (DP)	<ul> <li>The site will result in the amalgamation of land legally identified as:</li> <li>Part of Lot 8 and Lot 26 in DP 36641 (11 Mannix Parade)</li> <li>Part of Lot 9 and Lot 27 in DP 36641 (13 Mannix Parade).</li> </ul>
State Survey Marks	One state survey mark was situated on the corner of Mannix and McGirr Parades, being SS37185 (Ref: http://maps.six.nsw.gov.au).
Current Zoning	R4 – High Density Residential (Liverpool Local Environmental Plan 2008)
Current Land Use	Low density residential

### 2.2 Regional Setting

The topography, geology and landscape information is summarised in Error! Reference source not found..

Setting Information
Setting Information

Attribute	Description
Topography	The site surface was gently sloping to the north / north-east, with a surface elevation of 12.04 meters Australian Height Datum (AHD) in the north eastern corner, increasing to 13.27mAHD in the south western corner (site survey in <b>Appendix B</b> ).
Site Drainage	Consistent with the general slope of the site, surface water is assumed to flow north-west, towards Brickmakers Creek. This creek drains to Cabramatta Creek, which ultimately discharges into the Georges River.
Regional Geology	The site was underlain by geological formations of the Wianamatta Group (Rwb), consisting of shale, carbonaceous claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff (DMR, 1991).
Soil Landscape	The site overlies a Blacktown ( <i>bt</i> ) resdidual soil landscape, characterised by gently undulating rises on Wianamatta Group shales. Typical landforms include local relief to 30m and slopes of <5%, and broad rounded crests and ridges with gently



Attribute	Description
	inclined slopes. Typical landscapes include cleared eucalypt woodland and tall open (wet sclerophyll) forests (Bannerman and Hazelton, 1990)
Acid Sulfate Soil (ASS) Risk	According to the <i>Liverpool 1:25,000 Scale Acid Sulfate Soil Risk Map</i> (Murphy, 1997) and <i>Liverpool Local Environmental Plan 2008 1:20,000 Scale Acid Sulfate Soils Planning Map</i> (Sheet ASS_010), the site lies within area where ASS are not known to occur. Therefore, no management of ASS was warranted.
Hydrogeology	Groundwater is present within the porous, fractured shale bedrock and expected to be of low to moderate productivity. A number of registered groundwater bores are identified within a 500m radius of the site, with the majority of these registered for monitoring purposes. The nearest registered bore was approximately 360m southeast of site; however, the use of this bore was unknown. No bores were registered for domestic or irrigation use, and drillers log information from the closest registered bores typically identified clay soil or silty sand to depths of 18.3-19.0m, underlain by siltstone (shale) bedrock.
	The potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low. There is a reticulated water supply in the area and consumption of groundwater is not expected to occur. Use of groundwater is not proposed as part of the current development.
Nearest Surface Water Feature	Brickmakers Creek, located approximately 225m north-west of the site.



## 3. Previous Investigations

Investigations of the site were included in the following previous reports:

- JK Environments Pty Ltd (JK, 2020) Preliminary Site Investigation; 11-13 Mannix Parade, Warwick Farm NSW, for Taylor Construction Group (JK Report E33075BDrpt, dated 9 April 2020); and
- EI (2021) Additional Site Investigation; 11-13 Mannix Parade, Warwick Farm NSW (EI Australia Report E25074.E03.Rev1, dated 20 April 2021).

A summary of the key findings from each report is provided in Error! Reference source not found.. Plans showing the sampling locations are presented as **Figures A.2** and **A.3**, **Appendix A**. Tabulated analytical results are presented in **Appendix C**.

 Table 3-1
 Summary of Previous Investigations

Stage	Project Tasks and Findings
JK (2020) Prelimin	ary Site Investigation
Objective	The main objective was to determine the potential for site contamination, by means of reviewing site history (potentially contaminating activities) and soil sampling / testing. The investigation included assessment of the potential for soil salinity and waste classification for off-site disposal.
Scope of Works	<ul> <li>The scope of the PSI included:</li> <li>Review of site information and history from a Lotsearch report;</li> <li>Preparation of a conceptual site model (CSM);</li> <li>Design and implementation of a sampling, analytical and quality plan (SAQP);</li> <li>The drilling of seven boreholes (BH1-BH7) to a maximum depth of 1.7m BGL;</li> <li>Collection and analysis of representative soil samples;</li> <li>Assessing the analytical results against the adopted criteria;</li> <li>Data quality assessment; and</li> <li>Reporting the findings, providing recommendations for data gap closure.</li> </ul>
Site History and Potentially Contaminating Activities	<ul> <li>The site history review indicated the land was used for agricultural (grazing) purposes up until 1930s, after which it formed part of an operational airfield. Development of the current residential properties occurred in the 1940-50s.</li> <li>Potentially contaminating activities identified for the site included:</li> <li>The importation of fill from unknown sources, for site levelling;</li> <li>The historic use of the site as an airfield;</li> <li>The historic use and storage of pesticides (termiticides) and herbicides; and</li> <li>The weathering / damage of hazardous building materials present within former and current structures on the site.</li> </ul>
Council Records	No records pertaining the site were available.
Field Works	No evidence of above-ground or underground storage tanks (ASTs / USTs) was observed. Suspected asbestos containing material (ACM), in the form of fibre cement sheeting (FCS) fragments, was observed across the surface of the site. Fragments of FCS were also identified within some of the drilled boreholes (spoil). No evidence of significant storage of industrial chemicals or waste was observed. Discarded electrical and gas appliances (hot water systems) were observed in the rear of 13 Mannix Parade, associated with recent strip-out of the building. Soils from the seven test bores were analysed for the COPC, being heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), TRH, BTEX, PAH, OCP, OPP, PCB and asbestos. The concentrations for all COPC were below the adopted acceptance criteria applicable to residential sites with accessible soils, with the exception of asbestos - visible ACM was within the initial 100mm of soil encountered in BH1 and BH6, while friable asbestos was found to exceed criteria at BH6 (0-0.1mBGL).



Stage	Project Tasks and Findings
	aggressive towards buried steel, though mildly aggressive to buried concrete.
Conclusion	JK concluded that remediation was necessary to render the site suitable for the proposed (residential) development.
Recommendations (Data Gap Closure)	<ul> <li>JK recommended completion of certain tasks, to close identified data gaps.</li> <li>The site was historically used as an airfield during the 1930s and 1940s, suggesting there was a potential for dangerous goods to have been stored on the premises. A review of SafeWork records for the storage of dangerous goods would address this data gap.</li> </ul>
	<ul> <li>Further investigations were required to determine the extent of the asbestos impacts across the site and enable the development of a remediation action plan (RAP). The sampling density for asbestos was to be twice the minimum EPA (1995) requirement, as recommended by WADOH (2009) for site characterisation. The additional investigation also needed to consider the salinity conditions of soil and groundwater at depth (&gt;1.6m BGL, to 3m BGL), as well as contamination.</li> <li>Preparation of a Salinity Management Plan (SMP), for the management of saline soils.</li> <li>Preparation of a validation report, to document any remediation works and confirm the suitability of the site for the intended land use.</li> </ul>
El (2021) Additiona	al Site Investigation
Objective	The main objective of the ASI was to further assess the degree of soil and groundwater contamination and salinity identified by the stage 1 (preliminary) site investigation, through closure of the existing data gaps.
Scope of Works	<ul> <li>The scope of the PSI included:</li> <li>A review of relevant hydrogeological and soil landscape maps for the project area;</li> <li>A search of SafeWork NSW records, for information relating to the storage of dangerous goods, in particular underground tank approvals and locations;</li> <li>Review of the previous investigation report relating to the site;</li> <li>Construction of test pits at 7 locations, distributed in accessible areas of the site and complementing the previous (PSI) sampling plan, to enable multi-level soil sampling within fill and natural soils;</li> <li>Construction of 3 groundwater monitoring wells, positioned at up and down gradient locations on the site, followed by the completion of a single groundwater monitoring event (GME) to assess local groundwater samples for the contaminants of potential concern (COPC), as well as salinity parameters; and</li> <li>Data interpretation and reporting</li> </ul>
Key Findings	<ul> <li>The site was used for agricultural purposes up to the 1930s, then formed part of an airfield (1930s-1940s), before redevelopment into the current residential setting.</li> <li>SafeWork NSW did not hold any records pertaining to the subject site.</li> <li>Asbestos was identified in three fill soil samples (TP2_2-0.3, TP4_0.1-0.2 and TP6_0.2-0.3).</li> <li>In combination with the JK (2020) preliminary investigation results, the asbestos impact was widespread across the southern portion of the site, although limited to the upper fill soil layers (≤0.5m BGL). The asbestos was identified in the form of fragments bonded ACM, as well as friable asbestos.</li> <li>Based on the available salinity, aggressivity and sodicity data:</li> <li>&gt; the clay loams of the site were non-saline; however, the sandy clays from 3m BGL onwards were of a saline nature, the strength of salinity increasing with depth;</li> <li>&gt; all site soils (i.e. to 4m BGL) were classed as non-aggressive towards buried steel, but mildly aggressive to buried concrete; and</li> <li>&gt; all site soils (i.e. to 4m BGL) were classified as highly sodic and thus prone to erosion.</li> <li>Elevated concentrations of heavy metals (copper, nickel and zinc) were identified in the local groundwater, which is also acidic (pH: 5.03 - 5.10) and saline (electrical conductivity (EC): 20,290 - 31,380 µS/cm).</li> </ul>
Conclusion	El concluded that the site could be made suitable for the proposed development, subject to addressing certain recommendations.



Stage	Project Tasks and Findings
Recommendations	<ul> <li>El made the following recommendations in relation to the proposed development:</li> <li>Preparation and implementation of a RAP, to address the fill soil (asbestos) contamination, incorporating measures that prevent exposure of site personnel to airborne asbestos fibres.</li> <li>The preparation and implementation of a SMP.</li> <li>Completion of at least one GME during the site remediation phase, to provide heavy metal monitoring information prior to, or as part of, site validation.</li> <li>Preparation of a final site validation report by a qualified environmental consultant, certifying site suitability for the proposed development.</li> </ul>

#### Summary of Site Characterisation

In accordance with NEPM (2013) Schedule B2 – Guideline on Site Characterisation, EI developed a conceptual site model (CSM), based on the information collated during the site investigation phase. The CSM established the following environmental (contamination) issues relating to the site:

- Asbestos-impacted filling (≤0.5m BGL) across the southern portion of the site. The asbestos was identified in the form of fragments bonded ACM, as well as friable asbestos.
- The natural, sandy clays from 3m BGL onwards were saline, the strength of salinity increasing with depth. All site soils (i.e. to 4m BGL) were classed as non-aggressive towards buried steel, but mildly aggressive to buried concrete, and highly sodic (thus prone to erosion).
- Elevated concentrations of heavy metals (copper, nickel and zinc) in the local groundwater, which is also acidic (pH: 5.03 5.10) and saline (EC: 20,290 31,380 μS/cm).

Additional groundwater investigation, by way of further GME(s), shall form part of the site validation program. A salinity management plan for the site has been drafted by EI (Reference E25074.E99.Rev0, dated 20 April 2021), which should be cross referenced with this RAP during future excavation works.



## 4. Remediation Options Assessment

## 4.1 Extent of Remediation Required

Based on the site investigation phase, fill soils across the southern portion of the site ( $\leq 0.5$ m BGL) pose unacceptable risk to human health dur to ACM contamination, requiring remediation and/or appropriate risk management. The estimated extent of impacted fill is highlighted on **Figure A.2**.

## 4.2 Remediation Technology Review

When deciding which remediation option to choose, the sustainability (environmental, economic and social) of each should be considered, and the suitability of each method examined, with respect to the effects on any surrounding properties, the geological and hydrogeological limitations of the locality, priorities, timing and requirements of the development and the regulatory compliance of the method. The EPA (2017) *Guidelines for the NSW Auditor Scheme* provides the preferred hierarchy for site remediation and/or management when assessing soil contamination. These include:

- 1. On-site treatment of the contaminated soil, so that its associated risk is reduced to an acceptable level;
- 2. Off-site treatment of excavated soil, so that the its associated risk is reduced to an acceptable level, after which soil is returned to the site; or, if the above are not practicable
- 3. Removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material; or
- 4. Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy using consolidation and/or isolation by containment with a properly designed barrier.

A summary of remediation options to eliminate the exposure route for the identified impacts is presented in **Table 4-1**. Given the unacceptable risks identified as a result of the impacted material, the "no action" approach was not suitable and no consideration was given to this option.



#### Table 4-1 Review of Remediation Options

Option	Methodology	Advantages	Disadvantages	Suitability
<u>On-site ex-situ</u> <u>treatment and re-</u> <u>use</u>	<ul> <li>Soils are excavated and asbestos is removed soils through a systematic process including:</li> <li>Soils are excavated and placed across a tarp covered or sacrificial designated area in a 10 cm lift;</li> <li>The 10 cm lift is raked and emu-picked by a licensed contractor multiple times until all visible asbestos is removed;</li> <li>The 10 cm lift is inspected and sampled at double regulatory density by the environmental consultant to verify that asbestos has been removed;</li> <li>Soils are re-used on-site by supervised placement into designated site areas and carefully inspected during placement by the environmental consultant.</li> </ul>	Removes risk to human health by eliminating the contaminant. Cost effective - no disposal costs and no need to import backfill material as material is retained on-site.	The timeframe is lengthy if only small staging areas are available. Temporary stockpiling of asbestos impacted soils requires environmental controls. Requires long term, legally enforceable environmental management; Must be listed on title as contamination is retained onsite.	Not suitable for friable asbestos.
<u>Consolidation,</u> <u>cap and contain</u>	Contaminated soils are retained and isolated by a clean-cap and marker layer within inaccessible areas of site. A designated area is excavated to a depth to accommodate the volume of contaminated soil and any utilities/services. The contaminated soil is buried in the designated area. A marker layer is placed on top of the contaminated soil. A capping layer is placed above the marker layer. The capping layer must be of a minimum prescribed thickness verified by survey. The capping layer material must be made of approved soils or hardstand materials. Potential leachable contaminants must not be buried without additional engineered protective measures.	Removes risk to human health by eliminating the exposure pathway. Retains materials on site and minimises use of landfill space for disposal. No off-site disposal cost. Sustainable, cost effective remediation method.	Subject to agreement with Site Auditor. Will require a long term and legally enforceable environmental management plan (LT-EMP), and registration on Certificate of Title. The LT-EMP may have reporting conditions. Requires design of a capping layer over buried contaminated materials. Assessment of natural soils is required to determine if they are a viable capping material. Requires careful soil management planning, design and excavations with strict construction validation requirements.	This method is considered viable subject to the construction schedule due to the additional time required during the excavation and earthworks phase.



Option	Methodology	Advantages	Disadvantages	Suitability
Excavation and off-site disposal	The extent of contaminated soils is confirmed and a Waste Classification report is prepared for the volume of soil. The contaminated soils are excavated by backhoe/excavator into licensed waste disposal trucks and taken to a licensed waste facility that can accept the waste. The excavated area is validated by visual inspection, double density sampling and analyses.	Removes risk to human health by eliminating the contaminant. This is considered the quickest method of removing the contaminated soil.	Increased costs associated with the disposal of waste soils at a licensed premises and the assessment of, purchase, excavation, transport, and placement (importation) of approved backfill. Requires waste classification prior to disposal, management and retention of waste records, waste tracking and reporting. Requires validation that all contaminated soils have been removed from the site. Requires environmental controls during soil excavations.	Given the excavation of soil required for construction of the basement, this option would be preferred for the impacted fill material.



### 4.3 Preferred Remediation Technology

The proposed development will require bulk excavation across most of the available area (to depths of up to 3m BGL). Therefore, EI considers the preferred option to be excavation and off-site disposal of impacted soils.

#### 4.4 Category of Works

In accordance with SEPP 55, the category of the remediation defines whether consent is required for the works. Under SEPP 55, works where there is the potential for significant environmental impact are classed as Category 1 works and require development consent. Category 2 works pose a low potential for environmental impact and do not therefore require prior consent. The determination for the subject site is provided in **Table 4-2**.

#### Table 4-2 Category Determination for Remediation

Significant Environment Impact	Yes/No	Category
Designated Development or State Significant Development	No	2
Have significant impact on threatened ecological communities or habitats?	No	2
In area identified environmental significance such as scenic areas, wetlands (see list*)	No	2
Comply with a policy made under the land planning guidelines by council.	Yes	2
Is work ancillary to designated development	No	2

**Notes:** \* Environmental significance list -coastal protection, conservation or heritage conservation, habitat area, habitat protection area, habitat or wildlife corridor, environment protection, escarpment, escarpment protection or escarpment preservation, floodway, littoral rainforest, nature reserve, scenic area or scenic protection, or wetland.

Based on the above assessment, the remediation works for the site are considered Category 2 and will not require development consent. Category 2 works require notification to the consent authority; therefore, Council should be notified 30 days before their commencement. The 30-day limit does not prevent Council intervention after that time for a breach of the CLM Act 1997 or non-compliance with SEPP 55. The notification also serves as the basis for updating Council records on properties in the local government area and must:

- Be in writing;
- Provide contact details for the notice;
- Briefly describe the remediation work;
- Show why the work is considered Category 2 remediation work;
- Specify the property description and street address on which the remediation work is to be carried out;
- Provide a location map; and
- Provide estimates for commencement and completion dates of the work.

Provision of this RAP, as well as an indication of commencement and completion dates of the works in writing, is usually sufficient to meet the requirements of this notification.

#### 4.4.1 Development Consent and Control Plans

All works should be in accordance with the Liverpool LEP 2008, Liverpool DCP 2008 and any relevant conditions issued under the consent for the development.

#### 4.4.2 Other Licence Requirements

The appointed site contractor should prepare health and safety plans, such as an asbestos management plan (AMP), as well as any other plans required by the Council DA and DCP.

The contractor must be appropriately licensed to perform the removal and/or disturbance activities (*Class A* in this case, due to presence of friable asbestos).

### 4.5 Timing of the Work

Timing of the works is dependent on the finalised construction schedule of the development and critical benchmark points of the remediation. Prior to commencement of any work, timing should be confirmed in consultation with the:

- Client;
- Site Developer;
- Remediation Contractor; and
- Environmental Consultant.

## 5. Remediation Criteria

The Remediation Acceptance Criteria (RAC) are based on screening levels from Australian Federal and NSW guidelines that were made or approved by the EPA in accordance with the *Contaminated Land Management Act 1997*, with due consideration of the proposed land use. Where criteria are not available in guidelines made or approved by the EPA, alternative sources are used, with justification provided.

### 5.1 Soil Criteria

#### Health Screening Levels (HSLs)

HSLs for asbestos in soil are provided in Schedule B1 of NEPC (2013) and are adopted from the Western Australian Department of Health (WADOH, 2009) guidelines. The developed site represents a residential exposure setting with minimal soil access (HSL-B), with public / open space (HSL-C) applied to the landscaped areas.

#### Aesthetic

Aesthetic assessment requires balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity. The following characteristics or presentations are examples of where site assessment may not have detected contamination above investigation or screening levels but where further assessment would be required:

- Highly malodorous soils or extracted groundwater (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulphide etc);
- Hydrocarbon sheen on surface and/or ground water;
- Large monolithic deposits of otherwise low-risk material, e.g. gypsum as powder or plasterboard, cement kiln dust; and
- The presence of putrescible refuse including a deep-fill profile of green waste or large quantities of timber waste.

Details of the criteria applied for soil are presented in **Table 5-1** below.

Guideline	Area of Site	Criteria
Human Health		
NEPC (2013) Schedule B1 Section 4, Table 7	Building footprint / basement	<ul> <li>For asbestos:</li> <li>No visible asbestos for surface soils.</li> <li>HSL-B for bonded ACM; and</li> <li>0.001% w/w for friable asbestos / asbestos fines in soil</li> </ul>
	Landscaped area	<ul> <li>For asbestos:</li> <li>No visible asbestos for surface soils.</li> <li>HSL-C for bonded ACM; and</li> <li>0.001% w/w for friable asbestos / asbestos fines in soil</li> </ul>

 Table 5-1
 Remediation Acceptance Criteria for Soil

## 5.2 Waste Classification

Prior to being removed from the site, excavated soils must be classified in accordance with the EPA (2014) Waste Classification Guidelines. Under these guidelines, fill/soils may be classified into the following groups: *General Solid Waste*, *Restricted Solid Waste* or *Hazardous Waste*, subject to chemical assessment using NATA-registered laboratory methods for total and leachable contaminant levels, the latter derived using the Toxicity Characteristics Leaching

Procedure (TCLP; where required). Any soils containing asbestos would also be classified as *Special Waste - Asbestos Waste*.

In accordance with the EPA Waste Regulation, soils must only be disposed at a facility that is appropriately licenced to receive the incoming material. It is therefore recommended that confirmation is obtained from the waste facility prior the materials being removed from the site.

## 5.3 Groundwater Criteria

**Aquatic Ecosystems:** ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, defaulting to the ANZECC and ARMCANZ (2000) Water Quality Guidelines where necessary. Results were compared against criteria corresponding to 95% level of protection for marine water environments, except the 99% level of protection is considered to account for bio-accumulative metals (e.g. mercury).

**Human Health (Non-Use Scenario**): Where groundwater is contaminated with volatile contaminants, assessment for human health (non-use) was based on consideration of potential vapour intrusion impacting on indoor air quality. The NEPM (2013) groundwater health screening levels (HSL) for vapour intrusion (HSL-D) will be used.

**Human Health (Recreational Use):** The ANZG (2018) guidelines refer to the NHMRC (2008) *Guidelines for Managing Risks in Recreational Water 2008.* The NHMRC (2008) guideline recommends the derivation of recreational guideline values for health / aesthetic consideration, by multiplying the corresponding Australian drinking water guideline value by 10 for each contaminant assessed [Note: The current version of the NHMRC Version 3.5 August 2018]

## 6. Remediation Methodology

To achieve the remediation objectives (**Section 1.3**) and make the site suitable for the proposed development, the remediation sequence proposed will be:

- Site Preparation: Conduct a hazardous material survey of all building structures prior to demolition works, and install any environmental and/or WHS measures as required by the construction environmental management plan. This should include the designation of a stockpiling area within the site.
- Site Demolition: Remove any hazardous building materials identified, then complete mechanical demolitions of all above ground structures (including hardstand) and underground services.
- Asbestos Management Plan (AMP).
- Remediation (excavation) of asbestos-impacted fill, with off-site disposal, following waste classification.
- Site Validation, including the collation of all waste disposal documentation and reporting.

El recommends regular and consistent consultation with the Environmental Consultant is undertaken during all stages of the remediation. Any amendments to the remediation works must be approved by either the Council or the appointed EPA accredited Site Auditor.

#### 6.1 Site Preparation

The remediation is classified as Category 2 work. Notice must be given to Council at least 30 days prior to the commencement of remediation. A list of all required work permits and notifications will be obtained from Council and arrangements are to be made to obtain the necessary approvals from the relevant regulatory authorities including site fencing, sediment and erosion control, signage and staff facilities.

The site itself will be prepared in accordance with the requirements of the site management plan, the SMP and all designated environmental control measures. The plans are to be developed in accordance with the relevant guidelines and any conditions of consent to be issued for the site.

Prior to demolition, a hazardous material survey is required, in accordance with the WHS Regulations 2017. The survey will detail actions required to remove any hazardous materials identified, in accordance with the relevant codes, standards and legislation applicable to the works. Adherence to these methods will be required to ensure effective removal of the identified materials.

#### 6.2 Site Demolition

Removal of on-site structures is required to access the underlying site surface. The asbestos works will require notification to SafeWork NSW, at least 5 calendar days before commencing any disturbance activities. All hazardous building materials will require removal in accordance with the HazMat survey, and the works will be completed by a suitably qualified hazardous materials removal contractor. Once all hazardous materials are effectively removed, site wide demolition may commence. Resulting surfaces should be cleared by the supervising contractor, and deemed to be 'free of asbestos'.

Building demolition should be in accordance with Australian Standard AS2601-2001 and Council requirements. Wherever possible, waste should be segregated into metal, wood, brick and concrete. Hardstand will be removed, however the partial retention of hardstand within the designated stockpile / waste area is recommended, to limit the likelihood of cross-contamination to underlying soil.

### 6.3 Asbestos Management Plan

The preparation and implementation of an Asbestos Management Plan (AMP) is necessary, in order to outline control measures that will prevent exposure of site personnel to airborne asbestos fibres. The AMP for soil remediation (excavation) will be drafted by the Remediation Contractor (*Class A* licensed).

## 6.4 Soil Remediation and Waste Management

Fill across the southern portion of the site shall be remediated in the first instance, this representing the initial stage of the bulk excavation program. Ideally, excavated filling shall be loaded directly onto waste transport vehicles, then transported to the designated landfill facility (licensed to accept *Special Waste - Asbestos Waste*).

All material designated for off-site disposal must be pre-classified in accordance with the EPA (2014) *Waste Classification Guidelines. In situ* waste classification is therefore preferred (**Section 6.4.1**). The previous investigation results can be utilised for this purpose. It should be noted that no mechanised screening of the fill soils (which were identified across the entire site to a maximum depth of 0.5m BGL) should be carried out due to the presence of friable ACM.

#### 6.4.1 In Situ Waste Classification Sampling

Using suitable machinery, test pit samples will be advanced at a rate of one location per 50m<sup>2</sup> (min of 3) up to 2500m<sup>3</sup>. Fill soil shall be damp and a single sample will be collected from each location, for laboratory analysis. Where the total volume of fill to be removed exceeds 250m<sup>3</sup>, a minimum of 10 samples is required and 95% UCL statistical calculations of contaminant concentrations will be compared to the waste criteria.

#### 6.4.2 Stockpile Waste Classification Sampling

Stockpiled soils designated for waste classification will be sampled at a rate of one discrete per 25m<sup>3</sup> (minimum of 3) up to 250m<sup>3</sup>. For spoil exceeding 250m<sup>3</sup> but less than 2,500m<sup>3</sup>, a minimum of 10 samples is required and 95% UCL statistical calculations of contaminant concentrations will be compared to the waste criteria.

#### 6.4.3 Waste Classification Procedure – All Material

- 1 Waste samples will be collected using one of the two methods above. The analytical suite for waste classification will include 8 priority metals *(arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc),* TRH, BTEX, PAH, OCP, OPP, PCB and asbestos, with TCLP analyses (as required), as well as any additional COPC that may be identified during site remediation.
- 2 Previously reported results (Appendix C) and any additional analysis for the waste material will be compared to the waste classification criteria set out in the EPA (2014) Waste Classification Guidelines and a waste classification report will be provided, to enable offsite disposal.
- 3 Ensuring that the waste fill/soil streams are kept separate, material will be loaded, transported and disposed offsite to waste landfill facilities that are appropriately licensed to receive the materials corresponding to the documented waste classifications.
- 4 In accordance with the *POEO (Waste) Regulation 2014*, waste movements will be tracked and disposal receipts (dockets) will be maintained by the site manager and copies must be provided to the client and EI for final site validation reporting purposes.
- 5 All fill and contaminated soil needing to be remediated must be removed from the site and a shallow validation assessment of freshly exposed natural soil must be completed prior to the commencement of construction.

## 6.5 Contingency Management

To deal with problems that could occur on-site during the course of the remediation, the contingency measures described in **Table 6-1** are to be applied, in conjunction with the unexpected finds protocol (**Appendix D**).

 Table 6-1
 Remediation Contingency Measures

Anticipated Problem	Corrective Actions
Chemical / Fuel Spill	Stop work, notify above site project manager. Use accessible soil or appropriate absorbent material on site to absorb the spill (if practicable). Stockpile the impacted material in a secure location, sample and determine the appropriate disposal/treatment option.
Excessive Dust	Use water sprays to suppress the dust or stop site activities generating the dust until it abates.
Excessive Noise	Identify the source, isolate the source if possible, modify the actions of the source or erect temporary noise barriers if required.
Excessive Odours / Vapours or dust	If excessive organic odours/vapours or dust are being generated, stop works and monitor ambient air for organic vapours with a photoionisation detector (PID) or visually (for dust). Implement control measures including respirators for on-site workers, use of odour suppressants, wetting down of excavated material.
	No nuisance odours shall be detected at any site boundary as part of the remedial works. Should odour emissions be detected at or beyond the site boundary, it is recommended, as part of the CEMP and community consultation procedure, that the Remediation Contractor and the Site Developer should:
	<ul> <li>Notify the owners and occupiers of premises adjoining and across the road from the site regarding potential odour issues. Notification should be in writing. This is also required by the Council Contaminated Land Policy.</li> </ul>
	<ul> <li>In the notification, as well as on street signage, provide contact details of the site personnel for anyone who may be concerned by odour emission during the remediation.</li> </ul>
	<ul> <li>Temporarily halt site works to allow for excess odour to subside to a level acceptable by off-site receptors, should it be necessary, after implementation of the above-listed control measures.</li> </ul>
	<ul> <li>In regard to off-site impact from ACM impacts, boundary air monitoring should be completed during the duration of any soil disturbance of ACM impacted material, with a minimum of one monitoring point to be installed at each of the four site boundaries.</li> </ul>
	<ul> <li>Fill excavation works should not occur on days of high wind or dry conditions.</li> </ul>
Excessive Rainfall	Ensure sediment and surface water controls are operating correctly. If possible divert surface water away from active work areas or excavations.
Water in Excavations	Collect samples and assess against relevant EPA (2014) <i>Waste Classification Guidelines</i> , to enable disposal options to be formulated.
Leaking Machinery or Equipment	Stop the identified leak (if possible). Clean up the spill with absorbent material. Stockpile the impacted material in a secure location, sample and determine the appropriate disposal/treatment option.
Failure or Sedimentation Control Measures	Stop work, repair failed control measure.
Unearthing Unexpected Materials, Fill or Waste	Stop activities, contact the site project manager. Follow the unexpected finds protocol as detailed in <b>Appendix D</b> . Prepare a management plan if required, to address the issue.
Identification of Cultural or Building Heritage Items	Stop work and notify site project manager. Follow the unexpected finds protocol as detailed in <b>Appendix D</b> . Prepare action or conservation plan as required.
Equipment Failures	Ensure that spare equipment is on hand at site, or that the failed equipment can be serviced by site personnel or a local contractor.

Anticipated Problem	Corrective Actions
Complaint Management	Notify Client, Project Managers and Environmental Consultant (if required) following complaint. Report complaint as per management procedures. Implement control measures to address reason of complaint (if possible). Notify complainant of results of remedial actions.

## 7. Environmental Management and Mitigation

## 7.1 Site Management

The responsibilities for the various parties involved with the remediation program are outlined in the table below.

<b>Responsible Party</b>	<b>Details/Contacts</b>	Responsibility
Property Owner	Tylor Construction Pty Ltd	Overall responsibility of site and key liaison for council. Appoint site contractors and all other members of the remediation.
Property Developer This may include the Property Owner or the key ontractor for the redevelopment	Tylor Construction Pty Ltd	<ul> <li>Overall management of the site remedial activities, including ensuring all environmental protection measures are in place and functioning correctly during site remediation works.</li> <li>Implementation of and compliance with the RAP, including liaison between the appointed Environmental Consultant and Council, providing regular updates and informing of any problems encountered.</li> <li>Notification to contractors of the existence of a RAP and provision of copies of the RAP.</li> <li>Any notification of site conditions to the EPA required under the duty to report contamination under the <i>Contaminated Land Management Act</i> (1997).</li> <li>Ensuring site remediation works are carried out in an environmental issues to owner; and</li> <li>Preparation of any site specific management plans.</li> </ul>
Environmental Consultant	El Australia	Preparation of the RAP. On-site guidance of the remedial works. Completing validation sampling and monitoring as requested by the Remediation Contractor and dictated by the RAP. Liaison between remediation contractor and the client. Preparation and submission of a report confirming the site suitability for the use proposed.
Earthworks or Remediation Contractor	Engaged by Tylor Construction Pty Ltd	Ensuring all operations are carried out as identified in the RAP (remediation), as directed by the PPM and EMC. Inducting all employees, subcontractors and authorised visitors on procedures with respect to site works, WHS and environmental management procedures. Maintaining site induction, site visitor and complaint registers. Ensuring that fugitive emissions and dust potentially leaving the confines of the site are suitably controlled and that noise and vibration levels at the site boundaries comply with the legislative requirements Ensuring that surface water leaving the site is minimised and is suitably controlled, and does not pollute the environment. Ensuring that vehicles are cleaned and secured so that no mud, soil or water is deposited on any public roadways or adjacent areas.

## 7.2 Hours of Operation

Remediation works shall only be permitted during the following hours, which may be subject to change based on the conditions prescribed in the consent:

- 7:00 am to 7:00 pm, Mondays to Fridays inclusive (during daylight savings period);
- 7:00 am to 6:00 pm, Mondays to Fridays inclusive (outside daylight savings period);
- 7:00 am to 4:00 pm on Saturdays; and
- No work shall be carried out on Sundays or Public Holidays.

The site owner/manager shall be responsible for the compliance of this condition by all subcontractors, including demolishers. In addition, all work, including preparation, demolition, excavation and construction must comply with Australian Standard 2436 (2010) *Guide to Noise Control on Construction, Maintenance and Demolition Sites*.

## 7.3 Materials and Handling Management

Measures that should be implemented in respect of materials handling during excavation and remediation work for the remediation are presented below.

Item	Description/ Requirements		
Earthworks contractors	Excavation of fill materials should be completed by a suitably qualified contractor to ensure:		
	All site staff are aware of the environmental and health and safety requirements to be adhered to;		
	There is no discernible release of dust into the atmosphere as a consequence of the works;		
	There is no discernible release of contaminated soil into any waterway as a consequence of the works; and		
	There are no pollution incidents, health impacts or complaints.		
Stockpiling of materials	All stockpiles will be maintained as follows:		
	Stockpiles must be located on sealed surfaces such as sealed concrete, asphalt, or high density polyethylene.		
	Should stockpiles be placed on bare soils, they should be so on yet to be remediated areas. Contaminated materials should only be stockpiled in locations that do not pose any environmental risk (e.g. hardstand areas).		
	Excavated soils should be stored in an orderly and safe condition (<2m height).		
	Stockpiles should be battered with sloped angles to prevent collapse.		
	prevent dust blow and control odours.		
	Should the stockpile remain in situ for over 24 hours, silt fences or hay bales should be erected around each stockpile to prevent losses from surface erosion (runoff).		
	Stockpiles will be strategically located to mitigate environmental impacts while facilitating material handling requirements.		
Loading of material	Loading of stockpiles / materials will be as follows:		
	Transport of contaminated material off the site is to be via a clearly distinguished haul route.		
	Measures shall be implemented to ensure no contaminated material is spilled onto public roadways or tracked off-site on vehicle wheels. Such measures should include the use of a wheel washing/cleaning facility, placed before the egress point on the site, and should be able to handle all vehicles and plant operating on-site.		
	Residue from the cleaning facility should be collected and either dewatered on site in a contained / bunded area, or disposed as a slurry to an approved facility. Such residue will be deemed contaminated unless proven otherwise.		

Table 7-2 Materials Handling and Management Requirements

ltem	Description/ Requirements
Transport of materials	Prior to being assigned to an appropriate waste disposal facility, all waste fill/soils will be classified in accordance with the EPA (2014a) Waste Classification Guidelines. If prior immobilisation treatment of the waste soils is required, disposal consent will be obtained from the NSW EPA prior to spoil transport.
	All trucks transporting soils from the site are to be covered with tarpaulins (or equivalent).
	All haulage routes for trucks transporting soil, materials, equipment and machinery shall comply with all road traffic rules, minimise noise, vibration and odour to adjacent premises, utilise state roads and minimise use of local road.
	All deliveries of soil, materials equipment or machinery should be completed during the approved hours of remediation and exit the site in a forward direction.
	Removal of waste materials from the site shall only be carried out by a recognised contractor holding the appropriate EPA NSW licenses, consents and approvals.
	Unless hazardous, waste materials must be transported less than 150km from the source (POEO 1997, Waste 2014) and landfills are required to be licensed for the category of waste they are scheduled to receive.
Material tracking	Materials excavated from the site should be tracked from the time of their excavation until their disposal. Tracking of the excavated materials should be completed by recording the following:
	<ul> <li>Origin of material;</li> </ul>
	<ul> <li>Material type;</li> </ul>
	<ul> <li>Approximate volume; and</li> </ul>
	<ul> <li>Truck registration number.</li> </ul>
	Disposal locations will be determined by the remediation contractor. Disposal location, waste disposal documentation (weighbridge dockets) and the above listed information should be provided to the remediation consultant for reporting purposes.

### 7.4 Mitigation Measures

All work should be undertaken in a manner which minimises any adverse environmental effects and complies with the statutory environmental and safety requirements. The works must consider (but not be limited to):

- Conditions of consent (to be issued);
- Liverpool LEP 2008 and DCP 2008;
- Landcom (2004) Managing Urban Stormwater, Soils and Construction; and
- Salinity Management Plan.

Mitigation recommendations related to the remediation are presented in the table below.

Table 7-3	Mitigation	Measures	for	Remediation
	mingation	measures	101	I CHICAIAIOH

Category	Measure
Community Engagement	Community engagement should be carried out in accordance with Schedule B(8) of NEPC (2013). Prior to the commencement of any remediation works at the site, every owner and occupier of any land located either wholly or partly within 100m of the boundary of the premises should be notified at least 30 days in advance. The notice should include:
	<ul> <li>State the time and date such work is to commence:</li> </ul>
	<ul> <li>Indicate that the works are being conducted to minimise any risk of site contamination impacting on off-site receptors;</li> </ul>
	<ul> <li>Provide appropriate site signage at an easily readable location on the site fencing, including site contact name and phone number to be contacted should any matter arise; and</li> </ul>
	<ul> <li>Provide contact information and procedure for registering any complaints.</li> </ul>
Demolition (including Asbestos Management)	Appropriate measures shall be taken to ensure that demolition works are completed in accordance with SafeWork NSW Standards and Codes of Practice. Any asbestos identified within building materials should be managed in accordance with SafeWork NSW Codes of Practice and Australian Standards.
Site Stormwater Management and Control	<ul> <li>Appropriate measures shall be taken to ensure that contaminated water does not leave the site. Such measures should include, but not be limited to:</li> <li>Diversion and isolation of any stormwater from any contaminated areas;</li> <li>Provision of sediment traps including geotextiles or hay bales; and</li> <li>Discharge of any water to drains and water bodies must meet the appropriate effluent discharge consent condition under the <i>Protection of the Environmental Operations Act 1997</i>.</li> </ul>
Dust and Odour	<ul> <li>Control of dust and any odour during the course of the remediation works shall be maintained by the contractor to ensure no nuisance dust or odours are received at the site boundary according to requirements of Council's DCP.</li> <li>Action levels and specific control measures would be described in the site specific management plans and may include (but not be limited to) the following:</li> <li>Site wide water spraying, as and when appropriate, to eliminate wind-blown dust;</li> <li>Use of mist sprays, and/or sprinklers on stockpiles, fill screening areas and loaded fill to lightly condition the material;</li> <li>Use of tarpaulin or tack-coat emulsion or sprays to prevent dust blow from stockpiles or from vehicle loads;</li> <li>Covering of stockpiles or loads with polythene or geotextile membranes;</li> <li>Restriction of stockpile heights to 2m above surrounding site level;</li> <li>Ceasing works during periods of inclement weather such as high winds or heavy rain;</li> <li>Use of vapour masks or respirators for works near VOC-impacted areas (if required); and</li> <li>Regular checking of the fugitive dust and odour issues to ensure compliance with the CEMP requirements, undertaking immediate remedial measures to rectify any cases of excessive dust or odour (e.g. use of misting sprays or odour masking agent).</li> <li>It is advised that all site workers use adequate dust masks during ACM soil excavation and that machine operators remain within an enclosed, air conditioned cabin.</li> </ul>
Noise and Vibration	Noise and vibration will be restricted to reasonable levels. All plant and machinery used on site will be noise muffled to ensure emissions do not breach statutory levels as defined within Councils LEP.

Category	Measure
Incident Management and Community Relations	While various environmental management and occupational safety plans will be developed to protect human health and the environment, incidents may occur which pose a risk to the various stakeholders. To mitigate these risks and ensure that a suitable response is carried out quickly, a response plan to any incident that may occur on site should be prepared and various responsibilities assigned.
	The site health and safety plan and environmental management plan should document these procedures and responsibilities, and incident contact numbers should be maintained in an on-site register.
	All other relevant emergency contact numbers such as Police, Fire Brigade, and Hospital should be listed in the Health and Safety Plan and posted on-site for easy access.

### 7.5 Environmental Incidents

Refer to **Table 7-4** for a selection of potential environmental issues. The unexpected finds protocol (**Appendix D**) should also be followed should an incident occur.

Table 7-4 Management of Environmental Incl
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Problem	Corrective Actions
Chemical / Fuel Spill	Stop work, notify above site project manager. Use accessible soil or appropriate absorbent material on site to absorb the spill (if practicable). Stockpile the impacted material in a secure location, sample and determine the appropriate disposal/treatment option.
Leaking Machinery / Equipment	Stop work, repair or replace equipment, as required. Clean up spill with absorbent material.
Failure of Erosion / Sediment Control Measures	Stop activities, contact the site manager / remediation contractor. Follow the unexpected finds protocol ( <b>Appendix D</b> ). Prepare a management plan if required, to address the issue.
Excessive Rainfall / Water in Excavations	Collect samples and assess against relevant criteria from the EPA (2014) <i>Waste Classification Guidelines</i> , to enable disposal options to be formulated. Stop the identified leak (if from service). Clean up with absorbent material.
Equipment Failures	Ensure that spare equipment is on hand at site, or that the failed equipment can be serviced by site personnel or a local contractor.
Identification of Cultural or Building Heritage Item	Stop work and notify site manager and owner. Follow the unexpected finds protocol as detailed in <b>Appendix D</b> of this RAP. Prepare action or conservation plan as required.
Unearthing Unexpected Materials, Fill or Waste	Stop activities, contact the site manager. Follow the unexpected finds protocol as detailed in <b>Appendix D</b> of this RAP. Prepare a management plan if required, to address the issue.
Incident Management and Community Relations	Ensure that a suitable response is carried out quickly. A response plan to any incident that may occur on site should be prepared and various responsibilities assigned.
	The site WHSP and CEMP should specify how to document these procedures and responsibilities, and incident contact numbers should be maintained in an on-site register.
	All other relevant emergency contact numbers such as Police, Fire Brigade, and Hospital should be listed in the WHSP / CEMP and posted on-site for easy access.
Complaint Management	Notify the site manager, owner and environmental consultant (if required) following complaint. Report complaint as per management procedures. Implement control measures to address reason of complaint (if possible). Notify complainant of results of remedial actions.

## 8. Work Health and Safety

## 8.1 Work Health and Safety Plan

As required by the *NSW Work Health and Safety Act 2011* and associated regulations, a work health and safety plan (WHSP) should be prepared by the Remediation Contractor. The purpose of this plan is to manage the health and safety of site workers and nearby residents, and address such issues as site security, exclusion zones, excavation safety, vibration, noise, odour and dust levels. The plan should address the risks during the remediation works and cover site specific requirements associated with the contaminants present within the site.

The site officer responsible for implementing health and safety procedures should induct all site personnel so that they are aware of and comply with, the requirements of this document. It is the contractor's responsibility, with assistance from client/owner(s) of the site to ensure that all other permits, approvals, consents or licences are current. Hazards relevant to the remedial works were identified and mitigation measures determined for the remediation as presented in the table below. These should be considered for the preparation of any site specific management procedures.

Anticipated Problem	Corrective Actions
Chemical Hazards	Contaminated sites have chemical substances that may present a risk to human health and the environment. The site specific WHSP should set out controls to mitigate any potential risks.
Asbestos (ACM) Hazards	All works associated with the disturbance and removal of asbestos impacted fill at the site must be undertaken in accordance with SafeWork NSW guidelines.
	A licensed asbestos removalist must notify the regulator in writing at least five days before the licensed asbestos removal work commences and must also obtain a permit (SafeWork, 2016).
	Removal of asbestos-contaminated soil will require a <i>Class A</i> licensed asbestos removalist. The asbestos removalist must prepare an asbestos removal control plan for the proposed earthworks, which will document the management measures required to address risk associated with potential exposure to asbestos in accordance with NSW SafeWork requirements and must include:
	<ul> <li>Work area isolation (barrier protection, buffer zone);</li> </ul>
	<ul> <li>Removal methods (friable/non-friable);</li> </ul>
	<ul> <li>Contamination control methods (decontamination procedures); and</li> </ul>
	<ul> <li>Health and safety procedures (respiratory protection).</li> </ul>
	<ul> <li>Asbestos related works at the site involving disturbance of soil must be managed strictly in accordance with this RAP and an asbestos management plan (AMP) should be prepared.</li> </ul>
	All asbestos and any contaminated soil removed must be disposed of as asbestos waste according to the EPA and the requirements of the local licensed waste disposal facility.
	Under Clause 473 of the <i>NSW Work Health and Safety Regulation</i> (2017), a clearance inspection is required following the removal of ACM. A clearance inspection is to be carried out and a clearance certificate issued before the area can be re-occupied. The company undertaking the clearance inspection should be independent of the demolition and / or asbestos removal company.
Physical Hazards	<ul><li>The following hazards are associated with conditions that may be created during site works:</li><li>Heat exposure;</li><li>Buried services;</li></ul>

 Table 8-1
 Remediation Hazards

Anticipated Problem	Corrective Actions
	<ul> <li>Noise, vibration and dust;</li> </ul>
	<ul> <li>Release of asbestos fibres</li> </ul>
	<ul> <li>Electrical equipment; and</li> </ul>
	<ul> <li>The operation of heavy plant equipment.</li> </ul>
	Good personal hygiene should also be practiced at all times and the following activities should be prohibited within the site where asbestos containing materials are encountered:
	<ul> <li>Smoking.</li> </ul>
	<ul> <li>Eating or drinking or any other activity involving hand to mouth contact prior to personal decontamination.</li> </ul>
	<ul> <li>Persons with facial hair wearing respirators, as it interferes with proper respirator fit</li> </ul>
Personal Protective Equipment and Monitoring	Personnel should, wherever possible, avoid direct contact with potentially contaminated material. Workers are to ensure that surface waters or groundwater is not ingested or swallowed and that direct skin contact with soil and water is avoided. Standard PPE with the addition of disposable P2 dust masks as specified for the contractor will be sufficient for the prescribed remedial works.

### 8.2 Personal Protective Equipment

During contaminated soil excavation and/or asbestos removal works, the following minimum personal protective equipment shall be worn.

- a. Long trousers, long sleeved shirt.
- b. Half face disposable or cartridge type particulate respirator capable of providing protection from asbestos (i.e. a P2 rated mask) will be selected used and maintained in accordance with AS/NZS 1715-2009 and meeting the requirements of AS/NZS 1716-2012.
- c. Disposable overalls that are to a standard that prevent tearing and penetration of asbestos fibres (disposable coveralls rated Type 5, Category 3 (prEN ISO 13982–1) or equivalent).
- d. Waterproof boots fitted with a steel toe meeting AS/NZS 2210:2000. Latex surgical gloves (low protein (powder free)) or Nitrile work gloves meeting AS/NZS 2161:2000 requirements. Standard work gloves may also be worn over the surgical gloves for convenience, and should be disposed of as asbestos waste with the disposable overalls.
- e. Hard hats meeting AS/NZS 1800:1998 requirements shall be worn when working around machinery or as directed by the site operator or their representative.
- f. Hearing protection meeting AS/NZS 1270:2002 requirements shall be worn when working around machinery if noise levels exceed 85dB(A).
- g. Safety glasses meeting AS/NZS 1336:1997 (as determined by the site operator).

#### 8.3 Asbestos Air Monitoring

Since asbestos-contaminated soils are to be excavated, air monitoring is required due to the identified type of asbestos in the site and thus there may be a risk for aerial dispersion of asbestos fibres. All asbestos fibre air monitoring must be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003 (2005)] and analysed by a NATA-accredited laboratory. The criteria and actions that will apply to this project are summarised in **Table 8-2**.

Control Level (fibres/mL)	Control / Action
< 0.01	No Action.
	Continue with existing control measures.
≥0.01	Asbestos Consultant to notify Principal Contractor (PC) and Environmental Consultant (EC) of results as soon as practicable.
	PC to notify/engage a Licensed Asbestos Removal Contractor.
	Asbestos Consultant, EC and PC to review current control measures and improve, where applicable. This may include improved work practices, use of further control measures (e.g. plastic screening or wet wiping techniques) or changing the work methodology.
≥0.02	Asbestos Consultant to notify PC and EC of results as soon as practicable.
	Asbestos Consultant to advise Licensed Asbestos Removal Contractor to <u>stop</u> work immediately.
	Asbestos Consultant to conduct investigations to establish cause of problem.
	Asbestos Consultant to advise Licensed Asbestos Removal Contractor on necessary works to rectify problem.
	Asbestos air monitoring to be continued by Asbestos Consultant.
	Contractors will be allowed to return to works area after results are <0.01 fibres/mL.

#### Table 8-2Criteria for Air Monitoring of Asbestos

#### 8.4 Unexpected Finds Protocol

Should unexpected finds be encountered, the approach in **Appendix D** should be followed. A contingent asbestos assessment procedure is described below:

#### Asbestos Assessment Procedure (if required):

In addition to the above, should additional asbestos investigation be necessary, test pitting should be carried out prior to disturbance of site soils. The validation plan for the site is detailed in **Section 9** should be followed. The general assessment procedure is described below:

- 1. Follow the Unexpected Finds Protocol and notify the appointed Environmental Consultant.
- 2. The appointed consultant to design investigation program to delineate asbestos impacts in soil in accordance with relevant, EPA endorsed, asbestos assessment guidelines.
- 3. Areas impacted by asbestos should be segregated from the remainder of the site, and marked by prominent features that withstand weathering (e.g. star picket and danger tape).
- 4. Undertake separate waste classification assessments for areas impacted by asbestos and the remainder of the site.
- 5. Soils from asbestos-impacted areas will need to be excavated and disposed of separately from the remainder of the site, following the methodology previously described.
- 6. Validate underlying materials after complete removal of asbestos-impacted soils on-site in accordance with the validation plan in **Section 9**.
- For waste classification purposes, asbestos in soils will be assessed for presence/absence in accordance with Australia Standard AS4964-2004. For soil to be retained on-site or for validation, asbestos will be assessed by the NEPC (2013) gravimetric protocol.

Site workers shall endeavour, wherever possible, to avoid direct contact with potentially contaminated material. Workers are to ensure that stormwater or groundwater is not ingested or swallowed and that direct skin contact with soil and water is avoided. All personnel on site will be required to wear the personal protective equipment outlined in this RAP.

## 9. Validation Strategy

The site remediation works must be validated to ensure that the objectives stated in the RAP have been achieved and confirm that the site is suitable for the proposed use. Indicative validation requirements are as follows:

- All requirements of the RAP are confirmed as completed;
- All concentrations of the contaminants of concern in samples collected from the material retained at the site are below the adopted validation criteria;
- When the 95% upper confidence limit (95% UCL) of the average concentration for each analyte in samples collected from the retained material is below the adopted RAC;
- Volumes of waste soils removed from the site are reconciled with tipping dockets confirming disposal at licensed facilities; and
- All material imported to site for landscaping and/or capping meet the importation criteria to ensure the material is fit for use, and does not pose an unacceptable risk to site users.

#### 9.1 Validation Sampling Plan

Validation sampling and laboratory analyses will follow the removal of identified contaminated material to ensure that the vertical and lateral extent of the contamination has been defined. The specific requirements of sampling and analyses are detailed in **Table** 9-1 below.

Should residual contamination be identified, it would be "chased out" where appropriate until material exceeding the validation criteria has been removed. Where contamination remains at site boundary locations (i.e. confirming that it is present off-site), the boundary conditions will be temporarily secured and retained and discussion will be required with the client to determine course of action before further excavations continue.

Following removal of known contaminated soils from the site, a validation process must be undertaken to confirm these remaining soils as being suitable for the proposed land use. The validation sampling detailed plan is outlined in **Table** 9-1.

#### Additional GME

The validation program shall include at least one GME. It is thus important that the existing groundwater wells be <u>retained</u> during the demolition and remediation activities (**Figure A.3**, **Appendix A**). Where wells are removed or damaged beyond repair, additional costs will be incurred for the installation of replacement wells within the site.

The GME will involve:

- 1 Measurement of standing water levels (SWLs), inspection for light and dense non-aqueous phase liquids. A PID will be used to collect headspace readings from the top collar of each monitoring well. All results will be recorded on field data sheets.
- 2 Sequential sampling of the wells using low flow methods. Sampling equipment will be decontaminated between each location. Groundwater will initially be purged and field parameters (pH, temperature, EC, DO and Redox) measured. Sampling will take place after field parameters have stabilised, as defined by three consecutive readings with variations not exceeding pH ±0.1, EC ± 5%, Redox ±10mV and Temp ± 0.2°C.
- 3 Samples will be collected for the analysis of dissolved heavy metals, including copper, nickel and zinc. TRH and VOC (including BTEX and CVOC) will be considered. Industry-standard methods for sample collection, handling and transport will be adhered to. This includes field filtering water for dissolved heavy metal analysis, using a 0.45 µm pore-size membrane. Laboratory-supplied sample containers shall be used. QC samples will be collected, as specified in the SAQP (Section 9.2).

#### Table 9-1 Validation Sampling Plan

Area	Sampling Density	COPC
Site Wide	The validation sampling density will be subject to the requirements of WADOH (2009), Table 8. Given the residential land use proposed, double density sampling is required.	Asbestos quantitative analysis as per
	Necessary field steps in determining the number of validations samples are as follows:	NEPC (2013)
	<ul> <li>Analyse for contaminants of concern, and chase any soils found to exceed the RAC.</li> </ul>	
Imported material	If material to reinstate the site is required to be sourced from off-site, it should be certified suitable for the intended use.	TRH
for use as backfill or in landscaping areas.	Certification should be supplied to the Environmental Consultant for review and include, as a minimum, those items noted in the EPA Virgin Natural Excavated Material (VENM) certificate obtained from the EPA website.	
	If the source site cannot supply suitable certifying information as deemed by the Environmental Consultant, the Client may request the Environmental Consultant to conduct the necessary review of the site source. The Environmental Consultant will determine the number of samples necessary for accentance of the source sites' material but as a minimum three representative samples of	
	First deliveries of imported material to the site should be undertaken while the Environmental Consultant is on-site to confirm the consistency of the material.	(quantitative and qualitative)



Page | 29

Soil assessment and sampling methodology should be in general conformance with the referenced regulatory and guidance documents within this RAP and as directed by the environmental consultant where unexpected finds occur. In addition, reference is made to the following documents for general guidance on soil sampling methodology:

- NEPC (2013) Schedule B2 Guideline on Site Characterisation;
- NEPC (2013) Schedule B3 Laboratory Analysis of Potentially Contaminated Soils;
- AS1141.3.1-2012 *Methods for Sampling and Testing Aggregates* (Method 3.1);
- WADOH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.

Validation sampling will be undertaken following the removal of contaminated material to ensure that the vertical and lateral extents of the impacts have been defined. Should residual contamination be identified, it would be "chased out" where appropriate until material exceeding the validation criteria has been removed.

The collection of validation samples will be based on screening of material visually for the presence of asbestos.

All samples will be transported to NATA-accredited laboratories, under strict 'chain of custody' (COC) conditions. More detailed (specific) methodology is described in **Table 9-2**.

Action	Description
Sampling Method	Sampling is to be undertaken at the surface, utilising onsite machinery for test pits and grab samples.
Sample Collection	Soil validation sampling will be directly from the exposed surface of excavation. Sampling data shall be recorded to comply with routine chain of custody requirements.
	Soil sample collection using a dry grab method (unused, dedicated nitrile gloves) plastic zip-locked bags (for asbestos analysis).
	Representativeness will be achieved through the application of double density sample locations.
	Samples should be taken a minimum 200mm from the soil exposed surface.
	For waste / stockpiles:
	Sketch and measure the stockpile dimensions, location and immediate vicinity impediments and record this information on the Field Inspection Form.
	Collection of screening samples by opening the stockpile using mechanical means (i.e. backhoe) or penetrating the stockpile using hand auger or push tube. Examples of stockpile partitioning are shown in AS11413.1-2012.
	Sampling should penetrate the entire depth of the stockpile.
	Samples should be handled with appropriate personal protective equipment.
	Each sample should be collected using decontaminated equipment, to minimise the opportunity for cross-contamination between individual samples.
	Where volatile contaminants are present, collect a minimum of 10 field screening samples from the stockpile for visual, olfactory and/or PID measurement. The screening samples should be discrete and collected evenly throughout the stockpile via a systematic grid. The 10 field screening samples should be collected in a Ziplock LDPE bag for PID head-space screening measurement.
	Samples assigned for laboratory VOC analysis will be determined on the basis of the PID screening result, visual and olfactory observations.

 Table 9-2
 Validation Sample Collection and Handling Procedures

Action	Description	
Soil Logging / Field Descriptions	Soils are to be classified in the field with respect to lithological characteristics and evaluated on a qualitative basis for odour and visual signs of contamination. Soil classifications and descriptions were based on Australian Standards AS 4482.1-2005 and AS1726-2017	
	A summary of field observations is to be provided on borehole logs, test pit logs, or field notes.	
Decontamination Procedures	<i>Drilling Equipment</i> – The drilling rods are to be decontaminated between sampling locations with potable water until the augers are free of all residual materials. <i>Sampling Equipment</i> – Dedicated gloves are to be used for each sample, and any trowel or shovel used is to be decontaminated between uses.	
Sample Handling, Transport and Tracking	Direct transfer of the sample into laboratory supplied glass jars or plastic bags, with each sample container sealed to eliminate cross contamination during transportation to the laboratory.	
	Label sample containers with individual and unique identification including project number, sample umber and depth, date and time of sampling.	
	Place sample containers into a chilled, enclosed and secure container for transport to the laboratory.	
	Provide chain of custody documentation to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to the environmental laboratory.	
	After sampling, refrigerated sample chests are to be transported to the primary laboratory using Chain-of-Custody (COC) procedures. Inter-laboratory duplicate samples are to be forwarded to the secondary laboratory with COC documentation. A Sample Receipt Advice (SRA) is to be provided by each laboratory to document sample condition upon receipt.	
Sample Containers	Containers and Preservation:	
and Holding Times	<ul> <li>Laboratory supplied containers and bags.</li> </ul>	
	<ul> <li>All parameters except as noted below: 250 mL glass jar with Teflon lined lid; Preservation: chill to 4°C</li> </ul>	
	<ul> <li>Asbestos: minimum 500 mL collected in a resealable LDPE bag; Preservation: not required.</li> </ul>	
	Holding Times:	
	Inorganics: generally 7-28 days	
	<ul> <li>Mercury and Hexavalent Chromium: 28 days</li> </ul>	
	<ul> <li>VOC/SVOC: 7-14 days</li> </ul>	
	• Other metals: 180 days	
	Asbestos: Indefinite holding time	
Field QA/QC	Quality assurance (QA) and quality control (QC) procedures will be adopted throughout the field sampling programme to ensure sampling precision and accuracy, to be assessed by analysis of 5% field duplicate/replicate samples.	
	Appropriate sampling procedures will be undertaken to prevent cross contamination, in accordance with EI's Standard Operating Procedures Manual. This will ensure:	
	<ul> <li>Standard operating procedures are followed;</li> </ul>	
	<ul> <li>Site safety plans are developed prior to works commencement;</li> </ul>	
	<ul> <li>Split duplicate field samples are collected and analysed;</li> </ul>	
	<ul> <li>Samples are stored under secure, temperature controlled conditions;</li> </ul>	
	<ul> <li>Chain of custody documentation is employed for the handling, transport and delivery of samples to the contracted environmental laboratory; and</li> </ul>	
	<ul> <li>Contaminated soil originating from the site area is disposed in accordance with relevant regulatory guidelines.</li> </ul>	
	<ul> <li>In total, field QA/QC will include one in 20 samples to be tested as blind field duplicates, one in 20 samples to be tested as inter-laboratory duplicates (ILD), as well as one VOC trip blank (intra-lab) sample and one equipment wash blank sample per sample batch. No QAQC samples will be collected for asbestos sampling</li> </ul>	
Action	Description	
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Laboratory QA/QC	The contract laboratory will conduct in-house QA/QC procedures involving the routine analysis of:	
	<ul> <li>Reagent blanks;</li> </ul>	
	<ul> <li>Matrix spike recoveries;</li> </ul>	
	<ul> <li>Laboratory duplicates;</li> </ul>	
	<ul> <li>Calibration standards and blanks;</li> </ul>	
	<ul> <li>Control standards and recovery plots; and</li> </ul>	
	<ul> <li>QC statistical data.</li> </ul>	
Achievement of Data Quality Objectives	An assessment of the overall data quality will be presented in the final Site Validation Report, in accordance with the EPA (2017) <i>Guidelines for the NSW Site Auditor Scheme</i> .	

#### Data Quality Objectives

In accordance with the US EPA (2006) *Data Quality Assessment* and the EPA (2017) *Guidelines for the NSW Site Auditor Scheme*, Data Quality Objectives (DQO) will be proposed to ensure an appropriate level of data quality and meet the specific requirements of the project. The DQO process to be applied for this remediation is documented in **Table 9-**.

Table 9-3	Summary	of Project	Data (	Quality	Objectives
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DQO Step	Details
1. State the Problem Summarise the contamination problem that will require new environmental data, and identify the resources available to resolve the problem; develop a conceptual site model.	The site is to be developed for residential purposes, with landscaped areas. Remediation is required to make the site suitable for the proposed use.
2. Identify the Goal of the Study (Identify the decisions) Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them.	Based on the objectives outlined in <b>Section 1.3</b> , the following decisions are identified: Are the soils remaining on the site following remediation suitable for the proposed land use? Does the level of impact coupled with the fate and transport of identified contaminants represent an unacceptable risk to identified human and/or environmental receptors on- or off- site? Will site soils require further remediation and/or special management before the site can be made suitable for use?
3. Identify Information Inputs (Identify inputs to decision) Identify the information needed to support any decision and specify which inputs require new environmental measurements.	<ul> <li>Inputs to the decision making process include:</li> <li>The proposed land use and development layout;</li> <li>Previous investigations performed at the site, summarised in Section 3;</li> <li>National and state guidelines made or approved by the EPA under Section 105 of the CLM Act 1997;</li> <li>Additional soil investigation and validation results for waste classification purposes;</li> <li>Laboratory analytical results of soil validation samples; and</li> <li>Assessment of analytical results in relation to the adopted criteria.</li> <li>At the end of the validation, a decision must be made regarding whether the environmental conditions are suitable for the proposed development, or if additional investigation and/or remedial works are required.</li> </ul>

DQO Step	Details
4. Define the Boundaries of the Study Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision.	Lateral – Cadastral boundaries of the site presented as <b>Figure 2</b> . Vertical – From the existing ground surface, fill and natural soil horizons, to the base of contaminated soil. Temporal – Results are valid on the day of data and sample collection, and remain valid as long as no changes occur on-site, or contamination (if present) does not migrate on-site or on to the site from off-site sources.
5. Develop the Analytic Approach (Decision rule) To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions.	<ul> <li>Laboratory analytical results will be accepted if:</li> <li>All contracted laboratories are accredited by NATA for the analyses undertaken;</li> <li>All detection limits (or limits of reporting (LORs)) fall below the remediation criteria;</li> <li>RPDs for duplicate samples are within accepted limits; and</li> <li>Laboratory QA/QC protocols and results comply with NEPM (2013) requirements.</li> </ul>
6. Specify Performance or Acceptance Criteria (Specify limits on decision errors) Specify the decision- maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data.	<ul> <li>Specific limits for this project are to be in accordance with National and NSW EPA guidance, and appropriate indicators of data quality and standard procedures for field sampling and handling. This includes the following points to quantify tolerable limits:</li> <li>The null hypothesis for the remediation of soils is that the 95% Upper Confidence Limits (UCLs) of the mean for contaminants of concern exceed the adopted remediation criteria across the site.</li> <li>The inspection of grid based surface locations and surface soil validation samples.</li> <li>The acceptance of the site as validated will be based on that:</li> <li>The 95% UCL of the mean of the data will satisfy the given site criterion. Therefore a limit on the decision error will be 5% that a conclusive statement may be incorrect;</li> <li>The standard deviation of the results is less than 50% of the relevant remediation acceptance criterion; and</li> <li>No single result exceeds the remediation acceptance criterion by 250% or more.</li> <li>Soil concentrations for the contaminants of concern that are below investigation/validation criteria made or approved by the NSW EPA will be treated as acceptable and indicative of suitability for the proposed land use.</li> </ul>
<ul> <li>7. Develop the Detailed Plan for Obtaining Data (Optimise the design for obtaining data)</li> <li>Identify the most resource- effective sampling and analysis design for general data that are expected to satisfy the DQOs.</li> </ul>	<ul> <li>Written instructions will be issued to guide field personnel in the required remedial and validation activities</li> <li>Soil remedial excavations are to be performed as per Section 6.</li> <li>Soil validation sampling is to be completed as per the methodology prescribed in Section 9.</li> <li>Validation sampling procedures will be implemented to optimise data collection for achieving the DQOs.</li> </ul>

To verify (support) that the validation data are of an acceptable quality, they will be assessed against the DQI outlined in Error! Reference source not found.

 Table 9-4
 Data Quality Indicators

QA/QC Measure	Field Data Quality Indicator	Laboratory Data Quality Indicator
Completeness – A measure of the amount of useable data from a data collection activity	Field data completeness would be deemed acceptable if: All critical locations are sampled. All samples are collected from the proposed grid and depth. Standard Operating Procedures (SOP) used are appropriate and complied with. Experienced field personnel are used. Field documentation is complete and correct. All laboratory documentation are presented, reviewed and found to be properly completed prior to submitting samples.	Laboratory data completeness would be deemed acceptable if: All critical samples are analysed according to the SAQP. All analytes are analysed according to the SAQP. Were appropriate methods and Practical Quantitation Limits (PQL) used for analysis Sample documentation in the form of Chain of Custody and Sample Receipt Notification is accurate and complete. Holding times are met in accordance with NEPM Schedule B3.
Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Field comparability is deemed acceptable if: SOP for sampling design and methodology are consistent between sampling events; Experienced field personnel are used. Seasonal variation is taken into consideration (i.e. temperature, rainfall, wind); and Sample types collected are consistent between sampling events where necessary.	Laboratory comparability is deemed acceptable if: Sample analytical methods are consistent between sampling events; Samples PQLs are consistent between sampling events; The same laboratory was used between sampling events; Analytical results are presented with the same units.
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present on site	Field representativeness is deemed acceptable if: Appropriate media are sampled according to the SAQP; All media identified in the SAQP are sampled.	Laboratory representativeness is deemed acceptable if: All samples were analysed according to the SAQP.
Precision – A quantitative measure of the variability (or reproducibility) of data	Field precision would be deemed acceptable if: SOPs are appropriate and complied with; Duplicate samples are collected and analysed at a rate of 5% (1 duplicate sample analysed per 20 primary samples collected); Laboratory-prepared volatile trip spike and trip blank are implemented at a rate of one per batch.	Laboratory data precision would be deemed acceptable if: Relative Percent Differences (RPDs) are found to be less than 30% between the inter-lab and the intra-laboratory duplicates. Trip spike laboratory analyses results show a recovery limit between 80 and 120%.
Accuracy – A quantitative measure of the closeness of reported data to the "true" value	Field data accuracy would be deemed acceptable if: SOPs are appropriate and complied with. Adequate calibration of field instruments against a known standard. Appropriate storage of primary and QA/QC samples in the field and during	Laboratory data accuracy would be deemed acceptable if: Rinsate blank results are below the PQL. Surrogates recoveries for soil are generally within 70-130%; Surrogates recoveries for water are generally within 40-130%;

QA/QC	C Measure	Field Data Quality Indicator	Laboratory Data Quality Indicator
		transport to the laboratory is implemented. Rinsate Blanks – 1 per batch where non- dedicated sampling equipment is used.	Method blank are evaluated against the Limit of Reporting (LOR) and analysed by the lab at a rate of 1 per 20 primary samples;
			Laboratory control are evaluated against accepted results with a general recovery between 60-140% with a rate of 1 sample per 20 primary samples;
			Matrix Spikes are evaluated against the recovery percentage of an expected results; and
			Calibration of laboratory instruments against known standards.

Note 1 LOR = limit of reporting (quantitative limit prescribed by the laboratory for the given analytical method) Note 2 RPD = relative percentage difference

#### 9.3 Validation Reporting

All fieldwork, chemical analyses, discussions, conclusions and recommendations will be documented in a site remediation and validation report. The report will be prepared in general accordance with requirements of the EPA (2020) *Guidelines for Consultants Reporting on Contaminated Land* and EPA (2017) *Guidelines for the NSW Site Auditor Scheme* and must confirm that the site has been remediated to a suitable standard for the proposed development, as defined by the RAC.

# 10. Conclusion

This RAP has been prepared to inform the remediation works at 11-13 Mannix Parade, Warwick Farm NSW.

The following environmental (contamination) issues relate to the site:

- Asbestos-impacted filling (≤0.5m BGL) across the southern portion of the site. The asbestos was identified in the form of fragments bonded ACM, as well as friable asbestos.
- The natural, sandy clays from 3m BGL onwards were saline, the strength of salinity increasing with depth. All site soils (i.e. to 4m BGL) were classed as non-aggressive towards buried steel, but mildly aggressive to buried concrete, and highly sodic (thus prone to erosion).
- Elevated concentrations of heavy metals (copper, nickel and zinc) in the local groundwater, which is also acidic (pH: 5.03 5.10) and saline (EC: 20,290 31,380 μS/cm).

The preferred remediation strategy involves excavation and off-site disposal of ACM-impacted soils. Excavations will be performed in accordance with appropriate site management plans, including the SMP, AMP and CEMP.

The sequence of the remediation works will be:

- Site Preparation;
- Site Demolition;
- Asbestos Management Plan;
- Soil Remediation (excavation of asbestos-impacted fill following waste classification; and
- Site Validation.

In addition to analysis of soil validation samples for asbestos content, the validation phase shall include at least one GME, with analysis of samples from the existing wells for dissolved heavy metals (copper, nickel and zinc).

In summary, EI considers that the site can be made suitable for the proposed residential land use, through the implementation of the works described in this RAP.



# 11. Statement of limitations

This plan has been prepared for the exclusive use of Taylor Construction Group Pty Ltd (the client), being the only intended beneficiary of El's work. The scope of the plan is limited to that agreed with the client.

No other party should rely on the document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

In preparing this plan, EI has used a degree of care and skill ordinarily exercised by reputable members of the environmental industry in Australia, as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this report must be read in conjunction with the whole of this report, including its appendices.

The methods and conclusions presented in this report are based on a limited investigation of conditions, with specific sampling locations chosen to be as representative as possible under the given circumstances.

El's professional opinions are reasonable and based on its professional judgment, experience, training and results from analytical data. El may also have relied upon information provided by the client and other third parties to prepare this document, some of which may not have been verified by El.

El's professional opinions contained in this document are subject to modification if additional information is obtained through further investigation, observations and/or validation testing during remedial activities. In some cases, further analysis may be required, which may result in a further report with different conclusions.



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# Abbreviations

ACM	Asbestos-Containing Materials
AF	Asbestos Fines
AHD	Australian Height Datum
AMP	Asbestos Management Plan
AS	Australian Standard
ASI	Additional Site Investigation
ASS	Acid Sulfate Soils
B(a)P	Benzo(a)Pyrene (a PAH compound), - B(a)P TEQ Toxicity Equivalent Quotient
BFD	Blind Field Duplicate (also known as intra-laboratory duplicate)
BGL	Below Ground Level
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CBD	Central Business District
CEC	Cation Exchange Capacity
CEMP	Construction Environmental Management Plan
CLM	Contaminated Land Management
COC	Chain of Custody
COPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
CVOC	Chlorinated Volatile Organic Compounds (a sub-set of the VOC analysis suite)
DA	Development Application
DBYD	Dial Before You Dig
DO	Dissolved Oxygen
DP	Deposited Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
EPA	Environment Protection Authority of New South Wales
ESL	Ecological Screening Level
ESP	Exchangeable Sodium Percentage
F1	TRH $C_6 - C_{10}$ less the sum of BTEX concentrations (Ref. NEPM 2013, Schedule B1)
F2	TRH > $C_{10} - C_{16}$ less the concentration of naphthalene (Ref. NEPM 2013, Schedule B1)
FA	Friable Asbestos
FCS	Fibre Cement Sheeting
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
GMW	Groundwater Monitoring Event
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
ILD	Inter-Laboratory Duplicate (also known as split field duplicate)
km	Kilometres
L	Litres



LEP	Local Environmental Plan
LGA	Local Government Area
m	Metres
µg/L	Micrograms per Litre
mg/L	Milligrams per Litre
mV	Millivolts
NATA	National Association of Testing Authorities, Australia
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
pН	Potential Hydrogen (a measure of the acidity or basicity of an aqueous solution)
PID	Photoionisation Detector
PM	Priority Metals
POEO	Protection of the Environment Operations
PQL	Practical Quantitation Limit (limit of detection for respective laboratory instruments)
QA/QC	Quality Assurance / Quality Control
RAC	Remediation Acceptance Criteria
RAP	Remediation Action Plan
RPD	Relative Percentage Difference
Redox	Reduction-Oxidation Potential
RL	Relative Level
SAQP	Sampling, Analytical and Quality Plan
SEPP	State Environment Planning Policy
SIL	Soil Investigation Level
SRA	Sample Receipt Advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TDS	Total Dissolved Solids (a measure of water salinity)
TCLP	Toxicity Characteristics Leaching Procedure
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
UCL	Upper Confidence Limit (of the mean)
UPSS	Underground Petroleum Storage System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compounds (specific organic compounds which are volatile)
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compounds (specific organic compounds which are volatile)
WHSP	Work, Health and Safety PLan



Appendix A - Figures





#### LEGEND (Note: All locations are approximate)

- — Site boundary
- — Basement boundary
- ---- OSD Tank location
- Test pit location
- Borehole/monitoring well location
- Previous borehole location (JK, 2020)



awn:	AM.H.	Taylor Cor
proved:	A.I.	Rem 11-13 Mannix
ate:	15-04-21	Soil and Gro



ceedances		GW-BH2M-1
Date		01-04-21
	μg/L	12
	μg/L	81
	μg/L	4800

ances	BH6		
n (m BGL)	0.0-0.1	0.12-0.3	
	Visible		
	0.1369% w/w	0.08% w/w	
	0.0112% w/w		

ceedances		GW-BH1M-1
Date		01-04-21
	μg/L	24
	μg/L	170
	μg/L	2700

ances		TP2_0.2-0.3
n (m BGL)		0.2-0.3
се	mg/kg	Yes

Map Source: DS&P, Ref No: D.P. 36641, Sheet: 2 & 4, Dated on: 16/06/2016

Figure:

2

Project: E25074.E06



- Site boundary
- Basement boundary
- OSD Tank location
- $\bigcirc$ Monitoring well location
  - Inferrred groundwater flow direction



11-13 Mannix Parade, Warwick Farm NSW Groundwater Contour and flow direction Plan

Remediation Action Plan

3

Project: E25074.E06

Appendix B – Proposed Development

# LAHC WARWICK FARM

# 11-13 MANNIX PARADE, WARWICK FARM

A000 - GENERA	AL NOTES / SITE CONTEXT		
A001	COVER SHEET / DRAWING LIST	5	12/02/2021
A1000 - GENER	AL ARRANGEMENT PLANS		
A1001		3	18/12/2020
A1002 A1003		5	12/2020
A1003	GROUND LEVEL FLOOR PLAN	8	12/02/2021
A1005	LEVEL 1 FLOOR PLAN	8	12/02/2021
A1006	LEVEL 2 FLOOR PLAN	7	12/02/2021
A1007	LEVEL 3 FLOOR PLAN	7	12/02/2021
A1008	LEVEL 4 FLOOR PLAN	7	12/02/2021
A1009	LEVEL 5 FLOOR PLAN	7	12/02/2021
A1010	ROOF LEVEL PLAN	6	12/02/2021
A1100 - BEFLE	CTED CEILING PLANS		
A1101	BASEMENT LEVEL RCP	5	12/02/2021
A1102	GROUND LEVEL RCP	5	12/02/2021
A1103	LEVEL 1 RCP	5	12/02/2021
A1104	LEVEL 2 RCP	5	12/02/2021
A1105	LEVEL 3 RCP	5	12/02/2021
A1106	LEVEL 4 RCP	5	12/02/2021
A1107	LEVEL 5 RCP	5	12/02/2021
	RETE SETOUT PLANS		
A1301	BASEMENT LEVEL CONCRETE SETOUT PLAN	2	18/12/2020
A1302	GROUND LEVEL CONCRETE SETOUT PLAN	2	18/12/2020
A1303	LEVEL 1-3 CONCRETE SETOUT PLAN	2	18/12/2020
A1304	LEVEL 4 CONCRETE SETOUT PLAN	2	18/12/2020
A1305	LEVEL 5 CONCRETE SETOUT PLAN	2	18/12/2020
A1306	ROOF CONCRETE SETOUT PLAN	2	18/12/2020
A1400 - COMPA		2	10/00/0001
A1401		2	12/02/2021
A1402	GROUND FLOOR COMPARTMENT PLAN	1	12/02/2021
A1403	LEVELS 1-3 (TYPICAL) COMPARIMENT PLANS	1	
A1404		1	
A2000 - ELEVA <sup>-</sup>	ΓIONS		
A2001	NORTH & SOUTH ELEVATIONS	4	18/12/2020
A2002	EAST & WEST ELEVATIONS	4	18/12/2020
A3000 - SECTIC	DNS		
A3001	SECTIONS A & B	4	18/12/2020
A3002	SECTIONS C & D	4	18/12/2020
A3100 - SECTIC	INS		
A3101	WALL SECTION AA	2	18/12/2020
A3102	WALL SECTION BB	2	18/12/2020
A3103	WALL SECTION DD	1	29/01/2021
			· · ·
A4000 - CONST	RUCTION DETAILS		
A4001	BRICK CORBELLING & BALCONY DETAILS	2	18/12/2020
A4005	MAIL BOX DETAILS	2	18/12/2020
A5000 - VERTIC		2	18/12/2020
A5003	BALUSTRADE. HANDRAIL & NOSING DETAILS	2	18/12/2020
A5004	ENTRY RAMP AND STAIR DETAILS	1	18/12/2020
		I	
A6000 - ROOM	LAYOUT		
A6001	BATHROOM LAYOUTS 01	2	18/12/2020
A6003	KITCHEN LAYOUTS 01	2	18/12/2020
A6004		2	12/02/2021
A6005		2	18/12/2020
A0000		2	18/12/2020
A6012	TYPICAL UNIT TYPE 06 07 & 08	2	18/12/2020
A6013	TYPICAL UNIT TYPE 09. 10. 11 & 12	2	18/12/2020
		<u> </u>	
A9000 - DOOR /	AND WINDOW SCHEDULE		
A9001	WALL TYPES SCHEDULE 1	3	18/12/2020
A9001-1	WALL TYPES SCHEDULE 2	3	18/12/2020
A0001-2	WALL TYPES SCHEDULE 3	3	18/12/2020
A9001-2			
A9001-2 A9002	DOOR TYPE ELEVATION	2	18/12/2020
A9001-2 A9002 A9004	DOOR TYPE ELEVATION WINDOW / LOUVRE TYPE ELEVATIONS & SCHEDULE	2 2	18/12/2020 18/12/2020

HYDRAULIC LEGEND					
NOTE: REFER TO HYDRAULIC & FIRE ENG. DOCUMENTATION FOR DETAILS.					
DESCRIPT	DESCRIPTION:				
0	DOWNPIPE				
$\Phi$	FLOOR WASTE				
$\equiv$	OVERFLOW CHANNELS				
$\boxtimes$	RAIN WATER OUTLET				
FH	FIRE HYDRANT				
0	EXPOSED SPRINKLER				
۲	SEMI RECESSED CEILING SPRINKLER				



ELECTRICAL FITTINGS LEGEND				
NOTE: REFER TO EL FOR DETAILS.	ECTRICAL ENG. DOCUMENTATION	A/C BL		
DESCRIPTION:		CD CP EX		
HH	SURFACE MOUNTED LINEAR LIGHT	DB DP		
	SURFACE MOUNTED LINEAR LIGHT W/ EMERGENCY SPITFIRE	F FCU FEX FH		
O	CEILING LIGHT	FHR FW GD		
$\oslash$	CEILING LIGHT	k L/D MJ		
8	RECESSED LED EMERGENCY LUMINAIRE	MC NBN HWU		
MD	MOTION DETECTOR	O/F RWO S		
EXIT	EXIT SIGN	SWP		
$\mathbf{N}$		MECHAN		
$\sim$	CEILING MOUNTED FAN WITH BUILT IN LED LIGHT	NOTE: REF FOR DETA		
<u>어</u>	WALL MOUNTED LIGHT			

 $\bigcirc$ 

GENERAL	ABBREVIATIONS:		ITRACT
A/C BL CD CP EX	A/C CONDENSER UNIT SPACE BOLLARD CLOTHES DRYING RACK CARPARK EXHAUST	1.	CONTRAC AND COM TENANTS AMENDM
55 DB DP = FCU =FX	DISTRIBUTION BOARD DOWNPIPE FRIDGE FUTURE SPLIT UNIT FIBE EXTINGUISHEB	2.	ANY DISC DOCUME REID CAN WORKS.
=H =HR =W GD	FIRE HYDRANT FIRE HOSE REEL FLOOR WASTE GRATED DRAIN	3.	CONTRA CONSTRI COMMEN
K _/D MJ	KITCHEN LIVING / DINING MOVEMENT JOINT (WITH THERMAL BREAK FIXING TO SECTION J REQUIRMENTS) MIRBOR CURBOARD	4.	ARCHITE ARCHITE IN CONJU DOCUME
NBN HWU	NBN BOX HOT WATER UNIT	5.	CLIENT T PRIOR TO
RWO S SWP	RAIN WATER OUTLET STORAGR STORMWATER PIT	6.	CONTRA COMPLE CONSTR
MECHANIC	AL FITTINGS LEGEND	7.	CONTRA READ DC
OTE: REFER	TO ELECTRICAL ENG. DOCUMENTATION	8.	CONTRA EXISTING ALL NEW
	I: EGGCRATE TYPE GRILLE	9.	CONTRA

AR WITH LIGHT ACCESS PANEL

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construction.

-Figured dimensions to be taken in preference to scaled drawings.

-All work is to conform to relevant Australian Standards and other Codes as applicable, together with other Authorities' requirements and regulations.

NSW Registered Architect Mark David Roach, 10332

1 F	PRELIMINARY CONSULTANT ISSUE	
		05/11/2020
2  F	-INAL ARCHITECTURAL LAYOUTS	18/11/2020
3 1	FENDER ISSUE	27/11/2020
4 T	FENDER ISSUE	18/12/2020
5 T	FENDER ISSUE	12/02/2021



# LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM

Client

A001

Project

Remembrance Ave

#### TOR'S NOTES

ACTOR MUST ENSURE WORKS ARE UNDERTAKEN MPLETED TO COMPLY WITH CLIENTS AND S DESIGN BRIEF/S, SPECIFICATIONS AND ALL MENTS.

CREPANCY FOUND WITHIN REID CAMPBELL'S ENTATION, PLEASE BRING TO THE ATTENTION OF AMPBELL BEFORE COMMENCEMENT OF ANY

ACTOR TO CONFIRM ALL REQUIRED RUCTION TOLERANCES PRIOR TO THE NCEMENT OF ANY WORKS.

SITE

mbanquete.com

ECTURAL SKETCHES (ASK) FORM PART OF THE ECTURAL DOCUMENTATION AND MUST BE READ JUNCTION WITH ALL OTHER ARCHITECTURAL IENTATION.

TO REVIEW ARCHITECTURAL DOCUMENTATION TO COMMENCEMENT OF WORKS.

ACTOR IS TO ENSURE ALL WORKS ARE ETED AS PER CURRENT CLIENT DESIGN AND RUCT BRIEF.

ACTOR MUST TAKE ALL REASONABLE STEPS TO OCUMENTATION PRIOR TO THE ISSUING OF RFIS.

ACTOR MUST CONFIRM THE LOCATION OF ALL IG SERVICES PRIOR TO WORKS, AND COORDINATE WORKS ACCORDINGLY.

ACTOR TO ENSURE WORKS ARE COMPLETED TO Y WITH THE RELEVANT AUSTRALIAN STANDARD, NATIONAL CONSTRUCTION CODE AND LEGISLATIVE COMPLIANCE.



5







Notes



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Notes

drawings. -All work is to conform to relevant Australian Standards and other Codes as applicable, together with other Authorities' requirements and regulations.

NSW Registered Architect Mark David Roach, 10332

Issue		Description		Da	ite
1	PRELIMINARY	CONSULTANT IS	SUE	05/11	/202 /202
3	TENDER ISSU	E		27/11	/202
4	TENDER ISSU	E		18/12	/202
5	TENDER 1330			12/02	/202
	Issue	d For Te	nder		
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)m ⊟⊟⊟	2m	4m 6m	200 @	۶m کم	10
)m ⊣⊣⊣⊣ SCALE	2m ⊣	4m 6m @ A1 ; 1:	8 200 @	3m A3	10
)m HHH SCALE Project	2m E BAR 1:100	4m 6m @ A1 ; 1:	200 @	3m A3	10
)m ⊟⊟⊟ SCALE Project LAI	2m E BAR 1:100 t <b>HC WAF</b>	4m 6m @ A1 ; 1: RWICK F	200 @ ARM	³m ⊨ A3	10
)m BCALE Project LAI 11-13	2m BAR 1:100 t <b>- IC WAF</b> MANNIX PA	4m 6m @ A1 ; 1: <b>RWICK F</b> RADE, WARW	8 200 @ ARM /ICK FA	3m ⊢ A3   RM	10
)m BCALE Project LAI 11-13 Client	2m BAR 1:100 t <b>HC WAF</b> MANNIX PA	4m 6m @ A1 ; 1: <b>RWICK F</b> RADE, WARW	8 200 @ ARM /ICK FA	3m ⊢ A3   RM	10
)m BCALE Project LAI 11-13 Client	2m BAR 1:100 t <b>HC WAF</b> MANNIX PA	4m 6m @ A1 ; 1: <b>RWICK F</b> RADE, WARW	8 200 @ ARM /ICK FA	3m   A3   RM	10
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Om FICALE Project LAF 11-13 Client	2m BAR 1:100	4m 6m @ A1 ; 1: RWICK F RADE, WARW YLC	8 200 @ ARM /ICK FA	am A3 RM	10
Om FICALE Project LAF 11-13 Client	2m BAR 1:100	4m 6m @ A1 ; 1: RWICK F. RADE, WARW YLC	8 200 @ ARM /ICK FA		10
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Dm FICALE Project LAF 11-13 Client Drawn MR	2m BAR 1:100 t HC WAF MANNIX PA TAC WAF MANNIX PA	4m       6m         @ A1       ; 1:         RWICK F.         RADE, WARW         YLC         Market Street         W 2060 Australia         011       Email:         sydney@         946         Web:       www.rei	8 200 @ ARM /ICK FA DF BELI g Preidcampbell.com	A3 RM	10
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Dm FICALE Project LAF 11-13 Client Drawn MR Print C 12/02/	2m BAR 1:100 t HC WAF MANNIX PA TACNO2 033 801 AF Level 15, 124 Wa North Sydney NSV Tel: 61 02 9954 5 Fax: 61 02 9954 4 C M	4m 6m @ A1 ; 1: RWICK F. RADE, WARW YCC PADE, WARW YCC RADE, WARW YCC YCC RADE, WARW YCC RADE, WARW YCC RADE, WARW YCC RADE, WARW YCC RADE, WARW YCC YCC RADE, WARW YCC YCC RADE, WARW YCC YCC YCC YCC YCC YCC YCC YC			
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TOTAL NUMBER
15
5
22



-EX. CL OF 150 DIA SEWER LINE SHOWN (NEAREST SURVEYED INVERT 10.500). ALLOW FOR 45 DEGREE ZONE OF INFLUENCE.

-EX. CL OF 150 DIA SEWER LINE SHOWN INDICATIVELY BASE ON AUSFLOW PEGOUT

-PROPOSED SUBSTATION FENCE

-INDICATIVE SUBSTATION LOCATIONS -SUBSTATION LOCATION WITH GREATER CLEARANCE BOOSTER BUT OVER

-EXISTING FENCE LINE IN PURPLE

NOTE: ALL INFORMATION PROVIDED IS BASED ON SURVEY INFORMATION AND ENDEAVOUR ENERGY DRAWINGS

-TIMBER FENCE TO LANDSCAPE

Notes

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-Contractor to verify all dimensions on site before commencing work. -Report all discrepancies to project manager prior to

construction. -Figured dimensions to be taken in preference to scaled

drawings. -All work is to conform to relevant Australian Standards and other Codes as applicable, together with other Authorities' requirements and regulations.

NSW Registered Architect Mark David Roach, 10332

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1 1		Date 05/11/2020
2	PRELIMINARY CONSULTANT ISSUE	13/11/2020
3	PRELIMINARY CONSULTANT ISSUE	16/11/2020
4	FINAL ARCHITECTURAL LAYOUTS	18/11/2020
6	TENDER ISSUE	27/11/2020
7	TENDER ISSUE	18/12/2020
8	I ENDER ISSUE	12/02/2021
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	REIDCANPBEL Architecture, Interiors, Planning ACN 002 033 801 ABN 28 317 605 875 Level 15, 124 Walker Street North Sydney NSW 2060 Australia Tel: 61 02 9954 5011 Email: sydney@reidcampbe Fax: 61 02 9954 4946 Web: www.reidcampbell.co	II.com
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# LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM, NSW 2170



# 20023 - STRUCTURAL DOCUMENTATION

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#### GENERAL

- 1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS.
- THESE ENGINEERING DRAWINGS HAVE BEEN PREPARED FROM INFORMATION AVAILABLE AT THE TIME, AS INFORMATION MAY BE SUBJECT TO CHANGE PRIOR TO OR DURING CONSTRUCTION, THE CONTRACTOR IS REQUESTED TO ADVISE THE ENGINEER WHERE DIFFERENCES OCCUR.
- 3. THESE DRAWINGS SHALL NOT BE USED FOR FINAL SET OUT OF THE PROJECT UNLESS SPECIFICALLY STATED.
- ALL WORKS SHALL COMPLY WITH THE CURRENT, RELEVANT SAA CODES AND THE BUILDING CODE OF AUSTRALIA. THE FOLLOWING RELEVANT STANDARDS SHALL BE READ AS PART OF THESE GENERAL NOTES AND COPIES SHALL BE KEPT ON SITE WITH THE CONTRACTUAL DOCUMENTS:
- AS 1554 SAA WELDING CODE (ALL PARTS)
- AS 1684 SAA NATIONAL TIMBER FRAMING CODE (ALL PARTS)
- AS 1720 SAA TIMBER CODE (ALL PARTS) AS 2870 - SAA RESIDENTIAL SLABS AND FOOTINGS
- AS 3600 SAA CONCRETE STRUCTURES CODE AS 3610 - SAA FORMWORK FOR CONCRETE CODE
- AS 3700 SAA MASONRY STRUCTURES CODE
- AS 3798 SAA GUIDELINES FOR EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS AS 4100 - SAA STEEL STRUCTURES CODE AS 4600 - SAA COLD-FORMED STEEL STRUCTURE NCC 2019 - NATIONAL CONSTRUCTION CODE
- ALL STRUCTURAL WORK SHOWN ON THESE DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER
- PERIODICAL INSPECTIONS ARE REQUIRED TO BE PERFORMED BY A DULY APPOINTED INSPECTOR FROM "WEBBER DESIGN PTY. LTD.". THESE INSPECTIONS ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH SCOPE OF INSPECTIONS IN SPECIFICATIONS PREPARED. THE INSPECTING ENGINEER IS RESPONSIBLE FOR PERFORMING MONITORING INSPECTIONS ONLY AND NOT SITE WORKS SUPERVISION, WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO PROVIDE A MINIMUM OF 24 HOURS NOTICE PRIOR TO INSPECTION.
- 7. SPECIFICATIONS OR INSTRUCTIONS ON DRAWINGS TAKE PRECEDENCE OVER THESE NOTES.
- 8. DO NOT SCALE FROM DRAWINGS.
- 9. DESIGN PARAMETERS ADOPTED FOR THIS PROJECT ARE AS FOLLOWS:

	WIND LOADS REGION TERRAIN CATEGORY SHIELDING Ms GUST WIND SPEED Vu TOPOGRAPHY Mt IMPORTANCE MI	A2 3 1 46m/s 1.0 1.0
	EARTHQUAKE LOADS (AS1170.2007) SITE SUB CLASS HAZARD FACTOR Z BCA IMPORTANCE LEVEL PROBABILITY FACTOR, Kp EDC	Ce 0.08 2.0 1.0 II
	SUPERIMPOSED DEAD LOADS (kPa) RESIDENTIAL NON-ACCESSIBLE ROOF TERRACES BALCONIES CARPARK BATHROOMS / WET AREAS CORRIDOR / FIRE STAIR COURTYARD / LANDSCAPE SUBSTATION	1.0 2.0 2.0 1.5 0.5 2.0 0.5 2.0 TBC
	LIVE LOADS (kPa) RESIDENTIAL NON-ACCESSIBLE ROOF TERRACES BALCONIES CARPARK BATHROOMS / WET AREAS CORRIDOR / FIRE STAIR COURTYARD / LANDSCAPE SUBSTATION	1.5 1.5 4.0 2.0 2.5 1.5 4.0 4.0, OR 18.0 (PER METRE OF SOIL DEPTH - WHERE APPLICABLE TBC
F	TRE RATING LIMIT (FRL) FOR STRUCTUR	AL ADEQUACY

CARPARK 120 MIN

#### EXPOSURE CLASSIFICATION **A2 INTERNAL**

RESIDENTIAL

**B2 EXTERNAL** B1 SURFACES IN CONTACT WITH THE GROUND

90 MIN.

- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND ADJACENT STRUCTURES IN A STABLE CONDITION. NO PART OF THESE STRUCTURES SHALL BE OVERSTRESSED UNDER CONSTRUCTION ACTIVITIES.
- 11. ALL PROPS AND FORMWORK FOR FLOOR BEAMS AND SLABS SHALL BE REMOVED BEFORE CONSTRUCTION OF ANY MASONRY WALLS OR PARTITIONS ON THE FLOOR.
- 12. ALL NON LOAD-BEARING WALLS SHALL BE KEPT 20mm CLEAR OF THE UNDERSIDE OF SLABS AND BEAMS UNLESS NOTED OTHERWISE.
- 13. CONTRACTOR SHALL RECORD ALL VARIATIONS TO THE DRAWINGS AND BE RESPONSIBLE FOR PRODUCING AS-BUILD DRAWINGS AT THE COMPLETION OF THE WORK AS REQUIRED.
- 14. NO PENETRATION, DRILLING OR CHASING IN STRUCTURAL ELEMENTS IS PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 15. ALL PROPRIETARY PRODUCTS SPECIFIED ON THESE DRAWINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS, ALTERNATIVE EQUIVALENT PRODUCTS MAY ONLY BE USED WITH THE APPROVAL OF THE ENGINEER.
- 16. CONTRACTOR SHALL SUBMIT TO THIS OFFICE CONSTRUCTION METHODOLOGY, INCLUSIVE OF ALL TEMPORARY ERECTION STRUCTURE PRIOR TO THE COMMENCEMENT OF STEEL INSTALLATION.
- 17. IT IS A REQUIREMENT THAT ALL BUILDING MATERIALS USED AND INSTALLED ON THE PROJECT MUST BE COMPLIANT WITH THE NATIONAL CONSTRUCTION CODE, THE BUILDING CODE OF AUSTRALIA, THE AUSTRALIAN STANDARDS AND ANY OTHER APPLICABLE LAWS OR REGULATIONS.

#### **BULK EXCAVATION:**

- 1. ALL LEVELS, BATTERS, CONTOUR LINES AND LOCATIONS OF EXISTING SERVICES SHOWN ON PLAN ARE INDICATIVE ONLY AND SHALL BE VERIFIED ON SITE. REFER TO ARCHITECTURAL AND SURVEY PLANS FOR DETAILS.
- 2. THE CONTRACTOR IS TO NOTIFY ALL SERVICE AUTHORITIES AND ARRANGE FOR DISCONTINUANCE OF SERVICES OR SUPPLY AS APPLICABLE AND CARRY OUT ALL DISCONNECTION OR SEALING OFF OF SERVICES AND DRAINS AS REQUIRED. SERVICES OR SUPPLY LINES THAT ARE TO BE RETAINED SHALL REMAIN UNDAMAGED AND GIVEN ALL NECESSARY PROTECTION AS REQUIRED.
- 3. THE CONTRACTOR SHALL PROVIDE EFFECTIVE DIVERSION OR REMOVAL OF ALL SURFACE WATER FROM THE PREPARED SUB-GRADE.
- 4. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED ENVIRONMENTAL TREATMENT OF RUNOFF FROM THE CONSTRUCTION SITE.
- 5. THE BULK EXCAVATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE BULK EXCAVATION PLAN. EXCESS EXCAVATIONS SHALL NOT BE PAID FOR AS EXTRA EXCAVATION UNLESS AUTHORISED BY THE SUPER INTENDENT OR THE ENGINEER. EXCESS EXCAVATION SHALL BE FILLED BY THE CONTRACTOR WITH 3% CEMENT STABILISED SAND.
- BULK EXCAVATION BATTERS AROUND THE PERIMETER OF THE SITE ARE TO BE 1V:1.5.H UNLESS OTHERWISE NOTED

#### FOUNDATIONS:

- 1. THE FOUNDATION IS DESIGNED BASED ON FINAL GEOTECHNICAL REPORT NUMBER 20/0955 BY STS GEOTECHNIQUES DATED APRIL 2020. STS GEOTECHNIQUES SHALL BE ENGAGED TO QUALIFY AND ASSESS THE SUITABILITY OF THE FOUNDATION MATERIAL PRIOR TO PLACING CONCRETE.
- 2. THE BUILDER TO STUDY AND IMPLEMENT ALL RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT AND OTHER RELEVANT RECOMMENDATIONS FROM BUILDING TECHNOLOGY FILE 18 (FORMERLY KNOWN AS CSIRO NOTE 10-9).
- 3. REFER GEOTECHNICAL REPORT FOR SITE CLASSIFICATION IN ACCORDANCE WITH AS 2870.
- EXISTING ADJACENT FOOTINGS SHALL NOT BE UNDERMINED. NEW FOOTING FOUNDING DEPTH SHALL MATCH, BUT NOT EXCEED, ADJACENT FOOTING FOUNDING DEPTH. IN THE EVENT THAT UNDERPINNING IS REQUIRED PLEASE CONTACT THIS OFFICE.
- 5. ANY EXCAVATION WORKS FOR CONSTRUCTION OF FOOTINGS OR RETAINING WALLS SHALL NOT ENCROACH BEYOND 45° LINE OF INFLUENCE.
- 6. UNLESS NOTED OTHERWISE, WHEREVER A NEW FOOTING IS LOCATED CLOSE TO AN EXCAVATION, BATTER, EXISTING FOOTING, EXISTING SERVICE OR NEW SERVICE WHICH IS DEEPER THAN THE NEW FOOTING; THE EXCAVATION FOR THE NEW FOOTING SHALL BE DEEPENED AND BACKFILLED WITH BLINDING CONCRETE AS SPECIFIED. THE ENGINEER SHALL BE NOTIFIED IF IN DOUBT
- 7. THE STRUCTURAL DESIGN HAS BEEN UNDERTAKEN BASED ON THE FOOTING ALLOWABLE BEARING PRESSURES RECOMMENDED BY THE GEOTECHNICAL REPORT.
- 8. THE SITE SHALL BE STRIPPED, TRIMMED AND GENERALLY PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. IN ALL CASES THE SITE SHALL BE STRIPPED OF ALL VEGETATION IN BUILDING AREAS. NO VEGETATION OR ORGANIC MATTER SHALL EXIST IN THE SOIL STRATA BELOW FOOTINGS OR GROUND LEVEL
- 9. THE CONTRACTOR IS TO ALLOW FOR ANY ADDITIONAL INVESTIGATIONS AND MATERIAL TESTING DEEMED NECESSARY TO FURTHER ESTABLISH SITE CONDITIONS TO ACHIEVE THE REQUIRED FOUNDATION PARAMETERS.
- 10. ALL FOUNDATION MATERIALS SHALL BE VERIFIED BY TESTING AT THE EXPENSE OF THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE PLACEMENT OF MEMBRANE. REINFORCEMENT OR CONCRETE.
- 11. UNLESS OTHERWISE NOTED, THE SITE SHALL BE FILLED WITH APPROVED WELL GRADED SAND. 12. NO EXCAVATED MATERIAL FROM SITE SHALL BE SUITABLE FOR BACKFILL WITHOUT PRIOR GEOTECHNICAL
- ENGINEERS APPROVAL. 13. COMPACT FOUNDATION MATERIAL AND BACKFILL IN LAYERS NOT EXCEEDING 300mm INTERMEDIATE
- LAYERS TO 95% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289. PROVIDE COMPACTION TEST RESULTS PRIOR TO PROCEEDING. 14. COMPACTION METHODOLOGY SHALL BE VERIFIED BY THE CONTRACTOR TO CAUSE NO DAMAGE TO
- ADJACENT STRUCTURES.
- 15. LOWEST LEVEL FOOTINGS SHALL BE POURED FIRST. NO HEIGHT EXCEEDING HALF THE CLEAR DISTANCE BETWEEN FOOTINGS WITH DIFFERENT LEVEL IS PERMITTED.
- 16. ALL FOOTINGS TO BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS OTHERWISE NOTED.
- 17. BLINDING CONCRETE OF 15MPa SHALL BE PROVIDED TO BACKFILL IN ANY NECESSARY OVER EXCAVATION TO ACHIEVE THE REQUIRED BEARING CAPACITY.
- 18. PRIOR TO PLACING CONCRETE, ALL FOUNDATIONS ARE TO BE FREE OF WATER OR LOOSE DELETERIOUS MATERIAL.
- 19. FOOTINGS ARE TO BE FOUNDED 100mm INTO THE NOMINATED MATERIAL UNLESS OTHERWISE NOTED AND PROVIDED WITH A 50mm BLINDING LAYER OF 15MPa CONCRETE.
- 20. RAFT SLABS AND SLABS ON GROUND SHALL BE UNDERLAIN BY HEAVY DUTY SEALED POLYTHENE VAPOUR BARRIER.
- 21. BORED PIERS AND PILES ARE TO BE CONSTRUCTED TO WITHIN 75mm OF THE DESIGNATED PLAN LOCATION. TRUE VERTICALITY OF PILES SHALL BE 1/100 OF THE TOTAL LENGTH OF THE PILE. THE CONTRACTOR SHALL ALLOW FOR AND PROVIDE TEMPORARY LINERS AS REQUIRED TO AVOID COLLAPSE IN THE BORED HOLE
- 22. ALL GROUND SLABS ARE TO BE UNDERLAIN BY A 50mm MINIMUM DEPTH LEVELLING SAND BED ON ADEQUATE SUBGRADE MATERIAL (50mm CRUSHED ROCK OR TO GEOTECHNICAL ENGINEERS RECOMMENDATIONS

#### PILING

- 1. ALL PILES SHALL BE DESIGNED IN INSTALLED IN ACCORDANCE WITH CURRENT SAA CODES AS 1170, AS 2159 AND AS 3600.
- 2. THE PILING CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PILES ARE INSTALLED TO THE REQUIREMENTS OF;
  - STRUCTURAL DRAWINGS PILING SPECIFICATION

CAPWAP 2%

- AUSTRALIAN STANDARDS: AS 1170 (SAA LOADING CODE), AS 2159 (SAA PILING CODE), AS 3600 (SAA CONCRETE
- STRUCTURES CODE) AND AS 4100 (SAA STEEL STRUCTURES) GEOTECHNICAL INVESTIGATION REPORT
- ALL PILES SHALL BE DESIGNED TO ACCOMMODATE A LOAD ECCENTRICITY OF 75mm DUE TO INSTALLATION 3 TOLERANCES ON SITE
- 4. THE PILING CONTRACTOR SHALL SUBMIT ALL PILING AND RETENTION DETAILS AND DESIGN CALCULATION TO THE ENGINEER FOR REVIEW. ALLOW MINIMUM OF 5 WORKING DAYS FOR REVIEW PRIOR TO SITE COMMENCEMENT
- 5. PILES SHALL BE TESTED IN ACCORDANCE WITH THE SPECIFICATION. PILE TESTS TO BE CARRIED OUT AS FOLLOWS: DYNAMIC TESTING 5%
- 6. THE PILING CONTRACTOR IS RESPONSIBLE FOR SETTING OUT PILE LOCATIONS.
- 7. ALL PILE DESIGNS MUST INCORPORATE AN ALLOWANCE FOR ANY DOWN-DRAG DUE TO SOFT SOIL CONSOLIDATION WHERE APPLICABLE.
- 8. PILES ARE TO BE MONITORED FOR UPWARD HEAVE MOVEMENTS WHERE APPLICABLE. PILES WITH SIGNIFICANT MOVEMENT MAY REQUIRE TO BE RE-DRIVEN. 9. THE DESIGN OF PROPRIETARY BOUNDARY RETENTION SYSTEMS SHALL ENSURE THE SAFETY AND STABILITY
- OF THE SITE AND ADJACENT STRUCTURES AT ALL TIMES.
- 10. PILING CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE PRESENCE OF ALL UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF ANY WORKS.

# FORMWORK:

1. DESIGN OF FORMWORK AND SUPPORTING STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN ACCORDANCE WITH AS 3610.

2. REFER OTHER CONSULTANTS DOCUMENTATION FOR ADDITIONAL FIXING REQUIREMENTS

14 DAYS

3. MINIMUM STRIPPING TIMES WALLS AND COLUMNS 7 DAYS

GENERAL FLOOR

4. FORMWORK SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED TO SAFELY SUPPORT ALL VERTICAL AND LATERAL LOADS THAT WILL BE APPLIED UNTIL SUCH LOADS CAN BE SUPPORTED BY THE CONCRETE STRUCTURE.

5. BACK PROP SLABS AND BEAMS TO ENGINEERS APPROVAL FOR A MINIMUM OF 28 DAYS AFTER CASTING.

- 6. STRIPPING AND BACK PROPPING TIMES MAY BE REDUCED UPON RECEIPT OF STRENGTH TEST RESULTS AT THE DISCRETION OF THE ENGINEER.
- 7. PRE-CAMBER ALL FORMWORK: SLABS AND BEAMS SPAN / 600 CANTILEVERS SPAN / 200
- 8. ENSURE DECK IS CLEANED OF ALL DEBRIS PRIOR TO CONCRETING.
- 9. CONTRACTOR SHALL PROVIDE SOLEBOARDS TO ALL SUPPORT SYSTEM LEGS BEARING ON GROUND OR SUSPENDED FLOOR AND ENSURE THAT THE GROUND OR SUSPENDED FLOOR IS CAPABLE OF SUPPORTING THE MAXIMUM DESIGN LEG LOAD
- 10. CONTRACTOR SHALL MONITOR FORMWORK DURING CONCRETE PLACEMENT AND ADJUST FORMWORK IF REQUIRED.
- 11. CONTRACTOR TO VERIFY THAT ALL PROPRIETARY MANUFACTURED FORMWORK (PROPS, FRAMES, JACKS AND BRACING ETC.) TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

#### CONCRETE

1. CONTRACTOR IS TO ENSURE THAT ALL CONCRETE ELEMENTS ARE CONSTRUCTED TO THE MINIMUM SIZE SHOWN ON DRAWINGS

- 2. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE APPLIED FINISHES.
- 3. APPROVED INTERNAL VIBRATORS SHALL BE USED TO COMPACT CONCRETE. CAVITY FILL SHALL BE RODDED. 4. ALL CONCRETE IS TO BE CURED FOR 14 DAYS MINIMUM AFTER POURING OR APPROVED PROPRIETARY SYSTEM. UNLESS OTHERWISE NOTED. SLABS SHALL BE THOROUGHLY WETTED. THEN COVERED FOR A MINIMUM OF 7 DAYS WITH 0.2MM THICK POLYTHENE SHEETING, WHICH SHALL BE SECURELY FIXED AGAINST TRAFFIC AND WIND AND OVERLAPPED 300MM MINIMUM AT JOINTS.

5. CONCRETE SHALL BE READY MIXED BY AN APPROVED SUPPLIER AS BELOW (UNLESS NOTED OTHERWISE):

ELEMENT	SLUMP (mm)	MAX. COURSE AGGREGATE (mm)	MIN. fc AT 28 DAYS (MPa)
PAD FOOTINGS	80	20	N50
STRIP FOOTINGS	80	20	N50
SLAB ON GROUND INTERNAL	80	20	N32
SLAB ON GROUND EXTERNAL	80	20	N32
CAVITY FILLS	100	10	N20
WALLS	80	20	(REFER SCHEDULE)
COLUMNS	80	20	(REFER SCHEDULE)
INT. SUSPENDED SLABS, BEAMS AND STAIRS	60	20	N40 FOR R.C (REFER SCHEDULE) S40 FOR P.T. (REFER SCHEDULE)
EXT. SUSPENDED SLABS, BEAMS AND STAIRS	60	20	N40

6. TYPE 'GP' PORTLAND CEMENT SHALL BE USED UNLESS OTHERWISE NOTED.

7. ADMIXTURES SHALL NOT ADVERSELY AFFECT THE SPECIFIED CONCRETE PROPERTIES. DO NOT USE ADMIXTURES UNLESS APPROVED BY THE ENGINEER. THE USE OF CALCIUM CHLORIDE, CHLORIDE ADMIXTURES AND SILICA FUME OR FLY ASH AS CEMENT SUBSTITUTES ARE NOT PERMITTED.

8. UNLESS NOTED OTHERWISE, CONCRETE STRENGTH SHALL BE GRADE N32 WITH: MINIMUM CEMENT CONTENT OF 320kg/m<sup>3</sup> MAXIMUM WATER CONTENT OF 1651/m<sup>3</sup>

COARSE AGGREGATE SIZE OF 20mm, AND MAXIMUM SHRINKAGE AT 56 DAYS 600 MICROSTRAINS

9. FOR HIGH STRENGTH CONCRETE (fc EXCEEDING 40MPa), THE MIX DESIGN SHALL INCLUDE THE FOLLOWING: LOW WATER / CEMENT RATIO LOW CREEP LOW SHRINKAGE (i.e. 600 AVERAGE MICROSTRAINS AT 56 DAYS)

LOW HEAT HYDRATION SUPER-PLASTICISERS ADDITIVES TO INCREASE SLUMP SUPPLEMENTARY CEMENTITIOUS MATERIALS SUCH AS SILICA FUME

FLY ASH AND GROUND GRANULATED BLAST FURNACE SLAG.

10. CURING IS ESSENTIAL TO PREVENT SELF DESICCATION IN EARLY AGE OF THE CONCRETE.

- 11. DETAILS OF ALL PROPOSED MIX DESIGNS SHALL BE FORWARDED TO THE ENGINEER PRIOR TO INCORPORATION IN THE
- 12. CAST CONCRETE TO JOINTS SHOWN ON DRAWINGS OR OTHERWISE APPROVED BY THE ENGINEER IN A HIT / MISS PATTERN.
- 13. THE ENGINEER SHALL BE NOTIFIED WHENEVER THE CURRENT AMBIENT TEMPERATURE OR THE TEMPERATURE FORECAST FOR THE DAY OF THE CONCRETE POUR EXCEEDS 35 DEGREES. ENGINEER AT HIS / HER DISCRETION MAY OR MAY NOT PERMIT CONCRETE BE POURED DURING THAT DAY
- 14. ALL COMPONENTS CAST INTO CONCRETE SHALL BE HOT DIP GALVANISED.
- 15. CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER 7 AND 28 DAY COMPRESSIVE STRENGTH TEST FOR EVERY 50m<sup>3</sup> DELIVERED OR DELIVERY TO SITE. CONCRETE TESTING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1379.

16. PROPOSED LOCATION OF CONSTRUCTION JOINT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. 17. DURING PLACEMENT, CONCRETE FALL HEIGHT SHALL BE RESTRICTED TO - 1800mm GENERALLY

FOR WALLS EQUAL TO OR - 2700mm GREATER THAN 200mm THICK

- 18. TOLERANCE CLASSES TO CONCRETE SURFACES SHALL BE DETERMINED BY A STRAIGHT EDGE PLACED ANYWHERE ON THE SURFACE IN ANY DIRECT AS FOLLOWS: CLASS A MAXIMUM DEVIATION FROM 3m STRAIGHT EDGE 3mm
  - CLASS B MAXIMUM DEVIATION FROM 3m STRAIGHT EDGE 6mm CLASS C MAXIMUM DEVIATION FROM 6m STRAIGHT EDGE 6mm

19. CONCRETE WORKS REQUIRING WATERPROOFING SHALL INCLUDE WATERPROOF ADMIXTURE AS PER MANUFACTURERS RECOMMENDATIONS

20. CONCRETE SURFACE SHALL BE FINISHED TO BE COMPLIANT WITH THE SPECIFIC REQUIREMENTS FOR ANY APPLIED SURFACE FINISHES INCLUDING CARPET TILES, VINYL FLOOR, TILES, ADHESIVES, OTHER SURFACE APPLICATION, ETC. REFER ARCHITECTURAL SPECIFICATION FOR EXTENT AND FINAL SLAB FINISH REQUIREMENTS.

## **REINFORCEMENT:**

- BE FIXED AS SHOWN ON REINFORCING PLAN.
- 2. MATERIAL IS INDICATED BY THE FOLLOWING SYMBOLS R10 DENOTES 10mm DIAMETER HOT ROLLED PLAIN ROUND BAR N12 DENOTES 12mm DIAMETER HOT ROLLED DEFORMED BAR SL82 DENOTES SQUARE WELDED WIRE FABRIC RI 918 DENOTES RECTANGULAR WELDED WIRE FABRIC DENOTES 4 MAIN WIRES OF 12mm TRENCH MESH 4-L12TM DEFORMED BAR OF GRADE 500 ROUND BAR OF GRADE 250 LOW DUCTILITY BAR OF GRADE 500 SQUARE WELDED WIRE OF GRADE 500 RECTANGULAR WELDED WIRE MESH OF GRADE 500
- 3. THE BAR SIZE INDICATED BY A NUMBER AFTER THE ABOVE SYMBOL, WHICH INDICATES THE BAR DIAMETER IN MILLIMETERS. REFER TO NOTE 2 ABOVE FOR EXAMPLE.
- 4. GRADE 500 REINFORCEMENT TEST CERTIFICATES SHALL BE AVAILABLE FOR WEBBER DESIGN PTY. LTD. FOR APPROVAL PRIOR TO FIXING UPON REQUEST.
- 5. COVER TO REINFORCEMENT TO BE (UNLESS NOTED OTHERWISE):

ТҮРЕ	INTERNAL FACES	EXTERNAL FACES
FOOTINGS / PILE CAPS	-	50
COLUMNS	30	40
WALLS	30	40
RETAINING WALLS	50	50
BEAMS	35	40
SUSPENDED SLABS	25	40
SLABS ON GROUND	30	40
PRECAST	20	30

- 6. HOOKS AND COGS SHALL COMPLY WITH AS 3600 UNLESS OTHERWISE SHOWN. SLOPES OF CRANKS ARE NOT TO EXCEED 1 IN 6.
- 7. REINFORCE SLAB RE-ENTRANT CORNERS WITH 2N16 x 1500 BARS PLACED AT 45 DEGREES TIED TO THE INSIDE OF THE REINFORCEMENT.
- 8. MINIMUM LAPS FOR: MESH OVERLAP 2 OUTERMOST TRANSVERSE BARS N & R BARS 50 BAR DIAMETERS UNLESS NOTED OTHERWISE
- 10. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING AT 800mm MAXIMUM WIDTH FOR BARS AND 600mm MAXIMUM WIDTHS FOR MESH.
- BAR CHAIRS IN REINFORCED CONCRETE ARE TO BE IN ACCORDANCE WITH AS / NZS 2425:2015 11. MOVE AFFECTED REINFORCEMENT TO EITHER SIDE OF HOLES IN SLAB UNLESS NOTED OTHERWISE.
- 12. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL ESTABLISH A WELDING PROCEDURE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL WELDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH AS 1554 PART 3.
- 13. ALL WELDING TO BE CARRIED OUT BY A QUALIFIED AUSTRALIAN SUPERVISOR, WELDING QUALIFICATION TO BE PRESENTED UPON REQUEST. MAXIMUM WELD SIZE TO BE 4 CFW EACH PASS, WITH E48XX ELECTRODE. THE CONTRACTOR SHALL ENGAGE A WELDING INSPECTOR TO INSPECT THE PROCEDURE AND SITE WELDS.
- 14. REINFORCEMENT IS NOT PERMITTED TO BE HEATED ABOVE 400 DEGREES
- 15. NO WELDS PERMITTED WITHIN 50mm OF BAR BENDS 16. ABBREVIATIONS USED IN DRAWINGS:

EW	EACH WAY
NF	NEAR FACE
FF	FAR FACE
EF	EACH FACE
CTR	CENTRAL
Т	ТОР
В	BOTTOM
LG	BAR LENGTH (NOT
CTS	CENTRES
REINF.	REINFORCEMENT
SEC.	SECONDARY

17. SAFETY MESH TO BE SUPPLIED FOR DEPTHS GREATER THAN 350mm AND INSTALLED AS REQUIRED ONSITE

INCLUDING COG)

1. REINFORCEMENT IS TO BE MANUFACTURED IN ACCORDANCE WITH AS/NZS 4671 AND AS 1302 AND SHALL

<u>2</u>

9. REINFORCEMENT SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION

	WORK SHALL BE REPROL MEANS (GRAPHIC, ELECT PHOTOCOPYING, RECORE SYSTEMS) WITHOUT THE LTD.	DUCED RONIC DING C E PERM	OR COPIE OR MECH R INFORM IISSION O	D IN ANY IANICAL, I IATION RE F WEBBEF	TORM OR BY NCLUDING TRIEVAL R DESIGN PTY
C	O NOT SCALE DRAWINGS, USE	FIG	URED D	DIMENS	SIONS
Rev	. Description		Eng.	Draft.	Date
1	ISSUED FOR TENDER (DRAFT)		MA/BT	PAC	27.11.20
2	ISSUED FOR TENDER (UPDATED)		MA/BT	PAC	18.12.20
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		S-V	VEB-01	0-029	$\longrightarrow$
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ſ⊢	RECAST WALLS	5-1	VEB-02	<u>10-879</u>	——
t∣s	LAB ON GROUND DETAILS	S-V	VFB-95	50-951	——X
} s	USPENDED CONCRETE SLABS	S-V	VEB-96	50-962	
}	OST TENSIONING DETAILS	S-V	VEB-96	5-966	$\square$
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	IASONRY DETAILS	S-V	VEB-98	80-981	
	TEEL DETAILS	S-V	VEB-99	0-991	<u>_</u>
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**ISSUED FOR TENDER** 

## STRUCTURAL DRAWING



# LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM, NSW 2170

# **GENERAL NOTES - SHEET 1**

DATE	DESIGNED BY	CHECKED BY	
NOV 2020	MA/BT	AC	
SCALES AT A1	DRAWN BY	APPROVED BY	
1:100	PAC	PW	1
JOB No.	DRAWING No.		REV.
20023	S-WEI	B-001	2

## **TENDER NOTES**

- 1. ALL DRAWINGS ARE CURRENTLY BEING COORDINATED WITH ARCHITECT AND SERVICES ENGINEER. BUILDER SHALL MAKE ALLOWANCE WHERE NECESSARY OR RAISE QUERIES FOR CLARIFICATION.
- SERVICES PENETRATIONS TO BE COORDINATED WITH SERVICES ENGINEER. WHERE RELOCATION IS NOT POSSIBLE, BUILDER SHALL MAKE ALLOWANCE FOR STRUCTURAL REDESIGN AS DEEMED NECESSARY. NO SETDOWN HAS BEEN ALLOWED FOR. IF REQUIRED, ADDITIONAL CONCRETE DEPTH, REINFORCEMENT AND CONCRETE STRENGTH MAY BE REQUIRED.
- 3. REFER TO ARCHITECT FOR ALL ARCHITECTURAL FACADE TREATMENT.
- 4. BUILDER SHALL MAKE ADDITIONAL ALLOWANCE FOR CONSTRUCTION SEQUENCE/JOINTS/POUR STRIPS, ADDITIONAL REINFORCEMENT AND ADDITIONAL LOADING CAPACITY. THESE DOCUMENTATIONS ARE FOR THE BASE BUILDING STRUCTURAL REQUIREMENTS ONLY. ANY CONSTRUCTION RELATED WORKS, REDESIGN AND COST ARE EXCLUDED. BUILDER TO MAKE NECESSARY ALLOWANCE AS REQUIRED.
- ALTERNATIVE METAL DECK COMPOSITE FORMWORK SHALL BE IN EQUIVALENT TO DECK SPECIFICATION NOMINATED. CERTIFICATES OF COMPLIANCE SHALL BE PROVIDED PRIOR TO CONSTRUCTION.
- ADDITIONAL BUILDING MAINTENANCE ACCESS SYSTEM FIXING AND LOADING REQUIREMENT SHALL BE REVIEWED AND ALLOWED FOR.
- REFER ARCHITECTURAL FOR OTHER SECONDARY STRUCTURAL STEEL (NON-BASE BUILDING RELATED) SUCH AS HAMPER TRUSS. CEILING FRAME. BALUSTRADES, ARCHITECTURAL FEATURE WALL, FENCE. WHERE NOT DOCUMENTED. BUILDER SHALL MAKE ADEQUATE ALLOWANCE
- 8. EDGE TREATMENTS (Eg. PRECAST, SLAB THICKENINGS, LIGHTWEIGHT FACADE, CAST-IN PFC EDGE, ETC.) TO ALL SUSPENDED RESIDENTIAL SLABS ARE CURRENTLY BEING REVIEWED ALONG WITH ITS CORRESPONDING CANTILEVER SPAN. THE EXTERNAL COLUMNS MAY NEED TO BE ADJUSTED TO SUIT SLAB THICKNESS NOMINATED ALTERNATIVELY, CANTILEVER SPAN WILL NEED TO BE THICKENED WITH REVISED SPECIFICATION. TRANSFER SLAB AND BEAM SHALL BE REVIEWED ACCORDINGLY.
- ALL ARCHITECTURAL FACADES ARE BEING COORDINATED AND UNDER REVIEW FOR ADEQUATE STRUCTURAL CAPACITY, STRUCTURAL SUPPORT AND PANEL BREAK UPS. BUILDER TO MAKE ALLOWANCE AS NECESSARY FOR TRANSPORTATION AND REDESIGN.
- 10. THE CLIENT REQUIRES ALL ADDITIONAL DOCUMENTATION WHICH RELATES TO BULDERS ALTERNATIVE STRUCTURAL SOLUTION, NON BASE STRUCTURE RELATED SECONDARY STEELWORK SHALL BE CARRIED OUT BY WEBBER DESIGN AND ADDITIONAL CERTIFICATION COST BY OTHERS SHALL BE BORNE BY THE BUILDER.

#### POST TENSIONING

- 1. THE POST TENSIONING CONTRACTOR / INSTALLER IS TO ENSURE ALL STRESSING EQUIPMENT SHALL POSSESS CURRENT CALIBRATION CERTIFICATES, AVAILABLE TO THE ENGINEER UPON REQUEST.
- 2. ALL POST TENSIONING AND PRE-STRESSED WORKS SHALL BE IN ACCORDANCE WITH AS 3600 AS A MINIMUM. 3. ALL CABLE DRAPES ARE SHOWN TO THE UNDERSIDE OF THE DUCT, DIMENSIONS TO LIVE AND DEAD ENDS ARE
- MEASURED TO THE CENTRE OF CONCRETE DEPTH. (a) TENDONS SHALL BE PROFILED AND LOCATED IN ACCORDANCE WITH THE DRAWING USING CHAIR SUPPORTS OR SIMILAR OF THE SPECIFIED HEIGHTS. TENDONS SUPPORTS SHALL BE SUPPLIED AND INSTALLED TO A VERTICAL TOLERANCE OF ± 2.0mm.
- (b) SUPPORT CHAIRS SHALL BE EVENLY SPACED BETWEEN HIGH POINTS AND AT A NOMINAL MAXIMUM SPACING OF 1200mm
- (c) SPECIFIED PROFILE HEIGHTS ARE GIVEN FROM SOFFIT OF SLAB/BEAM TO: - UNDERSIDE OF DUCT ALONG TENDON LENGTH (U.N.O) - CENTRE LINE OF ANCHOR AT END ANCHORAGES (U.N.O.)
- 4. ALL BAND & EDGE TENDONS ARE TO HAVE ONIONED DEAD ENDS WITH THE FREE LENGTH OF THE STRAND TAPED AND GREASED TO ENSURE LOAD TRANSFER TO THE DEAD END ANCHORAGE.
- 5. ALL PRE-STRESSING CABLES TO CONSIST OF SUPER STRESS RELIEVED LOW RELAXATION STRANDS (TO AS1311) SHALL BE:
- 12.7mm STRANDS 184kN MINIMUM BREAKING LOAD - MAXIMUM JACKING LOAD = 85% OF BREAKING LOAD = 156 kN/STRAND
- STRESS PER STRAND JACKING FORCE: 25% = 39kN (24 HOURS MAX. OR 7MPa)

# 100% = 156 kN (7 DAYS OR 22 MPa)

- 15.2mm STRANDS - 250kN MINIMUM BREAKING LOADS
- MAXIMUM JACKING LOAD 85% = OF BREAKING LOAD = 212kN / STRAND STRESS PER STRAND - JACKING FORCE:

#### 25% = 53kN (24 HOURS MAX, OR 9MPa) 100% = 212 kN (7 DAYS OR 25MPa)

- 6. STRESS ALL STRANDS 25% AT 24 HOURS AND THEN 100% WHEN CONCRETE STRENGTH REACHES 25MPa
- 7. THE END OF ALL STRANDS SHALL BE SPRAY PAINTED (OR SIMILAR) 100mm FROM ANCHORAGE SO THAT THE EXTENSION CAN BE CLEARLY SEEN BY THE ENGINEER
- 8. TENDON EXTENSIONS SHALL BE MEASURED TO THE ACCURACY OF 3mm. THE STRANDS SHALL NOT BE CUT AND DUCTS CONTAINING TENDONS GROUTED UNTIL THE ENGINEER APPROVES THE STRANDS EXTENSIONS. A MINIMUM OF 24 HOURS NOTICE IS REQUIRED PRIOR TO THE ENGINEERS APPROVAL
- 9. THE SPECIALIST CONTRACTOR SHALL BE RESPONSIBLE FOR THE PERFORMANCE OF ANCHORAGES AND SUPPLY ANY ADDITIONAL ZONE REINFORCEMENT DEEMED NECESSARY
- 10. THE STRESSING CONTRACTOR SHALL SUBMIT 2 COPIES OF THE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL SETTING OUT:
- a. PROPOSED ORDER OF STRESSING
- b. DETAILS OF ALL INTERMEDIATE DRAPES c. DETAILS OF ALL ANCHORAGES
- 11. TENDON PROFILES GENERALLY SHALL BE PARABOLIC WITHIN SPANS U.N.O. SLAB TENDON PROFILES SHALL BE HORIZONTAL OVER BAND BEAMS. REFER TO PLANS FOR CHAIR HEIGHTS.
- 12. TENDON ANCHORAGE POSITIONS (IN PLAN) SHALL BE AS PER SETOUT ON DRAWINGS (TOLERANCE ±20mm). MINOR DEVIATIONS FROM SPECIFIED PLAN ALIGNMENT MAY BE ALLOWED BETWEEN ANCHORAGES (TOLERANCE ± 100mm). HOWEVER REFER ANY DISCREPANCIES AND/OR OBSTACLES TO BUILDER/DESIGN ENGINEER FOR DIRECTION PRIOR TO TENDON INSTALLATION.
- 13 TENDON PROFILE AND/OR ALIGNMENT SHALL HAVE PRIORITY OVER OTHER REINFORCEMENT OR CAST IN ITEMS (CONDUITS ETC)
- 14. TOTAL JACKING FORCE = 156 kN/STRAND (85% OF THE STRAND BREAKING LOAD)
- 15. DUCT TO BE 19mm FLAT DUCT FOR SLAB POST TENSIONING. 75mm OR 90mm WIDE DEPENDING ON NUMBER AND SIZE OF STANDS.
- 16. STRAND EXTENSIONS TO BE FORWARDED TO THIS OFFICE FOR APPROVAL WHERE DESIGNED BY WEBBER DESIGN.
- 17. RECORD AND REVIEW STRAND EXTENSIONS ON COMPLETION OF STRESSING. SUBMIT FINAL EXTENSIONS TO THIS OFFICE PRIOR TO PROCEEDING WITH FURTHER WORK.
- 18. TENDON GROUTING SHALL BE CONDUCTED WITHIN 14 DAYS OF APPROVAL OF FINAL EXTENSIONS.
- 19. CONCRETE SAMPLES FOR TRANSFER STRENGTH TESTS SHALL BE SITE CURED UNDER CONDITIONS CONSISTENT WITH THE CONCRETE POUR. (TYPICALLY AIR CURED).
- 20. WHERE DRAPE IS DEEMED CLASHING, ADJUST SLAB TENDONS LOCALLY TO ACHIEVE NOMINATED DRAPE. REFER WEBBER DESIGN FOR CLARIFICATION IF IN DOUBT
- 21. IF IN DOUBT WITH THE QUALITY OF THE CONCRETE AT TIME OF STRESSING, REFER TO ENGINEER FOR DIRECTION AND ADVICE.

7 8 9

- 22. POST TENSION TO COMPLY WITH FOLLOWING CRACK CONTROL REQUIREMENTS (U.N.O. ON PLAN):
- INTERNAL AREAS - EXTERNAL AREAS (BALCONIES, TERRACES, ROOF) - AREAS IN CONTACT WITH GROUND

#### MODERATE STRONG STRONG

## DESIGN AND CONSTRUCTION POST TENSIONING FLOOR SLAB AND BEAM DESIGN BRIEF:

- THE SUSPENDED FLOOR SLABS ARE A DESIGN AND CONSTRUCT COMPONENT. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, CERTIFICATION, CONSTRUCTION AND PRICING ASPECTS OF THIS COMPONENT. ANY RATES SUPPLIED ARE INDICATIVE ONLY AND SHOULD BE VERIFIED BY THE CONTRACTOR BASED ON THEIR PREFERRED DESIGN.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR ALL SUSPENDED FLOOR SLABS AND ROOF SLAB, EXCLUDING SLAB TO LIFT OVERRUN.
- 3. COMPUTATIONS SHALL BE SUBMITTED TO WEBBER DESIGN FOR REVIEW AND APPROVAL. COMPUTATIONS PROVIDED SHALL BE REFERENCED WITH PAGES AND IN ITS ENTIRETY. IF DESIGN INPUT AND OUTPUT IS LIMITED DUE TO LIMITATION OF DESIGN SOFTWARE, THE SOFTWARE FILE SHALL BE PROVIDED AS PART OF THE SUBMISSION.
- 4. SHOP DRAWINGS SHOWING COMPLETE TENDON PROFILES, POST TENSIONING DETAILS, ANCHOR DETAILS AND ADDITIONAL REINFORCEMENT REQUIRED FOR CONSTRUCTION MUST BE SUBMITTED WITH THE COMPUTATIONS FOR REVIEW AND APPROVAL BY WEBBER DESIGN.
- 5. THE CONCRETE PROFILE SHOWN HEREIN REPRESENTS A COORDINATED STRUCTURE. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE HOWEVER THE SUPERINTENDENT IS NOT BOUND TO ANY ALTERNATIVE.

#### **GENERAL DESIGN CRITERIA**

- THE DESIGN SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS AND SPECIFIC PROJECT REQUIREMENTS. IN ADDITIONAL THE DESIGN SHALL COMPLY WITH THE RELEVANT STRUCTURAL ITEMS NOTED BELOW:
- 1. THE POST TENSIONING CONTRACTOR SHALL ENSURE POTENTIAL INTERNAL FORCES AND CRACKS INDUCED BY PRESTRESSING, SHRINKAGE, AND/OR TEMPERATURE ARE CONTROLLED IN THE VICINITY OF RESTRAINING ELEMENTS AND MAKE PROVISION FOR MOVEMENT AND SHRINKAGE AS REQUIRED THROUGHOUT, INCLUDING MOVEMENT JOINTS, POUR STRIPS, LOW SHRINKAGE CONCRETE MIX ETC.
- 2. NO COLUMN STIFFNESS SHOULD BE USED IN THE SLAB AND BEAM DESIGN.
- 3. SLABS TO BE CHECKED FOR PUNCHING WITH MOMENT DERIVED WITH 100% COLUMN STIFFNESS. PT CONTRACTOR TO MAKE ALLOWANCE FOR SHEAR HEAD REINFORCEMENT (WHERE REQUIRED) TO SATISFY PUNCHING SHEAR REQUIREMENTS.
- 4. leff TO Igross MAX RATIO TO BE DETERMINED BY THE DESIGNER BUT IN NO INSTANCE SHALL BE GREATER THAN 0.7 FOR THE SLAB AND BEAM CALCULATIONS.
- 5. DEFLECTION CRITERIA SHALL GENERALLY BE IN ACCORDANCE WITH AS3600 SUBJECT TO THE FOLLOWING, MAXIMUM LONG TERM DEFLECTIONS SHALL GENERALLY BE LIMITED TO: TYPICAL SLAB AND BEAMS -- SPAN/250 OR 20mm MAXIMUM, CANTILEVERS --SPAN/125 OR 15mm MAXIMUM. SLABS AND BEAMS SUPPORTING BRITTLE ELEMENTS -- SPAN/500, CANTILEVER -- SPAN/250 INCREMENTAL. TRANSFER SLABS AND BEAMS -- SPAN/1000 OR 10mm MAXIMUM. DIFFERENTIAL DEFLECTION BETWEEN FLOORS TO BE LIMITED TO SPAN/500 OR 15mm AT FACADE LOCATIONS.
- 6. POST TENSIONING CONTRACTOR SHALL ALLOW FOR LIVE LOAD PATTERNING FOR CANTILEVERS AND AREAS WITH LOCALIZED OR HIGH LIVE LOADS (LOADING DOCK AND CAR PARK) IN ACCORDANCE WITH AS3600.
- 7. REFER LOADING DRAWINGS FOR ALL GENERAL IN-SERVICE APPLIED LOADS. ALL ADDITIONAL APPLIED LOADS (BLOCK WALLS, PRECAST PANELS ETC) SHALL BE ADDITIONAL AS PER THE ARCHITECT'S DRAWING'S.
- 8. ALL SPECIFIC TRANSFER LOADS SHALL BE DETERMINED BY THE DESIGN ENGINEER AND SUBMITTED TO WEBBER DESIGN FOR REVIEW AND APPROVAL WITH THE COMPUTATIONS. ANY ADDITIONAL LATERAL LOAD SHALL BE ALLOWED FOR ACCORDINGLY. (REFER WEBBER DESIGN FOR CONFIRMATION)
- 9. POST TENSIONING CONTRACTOR SHALL COORDINATE ALL SLAB SERVICE PENETRATIONS FOR TENDON AND REINFORCEMENT LAYOUT.
- 10. ALL MOVEMENT JOINTS AND DETAILING SHALL BE BY THE DESIGN ENGINEER AND BE CO-ORDINATED WITH THE ARCHITECT WHERE APPLICABLE
- 11. ALL POST TENSION SLABS AND BEAMS ARE TO BE EDGE STRESSED (ACCESSIBILITY, POUR SEQUENCE AND SITE CONDITIONS PENDING) SHOULD PAN STRESSING BE REQUIRED, BUILDER TO COORDINATE WITH POST-TENSION CONTRACTOR.
- 12. PT CONTRACTOR TO MAKE ALLOWANCE FOR STRUCTURAL INTEGRITY REINFORCEMENT IN ACCORDANCE WITH CL9.2.2 OF AS3600-2018 FOR ALL SLABS AND BEAMS
- 13. PT CONTRACTOR TO PROVIDE A MINIMUM P/A OF 1.4MPA (AFTER FINAL LOSSES) TO ALL INTERNAL CONCRETE SLABS AND BEAMS, AND 2.0 MPa (AFTER FINAL LOSSES) TO ALL EXTERNAL AREAS (BALCONIES, TERRACES, EXPOSED ROOFS, ETC.) PLUS SL82 TOP MESH U.N.O.
- 14. ALL EXPOSED SLABS/BEAMS CRACK WIDTH TO BE LIMITED TO 0.3MM MAX
- 15. REFER TO ARCHITECT'S DRAWINGS FOR ALL SETDOWN, STEPS, HOBS, KERBS DRIP GROOVES, FALLS AND RECESSES U.N.O. SLAB THICKNESSESS SHOWN ARE MINIMUM.
- 16. ALL HOBS ARE NON-STRUCTURAL. TYP. UNO.
- 17. BUILDER TO COORDINATE LOCATION OF CONSTRUCTION JOINT WITH APPOINTED SLAB DESIGNER.
- 18. SAFETY MESH IS TO BE SUPPLIED FOR DEPTHS GREATER THAN 350MM AND INSTALLED AS REQUIRED ONSITE. ENSURE ALLOWANCE IS MADE FOR SAFETY MESH.
- 19. PROVIDE WATERPROOF SHEET MEMBRANE TO ALL EXTERNAL SLABS TO ARCHITECT'S AND CONTRACTOR'S DETAILS U.N.O.

# STRUCTURAL STEEL

12. USE WASHERS UNDER ALL NUTS.

PURLIN WEBS ONLY.

- REFER TO ARCHITECTS DRAWINGS FOR ANY ADDITIONAL INCIDENTAL AND SECONDARY STEELWORK REQUIRED NOT SHOWN ON STRUCTURAL DRAWINGS.
- 2. UNLESS OTHERWISE NOTES ALL STRUCTURAL STEEL SHALL BE: - GRADE 300 PLUS FOR UB, UC, WB, WC, PFC, ANGLES, FLATS AND HOT ROLLED PLATES GRADE 350 FOR RHS, CHS AND SHS
- 3. BOLTS SHALL BE
- 8.8/S HIGH STRENGTH STRUCTURAL BOLTS OF STRESS GRADE 8.8 TO AS 1252 TIGHTENED TO A SNUG TIGHT CONDITION - 8.8/TB HIGH STRENGTH STRUCTURAL BOLTS OF STRESS GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A
- BEARING JOIN - 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS OF STRESS GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION JOINT
- 4.6/S COMMERCIAL GRADE BOLTS TO STRESS GRADE 4.6 TO AS 1252 TIGHTENED TO A SNUG TIGHT CONDITION
- 4. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET FROM E48XX ELECTRODES, ALL WELDS SHALL BE CATEGORY SP UNLESS NOTED OTHERWISE.
- ALL CLEATS AND GUSSETS SHALL BE 10mm PLATE UNLESS NOTED OTHERWISE.
- 6. ALL EXPOSED STEELWORK SHALL BE HOT DIP GALVANISED UNLESS NOTED OTHERWISE
- 7. ALL HOLLOW SECTIONS SHALL BE FULLY SEALED USING 5mm PLATES UNLESS NOTED OTHERWISE. PROVIDE BLOW HOLES TO
- ALL GALVANISED SECTIONS.
- 8. SHOP DRAWINGS TO BE SUBMITTED FOR DOCUMENTATION COMPLIANCE REVIEW PRIOR TO FABRICATION. ALL 5 WORKING DAYS FOR REVIEW. REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS.
- 9. ALL PRE-CAMBERS TO BE NATURAL CAMBER WITH UNIFORM CURVE TO BE UPWARDS.
- 10. STEELWORK SHALL BE IN ONE LENGTH, UNLESS OTHERWISE APPROVED. REFER TO DRAWINGS FOR ALL SPLICE LOCATIONS.
- 11. ALL HOLES SHALL BE 2mm OVERSIZED IN CLEATS, 10mm OVERSIZED FOR H.D. BOLT DIAMETERS IN BASE PLATES WITH 50x50x6.0 MINIMUM WASHERS.

13. ALL BOLTS TO BE GRADE 8.8/S, SNUG TIGHTENED UNLESS NOTED OTHERWISE.

14. ALL MEMBERS SHALL BE ERECTED FREE FROM TWISTS AND DISTORTIONS.

FOR ANY SPANS MORE THAN 2500mm UNLESS NOTED OTHERWISE.

STRUCTURE PRIOR TO THE COMMENCEMENT OF STEEL INSTALLATION.

HAVE TURNBUCKLES OR SIMILAR DEVICE.



# SITE RETENTION SPECIFICATION:

## **GENERAL REQUIREMENTS:**

#### PRELIMINARIES:-

SURVEY POINTS SHALL BE ESTABLISHED ON THE ADJACENT BUILDINGS WALLS AT FOUR (4) MIN LOCATIONS. THE LOCATION AND LEVEL OF THESE POINTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER & MONITORED BY A LICENSED SURVEYOR AT MAXIMUM WEEK INTERVALS INITIALLY (MAY BE ADJUSTED AS PROJECT PROCEEDS). DATE AND RESULTS SHALL BE PROGRESSIVELY ADDED TO A SURVEY PLAN, AND COPIES FORWARDED TO THE ENGINEER AT EACH STAGE. THE TOP OF SOLDIERS SHALL BE LOCATED BY SURVEY UPON INSTALLATION, AND AT REGULAR INTERVALS DURING THE PROJECT. ANY MOVEMENT DETECTED SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.

#### CONSTRUCTION SEQUENCE SOLDIER SHORING WALL:-

- 1. DRILL HOLES TO THE SETOUT AND DEPTHS SHOWN ON PLANS, ELEVATIONS AND SECTIONS, PLACE REINFORCEMENT CAGE AND POUR SOLDIERS. NOTE SOLDIERS MAY NEED TO BE CONSTRUCTED IN HIT 1 MISS 1 SEQUENCE DEPENDENT ON GEOTECHNICAL ADVICE.
- 2. CONSTRUCT CAPPING BEAMS
- 3. EXCAVATE WITHIN SITE TO A LEVEL 500mm BELOW TOP ANCHOR LOCATION.
- 4. DRILL, INSTALL AND STRESS ANCHORS (REFER GROUND ANCHORS NOTES)
- 5. EXCAVATE BETWEEN SOLDIERS TO THE BACK OF THE INFILL WALL, DRILL AND EPOXY TIE BARS. REFER
- DETAIL
- INSTALL STRIP DRAINS.
- SPRAY INFILL WALL PANELS. (REFER SPECIFICATION FOR SPRAY MIX DETAILS, PROCEDURES ETC.) MAXIMUM HEIGHT UNRESTRAINED SHALL BE 1.5m.
- **REPEAT STEPS 3 THROUGH 7 AS REQUIRED**
- MINIMUM THREE MONTHS AFTER POURING BRACING FLOOR SLAB. CLEAN OUT REBATES AT SUSPENDED BASEMENTS AND GROUT AS SHOWN ON DETAIL. WHEN GROUT HAS ATTAINED STRENGTH OF (fc) 40MPa. GROUND ANCHORS SHALL BE DE-STRESSED, ANCHOR HEADS REMOVED.

#### **TOLERANCE FOR PIERS/SOLDIERS:-**

- 1. PIERS SHALL BE CENTRED WITHIN 25mm OF THE "DESIGN CENTRE" AS INDICATED ON THE PLANS.MAXIMUM "OUT OF PLUMB" OF PIERS SHALL BE 25mm.
- 2. SOLDIERS SHALL BE SET OUT BY STRINGLINE SO THAT INTERNAL FACES ARE TRUE TOPOSITION AND LINE. MAXIMUM OUT OF POSITION "ALONG WALL" (AT INITIAL SURFACE LEVEL) SHALL BE 25mm.
- 3. PIERS SHALL BE CENTRED SUCH THAT THE EXTERIOR FACE OF THE SOLDIER/PANEL DOES NOT PROJECT OVER THE ADJOINING PROPERTY.

#### GROUND ANCHORS:-

- 1. CONTRACTOR IS TO CONFIRM LOCATION & DEPTH OF EXISTING BUILDING FOOTINGS, BASEMENTS & EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANCHOR WORKS TYPICAL.
- 2. GROUND ANCHORS ARE EACH TO BE DESIGNED IN ACCORDANCE WITH AS, 1481 FOR A WORKING LOAD AS SHOWN IN THE SCHEDULE. THE DESIGN AND DETAILS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT ON SITE, REFER ALSO TO RECOMMENDATION PROVIDED BY SOIL INVESTIGATION REPORT.
- 3. ANCHORS SHALL CONSIST OF LOW RELAXATION STRESS RELIEVED SUPERGRADE STEEL STRAND TO AS. 1313 AND ANCHORAGES SHALL CONFORM TO AS. 1314.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY "ACTUAL" ANCHOR LENGTH BY TEST ANCHORS ETC.. AND TO PROOF LOAD EACH ANCHOR AS PER NOTE BELOW.
- 5. PRIOR TO ANY DRILLING OPERATIONS, THE CONTRACTOR SHALL ACQUAINT HIMSELF WITH ALL ADJACENT UNDERGROUND SERVICES AND ENSURE THAT NONE OF THESE ARE DISRUPTED BY GROUND ANCHORS. ALL APPROPRIATE APPROVALS, PERMITS AND AGREEMENTS SHALL BE OBTAINED BEFORE COMMENCEMENT OF THE WORK.
- 6. ANCHORS SHALL BE STRESSED AT THE APPROPRIATE STAGES OF THE CONSTRUCTION SEQUENCE, PROVIDED THAT AT LEAST THREE DAYS HAVE ELAPSED AFTER GROUTING THE ANCHORAGE LENGTH. SUFFICIENT STRAND SHALL BE LEFT PROJECTING FROM THE ANCHORAGE TO ENABLE ANY SUBSEQUENT STRESSING.
- 7. EACH ANCHOR SHALL BE PROOF LOADED IE. STRESSED TO 150% OF THE WORKING LOAD, HELD FOR FIVE MINUTES, AND SLOWLY EASED BACK. THE ANCHOR SHALL THEN BE STRESSED TO WORKING LOAD AND LOCKED OFF. ANY ANCHOR WHICH FAILS TO HOLD THE LOAD SHALL BE REMOVED AND REPLACE WITH ANOTHER ANCHOR. SUCH WORK SHALL BE CARRIED OUT IN THE PRESENCE OF THE ENGINEER. CONTRACTOR SHALL KEEP ON SITE AN ADEQUATE SUPPLY OF ANCHOR CABLES, GROUT ETC. FOR EMERGENCY USE.
- 8. THE CONTRACTOR SHALL KEEP ON SITE AN ADEQUATE SUPPLY OF ANCHOR CABLES, GROUT ETC. FOR EMERGENCY USE.
- 9 THE CONTRACTOR SHALL REGULARLY MONITOR THE STRESS IN THE ANCHORS TO ENSURE NO MAJOR LOSSES ARE OCCURRING. IF STRESS LOSSES ARE DETECTED THEY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 10. GROUT FOR GROUND ANCHORS SHALL BE NEAT PORTLAND CEMENT/WATER MIX WITH "METHOCELL" ADDED TO MANUFACTURERS SPECIFICATION, MAXIMUM WATER/CEMENT RATIO = 0.50. THE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF S20MPa AT THREE (3) DAYS. GROUT CYLINDERS SHALL BE TAKEN ON THE BASIS OF ONE SAMPLE (TWO CYLINDERS) FOR EVERY TEN ANCHORS AND TESTED ON THE DAY OF STRESSING. THE GROUT SHALL BE MIXED IN A HIGH SPEED IMPELLER TYPE MACHINE.
- 11. SITE RECORDS (DATES AND DETAILS) SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE FOLLOWING STAGES:
  - ANCHOR INSTALLATION (NOTE FREE LENGTH/ANCHOR LENGTH PROVIDED)
  - ANCHOR GROUTING
- STRESSING /PROOF LOADING AND CONFIRMATION OF ACCEPTABLE ANCHOR PERFORMANCE - MONITORING (NOTE ACTUAL ANCHOR LOADS)

#### **BULK EXCAVATION:-**

- THE GEOTECHNICAL ENGINEER SHALL BE CONTACTED TO PROVIDE SUPERVISION OF EXCAVATIONS ADJACENT TO EXISTING BUILDINGS/PAVEMENTS TO PREVENT DAMAGE OR INSTABILITY.
- THE BUILDER SHALL BE RESPONSIBLE FOR VIBRATION CONTROLS DURING EXCAVATION.
- REFER TO THE GEOTECHNICAL ENGINEER TO CONFIRM THE REQUIREMENTS FOR EXCAVATION OF THE BASEMENT MATERIAL
- WHERE BASEMENT IS AT WATER TABLE LEVEL THE BUILDER IS TO PROVIDE MOVABLE SHIELDS FOR 4 VERTICAL SIDED DRIVES THROUGH BATTERED AND BENCHED EXCAVATION LEVELS. STABILITY CHECKS ARE TO BE PROVIDED FOR EXCAVATIONS GREATER THAN 600mm. THE GEOTECHNICAL ENGINEER SHALL BE CONTACTED TO PROVIDE SUPERVISION AND FURTHER RECOMMENDATION AS REQUIRED.
- THE BASE OF THE EXCAVATION SHALL BE GRADED / DRAINED TO SUMPS AND PUMPED AS REQUIRED TO MAINTAIN THE EXCAVATION FREE OF SURFACE WATER. THE SUMPS ARE TO BE FITTED WITH SILT TRAPS. DO NOT PUMP ANY MUD OR SLUDGE INTO COUNCIL DRAINS. THE INITIAL EXCAVATION MAY BE CARRIED OUT TO LEVELS SHOWN ON THE DRAWINGS WITH THE FINAL TRIMMING TO DESIGN LEVELS PRIOR TO POURING BASE SLABS.
- REDUCED LEVELS NOTED ARE MINIMUM EXCAVATION LEVELS TO ACHIEVE THE NOMINATED FINISHED FLOOR LEVELS. CONSIDERATION SHOULD BE GIVEN TO FOUNDING CONDITIONS WHEN NOMINATING THE INITIAL BULK EXCAVATION LEVELS.

## GEOTECHNICAL ENGINEER SUPERVISION NOTE:-

- 1. THE CONTRACTOR SHALL PAY ALL FEES REQUIRED FOR ADDITIONAL GEOTECHNICAL SERVICES.
- 2. ALL EXCAVATIONS ADJOINING AN EXISTING BUILDING ALONG A SITE BOUNDARY OR EXCAVATIONS OF A GEOTECHNICAL ENGINEER.
- 3. GEOTECHNICAL ENGINEER TO PROVIDE SUPERVISION OF EXCAVATION TO PREVENT DAMAGE TO EXISTING BUILDING ON ADJOINING SITE BOUNDARY.
- 4. THE BUILDER SHALL BE RESPONSIBLE FOR VIBRATION CONTROLS DURING EXCAVATION WORKS.
- CONTACTED TO PROVIDE SUPERVISION AND FURTHER RECOMMENDATION AS REQUIRED.
- EXCAVATION. IF THERE IS A TENDENCY OF INSTABILITY DURING THE EXCAVATION WORKS. THE EXCAVATION TO PROCEED.
- 7. REFER TO GEOTECHNICAL NOTES FROM S-WEB-001 FOR GEOTECHNICAL REPORT REFERENCE

#### SHOTCRETE NOTES:

- <u>GENERAL</u> PROCESS.
- 2. DEFINITIONS SPECIFICATION:
  - VELOCITY FROM A NOZZLE INTO PLACE TO PRODUCE A DENSE HOMOGENEOUS MASS.
  - NOT MORE THAN 20mm.
  - DOES NOT CONFORM TO THE DEFINITION OF SPRAYED CONCRETE. NOZZLE - IS THE ATTACHMENT AT THE END OF THE HOSE FROM WHICH THE MATERIAL IS JETTED AT
- HIGH VELOCITY. CONSISTENCY. AND MAKES THE FINAL DISPOSITION OF THE MATERIAL
- <u>MIX DESIGN</u> APPLY UNLESS OTHERWISE STATED.
- INITIAL SET OF CEMENT/ADMIXTURE PASTE 3 MINS. (a) FINAL SET OF CEMENT/ADMIXTURE PASTE
- (b) 8 HOUR STRENGTH OF CONCRETE 24 HOUR STRENGTH OF CONCRETE

ALL CONSTITUENTS SHALL BE UNIFORMLY DISPERSED THROUGHOUT 'THE MIX.

- QUALIFICATIONS OF OPERATORS SPRAYING, THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT THE FOREMAN, NOT AVAILABLE.
- PLANT 5. THE CONSTRUCTION OF THE WORKS.
- SUBSTRATE PREPARATION PREVENT EROSION WHEN THE SPRAYED CONCRETE IS APPLIED.
- SPRAYING PROCEDURE SPRAYED CONCRETE SHALL BE PROTECTED FROM RAIN OR WATER TILL THE SURFACE IS OF CONCRETE MIXER SHALL BE KEPT AND MADE AVAILABLE TO THE CONSTRUCTION MANAGER,
- JOINTS
- QUALITY CONTROL MANUAL "RECOMMENDED PRACTICE SPRAYED CONCRETE" CLAUSE A12 OF THE REFERENCE SPECIFICATION PREPARED BY THE CONCRETE INSTITUTE OF AUSTRALIA.

#### INTERFACE BETWEEN NEW AND EXISTING ADJACENT STRUCTURES:

MEMBRANE BETWEEN EXISTING & PROPOSED FOOTINGS.

WHICH MAY UNDERMINE AN ADJOINING BUILDING MUST BE CONDUCTED UNDER THE SUPERVISION

WHERE BASEMENT IS AT WATER TABLE LEVEL THE BUILDER IS TO PROVIDE MOVABLE SHIELDS FOR VERTICAL SIDED DRIVES THROUGH BATTERED AND BENCHED EXCAVATION LEVELS. STABILITY CHECK TO BE PROVIDED FOR EXCAVATION GREATER THAN 2000mm THE GEOTECHNICAL ENGINEER SHALL BE

AS EXCAVATION PROCEEDS FOR RETENTION SYSTEM ADJACENT TO THE EXISTING BUILDING OR ON ADJOINING BOUNDARY, THE GEOTECHNICAL ENGINEER SHALL PROVIDE SUPERVISION TO THE THE GEOTECHNICAL ENGINEER SHALL PROVIDE FURTHER SPECIFICATION AND RECOMMENDATION FOR

THE CONCRETE IN THE PANELS OF THE RETAINING WALLS MAY BE PLACED BY THE SHOTCRETING

THE FOLLOWING DEFINITIONS EXPLAIN THE MEANING OF CERTAIN WORDS AND TERMS AS USED IN THIS

 SPRAYED CONCRETE - IS A MIXTURE OF CEMENT, AGGREGATE AND WATER PROJECTED AT HIGH SHOTCRETE - IS A TERM USED FOR SPRAYED CONCRETE WHERE THE MAXIMUM AGGREGATE SIZE IS

REBOUND - IS A TERM USED FOR ALL MATERIAL HAVING PASSED THROUGH THE NOZZLE WHICH

• NOZZLEMAN - IS THE WORKMAN WHO MANIPULATES THE NOZZLE. THE NOZZLEMAN MAINTAINS

MIX PROPORTIONS SHALL BE DESIGNED BY THE CONTRACTOR AND SHALL BE TO THE APPROVAL OF THE SUPERINTENDENT. ALL CONCRETE SHALL BE OBTAINED FROM AN APPROVED CONCRETE SUPPLIER AND SHALL BE PREMIXED AND DELIVERED TO SITE IN ACCORDANCE WITH AS 1379. WHERE ADMIXTURES ARE APPROVED BY THE SUPERINTENDENT FOR ADDITION TO THE MIX TO ALTER THE SETTING RATE OF THE CEMENT, THE FOLLOWING SETTING TIMES AND STRENGTHS SHALL

- 12 MINS.

- 3 MPa

- 10 MPa

ALL OPERATORS SHALL BE TO THE APPROVAL OF THE ENGINEER. PRIOR TO COMMENCEMENT OF NOZZLEMAN AND DELIVERY EQUIPMENT OPERATIVES HAVE COMPLETED SATISFACTORY WORK IN SIMILAR CAPACITIES ELSEWHERE. WHERE REQUIRED BY THE ENGINEER THE OPERATOR SHALL SPRAY PRE-CONSTRUCTION PANELS WHICH SHALL BE APPROVED BY THE ENGINEER BEFORE THE OPERATORS ARE EMPLOYED ON THE WORKS. SUCH PANELS MAY ALSO BE USED BY THE ENGINEER TO ASSESS THE COMPETENCE OF OPERATORS OR TRAINEES FOR WHOM SUCH CERTIFICATION IS

THE CONTRACTOR SHALL STATE THE NUMBERS AND TYPE OF PLANT WHICH HE PROPOSES TO USE FOR

THE SURFACE SHALL BE COMPACT, TRIMMED AND GRADED AS REQUIRED AND DAMP BEFORE THE APPLICATION OF SPRAYED CONCRETE. NATURAL SURFACES MUST BE SUFFICIENTLY COHESIVE TO

NO CONCRETE SHALL BE SPRAYED IN AIR TEMPERATURES LESS THAN 5 DEGREES CELSIUS. FRESHLY SUFFICIENT HARDNESS TO PREVENT DAMAGE. SPRAYING SHALL BE DISCONTINUED IF WIND OR AIR CURRENTS CAUSE SEPARATION OF THE NOZZLE STREAM DURING PLACEMENT. DURING STARTING OR STOPPING OF THE SPRAYING OPERATION OR WHENEVER SPRAYING IS IRREGULAR, THE NOZZLE SHALL BE DIRECTED AWAY FROM THE WORKS. ALL CORNERS AND ANY AREAS WHERE REBOUND CANNOT ESCAPE OR BE BLOWN FREE, SHALL BE FILLED PRIOR TO GENERAL SPRAYING, REBOUND SHALL NOT BE WORKED INTO THE CONSTRUCTION OR RE-USED IN THE WORKS. GUIDES SHALL BE SET UP TO ESTABLISH FINISHED SURFACES. THESE GUIDES SHALL BE TO THE APPROVAL OF THE ENGINEER PRIOR TO SPRAYING. SPRAYED CONCRETE SHALL BE APPLIED SO THAT IT NEITHER SAGS NOR SLUMPS. SPRAYED CONCRETE SHALL BE TROWELLED TO A SMOOTH SURFACE. MAXIMUM DEVIATION FROM A 1m STRAIGHT EDGE SHALL BE 10mm. FULL RECORDS OF ALL MATERIALS DELIVERED TO THE SPRAYED

THE POSITION AND TYPE OF ALL CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER.

TESTING OF SHOTCRETE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPRAYED CONCRETE

1. THE PILING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN APPROVED BOND BREAKER OR



## **TYPICAL GROUND ANCHOR SECTION AT** EXISTING SERVICES LOCATION NOT TO SCALE

NOTE: REFER TO RETENTION ELEVATIONS FOR NUMBER OF ANCHORS AND LOCATIONS. ALSO REFER TO RETENTION DETAILS AND SECTIONS FOR ANCHOR REQUIREMENTS

NOTES

REFER TO GEOTECH FOR ANCHOR DESIGN AND PARAMETERS. ALL ANCHORS TO BE PROOF TESTED TO 1.5 TIMES THE WORKING LOAD.

#### REFERENCE NOTE:

REFER TO RETENTION DRAWING FOR SHOTCRETE WALL TYPES AND MAXIMUM VERTICAL DRIVES REFER RETENTION ELEVATIONS FOR NUMBER OF ANCHORS AND LOCATIONS. ALSO REFER TO RETENTION DETAILS & SECTION FOR ANCHOR REQUIREMENTS.

#### **EXISTING SERVICES NOTES:**

LOCATION AND LEVELS OF EXISTING SERVICES SHOWN INDICATIVELY ONLY. EXACT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. REFER ALSO TO ALL SERVICES (IE. HYDRAULIC, CIVIL) FOR FURTHER DETAILS TYPICAL

ENSURE FIRST GROUND ANCHOR IS MINIMUM 1000mm BELOW INVERT LEVEL OF LOWEST ADJACENT SERVICE.

PRIOR TO COMMENCEMENT OF TEMPORARY SOIL ANCHOR INSTALLATION SUBCONTRACTOR TO CONFIRM LOCATION & EXTENT OF EXISTING SERVICES SO AS TO ENSURE TEMPORARY SOIL ANCHORS FALL BELOW ANY EXISTING SERVICES WHEN INSTALLED

#### WATERPROOFING NOTE:

CONCRETE IN WALLS, FLOOR SLABS EXPOSED TO EXTERNAL WEATHER AND BASE OF ALL PITS TO CONTAIN WATERPROOFING ADDITIVE TO MANUFACTURERS RECOMMENDATIONS. APPLY A SLURRY COAT OF WATERPROOFING ADDITIVES TO CONSTRUCTION JOINTS, ALSO REFER TO MANUFACTURERS RECOMMENDATIONS. ALL CONSTRUCTION JOINTS AND PIT WALL BASES TO CONTAIN A CONTINUOUS WATERSTOP TO BASE OF WALL.

#### WATER DRAINAGE NOTE:

BASE EXCAVATION SHALL BE GRADED / DRAINED TO SUMPS AND PUMPED AS REQUIRED TO MAINTAIN THE EXCAVATION FREE OF SURFACE WATER. BULK EXCAVATION TO BE SUITABLY DRAINED INTO SUMPS FITTED WITH SILT TRAPS. DO NOT PUMP ANY MUD OR SLUDGE INTO COUNCIL DRAINS. INITIAL EXCAVATION MAY BE CARRIED OUT TO LEVELS SHOWN ON THIS DRAWINGS WITH THE FINAL TRIMMING TO DESIGN LEVELS PRIOR TO POURING BASE SLAB.

#### CONSTRUCTION MANAGEMENT NOTE:

CONSTRUCTION MANAGEMENT PLAN IS TO BE PROVIDED TO THE LOCAL COUNCIL FOR APPROVAL BY THE BUILDER/CONTRACTOR. THIS PLAN IS TO COVER TRAFFIC MOVEMENTS TO AND FROM SITE, PEDESTRIAN SAFETY, NUISANCE MANAGEMENT AND NOISE / DUST CONTROL. REFER TO COUNCIL FOR REQUIREMENTS.

#### BOND BREAKER NOTE:

THE PILING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN APPROVED BOND BREAKER OR MEMBRANE BETWEEN EXISTING & PROPOSED FOOTINGS.

#### EXISTING FOOTINGS NOTE:

CONTRACTOR IS TO CONFIRM LOCATION & DEPTH OF EXISTING BUILDING FOOTINGS, BASEMENTS & EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANCHOR WORKS TYPICAL.

#### **DEWATERING:**

THE CONTRACTOR SHALL PROVIDE ALL PUMPS, SPEARS, SUMPS ETC. AS NECESSARY TO EFFECTIVELY DEWATER THE SITE BELOW THE LOWEST EXCAVATION LEVEL TO PERMIT CONSTRUCTION. ALL DEWATERING WORKS, PERMITS AND DISCHARGE SHALL BE BY THE CONTRACTOR IN ACCORDANCE WITH THE RELEVANT STANDARDS, GEOTECHNICAL AND HYDROLOGICAL CONSULTANTS AND LOCAL AUTHORITIES REQUIREMENTS. DEWATERING SHALL CONTINUE UNTIL ALL STORMWATER PITS, SUMPS AND PUMPS HAVE BEEN COMMISSIONED AND WRITTEN APPROVAL OF THIS OFFICE. MONITORING OF ADJACENT PROPERTIES SHOULD COMMENCE BEFORE DEWATERING COMMENCES. THE CONTRACTOR SHALL ENGAGE THE GEOTECHNICAL AND HYDROLOGICAL CONSULTANTS AS REQUIRED FOR FURTHER ADVICE IF REQUIRED.

#### SURVEY MONITORING NOTE:

BUILDER TO PROVIDE SURVEY MONITORING POINTS ALONG RETENTION WALLS. THESE ARE TO BE MONITORED AND CHECKED FORTNIGHTLY. A RECORD OF THE FINDINGS/READINGS ARE TO BE KEPT ON SITE FOR VIEWING BY COUNCIL AS REQUIRED.

BUILDER TO CONFIRM SERVICES LOCATIONS PRIOR TO THE COMMENCEMENT OF WORKS. SERVICES SHOWN ARE INDICATIVE ONLY. REFER TO HYDRAULIC AND/OR CIVIL AND ALL SERVICE ENGINEERS DRAWINGS FOR EXISTING SERVICE





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## DESIGN CRITERIA

- 1. REFER TO STS GEOTECHNICS (A GEOTECHNICAL DESIGN PARAM
- 2. DESIGN SURCHARGE TO BE 20 k SURCHARGE.
- 3. RETENTION WALL HORIZONTAL TERM)
- 4. D & C PILE DESIGN TO INCORPO AS A RESULT OF PILING OFFSE

#### <u>NOTE:</u>

#### REFER TO SECTIONS ON DRG S-. 1 DRG S-WEB-028 FOR TYPICAL D mmmmm 2. GROUND ANCHORS TO BOUNDA 3. ALL RETENTION PILES TO BE SO EXCAVATION/LINE OF INFLUENCE RECOMMENDATIONS. 4. QUALIFIED GEOTECHNICAL ENGI

SOCKET FOUNDING MATERIAL 5. INTERNAL TEMPORARY PROPPI BY D&C CONTRACTOR.

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BASEMENT CONSTRUCTION AS PER THE LATEST GEOTECHNICAL SLAB AND LOWER RETENTION WALL DRAINAGE SYSTEM (DESIGNED BY 01 BOTH DURING CONSTRUCTION AND THEY HAVE NOT BEEN DESIGN AS A WATERPROOF MEDIUM (MEMBRANE PERMEATING THROUGH THE CONCR WATERPROOFING CONSULTANT SHO REQUIREMENTS INCLUDING POTENT ALL COLD JOINTS TO PILES, SHOTCR

- ALL DETAILING OF MEMBRANE AND PENDING TO FURTHER SF
- ALLOWANCE FOR POTENTIAL MADE PENDING CONFIRMATIO
- REQUIREMENTS. ALLOW FOR WATERPROOF ADM
- POUR STRIP AND POUR SIZE 1 STRATEGY ALONG WITH ADDI

# TEMPORARY SHORING NO

BUILDER TO PROVIDE TEMPORARY CONCRETING AS NECESSARY WITH FOOTPATH REINSTATED ON COMPL

# NOTE:

- 1. ALL BORED PIER EMBEDMENT WORKING CAPACITY NOMINAT DESIGN PARAMETERS.
- 2. RETENTION PIER SOCKETS AD INCREASED BY EXCAVATION D

#### IMPORTANT GROUND AN PRIOR TO COMMENCEMENT OF T ANCHOR INSTALLATION BUILDEF AND EXTENT OF EXISTING SERVIC TEMPORARY SOIL ANCHORS FAL SERVICES WHEN INSTALLED.

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PILE CENTRE	
PILE CONCRETE GRADE	
SHOTCRETE WALL THICKNESS	
SHOTCRETE WALL REINFORCEMENT	
SHOTCRETE WALL CONCRETE GRADE	
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	FO	UNDAT	ION SCHEDUL	E
		f'c	REINF. RATE	
MARK	SIZE	(MPa)	(kg/m <sup>3</sup> )	REMARKS
PC1	700d x 1500 x 1500	50	160	PILE CAP WITH BP1
PC2	700d x 2000 x 1300	50	160	PILE CAP WITH BP1
RF1	800d x AS NOTED ON PLAN	50	130	CORE RAFT
SF1	600d x 600w	40	110	STRIP FOOTING

		BORE	D PIER SCHED
MARK	SIZE	f'c (MPa)	REINF. RATE (kg/m³)
BP1	750 DIA.	50	N/A

## NOTES:

1. ALL BORED PIERS TO BE FOUNDED INTO UNDERLYING BEDROCK AS PER GEOTECHNICAL

REPORT RECOMMENDATIONS. BORED PIERS D&C BY OTHERS. 2. ALL BORED PIER EMBEDMENT DEPTH TO CONTRACTOR'S DESIGN TO ACHIEVE WORKING

CAPACITY NOMINATED IN DESIGN PARAMETERS IN LATEST GEOTECHNICAL REPORT. 3. ALL COLUMNS TO BE CONCENTRIC TO THE PAD FOOTING U.N.O. 4. GEOTECHNICAL ENGINEER TO INSPECT FOOTING EXCAVATIONS AND / OR BORED PIER HOLE DRILLING TO CONFIRM THAT THE FOOTINGS AND PIERS ARE FOUNDED OR SOCKETED

ADEQUATELY INTO THE FOUNDING MATERIALS THAT SATISFY THE DESIGN ALLOWABLE BEARING PRESSURES. 5. REFER TO DRAWING S-WEB-030 FOR FOUNDATION LOADS.

#### **BASEMENT CONSTRUCTION PHILISOPHY:**

AS PER THE LATEST GEOTECHNICAL REPORT(STS GEOTECHNICS, APRIL 2020), THE BASEMENT SLAB AND LOWER RETENTION WALLS ARE STRUCTURALLY DESIGNED WITH AN EFFECTIVE DRAINAGE SYSTEM (DESIGNED BY OTHERS) WITH NO RESULTANT HYDROSTATIC PRESSURE BOTH DURING CONSTRUCTION AND THE LIFETIME OF THE STRUCTURE. THEY HAVE NOT BEEN DESIGN AS A LIQUID RETAINING STRUCTURE AND AS SUCH RELIES ON A WATERPROOF MEDIUM (MEMBRANE, WATERPROOF ADDITIVES OR SIMILAR) TO STOP WATER PERMEATING THROUGH THE CONCRETE OR POTENTIAL CRACKS IN THE STRUCTURE. A WATERPROOFING CONSULTANT SHOULD BE ENGAGED TO ADVISE ON ALL WATERPROOFING REQUIREMENTS INCLUDING POTENTIAL MEMBRANES, CONCRETE ADDITIVES AND DETAILING OF ALL COLD JOINTS TO PILES, SHOTCRETE WALLS, SLABS, FOUNDATIONS AND WALLS.

- ALL DETAILING OF MEMBRANES, WATER STOPS, ETC MADE HEREIN ARE INDICATIVE ONLY
- AND PENDING TO FURTHER SPECIALIST ADVICE. • ALLOWANCE FOR POTENTIAL 50mm BLINDING LAYER TO BASEMENT SLAB SHOULD BE MADE PENDING CONFIRMATION OF THE WATERPROOFING SYSTEM ADOPTED AND SPECIFIC REQUIREMENTS.
- ALLOW FOR WATERPROOF ADMIXTURE IN CONCRETE BELOW THE WATERTABLE. • POUR STRIP AND POUR SIZE TO BE CONSIDERED IN CONJUNCTION WITH WATERPROOFING STRATEGY ALONG WITH ADDITIONAL REINFORCEMENT TO CONTROL CRACK WIDTH.

DULE

# REMARKS PILE BY D&C CONTRACTOR



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2	ISSUED FOR TENDER (DRAFT)	MA/BT	PAC	27.11.20
3	ISSUED FOR TENDER (UPDATED)	MA/BT	PAC	18.12.20
4	ISSUED FOR TENDER (UPDATED)	MA/BT	PAC	05.02.21

DRAWING REFERENCE	REFERENCE NO.
DRAWING INDEX	S-WEB-000
GENERAL NOTES	S-WEB-001-002
RETENTION	S-WEB-010-029
CONCRETE COLUMNS	S-WEB-800-819
IN-SITU WALLS	S-WEB-820-879
PRECAST WALLS	S-WEB-880-909
SLAB ON GROUND DETAILS	S-WEB-950-951
SUSPENDED CONCRETE SLABS	S-WEB-960-962
POST TENSIONING DETAILS	S-WEB-965-966
R.C. STAIR DETAILS	S-WEB-970
MASONRY DETAILS	S-WEB-980-981
STEEL DETAILS	S-WEB-990-991

# **ISSUED FOR TENDER**

STRUCTURAL DRAWING



# FOUNDATION PLAN

DATE	DESIGNED BY	CHECKED BY	
NOV 2020	MA/BT	AC	
SCALES AT A1	DRAWN BY	APPROVED BY	
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Rev.       Description         1       ISSUED FOR TENDER (UPDATED)         2       ISSUED FOR TENDER (UPDATED)         3       3         4       3         5       3         6       3         6       3         7       3         7       3         8       3         9       3         1       3	Eng. Draft. MA/BT PAC MA/BT PAC MA/BT PAC A MA/BT PAC A MA/BT PAC A A A A A A A A A A A A A	Date 27.11.20 18.12.20
1       ISSUED FOR TENDER (DRAFT)         2       ISSUED FOR TENDER (UPDATED)         3       IN-SITU WALLS       S-W         4       IN-SITU WALLS       S-W         5       IN-SITU WALLS       S-W         5       IN-SITU WALLS       S-W         SLAB ON GROUND DETAILS       S-W         SUSPENDED CONCRETE SLABS       S-W         MASONRY DETAILS       S-W         STEEL DETAILS       S-W         STEEL DETAILS       S-W         5       ISTEEL DETAILS	Ing.       Drata         MA/BT       PAC         MA/BT       PAC         MA/BT       PAC         MA/BT       PAC         Image: Constraint of the state of the stat	27.11.20 18.12.20
2       ISSUED FOR TENDER (UPDATED)         2       ISSUED FOR TENSIONING REFERENCE         RETENTION       S-W         GENERAL NOTES       S-W         RETENTION       S-W         PRECAST WALLS       S-W         POST TENSIONING DETAILS       S-W         SUSPENDED CONCRETE SLABS       S-W         POST TENSIONING DETAILS       S-W         R.C. STAIR DETAILS       S-W         STEEL DETAILS       S-W         STEEL DETAILS       S-W         STEEL DETAILS       S-W	MA/BT PAC MA/BT PAC MA/BT PAC PAC PAC PAC PAC PAC PAC PAC	18.12.20
DRAWING REFERENCE         DRAWING INDEX         S-W         GENERAL NOTES         S-W         RETENTION         S-W         PRECAST WALLS         S-W         SLAB ON GROUND DETAILS         S-W         SLAB ON GROUND DETAILS         S-W         SLAB ON GROUND DETAILS         S-W         SUSPENDED CONCRETE SLABS         POST TENSIONING DETAILS         S-W         STEEL DETAILS         S-W         STEEL DETAILS         S-W         STEEL DETAILS         S-W	FERENCE /EB-000 /EB-001-002 /EB-001-002 /EB-800-819 /EB-820-879 /EB-880-909 /EB-950-951 /EB-960-962 /EB-965-966 /EB-970 /EB-980-981 /EB-990-991	
DRAWING REFERENCE RE DRAWING INDEX S-V GENERAL NOTES S-V RETENTION S-V CONCRETE COLUMNS S-V IN-SITU WALLS S-V PRECAST WALLS S-V SLAB ON GROUND DETAILS S-V SUSPENDED CONCRETE SLABS S-V MASONRY DETAILS S-V STEEL DETAILS S-V	FERENCE /EB-000 /EB-001-002 /EB-010-029 /EB-800-819 /EB-880-909 /EB-950-951 /EB-960-962 /EB-965-966 /EB-970 /EB-980-981 /EB-990-991	
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DRAWING REFERENCE       RE         DRAWING INDEX       S-W         GENERAL NOTES       S-W         RETENTION       S-W         CONCRETE COLUMNS       S-W         IN-SITU WALLS       S-W         PRECAST WALLS       S-W         SUSPENDED CONCRETE SLABS       S-W         POST TENSIONING DETAILS       S-W         MASONRY DETAILS       S-W         STEEL DETAILS       S-W	FERENCE /EB-000 /EB-001-002 /EB-800-819 /EB-820-879 /EB-880-909 /EB-950-951 /EB-960-962 /EB-970 /EB-980-981 /EB-990-991	
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RETENTION       S-V         CONCRETE COLUMNS       S-V         IN-SITU WALLS       S-V         SLAB ON GROUND DETAILS       S-V         SUSPENDED CONCRETE SLABS       S-V         POST TENSIONING DETAILS       S-V         MASONRY DETAILS       S-V         STEEL DETAILS       S-V         STEEL DETAILS       S-V	/EB-010-029 /EB-800-819 /EB-800-819 /EB-820-879 /EB-950-951 /EB-960-962 /EB-965-966 /EB-970 /EB-980-981 /EB-990-991	
CONCRETE COLUMNS       S-V         IN-SITU WALLS       S-V         PRECAST WALLS       S-V         SLAB ON GROUND DETAILS       S-V         SUSPENDED CONCRETE SLABS       S-V         POST TENSIONING DETAILS       S-V         R.C. STAIR DETAILS       S-V         MASONRY DETAILS       S-V         STEEL DETAILS       S-V         STEEL DETAILS       S-V	VEB-800-819 VEB-820-879 VEB-950-951 VEB-960-962 VEB-965-966 VEB-970 VEB-980-981 VEB-990-991	
PRECAST WALLS S-W SLAB ON GROUND DETAILS S-W SUSPENDED CONCRETE SLABS S-W POST TENSIONING DETAILS S-W MASONRY DETAILS S-W STEEL DETAILS S-W STEEL DETAILS S-W	/EB-880-909 /EB-950-951 /EB-960-962 /EB-965-966 /EB-970 /EB-980-981 /EB-990-991	
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MASONRY DETAILS S-V STEEL DETAILS S-V	/EB-980-981 /EB-990-991	
STEEL DETAILS	/ <u>EB-990-991</u>	
ISSUED FOR TE	INDER	
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STRUCTURAL MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T: +61 3 9614 7155 CLIENT	INEER FFICE: LEVEL 3, 19A BOUND ERS BAY, NSW, AUST 20 2488	ING ary stree <sup>-</sup> ralia 2011
	( FARM	
	<i>#</i> \1 \1¥	-, -,
11-13 MANNIX F WARWICK FARM, N	PARADE NSW 21	.70
11-13 MANNIX F WARWICK FARM, N FOUNDATION T DETAILS - SHE	PARADE NSW 21 YPICAL EET 2	.70
11-13 MANNIX F         WARWICK FARM, N         TITLE         FOUNDATION TY         DATE         NOV 2020         MA/BT         SCALES AT A1         1:20         PAC	PARADE NSW 21 YPICAL ET 2	. 70
11-13 MANNIX F         WARWICK FARM, N         TITLE         FOUNDATION TY         DATE         NOV 2020         MA/BT         SCALES AT A1         1:20         DRAWING NO.	PARADE NSW 21 YPICAL ET 2 AC	. 70



										ALL RIGHT RESERVED. THI THE PROPERTY OF WEBBE	3 WORK IS CO R DESIGN PT	OPYRIGHT /	AND REMAIN PART OF THIS
		E	BASEME	NT 1 - S	SLAB SC	HEDU	JLE			WORK SHALL BE REPRODI MEANS (GRAPHIC, ELECTR PHOTOCOPYING, RECORDI SYSTEMS) WITHOUT THE		HANICAL, MATION RI	ETRIEVAL
THICKNESS	f'c (M	1Pa)	REINF	RATE m <sup>3</sup> )	P.T. RA	ATE	REMARKS		DO	) NOT SCALE DRAWINGS. USE	FIGURED		SIONS
150	40	)	4	) )	N/A	S	LAB ON GROUND	Re	Rev. Description			Draft.	Date
200*	40	)	4	C	N/A	R	.C. RAMP SLAB	1		WORK IN PROGRESS ISSUE	MA	PAC	18.11.20
200	40	)	11	.0	N/A	В	ONDEK SLAB	2	2	ISSUED FOR TENDER (DRAFT)	MA/BT	PAC	27.11.20
								3	;	ISSUED FOR TENDER (UPDATED) ISSUED FOR TENDER (UPDATED)	MA/BT	PAC PAC	18.12.20 05.02.21
	BA	SEME	ENT 1- C	ONCRE	TE COLI	JMN S	SCHEDULE	$\neg \vdash$	-				
				REIN	. RATE				1				
MARK	SIZE	1	f'c (MPa)	(kg	/m³)		REMARKS		+		<u> </u>		
C1 3	300 x 100	0	65	1	.90	INSITU	CONCRETE COLUMN		+				
C6	500 x 500	)	65	1	.50	INSITU							
C10	500 DIA.		65		/0	INSITU	CONCRETE COLUMN						
								[ [	D	RAWING REFERENCE	REFEF	RENCE	E No.
		E	BASEME	NT 1 - V	NALL SC	CHEDI	ULE		DF	RAWING INDEX	S-WEB-(	000	
								— <b>  </b>    -	GE	ENERAL NOTES	S-WEB-0	$\frac{001-002}{010-029}$	2
		fla (N	/IDa)   F				DEMADKS		CC	ONCRETE COLUMNS	S-WEB-8	300-819	9
			0 0	(kg/III				— <b>-</b>	IN	I-SITU WALLS	S-WEB-8	320-879	9
CW1	200	5	0	220				—— <b>  </b>  -	PF SL	AB ON GROUND DETAILS	S-WEB-8	380-90 950-95	9 1
CW2	250	5	0	180	IN		ONCRETE CORE WALL		SL	JSPENDED CONCRETE SLABS	S-WEB-9	960-962	2
CW3	150	5	0	180	IN	ISITU CO	ONCRETE CORE WALL		PC	OST TENSIONING DETAILS	S-WEB-S	965-966	ŝ
W1	200	4	0	220	IN	ISITU CO	ONCRETE WALL		<u>к</u> . М	ASONRY DETAILS	S-WEB-9	970 980-98°	1
W2	250	4	0	180	IN	ISITU CO	ONCRETE WALL	†	ST	TEEL DETAILS	S-WEB-9	990-99	1
<ol> <li>ALL SERVICES</li> <li>REBATES AND WITH ARCHITE</li> <li>CONTRACTOR</li> <li>CONTRACTOR</li> <li>REFER TO ARC</li> <li>REFER TO ARC</li> <li>PER THE LATES</li> <li>AB AND LOWER</li> <li>AINAGE SYSTEM</li> <li>TH DURING CON</li> <li>HAVE NOT BE</li> <li>ATERPROOF MED</li> <li>RMEATING THRO</li> <li>ATERPROOF MED</li> <li>COLD JOINTS T</li> <li>ALL DETAILIN AND PENDIN</li> <li>ALLOWANCE MADE PENDI</li> <li>REQUIREMENT</li> </ol>	PENETRA CAST IN I ECT. SHALL AL HITECT'S DNSTRL T GEOTEC RETENTIC I (DESIGNI ISTRUCTIO EN DESIC DUM (MEN DUGH THE CONSULT/ CLUDING TO PILES, NG OF ME FOR POTING CONF NG CONF NTS.	TIONS PLATES LOW F DRAWI JCTIO CHNICAI DRAWI ED BY ( ON ANI GN AS A MBRAN E CONC ANT SH POTEN SHOTC MBRAN THER S ENTIAL IRMATI	TO BE CO-G FOR STRU OR CONSTRU- INGS FOR C DN PHILI L REPORT(S LS ARE ST OTHERS) W D THE LIFE A LIQUID RI IE, WATERF RETE OR P IOULD BE E ITIAL MEMI RETE WALI RETE WALI SPECIALIST 50mm BLI ION OF THE	DRDINATE CTURAL S RUCTION J AR CRASH AR CRASH STS GEOTH TS GEOTH TH NO RI TIME OF T TAINING PROOF ADI OTENTIAL NGAGED BRANES, C S, SLABS R STOPS, H ADVICE. NDING LA WATERPI	D AND APF TEEL WOR OINTS AS I BARRIER ECHNICS, A LY DESIGN ESULTANT HE STRUCTUR DITIVES OR CRACKS IN TO ADVISE CONCRETE FOUNDAT ETC MADE I YER TO BA ROOFING S	PROVED REQUIR REQUIR REQUIF NED WIT HYDRO TURE. RE AND A SIMILA N THE S ON ALL ADDITIN TONS AT HEREIN SEMEN SYSTEM	BY WEBBER DESIGN. FACADE TO BE CO-ORDINATED ED. REMENTS. D20), THE BASEMENT TH AN EFFECTIVE STATIC PRESSURE AS SUCH RELIES ON A R) TO STOP WATER TRUCTURE. A WATERPROOFING VES AND DETAILING OF ND WALLS. ARE INDICATIVE ONLY T SLAB SHOULD BE ADOPTED AND SPECIFIC			GENERAL ARRANGEME         xx*       -DENOTES SLAB/BA         -DENOTES COLUMN         -DENOTES LOAD BE         UNDER & OVER         -DENOTES BLOCK W         S.C.J.       -DENOTES SAWCUT         C.J.       -DENOTES CONSTRUCT         -DENOTES SLAB SE         REFER TO ARCH. DE	VT LEG VD BEAM OVER ER ARING EL ARING EL JOINT JOINT JOINT JCTION J( TOWN. TAILS FC	END THICK EMENT EMENT R DINT	UNDER
POUR STRIP STRATEGY AI	AND POU LONG WIT	IR SIZE	TO BE CON	ISIDERED	IN CONJUN	NCTION CONTROL	WITH WATERPROOFING L CRACK WIDTH.				· · ·		

										All Right Reserved. Thi The property of Webbe Work shall be reprodu	s work is r design f JCED or co	Copyrie Ty Ltd. Pied in	GHT A NO P ANY I	ND REMAINS ART OF THIS FORM OR BY
		E	BASEN	1ENT 1 - \$	SLAB SC	CHEDI	ULE			Means (graphic, electr Photocopying, recordi Systems) without the I	onic or m Ng or info Permissioi	Echanic Rmatic Nof We	Cal, IN DN RE EBBER	icluding Frieval Design Pty
THIOKNESS	fle (N	4De)	REIN	IF. RATE	P.T. R	ATE								
1HICKNESS 150	5 TC (IV 40	0 0	(к 	(g/m <sup>3</sup> ) 40	(kg/ff N/A	1 <sup>2</sup> )	REMARKS SLAB ON GROUND	Rev. Des		Description	-IGUREL			Date
200*	4(	0		40	N/A	F	R.C. RAMP SLAB	1	WORK IN	PROGRESS ISSUE	MA	. P/	AC	18.11.20
200	40	0		110	N/A	] E	BONDEK SLAB	2	ISSUED FO	DR TENDER (DRAFT)	MA/E	BT P/	AC	27.11.20
								3	ISSUED FO	DR TENDER (UPDATED)	MA/E MA/E	BT PA	AC AC	18.12.20 05.02.21
	BA	SEME	ENT 1-	CONCRE	TE COL	UMN	SCHEDULE							
				RFINE	. RATF									
MARK	SIZE	f	f'c (MF	Pa) (kg	r/m³)		REMARKS							
C1	300 x 100	0	65	1	.90	INSITU	J CONCRETE COLUMN	1					_	
C6	500 x 500	2	65	1	.50	INSITU	J CONCRETE COLUMN							
010	500 DIA.		65		.70	INSIT	J CONCRETE COLUMN	J [						
									RAWI	NG REFERENCE	REFE	REN	ICE	No.
		E	BASEN	1ENT 1 - \	WALL SO	CHED	DULE		RAWING		S-WEB	-000	000	
			T	RFINF F	RATE				<u>ENERAL</u> ETENTIO	NOTES N	S-WEB	-001- -010-	002	
MARK	/IDTH	f'c (N	/Pa)	(kg/m	3)		RFMARKS		ONCRET	E COLUMNS	S-WEB	-800-	819	
BW1	190	20	0	60	, C	ORE FII	LLED BLOCKWORK		N-SITU W RECAST \	ALLS WALLS	S-WEB	<u>-820-</u> -880-	<u>879</u> 909	
CW1	200	50	0	220	11	NSITU C	CONCRETE CORE WALL	S	LAB ON (	GROUND DETAILS	S-WEB	-950-	951	
CW2	250	50	0	180	11	NSITU C	CONCRETE CORE WALL		USPEND	ED CONCRETE SLABS	S-WEB	-960-	962 066	
CW3	150	50	0	180	11	NSITU C	CONCRETE CORE WALL		.C. STAIF	SIONING DETAILS	S-WEB	-965- -970	966	
<u>W1</u>	200	4(	0	220	11	NSITU C		- M	IASONRY	DETAILS	S-WEB	-980-	981	
<ol> <li>ALL SERVICES</li> <li>REBATES AND WITH ARCHITI</li> <li>CONTRACTOR</li> <li>REFER TO ARC</li> <li>REFER TO ARC</li> <li>PER THE LATES AB AND LOWER</li> <li>RAINAGE SYSTEN DTH DURING COI HEY HAVE NOT B</li> <li>ATERPROOF MEI ERMEATING THRI ATERPROOF MEI</li> <li>REFEROFING</li> <li>QUIREMENTS IN L COLD JOINTS</li> <li>ALL DETAILI AND PENDING</li> <li>ALL OWANCE MADE PEND REQUIREME</li> <li>ALLOW FOR</li> </ol>	Denetra Cast in Ect. Shall al Chitect's <u>ONSTRU</u> St Geotec Retentio (Design NSTRUCTI EEN DESIG DIUM (MEI OUGH THI CONSULT, NCLUDING TO PILES, NG OF ME NG TO FUF E FOR POT DING CONF ING CONF ING STO FUF E FOR POT	LOW FO DRAWI JCTIO CHNICAI DN WAL DN	TO BE C FOR ST OR CONS NGS FOI NGS FOI L REPOF LS ARE DTHERS D THE LI A LIQUID E, WATE RETE OF IOULD B ITIAL ME RETE WA SPECIAL 50mm I ON OF T OMIXTUF	O-ORDINATE RUCTURAL S STRUCTION J R CAR CRASH (STS GEOTE STRUCTURAL WITH NO RI FETIME OF T RETAINING RETAINING RETAINING RETAINING RETAINING MBRANES, C ALLS, SLABS, TER STOPS, F IST ADVICE. BLINDING LA HE WATERPI RE IN CONCR	D AND API STEEL WOF OINTS AS H BARRIER ECHNICS, A LLY DESIG ESULTANT HE STRUC STRUCTUF DITIVES OF CRACKS II TO ADVISE XONCRETE FOUNDAT ETC MADE YER TO BA ROOFING S ETE BELOV	PROVEL RK AND REQUIF REQUIF REQUIF REQUIF HYDRO TURE. REAND R SIMIL N THE S ADDITI TIONS A HEREIN ASEMEN SYSTEM	D BY WEBBER DESIGN. PACADE TO BE CO-ORDINATED RED. IREMENTS. 2020), THE BASEMENT TH AN EFFECTIVE OSTATIC PRESSURE AS SUCH RELIES ON A AR) TO STOP WATER STRUCTURE. A L WATERPROOFING IVES AND DETAILING OF AND WALLS. N ARE INDICATIVE ONLY NT SLAB SHOULD BE 1 ADOPTED AND SPECIFIC WATERTABLE.		GENER XX*	AL ARRANGEME -DENOTES SLAB/BAI -DENOTES COLUMN -DENOTES COLUMN -DENOTES LOAD BE UNDER & OVER -DENOTES BLOCK W -DENOTES SAWCUT -DENOTES SAWCUT -DENOTES SLAB SET REFER TO ARCH. DE	NT LE ND BEAI OVER ER ARING E ARING E /ALL OV JOINT JOINT JOINT	GEN // THI/ LEME LEME ER JOINT		ESS JNDER
STRATEGY A	LONG WI	TH ADD	ITIONAL	REINFORCE	MENT TO C	CONTRO	DL CRACK WIDTH.				<b></b>			

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		E	BASEME	NT 1 - S	SLAB SC	HEDU	JLE			WORK SHALL BE REPRODI MEANS (GRAPHIC, ELECTR PHOTOCOPYING, RECORDI SYSTEMS) WITHOUT THE		HANICAL, MATION RI	ETRIEVAL
THICKNESS	f'c (M	1Pa)	REINF	RATE m <sup>3</sup> )	P.T. RA	ATE	REMARKS		DO	) NOT SCALE DRAWINGS. USE	FIGURED		SIONS
150	40	)	4	) )	N/A	S	LAB ON GROUND	Re	Rev. Description			Draft.	Date
200*	40	)	4	C	N/A	R	.C. RAMP SLAB	1		WORK IN PROGRESS ISSUE	MA	PAC	18.11.20
200	40	)	11	.0	N/A	В	ONDEK SLAB	2	2	ISSUED FOR TENDER (DRAFT)	MA/BT	PAC	27.11.20
								3	;	ISSUED FOR TENDER (UPDATED) ISSUED FOR TENDER (UPDATED)	MA/BT	PAC PAC	18.12.20 05.02.21
	BA	SEME	ENT 1- C	ONCRE	TE COLI	JMN S	SCHEDULE	$\neg \vdash$	-				
				REIN	. RATE				1				
MARK	SIZE	1	f'c (MPa)	(kg	/m³)		REMARKS		+				
C1 3	300 x 100	0	65	1	.90	INSITU	CONCRETE COLUMN		+				
C6	500 x 500	)	65	1	.50	INSITU							
C10	500 DIA.		65		/0	INSITU	CONCRETE COLUMN						
								[ [	D	RAWING REFERENCE	REFEF	RENCE	E No.
		E	BASEME	NT 1 - V	NALL SC	CHEDI	ULE		DF	RAWING INDEX	S-WEB-(	000	
								— <b>  </b>    -	<u>GE</u> RF	ENERAL NOTES	S-WEB-0	$\frac{001-002}{010-029}$	2
		flo (N	/IDa)   F				DEMADKS		CC	ONCRETE COLUMNS	S-WEB-8	300-819	9
			0 0	(kg/III				— <b>-</b>	IN	I-SITU WALLS	S-WEB-8	320-879	9
CW1	200	5	0	220				—— <b>  </b>  -	PF SL	AB ON GROUND DETAILS	S-WEB-8	380-90 950-95	9 1
CW2	250	5	0	180	IN		ONCRETE CORE WALL		SL	JSPENDED CONCRETE SLABS	S-WEB-9	960-962	2
CW3	150	5	0	180	IN	ISITU CO	ONCRETE CORE WALL		PC	OST TENSIONING DETAILS	S-WEB-S	965-966	ŝ
W1	200	4	0	220	IN	ISITU CO	ONCRETE WALL		<u>к</u> . М	ASONRY DETAILS	S-WEB-9	970 980-98°	1
W2	250	4	0	180	IN	ISITU CO	ONCRETE WALL	†	ST	TEEL DETAILS	S-WEB-9	990-99	1
<ol> <li>ALL SERVICES</li> <li>REBATES AND WITH ARCHITE</li> <li>CONTRACTOR</li> <li>CONTRACTOR</li> <li>REFER TO ARC</li> <li>REFER TO ARC</li> <li>PER THE LATES</li> <li>AB AND LOWER</li> <li>AINAGE SYSTEM</li> <li>TH DURING CON</li> <li>HAVE NOT BE</li> <li>ATERPROOF MED</li> <li>RMEATING THRO</li> <li>ATERPROOF MED</li> <li>COLD JOINTS T</li> <li>ALL DETAILIN AND PENDIN</li> <li>ALLOWANCE MADE PENDI</li> <li>REQUIREMENT</li> </ol>	PENETRA CAST IN I ECT. SHALL AL HITECT'S DNSTRL T GEOTEC RETENTIC I (DESIGNI ISTRUCTIO EN DESIC DUM (MEN DUGH THE CONSULT/ CLUDING TO PILES, NG OF ME FOR POTING CONF NG CONF NTS.	TIONS PLATES LOW F DRAWI JCTIO CHNICAI DRAWI ED BY ( ON ANI GN AS A MBRAN E CONC ANT SH POTEN SHOTC MBRAN THER S ENTIAL IRMATI	TO BE CO-G FOR STRU OR CONSTRU- INGS FOR C DN PHILI L REPORT(S LS ARE ST OTHERS) W D THE LIFE A LIQUID RI IE, WATERF RETE OR P IOULD BE E ITIAL MEMI RETE WALI RETE WALI SPECIALIST 50mm BLI ION OF THE	DRDINATE CTURAL S RUCTION J AR CRASH AR CRASH STS GEOTH TS GEOTH TH NO RI TIME OF T TAINING PROOF ADI OTENTIAL NGAGED BRANES, C S, SLABS R STOPS, H ADVICE. NDING LA WATERPI	D AND APF TEEL WOR OINTS AS I BARRIER ECHNICS, A LY DESIGN ESULTANT HE STRUCTUR DITIVES OR CRACKS IN TO ADVISE CONCRETE FOUNDAT ETC MADE I YER TO BA ROOFING S	PROVED REQUIR REQUIR REQUIF NED WIT HYDRO TURE. RE AND A SIMILA N THE S ON ALL ADDITIN TONS AT HEREIN SEMEN SYSTEM	BY WEBBER DESIGN. FACADE TO BE CO-ORDINATED ED. REMENTS. D20), THE BASEMENT TH AN EFFECTIVE STATIC PRESSURE AS SUCH RELIES ON A R) TO STOP WATER TRUCTURE. A WATERPROOFING VES AND DETAILING OF ND WALLS. ARE INDICATIVE ONLY T SLAB SHOULD BE ADOPTED AND SPECIFIC			GENERAL ARRANGEME         xx*       -DENOTES SLAB/BA         -DENOTES COLUMN         -DENOTES LOAD BE         UNDER & OVER         -DENOTES BLOCK W         S.C.J.       -DENOTES SAWCUT         C.J.       -DENOTES CONSTRUCT         -DENOTES SLAB SE         REFER TO ARCH. DE	VT LEG VD BEAM OVER ER ARING EL ARING EL JOINT JOINT JOINT JCTION J( TOWN. TAILS FC	END THICK EMENT EMENT R DINT	UNDER
POUR STRIP STRATEGY AI	AND POU LONG WIT	IR SIZE	TO BE CON	ISIDERED	IN CONJUN	NCTION CONTROL	WITH WATERPROOFING L CRACK WIDTH.				· · ·		





BASEMENT 1 - RAMP PART PLAN SCALE: 1:100



						$\langle \Lambda N \rangle$	THE PROPERTY OF	· WEBBER D	ESIGN PTY	LID. NO F	ARI OF I	HIS
M	- SLA	B SCH	HEDULE				MEANS (GRAPHIC PHOTOCOPYING, F		D OR COPIE C OR MECH DR INFORM	ANICAL, I	NCLUDING	DL) 9 BI
E	P.T. F	RATE					LTD.	UT THE PER	1011221010 0	F WEDDER	DESIGN	-11
	(kg/r	n²)	REMARKS		D	O NOT SCA	LE DRAWINGS,	USE FIG	IURED E	DIMENS	IONS	
~		A C	R.C. RAMP SLAB		Rev.		Description		Fng.	Draft.	Date	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Ň//	A A	BONDEK SLAB		1	ISSUED FOR	TENDER (DRAFT)		MA/RT	PAC	27 11 2	20
					2	ISSUED FOR	R TENDER (UPDATI	ED)	MA/BT	PAC	18.12.2	20
_ `	WALLS	CHF	DUI F									_
- r												_
. י /m	3)		REMARKS									_
, 60	. ,	CORF F										_
20			CONCRETE CORE WALL									_
80	0.0		CONCRETE CORE WALL									_
80			CONCRETE CORE WALL									_
50	$\sim \sim \sim \downarrow$		CONCRETE WALL									_
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$\overline{\gamma}$				<u></u>	₿ [r	RAWIN	G RFFFRFN		REFER	FNCF	No.	ľ
				$\left\langle \right\rangle$	╠┠╴				-WFB-0			-k
JLV	ΈD.			5	k F	FNFRAL N	OTES	5	-WFR-0	01-002		ť
ATE	d and af	PPROVE	ED BY WEBBER DESIGN.	Z		FTENTION	0120	S	-WFB-0	10-029		ſ
۹L S	STEEL WC	RK ANI	D FACADE TO BE CO-ORDINATED	$\boldsymbol{\mathbf{x}}$	k Ho	ONCRETE (	COLUMNS	S	-WEB-8	00-819	1	ħ
				$\langle$	₿ <b>Г</b> і	N-SITU WA	LLS	S	-WEB-8	20-879		
)N .	JOINTS AS	S REQU	IRED.	5	È ГР	RECAST W	ALLS	S	-WEB-8	80-909		ļ
AS	H BARRIE	R REQU	JIREMENTS.	Z	k   s	LAB ON GF	ROUND DETAIL	S S	-WEB-9	50-951		1
				$\left\{ \right.$	🕻 🛛 S	USPENDED	O CONCRETE SL	ABS S	-WEB-9	60-962		
ΗY	<u>:</u>			$\rightarrow$	₽	OST TENSI	ONING DETAIL	S S	-WEB-9	65-966		]
FOI	FCHNICS		2020) THE BASEMENT	5	Γ, R	.C. STAIR [	DETAILS	S	-WEB-9	70		ļ
			WITH AN FEFECTIVE	z	k _N	IASONRY D	DETAILS	S	-WEB-9	80-981		4
	RESULTAN		ROSTATIC PRESSURE	$\langle \wedge \rangle$	K Ls	TEEL DETA	ILS A DA	S	-WEB-9	90-991	<u></u>	ľ
DF	THE STRU	ICTURE										٦
ING	STRUCT	URF AN	ID AS SUCH RELIES ON A	5								
A	DITIVES	OR SIM	ILAR) TO STOP WATER	z								
ΓIΑ	L CRACKS	IN THE	E STRUCTURE. A	$\leq$								
ED	TO ADVIS	SE ON A	ALL WATERPROOFING	)								
ΞS,	CONCRET	e addi	ITIVES AND DETAILING OF	3								
ABS	S, FOUND	ATIONS	S AND WALLS.	z								
PS,	ETC MAD	E HERE	EIN ARE INDICATIVE ONLY	3								
CE.				2								
GL	AYER TO	BASEMI	ENT SLAB SHOULD BE	$\left\{ \right.$								
ERF	PROOFING	G SYSTE	M ADOPTED AND SPECIFIC	$\langle$								
				3								
NC	RETE BEL	OW TH	E WATERTABLE.	z								
RED	D IN CONJ	UNCTIO	ON WITH WATERPROOFING	$\leq$								
RCE	EMENT TO	CONT	ROL CRACK WIDTH.	$\langle$								
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# **ISSUED FOR TENDER**

## STRUCTURAL DRAWING



# LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM, NSW 2170

BASEMENT 1 -	RAMP PART										
PLAN											

20023	S-WEI	B-091	2
JOB No.	DRAWING No.		REV.
1:100	PAC	PW	/
SCALES AT A1	DRAWN BY	APPROVED BY	
NOV 2020	MA/BT	AC	
DATE	DESIGNED BY	CHECKED BY	



7 8 9 10

										_								
		G	ROUN	D FLC	DOR S	SLAB S	CHED	ULE			All Right Reserve The property of N Work Shall be re	ed. This wo webber de produced	ork is coi Sign Pty Or copie	Pyright A Ltd. No F :D in Any	and remains Part of this Form or by			
			REINF	. RAT	E	P.T. RA	ATE		11( 6	57)	MEANS (GRAPHIC, E PHOTOCOPYING, RE	CORDING C	OR MECH	IANICAL, I IATION RE	NCLUDING TRIEVAL			
THICKNE	ESS f'c (MF	Pa)	(kg/m <sup>3</sup> )			(kg/m <sup>2</sup> )		REMARKS			LTD.	HUUT THE PERMISSION OF WEBBER DESIGN						
150 180	40		4	40 40		1.8		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	DO N	IOT SCA	LE DRAWINGS, U	JSE FIG	JRED D	DIMENS	SIONS			
200	40			82 MES	SH JUT	5.0		P.T. SLAB BY D&C CONTRACTOR	Rev.		Description		Eng.	Draft.	Date			
200*	40		1	30	/01	N/A		BONDEK SLAB	2 ISS	SUED FOF	R TENDER (DRAFT)		MA/BT	PAC	27.11.20			
200*	40		1	130		N/A		R.C. RAMP SLAB	3 ISS	SUED FOF	R TENDER (UPDATED	))	MA/BT	PAC	18.12.20			
210	40		4 60 + SL	+0 82 MES	SH	2.5		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	4 ISS	SUED FOF	R TENDER (UPDATED	))	MA/BT	PAC	05.02.21			
300	40	T			UT	5.5												
500	40		4	Ĩ		5.5		1. SLAD DI DAG CONTRACTOR	┙┝─┼─									
	GR		D FLOO	DR - C	CONC	RETE E	BEAM	SCHEDULE	ו⊨									
				DEII		D .	тт		┥┝─┼─									
			f'c		TF	F. TEND	I. ONS											
	SIZE	(	MPa)	(kg/I	m <sup>3</sup> )	(kg/	$m^2$ )	REMARKS	DR/	AWIN(	G REFERENC	Ж R	EFERI	ENCE	No.			
4000	d x 2400w		40	4(	0	7.	0	P.T. BEAM BY D&C CONTRACTOR	DRAV	VING IN	IDEX DTES	S-V	VEB-OC	0				
400	d x 2400w d x 1200w		40	4(	5 0	10 8.	.5 5	P.T. BEAM BY D&C CONTRACTOR P.T. BEAM BY D&C CONTRACTOR	RETE			S-V	VEB-01	0-029				
										TU WAL	LS	S-V	VEB-80	0-819				
	GRO	UND	FLOOF	R - CC	DNCR	ETE CC	)LUMI	N SCHEDULE	PREC SLAB	CAST WA	ALLS OUND DETAILS	S-V S-V	VEB-88 VEB-95	0-909 0-951				
				F	REINF	. RATE			SUSP		CONCRETE SLA	BS S-V	VEB-96 VEB-96	0-962				
MARK	SIZE		f'c (M	Pa)	(kg/	/m³)		REMARKS	R.C. 3	STAIR D	ETAILS	S-V	VEB-90	0				
C2	250 x 120	00	50		2	30	INSITU		MASC STEE	DNRY D L DETAI	ETAILS LS	S-V S-V	VEB-98 VEB-99	0-981 0-991				
C3	300 x 60	0	50		2	10	INSITU	J CONCRETE COLUMN	+1									
C5	400 x 40	0	50		2	10	INSITU	J CONCRETE COLUMN	]									
										NERAI	_ ARRANGEN	MENT	LEGE	ND				
		GF	ROUNE	D FLO	OR -	WALLS	SCHE	DULE		-					-00			
				REII	NF. R	ATE				<u> </u>	-DENUTES SLAB	'BAND E	SEAIVI I	HICKINE	-55			
MARK	WIDTH	f'c (	MPa)	(	kg/m <sup>3</sup>	3)		REMARKS		<i>S</i> )	-DENOTES COLU	MN OVE	R					
CW1 CW2	200		50 50		180		NSITU C	ONCRETE CORE WALL		4	-DENOTES WALL	OVFR						
CW3	150	Ę	50		180	11	NSITU C	ONCRETE CORE WALL										
W1 W2	200 250		50 40		220 180	11	NSITU C	ONCRETE WALL	┥║╺═╸		-DENOTES LOAD	BEARIN	ig elen	MENT L	JNDER			
											-DENOTES LOAD	BEARIN	IG ELEI	MENT				
1 ALL PENE	TRATIONS TO				FSOLVE	D					UNDER & OVER							
2. ALL SERV	ICES PENETRA		TO BE C	CO-ORD		) AND API		) BY WEBBER DESIGN.			-DEINUTES BLUC	r vvall	OVER					
3. REBATES	ED WITH ARCH	HITECT.	S FOR ST	RUCIL	JRAL SI	I EEL WOF	rk and	FACADE TO BE CO-	<u></u>	.J	-DENOTES SAWC	NOL TUC	ΝT					
4. CONTRAC	CTOR SHALL AL	_LOW F	FOR CON	STRUC	TION JO	DINTS AS	REQUIF	RED.	C.	J.	-DENOTES CONS	TRUCTI		NT				
POST TEN	ISIONED SL		OTES:	<u>.</u>						- —								
THE SUSPENI	DED FLOOR SL RAWING S-WEE	LABS A	RE A DES & S-WEB	Sign An -002 f(	ND CON OR DES	ISTRUCT	COMPC	NENT. RUCTION POST-	STEP		-DENOTES SLAB RFFFR TO ARCH	SETDOV	VN. S FOR	ALLIF	VFLS.			
TENSIONING	FLOOR SLAB	AND DE	ESIGN BF	RIEF AN	ID GENE	ERAL DES	SIGN & I	OADING CRITERIA							VELO.			
GENERAL	NOTES																	
	PETE SLABS A		AMS TO				NO											
PT AND R	EINFORCEMEN		BE DESIG	INED BY	Y PT CO	NTRACT(	DR.											
- THE POST	TENSIONING	CONTR	ACTOR S	shall e	ENSURE	E POTENT	ĪAL											
INTERNAL		CRACK	(S INDU		PREST	RESSING,												
OF RESTRA	AINING ELEME	ENTS A	ND MAK	E PROV	/ISION F	FOR MOVE	EMENT	AND										
SHRINKAG JOINTS, PO	ge as require Our strips, l	ED THF _OW SH	rougho Hrinkag	UT, IN( E	CLUDIN	NG MOVE	MENT			100				FR				
CONCRET	E MIX ETC.			-						IS.								
- NO COLUN	MN STIFFNESS	SHOU	LD BE U	SED IN	THE SL	AB			Status									
AND BEAN	VI DESIGN.										STRUCTURA	L DRA	WIN	3				
- SLABS TO	BE CHECKED	FOR PL		G SHEA				/ED										
FOR SHEA	AR HEAD REINF	FORCEN	MENT (M	/HERE F	REQUIR	(ED) TO S	ALLOVV/ ATISFY	INCE										
PUNCHING	G SHEAR REIN	FORCE	MENTS							Ľ,								
- leff TO Igro	DSS MAX RATIO	TO BE		AINED E	BY THE													
BEAM CAL	_CULATIONS.	JE GR		i iain U.	.7 FUK	THE SLAD				7								
- PT CONTR	RACTOR TO MA	KE ALL	OWANC	E FOR S	STRUCT	URAL IN	TEGRIT	(		4								
REINFORC	CEMENT IN ACC	CORDA	NCE WIT	TH CL9.	.2.2 OF	AS3600-2	2018 F	DR		4								
		0.455	A										_					
LOSSES) T	O ALL INTERN	IAL CO		SLABS	AND BE	HVIPA (AF EAMS, AN	ID 2.0	/r∟ ⁄/Pa				N						
(AFTER FII EXPOSED	NAL LOSSES) T ROOFS. ETC.)	io all Plus s	EXTERN	AL ARE 9 MESH	AS (BA	LCONIES	, TERRA	ICES,				ゝヽ						
									STR	UC	TURAL	ENG	I N I	EER	ING			
- ALL EXPOS TO 0.3mm	SED SLABS/BE 1 MAX.	AIVIS CI	RACK WI	DIHIC	) BE LIN	VITED			MELBOURI LEVEL 2, 3	NE OFFICE: 1 QUEEN ST	REET	SYDNEY O SUITE 301	FFICE: LEVEL 3,	9A BOUNE	DARY STREET			
EXPOSURE CI	I ASSIFICATION	J							MELBOURI T: +61 3 96	NE, VIC, AU 14 7155	STRALIA 3000	RUSHCUT T: +61 2 96	TERS BAY, 90 2488	NSW, AUS	TRALIA 2011			
- A2 INTERN	NAL	-																
- BI EXTERI - BI SURFA	NAL ACES IN CONTA		TH THE (	GROUN	D						ΤΑΥΙ	OR						
FIRE RATING											.,,,,,	_01\						
- RESIDENT	TAL 90 MINU	JTES FI	RL						PPO ISOT									
		LO FRL	-						PROJECT	LAF		NIC	K FA	RM	1			
- TOTAL LOI	<u>.ITY</u> NG TERM DEFI	LECTIO	N SPA	N/250	) or 25	5mm MAX	IMUM.			 1 1 _ 1					-			
CANTILEVI	'ER SPAN / 1. R SI ARS & DE 1	25 OR	15mm N SPAN/10		JM 10mm	Μαχινήια	Л			/ D/ v *		чі/\ Г РК <i>Л</i> Г	/ IFN 1/01/		-, 1 70			
- INCREMEN	NTAL DEFLECT			R SLAB	S AND I	BEAMS	v1	1/105	VV/	<b>٦٢</b> ٧١		lvi, l	VCV	v Z.				
- DIFFEREN	IING BRITTLE	eleme Ion Be	LINTS S TWEEN	FLOORS	UU, CAN S TO BE	LIMITED	SPAN TO	GZ1W	IIFLE	(-	ROUND	FLC	OR	-				
SPAN/500 OR 15mm MAXIMUM AT FACADE LOCATIONS										FNF		RAN	GFN	ΛFN	JT			
050							<b></b>	]		1 <b>1</b> L		 	-л-Г	• 1 <b>i</b>   `				
GROUN	ND FLOOR	- LAN	NDSCA	PE FC	JUTIN	NG SCH	EDUL	£					,					
									DATE		DESIGNED BY	UHECKED BY						
MARK	fc (MP:	a)	REINF	F. RAT	TE R	MARK			NOV 2	2020	MA/BT		AG	2				
MARK	f'c (MPa	a)	REINF (kg	F. RA1 /m <sup>3</sup> )					NOV 2	2020	MA/BT		AC	2				
MARK SF3	f'c (MPa 32	a)	REINF (kg	F. RA1 /m <sup>3</sup> ) 50	TE RE ST	Emark RIP Foot	ING		NOV 2 SCALES AT A 1:1	2020 <sup>N1</sup> 00	MA/BT DRAWN BY PAC	APPROVED E	A( <sup>3Y</sup> P\	с 				

			GROUN	D FLO	OR SLA	B SCHED	OULE			5	All Right Reserve The property of N Work shall be re	.D. This wo Nebber De .Produced	ork is cof Sign Pty Or copie	'YRIGHT A LTD. NO F D IN ANY	and remains Part of this Form or by
			REINF	REINF. RATE		P.T. RATE				])	Means (graphic, e Photocopying, re Systems) withou	Lectronic Cording C T the Pern	or Mech R Inform Aission O	anical, i Ation re <sup>-</sup> Webbef	NCLUDING TRIEVAL R DESIGN PTY
THICKNE 150	ESS f'c (MF	Pa)	(kg/ 4	(kg/m <sup>3</sup> )		<b>g/m<sup>2</sup>)</b> 1.8	P.T. SLAB BY D&C CONTRACTOR								
180	40		4 60 + SL	.0 82 MESH	4	1.8	P.T. SLAB BY D&C CONTRACTOR		Rev.	1 SCA	Description		Eng.	Draft.	Date
200*	40		TOP THR		JT N/A						ROGRESS ISSUE		MA	PAC	18.11.20
200*	40		13	30		N/A	R.C. RAMP SLAB		3 ISSUE	ED FOR	R TENDER (UPDATED	))	MA/BT	PAC	18.12.20
210	40		4 60 + SL8	0 82 MESH	 	2.5	P.T. SLAB BY D& P.T. SLAB BY D&	C CONTRACTOR	4 ISSUE	D FOR	R TENDER (UPDATED	))	MA/BT	PAC	05.02.21
300	40		TOP THRC 4	OUGHOU		5.5	P.T. SLAB BY D&	C CONTRACTOR	]						
									ין ד						
	GR														
			f'c	REIN	ιε. Έ   ΤΙ	P.I. ENDONS									
100	SIZE		(MPa)	(kg/m	<sup>3</sup> )	(kg/m <sup>2</sup> )	RE	MARKS				E RE			No.
400 500	d x 2400w d x 2400w		40	40 65		7.0	P.T. BEAM BY P.T. BEAM BY	D&C CONTRACTOR D&C CONTRACTOR	- GENER		DTES	<u> </u>	VEB-00 VEB-00	<u>1-002</u> 0-029	
400	d x 1200w		40	40		8.5	P.T. BEAM BY	D&C CONTRACTOR	CONCR	ETE C J WAL	COLUMNS LS	S-V	NEB-80 NEB-82	0-819 0-879	
	GRO	UNE	) FLOOF	R - COI	NCRETE	COLUM	N SCHEDULI	Ξ	PRECAS SLAB O	ST WA	ALLS OUND DETAILS	S-V S-V	NEB-88 NEB-95	0-909 0-951	
				RE	EINF. R	ATE			SUSPEN POST T	NDED ENSI(	CONCRETE SLA	<u>3S S-V</u> S-V	NEB-96 NEB-96	0-962 5-966	
MARK	SIZE 250 x 120	00	f'c (MF	Pa)	(kg/m <sup>3</sup> 230	) INSIT	REMA		R.C. ST. MASON	<u>air d</u> iry d	DETAILS ETAILS	<u> </u>	NEB-97 NEB-98	0 0-981	
C3	200 x 140	00	50		250	INSIT	U CONCRETE COL	UMN	-   <u>  Steel (</u> -	DETAI	LS	S-V	NEB-99	0-991	
C4 C5	400 x 40	0	50		210	INSIT	U CONCRETE COL	LUMN	∃						
										<u>ERAI</u>	L ARRANGEN	<u>MENT</u>	LEGE	ND	
							DULE		-    xx*	]	-DENOTES SLAB,	/band e	BEAM TI	HICKNE	ESS
MARK	WIDTH	f'c	(MPa)	KEIN (kį	г. кан g/m <sup>3</sup> )	-	REMAF	RKS	6	1	-DENOTES COLU	MN OVE	R		
CW1	200		50		220		CONCRETE CORE	WALL							
CW3	150		50		180		CONCRETE CORE	WALL	╡║╚ <u>╴╴</u> ┥║			OVER			
W1 W2	250		40		180	INSITU (	CONCRETE WALL		┤║┖══┇		-DENOTES LOAD	BEARIN	NG ELEN	/IENT U	JNDER
NOTES:											-DENOTES LOAD UNDER & OVER	BEARIN	IG ELEN	/IENT	
1. ALL PENE 2. ALL SERV	TRATIONS TO	BE R ATION	EVIEWED / IS TO BE C	and res :0-ordin	Solved. Nated an	) APPROVE	d by webber de	ESIGN.			-DENOTES BLOC	K WALL	OVER		
3. REBATES ORDINATI	AND CAST IN ED WITH ARCH	PLAT HITEC	es for st T.	RUCTUR	RAL STEEL	WORK AND	) Facade to be (	0-	S.C.J.	<u> </u>	-DENOTES SAWC	110L TU	١T		
4. CONTRAC		LOW	FOR CON	STRUCTI	ON JOINT	s as requi	RED.		<u>C.J.</u>		-DENOTES CONS	TRUCTI	on Joii	١T	
<u>POST TEN</u> THE SUSPEN	<u>ISIONED SL</u> DED FLOOR SL	<u>_AB</u> _ABS	<u>NOTES:</u> ARE A DES	Sign ane	D CONSTR	UCT COMP(	ONENT.				-DENOTES SLAB	SETDO\	WN.		
REFER TO DR ENSIONING	RAWING S-WEE FLOOR SLAB A	3-001 And [	& S-WEB- DESIGN BR	-002 FOF RIEF AND	r design General	AND CONST . DESIGN &	RUCTION POST-	IA			REFER TO ARCH	. DETAIL	_S FOR	ALL LE	VELS.
GENERAL	NOTES:														
ALL CONC	RETE SLABS A	ND E	BEAMS TO	BE POST	-TENSION	ed U.N.O.									
pt and ri	EINFORCEMEN	IT TO	BE DESIG	NED BY I	PT CONTR	ACTOR.									
THE POST	TENSIONING	CONT CRA(	RACTOR S	Shall en Ced by P	NSURE PO PRESTRES	tential Sing,									
SHRINKAC	ge, and/or te Aining eleme	EMPE ENTS	RATURE A	RE CONT	FROLLED I SION FOR	N THE VICIN	NITY AND								
JOINTS, P	OUR STRIPS, L	LOW S	SHRINKAG	UT, INCL E	LUDING N	IOVEINENT				ISS	SUED FO	RT	END	ER	
	E IVIA ETC.	പറ							Status						
AND BEAN	A DESIGN.	5110									STRUCTURA	L DRA	WING	3	
SLABS TO WITH 100	BE CHECKED	FOR I FIFFN	PUNCHING	G SHEAR	WITH MO	MENT DERI' AKF ALLOW	VED ANCF								
FOR SHEA	R HEAD REIN G SHEAR REIN	FORC	EMENT (W EMENTS	HERE RE	EQUIRED)	TO SATISFY				/					
leff TO Igro	oss MAX RATIO	TO E	BE DETERM	/INED BY	Y THE DES	IGNER BUT									
IN NO INS BEAM CAL	TANCE SHALL CULATIONS.	BE G	REATER T	HAN 0.7	FOR THE	SLAB AND			<b> </b> −†−						
PT CONTR	ACTOR TO MA	KE AI	LLOWANCE	E FOR ST	RUCTURA	L INTEGRIT	Y			, 					
REINFORC	CEMENT IN ACC S AND BEAMS.	CORD	ANCE WIT	H CL9.2.	.2 of AS3	600-2018 F	OR			i I					
PT CONTR	ACTOR TO PR	OVIDI		UM P/A (	OF 1.4MP	A (AFTER FII	NAL					$\mathbf{N}$			
Losses) T (After Fii	O ALL INTERN NAL LOSSES) T	ial Co To Al	DNCRETE S	SLABS AI	ND BEAMS S (BALCO	s, and 2.0 Nies, terr	MPa ACES,				H-	-1			
EXPOSED	ROOFS, ETC.)	PLUS	SL82 TOP			D			S T R U	JC	TURAL	E N G		EER	ING
TO 0.3mm	SED SLABS/BE 1 MAX.	AIVIS	CRACK WI		BE LIMITE	D			MELBOURNE ( LEVEL 2, 31 Q MELBOURNE,	DFFICE: UEEN ST	TREET STRALIA 3000	SYDNEY O SUITE 301 RUSHCUT	FFICE: , LEVEL 3, 1 TERS BAY,	9A BOUNE NSW, AUS	DARY STREET
		1							T: +61 3 9614 7 CLIENT	7155		T: +61 2 96	690 2488		
B1 EXTERI	NAL NAL NES IN CONTA		אדם דווד מ												
											IAI				
RESIDENT CARPARK	TAL 90 MINU 120 MINUT	JTES FS FF	FRL RI						PROJECT						
SERVICEABIL	ITY	2011							L	_AF	HC WAR	NICł	k FA	RN	1
TOTAL LOI CANTILEVI	NG TERM DEFI ER SPAN / 1	LECTI 25 OI	ON SPAI R 15mm M	n / 250 ( 1AXIMUN	0R 25mm 1	MAXIMUM,			1	1-1	l 3 Mann	1IX F	PAR	ADE	Ξ,
TRANSFER	R SLABS & BEA NTAL DEFLECT	AMS - ION L	- Span/10 Imits fof	00 OR 10 R SLABS /	omm Max And Bean	IMUM ⁄IS			WAI	RN	/ICK FAF	:M, I	NSV	/21	170
SUPPORTI	ING BRITTLE TIAL DEFLECT	ELEN ION E	/IENTS S BETWEEN F	PAN/500 FLOORS	), CANTILE TO BE LIN	ever Spa Ited to	N/125		TITLE	G	ROUND	FLC	OR	-	
SPAN/500	XIMU	JM AT FAC	ade loc		GE	:NE	RAL AR	RAN	GEN	ΛEN	IT				
GROUI	ND FLOOR	- LA	NDSCA	PE FO	OTING S	SCHEDUL	E				PL/	٩N			
	0	``	REINF	REINF. RATE			—	DATE		DESIGNED BY	CHECKED BY	(	<u> </u>		
MARK	t'c (MPa	a)	(kg	/m <sup>3</sup> )					INUV 202	-0			AC	,	
573	32		5	JU	I 21KIN	OUTING		50ALES AT A1 1:100	1	PAC	MITRUVED E	P۷	v		
									1		ı				

20023

S-WEB-100

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									ALL RIGHT RESERVE	D. THIS WORK IS C	OPYRIGHT	AND REMAINS
		(	GROUN	D FLOO	R SLAB S	SCHED	ULE		THE PROPERTY OF V WORK SHALL BE REF	VEBBER DESIGN PT PRODUCED OR COF	y LTD. No Pied in Any Chanicai	Part of this form or by including
			REINF	. RATE	P.T. R	ATE			PHOTOCOPYING, REC SYSTEMS) WITHOUT	CORDING OR INFO	RMATION R OF WEBBE	ETRIEVAL R DESIGN PTY
1HICKNE	55 TC (IMF 40	<sup>z</sup> a)	(Kg/ 4	'm³) Ю	(Kg/n 1.8	1∸) ⊑	P.T. SLAB BY D&C CONTRACTOR					
180	40		4 60 ± SI	0 82 MESH	1.8	F	P.T. SLAB BY D&C CONTRACTOR	Rev.	Description	Eng.	Divielit.	Date
200	40			OUGHOUT	5.0			1 WORK IN F	PROGRESS ISSUE	MA	PAC	18.11.20
200* 200*	40		13	30 30	N/A N/A	. E	R.C. RAMP SLAB	2 ISSUED FC 3 ISSUED FC	OR TENDER (DRAFT) OR TENDER (UPDATED	) MA/B	T PAC T PAC	27.11.20 18.12.20
210 250	40		4 60 + SL	0 82 MESH	2.5	F	P.T. SLAB BY D&C CONTRACTOR	4 ISSUED FC	R TENDER (UPDATED	) MA/B	T PAC	05.02.21
200	40		TOP THR	OUGHOUT								
300	40		4	Đ	5.5	1	. I. SLAB BY D&C CONTRACTOR				+	
	GR	OUN	ID FLOC	DR - COI	NCRETE I	BEAM	SCHEDULE					
				REINF	. P	.T.						
			f'c	RATE		DONS						
400d	SIZE x 2400w		(MPa) 40	(kg/m <sup>3</sup> 40	) (kg	/m²) ′.0	REMARKS	DRAWING	NDEX	S-WEB-0		INO.
500d	x 2400w		40	65	10	0.5	P.T. BEAM BY D&C CONTRACTOR	GENERAL N RETENTION	IOTES	S-WEB-0	)01-002 )10-029	)
400d	x 1200w		40	40	8	3.5	P.T. BEAM BY D&C CONTRACTOR	CONCRETE IN-SITU WA	COLUMNS	S-WEB-8	300-819 320-879	)
	GRO	UND	FLOOF	R - CON	CRETE CO	OLUMI	N SCHEDULE	PRECAST W	ALLS	S-WEB-8	380-909 950-951	)
				REI	NF. RATE	E		SUSPENDEL	D CONCRETE SLAP	BS S-WEB-S	960-962	
MARK	SIZE		f'c (MI	Pa) (	(kg/m³)	-	REMARKS	R.C. STAIR	DETAILS	S-WEB-S	965-966 970	)
C2	250 x 120	00	50		230			MASONRY I STEEL DETA	DETAILS AILS	S-WEB-9 S-WEB-9	980-981 990-991	
C3	300 x 60	0	50		210	INSITU	CONCRETE COLUMN	-		·		
C5	400 x 40	0	50		210	INSITU	CONCRETE COLUMN	<b></b>				
		6			2 _ \///	SCHEI		GENERA	AL ARRANGEN	<u>/IENT LEG</u>	<u>END</u>	
								XX*	-DENOTES SLAB/	BAND BEAM	THICKN	ESS
MARK	WIDTH	f'c	(MPa)	REINF (kg/	. RATE   'm <sup>3</sup> )		REMARKS					
CW1	200		50	22	20	INSITU C	DNCRETE CORE WALL	C+C	-DENOTES COLU	MIN OVER		
CW2 CW3	250 150		50 50	18	30 I 30 I	INSITU C	ONCRETE CORE WALL		-DENOTES WALL	OVER		
W1	200		50	22	20 I	INSITU C	DNCRETE WALL		-DENOTES LOAD	BEARING ELI	EMENT	UNDER
W2	250		40	18	30	INSITU C	DNCRETE WALL		-DENOTES LOAD	BEARING FU	MENT	
<u>NOTES:</u>		חב חו							UNDER & OVER			
2. ALL SERVIC	CES PENETRA		S TO BE C	O-ORDINA	TED AND AF	PROVED	BY WEBBER DESIGN.		-DENOTES BLOCI	k wall ovef	R	
3. REBATES A ORDINATEI	AND CAST IN D WITH ARCH	PLATE HITEC	es for st T.	RUCTURA	L STEEL WC	RK AND	FACADE TO BE CO-	<u> </u>	-DENOTES SAWC	UT JOINT		
4. CONTRACT	OR SHALL AL	LOW	FOR CON	STRUCTIO	n joints as	S REQUIF	ED.	C.J.	-DENOTES CONS	TRUCTION JO	DINT	
POST TENS	SIONED SL		NOTES:									
REFER TO DRA	AWING S-WEE	ABS / 3-001	ARE A DES & S-WEB	-002 For I	DESIGN AND	COMPO	NENT. RUCTION POST-	STEP	REFER TO ARCH.	DETAILS FO	r all li	EVELS.
FENSIONING F	LOOR SLAB A	AND D	esign Bf	RIEF AND G	ENERAL DE	SIGN & L	OADING CRITERIA					
GENERAL N	NOTES:											
ALL CONCR	RETE SLABS A		EAMS TO	BE POST-T		U.N.O.						
PT AND REI	INFORGEMEN		BE DESIG	NED BY PI	CONTRACT	UR.						
I HE POST I INTERNAL F	FORCES AND	CON I CRAC	RACTOR S KS INDUC	Shall Ens Ced by Pr	URE POTEN	G,						
Shrinkage Of Restra	e, and/or te Ining eleme	EMPEF	RATURE A AND MAKI	re contr E provisio	olled in ti Dn for Mo\	HE VICIN /EMENT /	ITY AND					
SHRINKAGE	E AS REQUIRE			UT, INCLU	IDING MOVE	EMENT						
CONCRETE	MIX ETC.							15		RIEN	JER	
NO COLUMI	N STIFFNESS	SHOU	JLD BE U	SED IN THI	E SLAB			Status				
AND BEAM	DESIGN.								STRUCTURA	L DRAWIN	IG	
SLABS TO E WITH 100%	BE CHECKED   6 COLUMN ST	for f Fiffni	PUNCHING ESS. PT CO	G SHEAR W	/ITH MOMEN OR TO MAKE	NT DERIV	ED NCE	<b>\ \ /</b>				
FOR SHEAR	R HEAD REINF SHFAR RFIN	FORCE	EMENT (W EMENTS	HERE REG	UIRED) TO S	SATISFY						
IN NO INST	ANCE SHALL	BE G	REATER T	HAN 0.7 F	OR THE SLA	B AND		╟╍┽┙┥				
BEAM CALC	JULATIONS.											
REINFORCE	ACTOR TO MA EMENT IN ACC	ike al Cord	LOWANCI	e for str Th Cl9.2.2	OF AS3600	NTEGRITY -2018 F	) DR					
ALL SLABS	AND BEAMS.											
PT CONTRA	ACTOR TO PRO	OVIDE		UM P/A OF SLARS ANI	1.4MPA (AI	FTER FIN	AL 1Pa					
(AFTER FIN	AL LOSSES) T				(BALCONIES	S, TERRA	CES,	HI	$\mathbf{H}$			
EXPOSED R	00FS, ETC.) I	PLUS	5L82 TUP		N.O.			STRUC		FNGIN	FFF	2 I N G
TO 0.3mm I	ed Slabs/Be/ Max.	ams (	CRACK WI	DTH TO BE	ELIMITED			MELBOURNE OFFICE LEVEL 2, 31 QUEEN		SYDNEY OFFICE: SUITE 301, LEVEL 3	3, 19A BOUN	DARY STREET
EXPOSURE CLA	ASSIFICATION	1						MELBOURNE, VIC, A T: +61 3 9614 7155 CLIENT	USTRALIA 3000	RUSHCUTTERS BA T: +61 2 9690 2488	Y, NSW, AUS	STRALIA 2011
A2 INTERN	AL	-										
B1 SURFAC	CES IN CONTA	NCT W	ITH THE C	GROUND					TAYL	OR		
TRE RATING												
CARPARK	al 90 minu - 120 minuti	JTES ES FR	FRL					PROJECT				
SERVICEABILIT	ſY								HC WARV	VICK F	ARN	1
CANTIL FVF	G TERM DEFL R SPAN / 1	LECTIO	ON SPA ₹15mm M	N / 250 OF //AXIMLIM	R 25mm MAX	XIMUM,		11-	13 MANN	NIX PAF	RAD	Ε,
TRANSFER	SLABS & BEA	MS	SPAN/10	00 OR 10r		IM		WARV	VICK FAR	M, NS	<b>N</b> 2	170
SUPPORTIN	NG BRITTLE	ELEN	IENTS S	SLABS AI SPAN/500,	ND BEANS CANTILEVER	R SPAN	/125	TITLE			)	
DIFFERENTI SPAN/500 (	IAL DEFLECTI OR 15mm MA	iun B XIMU	LI WEEN I M AT FAC	ADE LOCA	) BE LIMITEI TIONS					( - \ //	17	
								GEN		TANGE	IVIEľ	NI
GROUN	ID FLOOR	- LA	NDSCA	PE FOO	E		PL4	AIN				
		a)	REINF	RATE		<		DATE NOV 2020	DESIGNED BY	CHECKED BY	AC	
		u)	(kg	/m <sup>3</sup> )				SCALES AT A1				
งเว	32		1 5	~	JIRIF FUU	טיווי		1:100	PAC		PW	
								1				

										_								
		G	ROUN	D FLC	DOR S	SLAB S	CHED	ULE			All Right Reserve The property of N Work Shall be re	ed. This wo webber de produced	ork is coi Sign Pty Or copie	Pyright A Ltd. No F :D in Any	and remains Part of this Form or by			
			REINF	. RAT	E	P.T. RA	ATE		11( 6	57)	MEANS (GRAPHIC, E PHOTOCOPYING, RE	CORDING C	OR MECH	IANICAL, I IATION RE	NCLUDING TRIEVAL			
THICKNE	ESS f'c (MF	Pa)	(kg/m <sup>3</sup> )			(kg/m <sup>2</sup> )		REMARKS			LTD.	HUUT THE PERMISSION OF WEBBER DESIGN						
150 180	40		4	40 40		1.8		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	DO N	IOT SCA	LE DRAWINGS, U	JSE FIG	JRED D	DIMENS	SIONS			
200	40			82 MES	SH JUT	5.0		P.T. SLAB BY D&C CONTRACTOR	Rev.		Description		Eng.	Draft.	Date			
200*	40		1	30	/01	N/A		BONDEK SLAB	2 ISS	SUED FOF	R TENDER (DRAFT)		MA/BT	PAC	27.11.20			
200*	40		1	130		N/A		R.C. RAMP SLAB	3 ISS	SUED FOF	R TENDER (UPDATED	))	MA/BT	PAC	18.12.20			
210	40		4 60 + SL	+0 82 MES	SH	2.5		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	4 ISS	SUED FOF	R TENDER (UPDATED	))	MA/BT	PAC	05.02.21			
300	40	T			UT	5.5												
500	40		4	Ĩ		5.5		1. SLAD DI DAG CONTRACTOR	┙┝─┼─									
	GR		D FLOO	DR - C	CONC	RETE E	BEAM	SCHEDULE	ו⊨									
				DEII		D .	<u>т</u>		┥┝─┼─									
			f'c		TF	F. TEND	I. ONS											
	SIZE	(	MPa)	(kg/I	m <sup>3</sup> )	(kg/	$m^2$ )	REMARKS	DR/	AWIN(	G REFERENC	Ж R	EFERI	ENCE	No.			
4000	d x 2400w		40	4(	0	7.	0	P.T. BEAM BY D&C CONTRACTOR	DRAV	MING IN	IDEX DTES	S-V	VEB-OC	0				
400	d x 2400w d x 1200w		40	4(	5 0	10 8.	.5 5	P.T. BEAM BY D&C CONTRACTOR P.T. BEAM BY D&C CONTRACTOR	RETE			S-V	VEB-01	0-029				
										TU WAL	LS	S-V	VEB-80	0-819				
	GRO	UND	FLOOF	R - CC	DNCR	ETE CC	)LUMI	N SCHEDULE	PREC SLAB	CAST WA	ALLS OUND DETAILS	S-V S-V	VEB-88 VEB-95	0-909 0-951				
				F	REINF	. RATE			SUSP		CONCRETE SLA	BS S-V	VEB-96 VEB-96	0-962				
MARK	SIZE		f'c (M	Pa)	(kg/	/m³)		REMARKS	R.C. 3	STAIR D	ETAILS	S-V	VEB-90	0				
C2	250 x 120	00	50		2	30	INSITU		MASC STEE	DNRY D L DETAI	ETAILS LS	S-V S-V	VEB-98 VEB-99	0-981 0-991				
C3	300 x 60	0	50		2	10	INSITU	J CONCRETE COLUMN	+1									
C5	400 x 40	0	50		2	10	INSITU	J CONCRETE COLUMN	]									
										NERAI	_ ARRANGEN	MENT	LEGE	ND				
		GF	ROUNE	D FLO	OR -	WALLS	SCHE	DULE		-					-00			
				REII	NF. R	ATE				<u> </u>	-DENUTES SLAB	'Band e	SEAIVI I	HICKINE	-55			
MARK	WIDTH	f'c (	MPa)	(	kg/m <sup>3</sup>	3)		REMARKS		<i>S</i> )	-DENOTES COLU	MN OVE	R					
CW1 CW2	200		50 50		180		NSITU C	ONCRETE CORE WALL		4	-DENOTES WALL	OVFR						
CW3	150	Ę	50		180	11	NSITU C	ONCRETE CORE WALL										
W1 W2	200 250		50 40		220 180	11	NSITU C	ONCRETE WALL	┥║╺═╸		-DENOTES LOAD	BEARIN	ig elen	MENT L	JNDER			
											-DENOTES LOAD	BEARIN	IG ELEI	MENT				
1 ALL PENE	TRATIONS TO				FSOLVE	D					UNDER & OVER							
2. ALL SERV	ICES PENETRA		TO BE C	CO-ORD		) AND API		) BY WEBBER DESIGN.			-DEINUTES BLUC	r vvall	OVER					
3. REBATES	ED WITH ARCH	HITECT.	S FOR ST	RUCIL	JRAL SI	I EEL WOF	rk and	FACADE TO BE CO-	<u></u>	.J	-DENOTES SAWC	NOL TUC	ΝT					
4. CONTRAC	CTOR SHALL AL	_LOW F	FOR CON	STRUC	TION JO	DINTS AS	REQUIF	RED.	C.	J.	-DENOTES CONS	TRUCTI		NT				
POST TEN	ISIONED SL		OTES:	<u>.</u>						- —								
THE SUSPENI	DED FLOOR SL RAWING S-WEE	LABS A	RE A DES & S-WEB	Sign An -002 f(	ND CON OR DES	ISTRUCT	COMPC	NENT. RUCTION POST-	STEP		-DENOTES SLAB RFFFR TO ARCH	SETDOV	VN. S FOR	ALLIF	VFLS.			
TENSIONING	FLOOR SLAB	AND DE	ESIGN BF	RIEF AN	ID GENE	ERAL DES	SIGN & I	OADING CRITERIA							VELO.			
GENERAL	NOTES																	
	PETE SLABS A		AMS TO				NO											
PT AND R	EINFORCEMEN		BE DESIG	INED BY	Y PT CO	NTRACT(	DR.											
- THE POST	TENSIONING	CONTR	ACTOR S	shall e	ENSURE	E POTENT	ĪAL											
INTERNAL		CRACK	(S INDU		PREST	RESSING,												
OF RESTRA	AINING ELEME	ENTS A	ND MAK	E PROV	/ISION F	FOR MOVE	EMENT	AND										
SHRINKAG JOINTS, PO	ge as require Our strips, l	ED THF _OW SH	rougho Hrinkag	UT, IN( E	CLUDIN	NG MOVE	MENT			100				FR				
CONCRET	E MIX ETC.			-						IS.								
- NO COLUN	MN STIFFNESS	SHOU	LD BE U	SED IN	THE SL	AB			Status									
AND BEAN	VI DESIGN.										STRUCTURA	L DRA	WING	3				
- SLABS TO	BE CHECKED	FOR PL		G SHEA				/ED										
FOR SHEA	AR HEAD REINF	FORCEN	MENT (M	/HERE F	REQUIR	(ED) TO S	ALLOVV/ ATISFY	INCE										
PUNCHING	G SHEAR REIN	FORCE	MENTS							Ľ,								
- leff TO Igro	DSS MAX RATIO	TO BE		AINED E	BY THE													
BEAM CAL	_CULATIONS.	JE GR		i iain U.	.7 FUK	THE SLAD				7								
- PT CONTR	RACTOR TO MA	KE ALL	OWANC	E FOR S	STRUCT	URAL IN	TEGRIT	(		4								
	CEMENT IN ACC	CORDA	NCE WIT	TH CL9.	.2.2 OF	AS3600-2	2018 F	DR		4								
		0.455	A										_					
LOSSES) T	O ALL INTERN	IAL CO		SLABS	AND BE	HVIPA (AF EAMS, AN	ID 2.0	/r∟ ⁄/Pa				N						
(AFTER FII EXPOSED	NAL LOSSES) T ROOFS. ETC.)	io all Plus s	EXTERN	AL ARE 9 MESH	AS (BA	LCONIES	, TERRA	ICES,				ゝヽ						
									STR	UC	TURAL	ENG	I N I	EER	ING			
- ALL EXPOS TO 0.3mm	SED SLABS/BE 1 MAX.	AIVIS CI	RACK WI	DIHIC	) BE LIN	VITED			MELBOURI LEVEL 2, 3	NE OFFICE: 1 QUEEN ST	REET	SYDNEY O SUITE 301	FFICE: LEVEL 3,	9A BOUNE	DARY STREET			
EXPOSURE CI	I ASSIFICATION	J							MELBOURI T: +61 3 96	NE, VIC, AU 14 7155	STRALIA 3000	RUSHCUT T: +61 2 96	TERS BAY, 90 2488	NSW, AUS	TRALIA 2011			
- A2 INTERN	NAL	-																
- BI EXTERI - BI SURFA	NAL ACES IN CONTA		TH THE (	GROUN	D						ΤΑΥΙ	OR						
FIRE RATING											.,,,,,	_01\						
- RESIDENT	TAL 90 MINU	JTES FI	RL						200/207									
		LO FRL	-						PROJECT	LAF		NIC	K FA	RM	1			
- TOTAL LOI	<u>.ITY</u> NG TERM DEFI	LECTIO	N SPA	N/250	) or 25	5mm MAX	IMUM.			 1 1 _ 1					-			
CANTILEVI	'ER SPAN / 1. R SI ARS & DE 1	25 OR	15mm N SPAN/10		JM 10mm	Μαχινήια	Л			/ D/ v *		чі/\ Г РК <i>Л</i> Г	/ IFN 1/01/		-, 1 70			
- INCREMEN	NTAL DEFLECT			R SLAB	S AND I	BEAMS	v1	14.05	VV/	<b>٦٢</b> ٧١		lvi, l	VCV	v Z.				
- DIFFEREN	IING BRITTLE	eleme Ion Be	LINTS S TWEEN	FLOORS	UU, CAN S TO BE	LIMITED	SPAN TO	GZ1W	IIFLE	(-	ROUND	FLC	OR	-				
SPAN/500 OR 15mm MAXIMUM AT FACADE LOCATIONS										FNF		RAN	GFN	ΛFN	JT			
050							<b></b>	]		1 <b>1</b> L		 ∆NI	-л-Г	• 1 <b>i</b>   `				
GROUN	ND FLOOR	- LAN	NDSCA	PE FC	JUTIN	NG SCH	EDUL	£					,					
									DATE		DESIGNED BY	UHECKED BY						
MARK	fc (MP:	a)	REINF	F. RAT	TE R	MARK			NOV 2	2020	MA/BT		AC	2				
MARK	f'c (MPa	a)	REINF (kg	F. RA1 /m <sup>3</sup> )					NOV 2	2020	MA/BT		AC	2				
MARK SF3	f'c (MPa 32	a)	REINF (kg	F. RA1 /m <sup>3</sup> ) 50	TE RE ST	Emark RIP Foot	ING		NOV 2 SCALES AT A 1:1	2020 <sup>N1</sup> 00	MA/BT DRAWN BY PAC	APPROVED E	A( <sup>3Y</sup> P\	с 				

											ALL RIGHT RESERVI	ED. THIS W	ORK IS CO		AND REMAINS			
		(	GROUN	ID FLC	DOR \$	SLAB S	CHED	ULE		$\bigcirc$	The property of Work shall be re Means (graphic, e	WEBBER DE PRODUCED	esign Pty ) or copie ) or mech	LTD. NO F D IN ANY ANICAL, I	'ART OF THIS FORM OR BY NCLUDING			
			REINF	RAT	E	P.T. R	ATE				PHOTOCOPYING, RE SYSTEMS) WITHOU	CORDING O	OR INFORM	ation re F webbef	.TRIEVAL R DESIGN PTY			
1 HICKINE 150	40	<sup>-</sup> a)	(Kg	10 10		(kg/II 1.8	1-)	P.T. SLAB BY D&C CONTRACTOR			E DRAWINGS	LISE EIG						
180	40		60 + SI	10 82 MFS	SH I	1.8 5.0		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	Rev.		Description		Eng.	Draft.	Date			
200*	40		TOP THR	OUGHO	UT	NI/A					OGRESS ISSUE			PAC	18.11.20			
200*	40		1	30		N/A		R.C. RAMP SLAB	3 ISSUE	ED FOR	TENDER (DRAFT)	))	MA/BT	PAC	18.12.20			
210 250	40		60 + SL	10 82 MES	SH	2.5 2.8		P.T. SLAB BY D&C CONTRACTOR P.T. SLAB BY D&C CONTRACTOR	4 ISSUE	ED FOR	TENDER (UPDATEI	)	MA/BT	PAC	05.02.21			
300	40		TOP THR	OUGHO 10	UT	5.5		P.T. SLAB BY D&C CONTRACTOR										
	10					0.0			」									
	GR	OUN	D FLO	DR - C	CONC	RETE I	BEAM	SCHEDULE										
				REI	NF.	P	.Т.											
	817E		f'c (MPa)		TE m <sup>3</sup> )	TENI	OONS	DEMADKS			REFERENC		EFERI	ENCE	No.			
4000	312E d x 2400w		(IVIF a) 40	40	) 0	(Kg/ 7	.0	P.T. BEAM BY D&C CONTRACTOR	DRAWI	NG IN	DEX	S-1	NEB-00	0				
500c	1 x 2400w		40	65 40	5 N	10	).5	P.T. BEAM BY D&C CONTRACTOR	R         GENERAL NOTES         S-WEB-001-002           R         RETENTION         S-WEB-010-029									
					5					J WAL	LS	S-\ S-\	NEB-80 NEB-82	<u>0-819</u> 0-879				
	GRO	UNE	) Flooi	R - CC	NCR	ETE CO	OLUM	N SCHEDULE	PRECAS SLAB O	ST WA	UND DETAILS	S-\ S-\	NEB-88 NEB-95	0-909 0-951				
				R	REINF	. RATE	Ξ		SUSPER POST T	NDED ENSIC	CONCRETE SLA	BS S-\ S-\	NEB-96 NEB-96	0-962 5-966				
MARK	SIZE	0	f'c (M	Pa)	(kg	/m <sup>3</sup> )			R.C. ST MASON	AIR D	ETAILS ETAILS	S-\ S-\	NEB-97 NEB-98	0 30-981				
C2	200 x 140	00	50		2	:50	INSITU	J CONCRETE COLUMN	STEEL	DETAI	LS	S-\	NEB-99	0-991				
C4	300 x 60	0	50 50		2	10		J CONCRETE COLUMN										
	400 × 40	0	50		2	.10												
		G	ROUNI	D FLO	OR -	WALL	SCHE	DULE		<u>eral</u>	<u>ARRANGEI</u>	VIEINI	LEGE	<u>IND</u>				
				REI	NF. R	ATE			-    xx*		DENOTES SLAB	/band e	BEAM T	HICKNE	ESS			
MARK	WIDTH	f'c	(MPa)	(	kg/m <sup>3</sup>	<sup>3</sup> )		REMARKS	-     _ @	-	DENOTES COLL	imn ove	ĒR					
CW1 CW2	200 250		50 50		220 180		NSITU C NSITU C	ONCRETE CORE WALL		- 4	DENOTES WALL	OVER						
CW3	150		50		180		NSITU C											
W1 W2	250		40		180		NSITU C	ONCRETE WALL	╴╴	- 20	DENUTES LOAL	BEARIN	NG ELEI	/IEINT C	INDER			
NOTES:										 _	DENOTES LOAD	BEARIN	NG ELEN	<i>Ι</i> ΕΝΤ				
1. ALL PENE	TRATIONS TO	BE R				ED.				- 22	DENOTES BLOC	K WALL	OVER					
3. REBATES	AND CAST IN	PLAT	ES FOR S	IRUCTU	JRAL S	TEEL WO	RK AND	FACADE TO BE CO-	S.C.J	J	DENOTES SAW		ЛТ					
4. CONTRAC	D WITH ARCH	LOW	FOR CON	ISTRUCT	tion J	OINTS AS	REQUIE	RED.										
POST TEN	SIONED SL	AB	NOTES	<u>.</u>					<u> </u>		DENOTES CONS	STRUCTI	ON JOII	ΝT				
THE SUSPENE	DED FLOOR SL	ABS		SIGN AN				NENT.	STEP 7	-	DENOTES SLAB		NN. S FOR		VELS			
TENSIONING F	FLOOR SLAB A	AND E	DESIGN B	RIEF AN	D GEN	ERAL DE	SIGN & I	LOADING CRITERIA							VLLJ.			
GENERAL	NOTES:																	
- ALL CONCE	RETE SLABS A	ND B	EAMS TO	BE POS	T-TEN	SIONED L	J.N.O.											
PT AND RE	EINFORCEMEN	IT TO	BE DESIG	INED BY	Y PT CC	ONTRACT	OR.											
- THE POST	TENSIONING (	CONT	RACTOR S	Shall e Ced by	ENSUR PREST	E POTEN	TIAL											
SHRINKAG	E, AND/OR TE		RATURE A	RE CON	NTROLL		HE VICIN											
SHRINKAG	E AS REQUIRE			UT, IN	CLUDI	NG MOVE	EMENT	AND										
CONCRETE	E MIX ETC.	_000 8	SHRINKAG	iL						ISS	SUED FC	RI	ENL	ΈR				
- NO COLUN	IN STIFFNESS	SHO	uld be u	SED IN	THE SI	LAB			Status									
AND BEAM	1 DESIGN.									ξ	STRUCTURA	L DRA	WIN(	÷				
- SLABS TO WITH 1009	BE CHECKED % COLUMN ST	for f Fiffn	PUNCHIN ESS. PT C	G SHEAF ONTRA	r with Ctor 1	H MOMEN O MAKE	IT DERIN	/ED ANCE		<u> </u>				,				
FOR SHEAF	R HEAD REINF		EMENT (V CEMENTS	/HERE F	REQUIF	RED) TO S	SATISFY			/								
					3V THE													
IN NO INST	TANCE SHALL	BE G	REATER 1	HAN 0.	7 FOR	THE SLA	B AND											
										!								
- PT CONTR/ REINFORCI	EMENT IN ACC	CORD	ANCE WI	E FOR S TH CL9.2	2.2 OF	AS3600	-2018 F	Y OR										
ALL SLABS	S AND BEAMS.																	
- PT CONTR/ LOSSES) TO	actor to pro 0 all intern	ovide Ial Co	E A MININ ONCRETE	ium P/A Slabs /	of 1.4 And B	4mpa (Af Eams, Ai	TER FINND 2.0	VAL MPa				N						
(AFTER FIN EXPOSED F	NAL LOSSES) T ROOFS, ETC.)	TO AL PLUS	L EXTERN SL82 TOF	AL ARE/ P MESH	AS (BA	ALCONIES ).	6, TERRA	ACES,	R			ゝヽ						
					) RF I II	MITED			STRU	UC.	TURAL	ENG	I N I	EER	ING			
TO 0.3mm	MAX.			10	LII				MELBOURNE LEVEL 2, 31 Q MELBOURNE,	OFFICE: QUEEN ST , VIC, AUS	REET ITRALIA 3000	SUITE 301 RUSHCUT	FFICE: , LEVEL 3, TERS BAY,	9A BOUNE NSW, AUS	)ARY STREET TRALIA 2011			
EXPOSURE CL	ASSIFICATION	1							T: +61 3 9614 7 CLIENT	7155		T: +61 2 96	690 2488					
- A2 INTERN - B1 EXTERN	NAL																	
- B1 SURFAG	CES IN CONTA	ACT W	/ITH THE (	GROUNI	D						TAY	LOR						
FIRE RATING - RESIDENTI	al 90 mini	JTES	FRL															
- CARPARK -	120 MINUT	ES FF	RL						PROJECT		ים אאר א	۸/۱۰	< <b>[</b> /					
		ECTI		NI / 250						_AF 1 1					 _			
CANTILEVE	ER SPAN / 1	25 OF	R 15mm N	MAXIMU	IM 10mm										<u>-</u> , 1 70			
- INCREMEN	ITAL DEFLECT	ION L		R SLABS	S AND	BEAMS				RVV		KIVI, I	121	▼ ∠ .	170			
- DIFFERENT	NG BRITTLE	ELEN ION E	AENTS S BETWEEN	FLOORS	JU, CAI S TO BE	NTILEVEF E LIMITE[	r Spai D TO	W125	IIILE	G	ROUND	FLC	OR	-				
SPAN/500	UR 15mm MA	XIML	JM AT FAC	ade lo	CATIO	NS			GE	INE	RAL AR	RAN	GEN	NEN	1			
GROUND FLOOR - LANDSCAPE FOOTING SCHEDULE												-						
REINF. RATE											DESIGNED BY	CHECKED B	Y					
MARK	f'c (MPa	a)			R	EMARK	<		NOV 202	20	MA/BT		A	;				
SF3	SF3 32 50 STRIP FOOTING										DRAWN BY	APPROVED I	BY					
									1:100	)	PAC		P\	۷				


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	DC	) NC	T S	SCA	LE [	DRA	WIN	GS,	USE	FIG	UREI	D D	IMEN	ISI	ONS	3
R	ev.				De	escri	iptior	1			Eng	g.	Draft		Da	ate
	1 2	ISSU ISSU	ED ED	FOR FOR	TEN TEN	IDER IDER	r (DRA R (UPI	AFT) DATE	D)		MA/	BT BT	PAC PAC		27.1 18.1	1.2 2.2
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کے ر	GE RE	NEF TEN	RAL TIC	. NC DN	TES	6				S-V S-V	NEB- NEB-	-00 -01	1-002 0-029	2 9		
ζ	CO IN-	NCF SITI	ret J V	TE C VAL	OLL LS	JMN	١S			S-V S-V	NEB- NEB-	.80 .82	0-819 0-879	9 9		
کر کر	PR SL	ECA AB (	ST DN	WA GR(		S ND E	DETA	ILS		S-V S-V	NEB- NEB-	.88 .95	0-909 0-951	9 1		
Ľ	SU PO	SPE ST 1	ΝΕ ΓΕΝ	DED NSIC		NCF NG [	RETE DETA		ABS	S-V S-V	NEB- NEB-	96 96	0-962 5-966	2 6		
5	R.(	J.S NSON	I Al NR	к D Y DE		ILS				S-\ S-\	NEB-	.97	0-981 0-981	1		
را	ST 							$\overline{}$	<u> </u>	<u>S-</u> \	VEB-	.99	0-99:	1 ~~		
St	tatus		1:	SS	SU	E	D	FC	)R	TI	ΞN	D	ER			
St	tatus				<b>SU</b>	E RUG	D	FC	DR	TI	<b>EN</b>	D	ER			
St St L L L L L L L L L L L L L	T T ELBC EVEL ELBC EVEL IELBC EVEL IELBC	R 01/17/17/17/17/17/17/17/17/17/17/17/17/17									EN WI	D NC	ER 2 5 5	R	I N RALIA	
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									ALL RIGHT RESER THE PROPERTY O WORK SHALL BE	RVED. THIS ' F WEBBER REPRODUC	Work IS Co Design Pty ED or Copie	PYRIGHT LTD. NO ED IN ANY	And Remain Part of This / Form or B
		REINF. F	ATE P.T. F	RATE				R	PHOTOCOPYING, SYSTEMS) WITH LTD.	, electroi Recording Dut the Pe	G OR INFORM ERMISSION C	NATION R	ETRIEVAL R DESIGN PT
THICKNE	SS f'c (MPa	1) (kg/m	<sup>3</sup> ) (kg/I	m²)		CTOD	D	O NOT SC/	ALE DRAWINGS	, USE FI	GURED [	DIMEN	SIONS
200	40	45	4.	.0	ADDITIONAL SL82 MESH T EXTERNAL AREAS	OP TO	Rev.		Description		Eng.	Draft.	Date
200*	40	130	N/	/A	R.C. CORE SLAB		2	ISSUED FO	R TENDER (DRAFT	)	MA/BT	PAC	27.11.20
	LEV	'EL 1 - CON	CRETE COLU	JMN SC	HEDULE		3	ISSUED FO	r tender (updat R tender (updat	ED) ED)	MA/BT MA/BT	PAC PAC	18.12.20 05.02.21
	0175		REINF. RAT	E									
C2	SIZE 250 x 1200	f'c (MPa) 50	(kg/m <sup>3</sup> ) 230	INSITU	CONCRETE COLUMN								
C3 C4	200 x 1400 300 x 600	50 50	250 210	INSITU	CONCRETE COLUMN								
C5	400 x 400	50	210	INSITU	CONCRETE COLUMN								
		LEVEL	1 - WALL SCH	HEDULE									No.
		R	EINF. RATE				GI	ENERAL N	OTES		6-WEB-00 6-WEB-01	)1-002 10-029	<u>.</u>
MARK cw1	WIDTH f'a	50 (MPa)	(kg/m <sup>3</sup> ) 220	INSITU CO	REMARKS			ONCRETE	COLUMNS LLS	S	6-WEB-80 6-WEB-82	)0-819 20-879	)
CW3	150	50	180	INSITU CO	NCRETE CORE WALL		Pf Sl	RECAST W _AB ON GF	ALLS ROUND DETAILS	S S	6-WEB-88 6-WEB-95	30-909 50-951	)
W2	250	40	180	INSITU CO	NCRETE WALL		SI PO	JSPENDED DST TENSI	O CONCRETE SL	ABS S	S-WEB-96 S-WEB-96	50-962 55-966	
NOTES.							R. M	C. STAIR I ASONRY D	DETAILS DETAILS		S-WEB-97 S-WEB-98	70 30-981	
1. ALL PENET	RATIONS TO BE	REVIEWED AN	D RESOLVED.					EEL DETA	ILS		5-VVEB-99	90-991	
<ol> <li>ALL SERVIO</li> <li>REBATES A</li> </ol>	CES PENETRATION ND CAST IN PL	ONS TO BE CO-0 ATES FOR STRU	ORDINATED AND A	APPROVEI VORK AND	) by webber design. Facade to be co-								
ORDINATEI 4. CONTRACT	D WITH ARCHIT OR SHALL ALLC	ECT. IW FOR CONSTR	RUCTION JOINTS /	as requii	RED.			GENERA	L ARRANG	EMEN	t lege	END	
POST TEN	SIONED SI A	B NOTES:						xx*	-DENOTES SLA	AB/BAND	) beam t	HICKN	ESS
THE SUSPENE		BS ARE A DESIG			ONENT.			6	-DENOTES COI	LUMN O	VER		
REFER TO DR. TENSIONING I	AVVING S-VVEB-( FLOOR SLAB AN	D DESIGN BRIE	UZ FUR DESIGN A	DESIGN &	LOADING CRITERIA			י ₹,	-DENOTES WA	ILL OVEF	7		
GENERAL	NOTES:								-DENOTES LOA	AD BEAF	RING ELE	MENT	UNDER
- ALL CONC	RETE SLABS AN	d beams to be	E POST-TENSIONE	D U.N.O.									ONDER
- SLABS TO	BE MINIMUM 20	Domm THICK. f	c = 40MPa AND	loron.					UNDER & OVE	R			
POST-TEN	SION BY OTHER	S U.N.O.						//////	-DENOTES BLC	ock wai	LL OVER		
- THE POST INTERNAL	TENSIONING CO FORCES AND C	NTRACTOR SHA	all ensure pot d by prestressi	ENTIAL ING,			-	<u>S.C.J.</u>	-DENOTES SAV	NCUT JO	DINT		
SHRINKAG OF RESTRA	GE, AND/OR TEM AINING ELEMEN	PERATURE ARE TS AND MAKE F	E CONTROLLED IN PROVISION FOR M	N THE VICI	NITY AND		-	C.J.	-DENOTES COI	NSTRUC	TION JOI	NT	
Shrinkag Joints, Po	ie as required Dur Strips, Lo'	) THROUGHOUT W SHRINKAGE	, INCLUDING MO	OVEMENT			S1	EP [7777	-DENOTES SLA		OWN.		
CONCRETE	E MIX ETC.												
- NO COLUN AND BEAN	1 DESIGN.	HOULD BE USE	D IN THE SLAB										
- SLABS TO	BE CHECKED FC % COLUMN STIE	R PUNCHING S	SHEAR WITH MON		VED								
FOR SHEAI	R HEAD REINFO	RCEMENT (WHI RCEMENTS	ERE REQUIRED) T	TO SATISFY	ANCE,								
- leff TO Igro	ss MAX RATIO T		NED BY THE DESIG	gner but									
IN NO INST BEAM CAL	TANCE SHALL B CULATIONS.	E GREATER THA	AN 0.7 FOR THE S	SLAB AND									
- PT CONTRA	Actor to Make	E ALLOWANCE F	FOR STRUCTURAL	L INTEGRI <sup>-</sup>	γ			IS	SUED FO	OR T	FEND	DER	
REINFORC	EMENT IN ACCC S AND BEAMS.	RDANCE WITH	CL9.2.2 OF AS36	600-2018	FOR		Statu	S					
- PT CONTRA	ACTOR TO PROV	IDE A MINIMU	M P/A OF 1.4MPA	(AFTER FI	NAL				STRUCTUR	AL DF	RAWIN	G	
LOSSES) TO (AFTER FIN	O ALL INTERNAI	L CONCRETE SL	ABS AND BEAMS, AREAS (BALCON	, AND 2.0 NIES, TERF	MPa ACES,			$\Lambda$ /					
EXPOSED F	ROOFS, ETC.) PL	US SL82 TOP N	MESH U.N.O.				<b>Y</b>	Д					
TO 0.3mm	MAX.	IS CRACK WIDT	TH TO BE LIWITED	)									
EXPOSURE CL	<u>ASSIFICATION</u>							IJ					
<ul> <li>B1 EXTERN</li> <li>B1 SURFAGE</li> </ul>	NAL CES IN CONTAC	T WITH THE GR	OUND					$\mathbf{D}$					
FIRE RATING								Π					
- RESIDENTI - CARPARK -	ial 90 minut 120 minutes	ES FRL 5 FRL						ΣГ					
SERVICEABILI	<u>TY</u>							٦L		ר כ	N		
- TOTAL LON CANTILEVE	NG TERM DEFLE ER SPAN / 125	CTION SPAN , 5 OR 15mm MA	/ 250 OR 25mm N XIMUM	Maximum,			S T Mele	RUC	TURAL	E N sydne'	GIN Y OFFICE:	EER	RING
<ul><li>TRANSFER</li><li>INCREMEN</li></ul>	R SLABS & BEAM	IS SPAN/1000 N LIMITS FOR S	) or 10mm Maxin Slabs and Beam	MUM IS			LEVE MELB T: +61	2, 31 QUEEN S OURNE, VIC, AU 3 9614 7155	STREET JSTRALIA 3000	SUITE 3 RUSHC T: +61 2	301, LEVEL 3, CUTTERS BAY, 2 9690 2488	19A BOUN NSW, AUS	DARY STREET STRALIA 2011
- DIFFERENT	NG BRITTLE E	LEMENTS SPA N BETWEEN FLO	AN/500, CANTILE OORS TO BE LIMI	ver SPA Ted to	N/125		CLIENT						
SPAN/500	OR 15mm MAXI	MUM AT FACAL	DE LOCATIONS						TAY	<b>/LOF</b>	र		
		T					PROJEC	π ΙΛΙ		»\\\/\ <i>C</i>	יע בו		Л
40	Jmm CAVITY —		REFE	ER TO ARC	HITECT			11_ <sup>1</sup>	IC WAR 12 MAN				'I F
			M12 WITH	2 HILTI HIT H HILTI HI	-Z-F AT 450 CTS. T HY-200-R,		Ιv	VARV		RM	NSV		∟, 170
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								LE	EVEL 1 -	GE	NER	۹L	
			110					AR	RANGE	MEN	IT PL	AN	
PRO	DVIDE BACKING		150>	x150x10 E	A SHELF ANGLE,		DATE		DESIGNED BY	CHECKED	) BY		
κυL			H.D. FIRE	E RATING T	SED. O		N	OV 2020	MA/BT		A	С	
		v	ARCI	niteut's [	JETAILS		SCALES	AT A1	DRAWN BY	APPROVE	ED BY	•	
FCTION	Λ Δ						1:	20, 1:100	PAC		P		
	· / <b>^</b>	١					JUB No		DRAWING No.			REV.	

	40mm CAVITY
LEVEL 1	
	PROVIDE BACKING ROD & SEALANT



S-WEB-110



		LEVEL 2 - S
		REINF. RAT
THICKNESS	f'c (MPa)	(kg/m <sup>3</sup> )
200	40	45
200*	40	130

									AN	All Right Reserve The property of N Work shall be re	ed. This w Webber d	ORK IS COI ESIGN PTY	PYRIGHT A LTD. NO F	AND REMAII PART OF TH
			LEVE	EL 2 - SL	AB SCH	EDUL			M)	MEANS (GRAPHIC, E PHOTOCOPYING, RE SYSTEMS) WITHOU	ELECTRONI CORDING T THE PER	C OR MECH OR INFORM MISSION O	anical, i Iation Re F Webbei	NCLUDING ETRIEVAL R DESIGN P
THICKNE	ESS fc (	MPa)	REINF	F. RATE	P.T. F	RATE m <sup>2</sup> )	REMARKS				ISE FIG			
200		40	(1)	45	4.	8	P.T. SLAB BY D&C CONTRACTOR	Rev.		Description		Eng.	Draft.	Date
							EXTERNAL AREAS		WORK IN P	ROGRESS ISSUE		MA MA/BT	PAC	18.11.2
200*		40	1	130	N/.	A	R.C. CORE SLAB	3	ISSUED FOR	R TENDER (UPDATED	))	MA/BT	PAC	18.12.2
		LEVE	L 2 - C(	ONCRET	E COLU	MN SC	HEDULE	4	ISSUED FOR	R TENDER (UPDATEL	))	MA/BT	PAC	05.02.2
				REII	NF. RAT	E								
MARK C2	250 x 12	200	f'c (Mf	Pa) (	kg/m <sup>3</sup> ) 230		REMARKS	-						
C3	200 x 14	400	50		250	INSIT								<u> </u>
C4 C5	300 x 6 400 x 4	.00	50		210	INSIT	U CONCRETE COLUMN							L
											E R			No.
							.E	G	ENERAL NO	DTES	S-	WEB-00 WEB-01	01-002 0-029	
MARK	WIDTH	f'c	(MPa)	REINF. (kg/i	m <sup>3</sup> )		REMARKS		ONCRETE O	COLUMNS	S-	WEB-80 WFB-82	0-819	
CW1	200		50 50	22	0	INSITU (	CONCRETE CORE WALL	P S	RECAST W	ALLS OUND DETAILS	S- S-	WEB-88 WEB-95	0-909 0-951	
W1	200		50 50	22	0	INSITU (	CONCRETE WALL	S	USPENDED OST TENSI	CONCRETE SLA	BS S-	WEB-96 WEB-96	0-962 5-966	
W2	250		40	18	0	INSITU (	CONCRETE WALL		.C. STAIR D IASONRY D	DETAILS ETAILS	S-	WEB-97 WEB-98	0 0-981	
OTES:								S	TEEL DETA	ILS	S-	WEB-99	0-991	
REBATES / ORDINATE CONTRACT	and cast II D with Are for shall . Sioned : Ded Floor Awing S-W Floor Slae	N PLATE CHITEC ALLOW SLABS SLABS (EB-001 3 AND E	ES FOR ST T. FOR CON MOTES ARE A DE & S-WEB DESIGN BF	TRUCTURAL STRUCTION SIGN AND ( S-002 FOR L RIEF AND G	_ STEEL W N JOINTS A CONSTRUC DESIGN AN GENERAL D	ork ane s requi ct comp id cons esign &	D FACADE TO BE CO- RED. ONENT. TRUCTION POST- LOADING CRITERIA		GENERA	L ARRANGE	MENT Øband JMN ov L over	<sup>-</sup> LEGE BEAM T ′ER	<u>ND</u> HICKN	ESS
<u>ENERAL</u>	NOTES:									-DENOTES LOAD	) BEARI	NG ELE	MENT	UNDER
ALL CONCI PT AND RE	RETE SLABS EINFORCEM	s and b Ent to	EAMS TO BE DESIG	BE POST-T GNED BY PT	ENSIONED	U.N.O. CTOR.				-DENOTES LOAD	) BEARI	NG ELE	MENT	
SLABS TO	BE MINIMU	M 200n	nm THICK	, f'c = 40N	1Pa AND				///////	-DENOTES BLOC	CK WAL	L OVER		
POST-TEN	SION BY OT	HERS U	J.N.O.						<u>S.C.J.</u>	-DENOTES SAW	CUT JO	INT		
INTERNAL	FORCES AN	G CONT ID CRAC	CKS INDU	CED BY PR	ESTRESSIN	NHAL NG, TUE VICI			C.J.	-DENOTES CONS	STRUCT	ION JOI	NT	
OF RESTRA	AINING ELEI		AND MAK	E PROVISIO	On For Mo		AND							
JOINTS, PO	DUR STRIPS	, LOW S	SHRINKAG	GE GE				S Z	TEP	REFER TO ARCH	I. DETA	ILS FOR	ALL LE	EVELS.
NO COLUM	IN STIFFNE	SS SHO	uld be u	ISED IN THI	E SLAB									
SLABS TO WITH 100° FOR SHEAI PUNCHING	BE CHECKE % COLUMN R HEAD REI 3 SHEAR RE	d for f Stiffn Nforci Inforc	PUNCHING ESS. PT C EMENT (M CEMENTS	g shear w Ontracto Vhere Reg	/ITH Mome or to Mak Quired) to	ent der E Allow Satisfy	IVED /ANCE /							
leff TO Igro IN NO INS <sup>-</sup> BEAM CAL	ss MAX RAT TANCE SHAI CULATIONS	'io to e ll be g	Be detern Reater t	VINED BY 1 Than 0.7 F	THE DESIGI OR THE SL	NER BUT AB AND	-	ISSUED FOR TENDER						
PT CONTRA	ACTOR TO N EMENT IN A	/AKE AI	LLOWANC	E FOR STR Th Cl9.2.2	UCTURAL OF AS360	INTEGRI <sup>-</sup> 0-2018	TY FOR	Statu	IS					
ALL SLABS	S AND BEAM	IS.							A /	STRUCTURA		4001100	ג 	
LOSSES) TO (AFTER FIN EXPOSED F	ACTOR TO F O ALL INTEF VAL LOSSES ROOFS, ETC	ROVIDE RNAL CO ) TO AL .) PLUS	- A MININ ONCRETE L EXTERN SL82 TOF	ium p/a of Slabs ani Ial areas P mesh u.	) 1.4mpa (/ D BEAMS, / (BALCONII N.O.	AND 2.0 ES, TERF	NAL DMPa RACES,	V	<u>М</u>					
ALL EXPOS TO 0.3mm	sed slabs/e Max.	BEAMS	CRACK WI	idth to be	E LIMITED				$\mathbf{H}$					
( <u>Posure Cl</u> A2 Intern B1 extern	<u>_ASSIFICATI(</u> NAL NAL	<u>NC</u>						Ĺ	Ĩ					
BI SURFA	CES IN CON IAL 90 MI 120 MINI	IACI W NUTES	FRL	GROUND				F	$\frac{1}{2}$	R	7			
RVICEABILI	<u>TY</u>	ו ו	_					s -	T R U C	TURAL	E N (	■ G I N I	EER	ING
TOTAL LON CANTILEVE TRANSFER INCREMEN SUPPORTI	NG TERM DE ER SPAN / R SLABS & B NTAL DEFLEC NG BRITTI	EFLECTI 125 OI EAMS CTION L LE ELEN	ON SPA R 15mm M - SPAN/1C JIMITS FOI MENTS S	N / 250 OF MAXIMUM DOO OR 10r R SLABS AN SPAN/500,	R 25mm M/ nm MAXIM ND BEAMS CANTILEVE	aximum um Er Spa	N/125	MELE LEVE MELE T: +6 CLIEN	BOURNE OFFICE: EL 2, 31 QUEEN S BOURNE, VIC, AU 1 3 9614 7155	TREET STRALIA 3000	SYDNEY SUITE 30 RUSHCU T: +61 2 9	<b>OFFICE:</b> 1, LEVEL 3, 1 ITERS BAY, 1690 2488	9A BOUNE NSW, AUS	DARY STREE
SPAN/500	ERENTIAL DEFLECTION BETWEEN FLOORS TO BE LIMITED TO N/500 OR 15mm MAXIMUM AT FACADE LOCATIONS									IAYI	_OR			
		0.00			<b>I</b>	0		PROJE			NIC	K F4		
	40mm	I CAVIT	r —		$\mathbf{i}$	- REFER	IO ARCHITECT		<u>11-1</u>	L3 MANN		PAR		- -
						- M12 H WITH F x 120	ILTI HIT-Z-F AT 450 CTS. HILTI HIT HY-200-R, EMBEDMENT	v	VARV	/ICK FAR	RM,	NSV	V 2	_, 170
		A	A					TITLE						
4									LE AR	EVEL 2 - RANGEN	GEN 1EN	NER/ T PL	AL AN	
	PROV	DE BAC	KING —		$\backslash$	- 150x1	50x10 EA SHELF ANGLE,	DATE		DESIGNED BY	CHECKFD	3Y		
	ROD &	x SEALA	AN I			H.D. G. FIRE R	ALVANISED. ATING TO	N	10V 2020	MA/BT		AC	)	
				╌╌╜╟╱╱╌└╴		ARCHI	TECT'S DETAILS	SCALE	ς ατ α1	DRAWN BY	APPROVED	BV		

									ALL RIGHT RESERVED. T THE PROPERTY OF WEB	HIS WORK IS CC BER DESIGN PTY	PYRIGHT / LTD. NO I	and Remai Part of th
			LEVEL 2	2 - SLAB SC	HEDUL	E			WORK SHALL BE REPRO MEANS (GRAPHIC, ELECT PHOTOCOPYING, RECOR	DUCED OR COPI IRONIC OR MECI DING OR INFORM	ed in Any Hanical, I Mation Re	' Form or I Including Etrieval
			REINF. F	RATE P.T.	RATE				LTD.	E PERMISSION C	F WEBBEI	R DESIGN P
THICKN 200	IESS f'c (N 4	/IPa) 0	(kg/m 45	<sup>3</sup> ) (kg	g/m²) 4.8	REMARKS		O NOT SC/	ALE DRAWINGS, USE	E FIGURED I	DIMENS	SIONS
						ADDITIONAL SL82 MESH TOP TO EXTERNAL AREAS	1	WORK IN F	PROGRESS ISSUE	MA	PAC	18.11.2
200*	4	0	130	1	N/A	R.C. CORE SLAB	2	ISSUED FO	R TENDER (DRAFT) R TENDER (UPDATED)	MA/BT MA/BT	PAC PAC	27.11.2 18.12.2
	l	EVEL	2 - CON	CRETE COLI	JMN S	CHEDULE	4	ISSUED FO	R TENDER (UPDATED)	MA/BT	PAC	05.02.2
				REINF. RA	TE		$\dashv \vdash$					
MARK	SIZE	f	f'c (MPa)	(kg/m <sup>3</sup> )								
C2 C3	250 x 120 200 x 140	00	50 50	230 250	INSI	U CONCRETE COLUMN						
C4 C5	300 x 60 400 x 40	00	50 50	210 210	INSIT INSIT	U CONCRETE COLUMN	$\dashv$					
								RAWIN	G REFERENCE	REFER	ENCE	No.
			LEVEL	2 - WALL SC	CHEDUL	E	G	RAWING II ENERAL N	NDEX OTES	S-WEB-00	00 01-002	
		flo (N	(IDa)	EINF. RATE			R C	ETENTION ONCRETE	COLUMNS	S-WEB-01	10-029 00-819	
CW1	200	1 C (IV 50		( <b>Kg/III</b> °) 220	INSITU	CONCRETE CORE WALL	IN	N-SITU WA RECAST W	LLS ALLS	S-WEB-82 S-WEB-88	20-879 30-909	
CW3 W1	150 200	50 50	0 0	180 220	INSITU	CONCRETE CORE WALL		LAB ON GE	ROUND DETAILS D CONCRETE SLABS	S-WEB-99	50-951 50-962	
W2	250	40	0	180	INSITU	CONCRETE WALL		OST TENSI .C. STAIR	ONING DETAILS DETAILS	S-WEB-96 S-WEB-97	55-966 70	
NOTES:							N S	IASONRY E TEEL DETA	DETAILS NLS	S-WEB-98 S-WEB-99	30-981 90-991	
<ol> <li>REBATES ORDINAT</li> <li>CONTRAC</li> <li>CONTRAC</li> <li>POST TEN</li> <li>THE SUSPEN</li> <li>REFER TO D</li> <li>TENSIONING</li> </ol>	S AND CAST IN TED WITH ARC CTOR SHALL A NOED FLOOR S RAWING S-WE G FLOOR SLAB	PLATES HITECT. LLOW FC LABS AR B-001 & AND DES	FOR STRUG DR CONSTR OTES: RE A DESIGN S-WEB-002 SIGN BRIEF	CTURAL STEEL V UCTION JOINTS N AND CONSTRU 2 FOR DESIGN A AND GENERAL	WORK ANI AS REQU JCT COMF AND CONS DESIGN &	O FACADE TO BE CO- RED. ONENT. TRUCTION POST- LOADING CRITERIA		GENERA	AL ARRANGEME -DENOTES SLAB/BA -DENOTES COLUMP -DENOTES WALL O	ENT LEGE AND BEAM T N OVER VER	<u>END</u> THICKN	ESS
GENERAL	<u>NOTES:</u>								-DENOTES LOAD BE	EARING ELE	MENT	UNDER
- ALL CON	CRETE SLABS	and bea NT to be	AMS TO BE I	POST-TENSIONE	D U.N.O.				-DENOTES LOAD BE	EARING ELE	MENT	
- SLABS TO		1 200mm	n THICK. f'c	= 40MPa AND					UNDER & OVER -DENOTES BLOCK V	VALL OVER		
POST-TEI	NSION BY OTH	IERS U.N	1.0.					SCI				
- THE POS <sup>-</sup> INTERNA	T TENSIONING L FORCES ANE	CONTRA	actor sha S induced	LL ENSURE POT BY PRESTRESS	ENTIAL ING,			0.0.3.	-DENOTES SAVICOT	JOINT		
Shrinka Of Reste Shrinka Joints, F Concre	age, and/or t Raining elem Ge as requif Pour strips, Te mix etc.	EMPERA ENTS AN RED THRO LOW SH	iture are ND Make PF Oughout, Rinkage	CONTROLLED IN ROVISION FOR M INCLUDING M	N THE VIC NOVEMEN OVEMENT	NITY F AND	S <sup>°</sup>		-DENOTES CONSTR -DENOTES SLAB SE REFER TO ARCH. D	UCTION JO TDOWN. ETAILS FOF	INT RALL LE	EVELS.
- NO COLU	IMN STIFFNES	S SHOUL	D BE USED	IN THE SLAB								
- SLABS TO	D BE CHECKED	FOR PU	INCHING SH	HEAR WITH MON	/IENT DER	IVED						
WITH 100 FOR SHE PUNCHIN	0% Column S Ar head rein Ng Shear rein	STIFFNES IFORCEN NFORCEN	S. PT CONT IENT (WHEI MENTS	ractor to ma Re required) t	KE ALLOV TO SATISF	VANCE Y						
- leff TO lgr IN NO IN BEAM CA	ross MAX RATIO STANCE SHALI ILCULATIONS.	d to be L be gre	Determine Eater thai	Ed by the design 0.7 for the s	gner bu <sup>:</sup> Slab and	Γ		IS	SUED FOR	TEND	DER	
- PT CONTI REINFOR ALL SLAE	Ractor to M Cement in AC 35 and beams	ake allo Cordan S.	OWANCE FO	DR STRUCTURAI 2L9.2.2 OF AS36	L INTEGRI 500-2018	TY FOR	Statu	IS	STRUCTURAL I	DRAWIN	G	
- PT CONTI LOSSES) (AFTER F EXPOSED	Ractor to PF To all Interi INAL Losses) Roofs, etc.)	rovide a Nal Con To all e Plus si	a minimum Icrete Sla External A L82 Top Mi	P/A of 1.4MPA BS AND BEAMS AREAS (BALCON ESH U.N.O.	(AFTER F , AND 2.0 NIES, TERF	NAL DMPa RACES,	Y	Д				
- ALL EXPO TO 0.3mr	DSED SLABS/BE m MAX.	EAMS CR	ACK WIDTH	H TO BE LIMITED	)		∣⊢	+				
EXPOSURE (	CLASSIFICATIO	N						Ϋ́				
- B1 EXTER - B1 SURF	RNAL RNAL ACES IN CONT	ACT WIT	H THE GRO	UND				Ħ				
FIRE RATING	<u>3</u> Tial 90 min	IUTES FR	RL					λΓ	FAN			
- CARPARK	∖ i∠u minu Lity	i eð frl					S -		TURAI F	N G I N	EER	
- TOTAL LC	DNG TERM DEF VFR SPAN / 1	LECTION	N SPAN / 3 15mm MAX	250 OR 25mm N IMLIM	MAXIMUM	,	MELE LEVE MELE	BOURNE OFFICE	STREET SU	DNEY OFFICE: ITE 301, LEVEL 3, SHCUTTERS BAY.	19A BOUNE	DARY STREE
<ul> <li>TRANSFE</li> <li>INCREME</li> <li>SUPPORT</li> <li>DIFFEREN</li> <li>SPAN/500</li> </ul>	R SLABS & BE NTAL DEFLEC TING BRITTLE NTIAL DEFLECT	AMS S TION LIM E ELEMEI FION BET	SPAN/1000 AITS FOR SL NTS SPAI TWEEN FLO	OR 10mm MAXII ABS AND BEAM V500, CANTILE ORS TO BE LIMI	MUM IS VER SP/ TED TO	AN/125	T: +6 CLIENT	1 3 9614 7155	TAYLC	)R		
2. , , , , , 00								07				
	40mm	CAVITY -	$\neg$		— REFER	TO ARCHITECT	PROJE		HC WARW			1
					— M12 ⊢ WITH x 120	IILTI HIT-Z-F AT 450 CTS. HILTI HIT HY-200-R, EMBEDMENT	V	11- VARV	13 MANNI VICK FARM	x par 1, nsv	ADE V 21	_, 170
		A , , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·				TITLE	LI AR	EVEL 2 - G RANGEMF	ENER	AL _AN	
								<i>,</i>			1	



SECTION

SCALE: 1 : 20

(A)

120

20023	S-WE	B-120	4
JOB No.	DRAWING No.		REV.
1:20, 1:100	PAC	PW	/
SCALES AT A1	DRAWN BY	APPROVED BY	
NOV 2020	MA/BT	AC	
DATE	DESIGNED BY	CHECKED BY	



			I FVFI	3 - 51	AB SCH	EDIII	E		] [ /		All Right Res The property Work Shall E	Served. This ' Y of Webber Be Reproduc	Work is co Design Pty Ed or copie	Pyright A Ltd. No F Ed in Any	ND REMAINS ART OF THIS FORM OR BY
			REINF.	RATE	P.T. F	RATE			$\left  \right  \left( \right)$	N/	MEANS (GRAPH PHOTOCOPYIN SYSTEMS) WIT	HIC, ELECTRON IG, RECORDING THOUT THE PE	NIC OR MECH GOR INFORM RMISSION O	Hanical, I Mation Re F Webber	NCLUDING .TRIEVAL R DESIGN PTY
THICKN	ESS f'c (	(MPa)	(kg/r	m <sup>3</sup> )	(kg/r	m²)						 GS. USE FI	GURED [	DIMENS	SIONS
200		40	4:	)	4.0	2	ADDITIONAL SL82	2 MESH TOP TO	Rev		Description		Eng.	Draft.	Date
200*		40	13	0	N//	Ą	R.C. CORE SLAB		1 2	WORK IN P	PROGRESS ISSUE	<u>-</u> .FT)	MA MA/BT	PAC PAC	18.11.20 27.11.20
		I FVF	I 3 - COI	NCRFT	F COLUI	MN SC	CHEDULE		3	ISSUED FO	r tender (upd. R tender (upd.	ATED) ATED)	MA/BT MA/BT	PAC PAC	18.12.20 05.02.21
				REI	NF. RAT	E									
MARK	SIZI	E	f'c (MPa	a) (I	kg/m <sup>3</sup> )			RKS							
C2 C3	250 x 1 200 x 1	400	50 50		230	INSIT	U CONCRETE COLU	JMN							
C4 C5	300 x 6 400 x 4	500 400	50 50		210 210	INSIT	U CONCRETE COLU U CONCRETE COLU	JMN	╘						
							_		<b>,</b>   [ī	ORAWIN	G REFERE	ENCE F	REFERI	ENCE	No.
				<u>3 - W</u>	ALL SCH	IEDUL	E			RAWING IN	NDEX OTES	S	-WEB-00	)0 )1-002	
MARK	WIDTH	f'c (	(MPa)	REINF. (kg/r	m <sup>3</sup> )		REMAR	KS		CONCRETE (			-WEB-01	0-029	
CW1 CW3	200 150		50 50	22 18	0 0	INSITU ( INSITU (	CONCRETE CORE W	VALL VALL		RECAST W	LLS ALLS ROLIND DETAI		-WEB-82 -WEB-88 -WEB-95	20-879 30-909 50-951	
W1 W2	200 250		50 40	22 18	0 0	INSITU ( INSITU (	CONCRETE WALL			USPENDED	CONCRETE S	SLABS S	-WEB-96 -WEB-96	50-962 55-966	
NOTES					- 1					R.C. STAIR E MASONRY D	DETAILS DETAILS	S S	-WEB-97 -WEB-98	70 30-981	
1. ALL PENI					LVED.				S	TEEL DETA	ILS	S	-WEB-99	90-991	
2. ALL SERV 3. REBATES	AND CAST		TES FOR STR	RUCTURA	L STEEL W	ORK AN	D FACADE TO BE (	CO-							
4. CONTRAC	CTOR SHALL		FOR CONS	TRUCTIO	N JOINTS A	AS REQL	IIRED.			GENERA	L ARRANO	<u>GEMEN</u>	<u>r lege</u>	<u>ND</u>	
			NOTEO							XX*	-DENOTES SI	LAB/BAND	BEAM T	HICKN	ESS
P <u>OST TEP</u> THE SUSPEN	NDED FLOOF	SLAB R SLABS	NOTES: ARE A DES	ign and	CONSTRU	CT COM	PONENT.			6	-DENOTES CO	OLUMN O	<b>V</b> ER		
refer to di Tensioning	RAWING S-V G FLOOR SLA	NEB-00: Ab and	1 & S-WEB-( DESIGN BRI	002 For EF AND (	DESIGN AN GENERAL D	ND CONS DESIGN &	STRUCTION POST-	RIA		, , , , , , ,	-DENOTES W	VALL OVEF	2		
GENERAL	<u>NOTES:</u>										-DENOTES LO	oad bear	ING ELEI	MENT L	JNDER
- ALL CON	CRETE SLAB	BS AND E	BEAMS TO E			) U.N.O.					-DENOTES LO	oad bear	ING ELEI	MENT	
- SLABS TO		JM 200	mm THICK,	f'c = 40N	/Pa AND	JION.				//////	UNDER & OV -DENOTES B	/er Lock wal	L OVER		
POST-TEI	NSION BY O	THERS l	J.N.O.							S.C.J.	-DENOTES S	AWCUT JC	NT		
- THE POST	T TENSIONII L FORCES A	NG CON	TRACTOR SI	HALL ENS	SURE POTE	NTIAL NG,				— - — C.J.		ONSTRUC		NT	
OF REST	GE, AND/OF RAINING ELE	EMENTS	AND MAKE		OLLED IN ON FOR MO	THE VIC	T AND								
JOINTS, F	POUR STRIP	S, LOW	SHRINKAGE						S <sup>-</sup>	TEP minin	REFER TO AF	RCH. DETA	AILS FOR	ALL LE	VELS.
- NO COLU	MN STIFFN	ESS SHC	ould be us	ed in th	e slab										
AND BEA	M DESIGN.														
- SLABS TO WITH 100 FOR SHE PUNCHIN	) be checki )% columi Ar head re Ig shear r	ed for N Stiffn Einforc Einfor(	PUNCHING IESS. PT CO EMENT (WH CEMENTS	Shear V Intracto Here Reo	vith mome Dr to mak Quired) to	ENT DEF E ALLO ) SATISF	RIVED WANCE Y								
- leff TO Igr IN NO INS BEAM CA	OSS MAX RA STANCE SHA LCULATION	TIO TO E ALL BE C S.	BE DETERM GREATER TH	ined by <sup>-</sup> Ian 0.7 f	The Desig For the Sl	NER BU .AB AND	T )			15	SUED F		FNC	)FR	
- PT CONTI REINFOR ALL SLAE	Ractor to Cement in 85 and beai	Make a Accore Ms.	LLOWANCE DANCE WITH	FOR STR H CL9.2.2	OF AS360	INTEGR 0-2018	ity For		State	us					
- PT CONTI LOSSES) (AFTER F	ractor to to all inte inal losse	PROVID ERNAL C S) TO AL	e a minimu Oncrete s 1. externa	JM P/A OF SLABS AN L AREAS	= 1.4MPA () D BEAMS, / (BALCONI	AFTER F AND 2. ES. TER	TNAL OMPa RACES.			Λ/				а 	
EXPOSED	ROOFS, ET	C.) Plus /Beams	sl82 top Crack Wie	MESH U. DTH TO BI	N.O. E LIMITED	,	,								
EXPOSURE C - A2 INTER	CLASSIFICAT	ION							۲	R					
- B1 EXTEF - B1 SURF/ FIRE RATING	RNAL ACES IN COI	NTACT V	VITH THE G	ROUND						Ϋ́			-		
- RESIDEN - CARPARK	TIAL 90 M ( 120 MIN _ITY	1INUTES IUTES FI	FRL RL						┢	۲Ľ	Ю	Æ			
- TOTAL LC CANTILE\ - TRANSFE	)ng term d /er Span /r Slabs & I	Deflect / 125 0 Beams -	ION SPAN R 15mm M SPAN/100	1 / 250 OF AXIMUM 00 OR 10r	R 25mm M mm MAXIM	aximun Ium	1,		S MEL LEVE MEL T: +6	TRUC BOURNE OFFICE EL 2, 31 QUEEN S BOURNE, VIC, AL 31 3 9614 7155	TURAL STREET JSTRALIA 3000	L E N SYDNEY SUITE 3 RUSHC T: +61 2	G I N OFFICE: 01, LEVEL 3, UTTERS BAY, 9690 2488	E E R 19A BOUNE NSW, AUS	ING DARY STREET TRALIA 2011
SUPPORT	INTAL DEFLE ING BRITI	TLE ELEI	LIMITS FOR MENTS SF RETWEEN F	SLABS A PAN/500, LOORS T(	CANTILEV	ER SP	AN/125		CLIEN	T					
SPAN/500	0 OR 15mm	MAXIM	JM AT FACA	ADE LOCA	TIONS						TA	YLOF	ł		
	40mm CAV	ITY —		7-	/ REFI	ER TO A	RCHITECT		PROJE						
					– M12	HILTI F	IIT-Z-F AT 450 CTS	<b>.</b>							-
					WITH x 12	H HILTI O EMBE	HIT HY-200-R, DMENT			VARV			NSV	ν2 <sup>.</sup>	-, 170
	а, а, а,	4		4					TITLE					· <u>~</u> ·	
4	4. 4	<u></u>		10						LE	EVEL 3	- GE	NER	4L	
P	ROVIDF BAG	CKING -			150	150-10				AR	RANGE	EMEN	T PL	AN	
R	COD & SEALA	ANT				κιουχ10 GALVAI Γρατινία	) LA SHELF ANGLE NISED. 3 TO	,	DATE		DESIGNED BY	CHECKED	BY		
					ARC	HITECTS	S DETAILS		1	NOV 2020	MA/BT		A	C	
	פרסדי								SCALE	es at a1 :20, 1:100	DRAWN BY PAC	APPROVE	d by P\	N	
		UN ; 20	( <i>P</i>	$\begin{pmatrix} \mathbf{v} \\ \mathbf{o} \end{pmatrix}$					JOB N	lo.	DRAWING No.			REV.	
			10							20023	S-V	VEB-13	0	1	4

										ALL RIGHT RES	ERVED. THIS V	Vork is co Design Pty	PYRIGHT	and remains Part of this
			-L 3 - SL			E T				WORK SHALL B MEANS (GRAPH PHOTOCOPYING	JE REPRODUCE HC, ELECTRON G, RECORDING	D OR COPI	ED IN ANY HANICAL, MATION RI	FORM OR BY INCLUDING ETRIEVAL
THICKN	IESS   f'c (MF	Pa)   REINF Pa)   (kg	RATE g/m <sup>3</sup> )	P.I.ト   (kg/r	KATE m²)	REMARKS				Systems) wit LTD.	HOUT THE PEP	RMISSION C	)F WEBBE	R DESIGN PTY
200	40		45	4.8	8	P.T. SLAB BY D&C CONTR ADDITIONAL SL82 MESH	ACTOR,	DC	D NOT SCA		S, USE FIC			SIONS
200*	· 40	1 1	30	N//	Δ	EXTERNAL AREAS		Rev.	WORK IN P	PROGRESS ISSUE		Eng. MA	Draπ. PAC	Date 18.11.20
200**	40		150	IN/7	A	R.C. CORE SLAB		2	ISSUED FO	R TENDER (DRAF	-T) ATED)	MA/BT	PAC	27.11.20
	LE	VEL 3 - CO	ONCRET	e colui	MN SO	CHEDULE		4	ISSUED FO	R TENDER (UPDA	ATED)	MA/BT	PAC	05.02.21
			REI	NF. RAT	E									
MARK	SIZE	f'c (MF	<sup>&gt;</sup> a) (I	kg/m <sup>3</sup> )		REMARKS								
C2 C3	250 x 1200 200 x 1400	50		230 250	INSI INSI	U CONCRETE COLUMN								
C4 C5	300 x 600 400 x 400	50 50		210 210	INSIT INSIT	U CONCRETE COLUMN								
					•									No
		LEVE	EL 3 - W.	ALL SCH	IEDUI	.E		DF	RAWING II	NDEX		-WEB-00		. 110.
			REINF.	RATE				GE	ENERAL N	OTES	<u> </u>	-WEB-00 -WEB-01	01-002 10-029	
MARK	WIDTH 200	f'c (MPa)	(kg/r	m <sup>3</sup> )				CC IN·	NCRETE ( -SITU WA	COLUMNS LLS	<u> </u>	-WEB-80 -WEB-82	00-819 20-879	
CW3	150	50	18	0	INSITU	CONCRETE CORE WALL		PF SL	RECAST W AB ON GF	'ALLS ROUND DETAII	LS S	-WEB-88 -WEB-95	30-909 50-951	
W1 W2	200 250	50 40	22 18	0 0	INSITU INSITU	CONCRETE WALL		SL PC	JSPENDED ST TENSI	OCONCRETE S	SLABS S- LS S-	-WEB-96 -WEB-96	50-962 55-966	
NOTES								R.0 M/	C. STAIR I ASONRY D	DETAILS DETAILS	<u> </u>	-WEB-97 -WEB-98	70 30-981	
1. ALL PEN	ETRATIONS TO E	BE REVIEWED	AND RESO	UVED.				ST	EEL DETA	AILS	S	-WEB-99	90-991	
2. ALL SER 3. REBATE	VICES PENETRA <sup>-</sup> S AND CAST IN F	TIONS TO BE ( PLATES FOR S	CO-ORDINA TRUCTURA	TED AND A	approv /Ork an	ed by webber design. Id facade to be co-								
ORDINA 4. CONTRA	TED WITH ARCH	ITECT. LOW FOR CON	ISTRUCTIO	N JOINTS A	AS REQL	JIRED.		G	FNFRA	I ARRANG			ND	
									~*					
<u>POST TE</u>	<u>NSIONED</u> SL	<u>AB NOTES</u>	<u>):</u>						x.	-DENOTES SL	-46/BAND	dlam 1	HICKN	LOO
THE SUSPE		ABS ARE A DE	ESIGN AND			PONENT.		ll d	101	-DENOTES CO	olumn ov	/ER		
TENSIONIN	G FLOOR SLAB A	ND DESIGN B	RIEF AND (	GENERAL D	DESIGN &	LOADING CRITERIA			4	-DENOTES W	ALL OVER			
<u>GENERA</u>	L NOTES:									-DENOTES LC	)ad Beari	NG ELE	MENT (	JNDER
- ALL CON		ND BEAMS TO	) BE POST-T		) U.N.O.					-DENOTES LC	Dad Bearl	NG ELE	MENT	
					JUR.					UNDER & OV				
POST-TE	ENSION BY OTHE	RS U.N.O.	<ol> <li>, i ⊂ 40i</li> </ol>	AND						-DENOTES DE				
- THE POS	ST TENSIONING C								<u>S.C.J.</u>	-DENOTES SA	YMCUT JO	INT		
SHRINK	AGE, AND/OR TE	MPERATURE A	ARE CONTR	ROLLED IN	NG, THE VIC			-	C.J.	-DENOTES CO	ONSTRUCT	TON JOI	NT	
OF REST SHRINKA	Raining Eleme Age as require	nts and mak D through	KE PROVISIO DUT, INCLU	on for Mo Jding Mo	OVEMEN VEMEN	IT AND -		STI	-P [7777777	-DENOTES SL	_AB SETDC	WN.		
JOINTS, CONCRE	Pour Strips, Li Te Mix etc.	OW SHRINKA	GE							REFER TO AR	CH. DETA	ILS FOR	ALL LE	EVELS.
- NO COLL	JMN STIFFNESS	SHOULD BE L	JSED IN TH	E SLAB										
	AM DESIGN.													
- SLABS IT WITH 10	0 BE CHECKED F 00% COLUMN ST	IFFNESS. PT (	IG SHEAR V CONTRACT(	DR TO MAK	ENT DEF (E ALLO)	WANCE								
FOR SHE	AR HEAD REINF	ORCEMENT (V FORCEMENTS	WHERE REC	QUIRED) IC	) SATISH	Ŷ								
- leff TO lg	gross MAX RATIO	TO BE DETER	MINED BY	THE DESIG	INER BL	Т								
in no in Beam Ca	ISTANCE SHALL ALCULATIONS.	BE GREATER <sup>-</sup>	Than 0.7 F	For the Sl	_ab ani	)			IS	SLIED F		FN	)FR	
- PT CONT	RACTOR TO MA	KE ALLOWANC	CE FOR STR	UCTURAL	INTEGR	ITY								
REINFOF ALL SLAI	rcement in ACC BS AND BEAMS.	ORDANCE WI	TH CL9.2.2	2 of AS360	0-2018	FOR		Status	3			<u></u>	<u> </u>	
- PT CONT	RACTOR TO PRO	OVIDE A MININ	/IUM P/A of	= 1.4MPA (	AFTER F	INAL			• •	SIRUCIU		Avviiv	G	
LOSSES) (AFTER F	TO ALL INTERN INAL LOSSES) T	AL CONCRETE O ALL EXTERN	ESLABS AN NAL AREAS	D BEAMS, (BALCONI	AND 2. ES, TER	OMPa RACES,			$\mathbf{N}$					
EXPOSE	D ROOFS, ETC.) F	PLUS SL82 TO	P MESH U.	.N.O.				<b> X</b>	Д					
- ALL EXPO TO 0.3m	OSED SLABS/BEA Im MAX.	AMS CRACK W	/IDTH TO BI	e limited										
EXPOSURE	CLASSIFICATION								IJ					
<ul><li>A2 INTER</li><li>B1 EXTER</li></ul>	RNAL RNAL								$\square$					
- B1 SURF	FACES IN CONTA	CT WITH THE	GROUND						Π					
FIRE RATIN	<u>g</u> Itial 90 minu	ITES FRL							5F					
- CARPAR	K 120 MINUTE	ES FRL							٢L		<b>(L</b>	V		
SERVICEABI	I <u>LITY</u> ONG TERM DEFL	ECTION SPA	an / 250 of	R 25mm M	AXIMUN	1.		S T	RUC	TURAL	E N (	GIN	EER	ING
CANTILE	VER SPAN / 12 ER SLABS & BEA	25 OR 15mm   MS SPAN/1(	Maximum 000 or 101	mm MAXIM	IUM	,		Melbo Level Melbo	DURNE OFFICE 2, 31 QUEEN S DURNE, VIC, AL	:: STREET JSTRALIA 3000	SYDNEY SUITE 30 RUSHCL	OFFICE: D1, LEVEL 3, JTTERS BAY,	19A BOUN NSW, AUS	DARY STREET STRALIA 2011
- INCREMI	ENTAL DEFLECTI	ON LIMITS FO	R SLABS A	ND BEAMS	S FR SF	AN/125		T: +61 CLIENT	3 9614 7155		T: +61 2 :	9690 2488		
- DIFFERE	NTIAL DEFLECTION	ON BETWEEN	FLOORS TO CADE LOCA	O BE LIMIT	ED TO					ΤΛ				
										IA	ILOR			
			L						-					
	40mm CAVITY			- REFI	ER TO A	RCHITECT		PROJEC	LA	HC WAI	RWIC	K F	١R	1
					2 HILTI F	HT-Z-F AT 450 CTS.			11-1	13 MAN	NNIX	PAR	ADI	Ξ,
				x 12	O EMBE	DMENT		V I	VARV	VICK FA	٩RΜ,	NSV	V 2	170
								TITLE			/			
۵ 									LE	EVEL 3	- GEľ	NER	AL	
-									AR	RANGE	MEN	T PL	AN	
F	PROVIDE BACKIN ROD & SEALANT			—— 150) H.D.	x150x10 . GALVA	) EA SHELF ANGLE, NISED.		DATE			015015	PV		
				FIRE	RATINO HITECT	G TO S DETAILS		DATE NC	OV 2020	DESIGNED BY MA/BT	CHECKED	ים A	С	
					_ • `			SCALES	AT A1	DRAWN BY	APPROVE	) BY		
	SECTIO	N	A					1:2	20, 1:100	PAC		Р	W	
	SCALE: 1:20		130					JOB No.		DRAWING No.			REV.	
		$\sim$						1 2	0023	S-W	VEB-130	)	1	4



		LEVEL 4 -
		REINF. RAT
THICKNESS	f'c (MPa)	(kg/m³)
200	40	45
200*	40	130

			LEVE	L 4 - SI	_AB SCHE	DUL	Ē				ALL RI THE PI WORK MEANS PHOTO SYSTE	GHT RESEF ROPERTY C SHALL BE S (GRAPHIC DCOPYING, MS) WITH(	RVED. THIS <sup>1</sup> DF WEBBER REPRODUC C, ELECTROM RECORDING OUT THE PE	Nork IS Co Design Pty Ed or Copii NC or Mech Or Inform Rmission C	Pyright / LTD. No f Ed in Any Hanical, I Hation Re F Webber	and Remains Part of This Form or By Ncluding Trieval R design Pty
THICKNI 200	ESS f	'c (MPa) 40	REINF. (kg/	. RATE m <sup>3</sup> ) <sup>5</sup>	P.T. RA (kg/m 4.8	ΔTE 2)	REMARKS P.T. SLAB BY D&C CONTRACT	ŌR,	DC Rev.		CALE DRA	AWINGS	S, USE FI	GURED [	DIMENS	SIONS
200*		40	13	30	N/A		ADDITIONAL SL82 MESH TOP EXTERNAL AREAS R.C. CORE SLAB	° TO	1 2	Work in Issued Fo	PROGRESS OR TENDE	s ISSUE R (DRAFT	_)	MA MA/BT	PAC PAC	18.11.20 27.11.20
		LEVE	EL 4 - CO	NCRET	E COLUM	IN SC	HEDULE		3 4	ISSUED FO	or tende or tende	r (updat r (updat	red) red)	MA/BT MA/BT	PAC PAC	18.12.20 05.02.21
MARK	S	IZE	f'c (MPa	a) (I	NF. RATE		REMARKS									
C2 C3	250 200	x 1200 x 1400	40 40		160 180	INSITU INSITU	J CONCRETE COLUMN J CONCRETE COLUMN									
C4	300	x 600	40		160	INSIT	J CONCRETE COLUMN									No
			LEVE	L 4 - W		EDUL	E		DF	RAWING I	NG KEI INDEX NOTES			-WEB-00 -WEB-00	)0 )1-002	TNO.
MARK	WID1	TH f'c	(MPa)	KEINF (kg	/m <sup>3</sup> )				RE CO IN-	TENTION NCRETE	N COLUM ALLS	NS	S S S	-WEB-01 -WEB-80 -WEB-82	0-029 0-819 0-879	
CW1 CW3 W1	200 150 200	)	40 40 50	1	80 80 20	INSIT	J CONCRETE CORE WALL		PR SL	RECAST V AB ON G	VALLS ROUND		S S	-WEB-88	30-909 50-951	
W1 W2	250	)	40	1	80	INSIT	J CONCRETE WALL		PC R (	SPENDE ST TENS	D CONCI BIONING	RETE SL DETAILS	LABS S S S	-WEB-96 -WEB-96 -WEB-97	60-962 65-966 70	
ALL PENE ALL SERV REBATES ORDINAT CONTRAC	NS TO BE F NETRATION ST IN PLAT I ARCHITEC ALL ALLOW <u>ED SLAB</u> S-WEB-00	REVIEWED A NS TO BE CO TES FOR STF T. / FOR CONS B NOTES: ARE A DES 1 & S-WEB-	ND RESO D-ORDINA RUCTURA STRUCTION SIGN AND	LVED. TED AND AP L STEEL WOI N JOINTS AS CONSTRUCT DESIGN AND	PROVE RK ANE REQUI	d by webber design. ) Facade to be co- red. Onent. Truction post-		ST C	EEL DET	AILS AL ARI -DENC -DENC	RANG DTES SLA	EMEN B/BANE	-WEB-99 T LEGE ) BEAM 1 VER	<u>90-991</u> <u>END</u> THICKN	ESS	
ENSIONING	FLOOR	SLAB AND	DESIGN BR	RIEF AND (	GENERAL DE	SIGN 8	LOADING CRITERIA			)'	-DENC	DTES WA	ALL OVEF	R		
ENERAL	<u>- NOTE</u> Crete Si	<u>S:</u> LABS AND	Beams to I	BE POST-1	TENSIONED I	J.N.O.					-DENC	otes lo	ad Beaf	RING ELE	MENT	JNDER
PT AND F	D BE MIN	CEMENT TO	) BE DESIGI )mm THICK,	NED BY P f'c = 40N	T CONTRACT /IPa AND	OR.				17 T N	-DENC UNDEI	DTES LOAR & OVE	AD BEAF		MENT	
POST-TEI	nsion b' T tensic	Y OTHERS NING CON	U.N.O. ITRACTOR S	HALL ENS	SURE POTEN	TIAL				S.C.J.	-DENC	)TES BLO				
INTERNA SHRINKA OF RESTF SHRINKA JOINTS, F	l force Ge, and Raining Ge as ri Pour st	S AND CRA )/OR TEMP ELEMENTS EQUIRED T RIPS, LOW	ACKS INDUC ERATURE A S AND MAKE THROUGHOU SHRINKAG	CED BY PF RE CONTF E PROVISI UT, INCLU E	Restressing Rolled in Ti On For Mov Jding Movi	à, HE VICI /EMEN <sup>:</sup> EMENT	NITY F AND		<u>—</u>    ST	C.J	-DENC	DTES CO	NSTRUC	TION JOI	NT	
NO COLU AND BEA	MN STIF M DESIG	TC. 'FNESS SH( iN.	ould be us	SED IN TH	E SLAB											
SLABS TO WITH 100 FOR SHE PUNCHIN	) be che )% coll Ar head Ng sheai	ECKED FOR JMN STIFF ) REINFOR R REINFOR	PUNCHING NESS. PT CO CEMENT (W CEMENTS	à Shear V Ontracto /Here Reo	Vith Momen Dr to Make Quired) to 9	nt der Allov Satisf	IVED VANCE Y									
leff TO Igr IN NO IN BEAM CA PT CONTI	ross MAX STANCE : LCULATI RACTOR	RATIO TO SHALL BE ONS. TO MAKE /	BE DETERM GREATER TI	hined by Han 0.7 F	THE DESIGN FOR THE SLA	er bu' B and	TY			IS	SUE	D F	OR T	ENC	DER	
REINFOR ALL SLAE	CEMENT S AND E	IN ACCOR BEAMS.	DANCE WIT	H CL9.2.2	2 OF AS3600	-2018	FOR		Status	;	etou					
PT Conti Losses) (After F Exposed	Ractor To all I Inal Los Roofs,	TO PROVIE NTERNAL ( SSES) TO A ETC.) PLU	DE A MINIMI CONCRETE S LL EXTERNA S SL82 TOP	um P/A OI Slabs An Al Areas ? Mesh U	F 1.4MPA (A D BEAMS, A (BALCONIES .N.O.	-TER F ND 2.( 6, TERF	NAL DMPa RACES,		V	V	SIRU				ב 	
ALL EXPO TO 0.3mr	)SED SLA n MAX.	ABS/BEAMS	CRACK WI	DTH TO B	e limited					Ū.						
XPOSURE ( A2 INTER B1 EXTER B1 SURF	<u>Classifi(</u> RNAL RNAL ACES IN	<u>CATION</u> CONTACT	WITH THE G	GROUND												
<u>IRE RATINO</u> RESIDEN CARPARI ERVICEABII	<u>)</u> TIAL 9 ( 120   LITY	o minutes Minutes f	S FRL TRL						F	łŁ	E	X	Æ			
TOTAL LC CANTILEN TRANSFE INCREME SUPPORT	)ng teri /er Sf :r Slabs :ntal De [ing bf	M DEFLEC PAN / 125 ( & BEAMS EFLECTION RITTLE ELE	FION SPAI DR 15mm M SPAN/100 LIMITS FOF MENTS S	N / 250 01 1AXIMUM 00 OR 10 R SLABS A PAN/500,	r 25mm Ma mm Maximu ND Beams Cantilever	KIMUM M R SP/	, NV/125		S T MELBO LEVEL MELBO T: +61	RUC DURNE OFFIC 2, 31 QUEEN DURNE, VIC, A 3 9614 7155	CTUF E: I STREET AUSTRALIA 30	R A L	E N SVDNET SUITE 3 RUSHCI T: +61 2	G I N <b>OFFICE:</b> 01, LEVEL 3, JTTERS BAY, 9690 2488	E E R 19A BOUNE NSW, AUS	ING DARY STREET TRALIA 2011
SPAN/500	0 OR 15r	mm MAXIM	UM AT FAC	ADE LOCA	TIONS							ΤΑ	<b>YLO</b> F	R		
40mm CAVITY					RE M1 WT x 1	Fer TC 2 Hilt Th Hil 20 Emi	ARCHITECT I HIT-Z-F AT 450 CTS. II HIT HY-200-R, BEDMENT			LA 11- VARV	HC \ 13 M NICK	Naf Man K Fa	rwic Inix RM,	k Fa Par Nsv	ARM Ade V 21	1 <u>-</u> , 170
							LEVEL 4 - GENERAL ARRANGEMENT PLAN					AL AN				
PROVIDE BACKING					└──── 15 H.[ FIF AR	Dx150x D. Gal\ E Rati Chitec	10 EA SHELF ANGLE, /ANISED. NG TO :T'S DETAILS	- ANGLE, DATE DESIGNED BY CHECKED BY NOV 2020 MA/BT AC SCALES AT A1 DRAWN BY APPROVED BY 1:20, 1:100 PAC PW								
SECTION A						1:20, 1:100         PAC         PW           JOB No.         DRAWING No.				REV.						
SECTION A SCALE: 1:20 140									20	0023		S-WI	EB-14	0		4

			LEVEI	_ 4 - SI	LAB SCHE	EDULE				WORK SHALL BE RE MEANS (GRAPHIC, E PHOTOCOPYING, RE	WEBBER DESIG EPRODUCED OI ELECTRONIC OI ECORDING OR	GN PTY L R COPIEL R MECHA	TD. NO F D IN ANY ANICAL, I ATION RE	PART OF THIS FORM OR BY NCLUDING TRIEVAL
			REINF.	RATE	P.T. RA	ATE				/ Systems) withou LTD.	IT THE PERMIS	SION OF	WEBBEF	R DESIGN PTY
THICKN 200	IESS	f'c (MPa) 40	(kg/r 45	m <sup>3</sup> )	(kg/m) 4.8	<sup>2</sup> )	REMARKS P.T. SLAB BY D&C CONTRACTO	OR, F	DO NOT SC Rev.	Description	USE FIGUF	RED D Eng.	IMENS	SIONS Date
						,	ADDITIONAL SL82 MESH TOP EXTERNAL AREAS	то	1 WORK IN	PROGRESS ISSUE		MA	PAC	18.11.20
200*	k	40	130	0	N/A		R.C. CORE SLAB	-	3 ISSUED FO	OR TENDER (DRAFT) OR TENDER (UPDATEI	N (C	MA/BT	PAC	18.12.20
		LEVE	L 4 - CO	NCRET	E COLUN	IN SC	HEDULE		4 ISSUED FO	OR TENDER (UPDATEI	O) N	ИА/ВТ	PAC	05.02.21
				REI	NF. RATE		DEMARKA							
C2	250	SIZE ) x 1200	f'c (MPa 40	a) (	kg/m³) 160	INSITU	CONCRETE COLUMN	—						
C3 C4	200 30	0 x 1400 0 x 600	40 40		180 160	INSITU INSITU	CONCRETE COLUMN CONCRETE COLUMN							
									DRAWIN			FRF	NCE	No.
			LEVEL	_ 4 - W	ALL SCHE	EDULE	<u> </u>		DRAWING	INDEX NOTES	S-WE	EB-00	) 1-002	
MARK	WID	TH f'c (	(MPa)	REINF (kg	F. RATE (/m <sup>3</sup> )		REMARKS		RETENTION CONCRETE	N COLUMNS	S-WE	EB-010 EB-800	D-029 D-819	
CW1	20	0	40	1	.80	INSITU	CONCRETE CORE WALL		IN-SITU WA	ALLS VALLS	S-WE S-WE	EB-820 EB-880	)-879 )-909	
W1	20	0	50 40	2	220	INSITU	CONCRETE WALL		SLAB ON G	ROUND DETAILS	BS S-WE	EB-950 EB-960	D-951 D-962	
	25	0	40	1	.60		CONCRETE WALL		R.C. STAIR	DETAILS	S-WE	EB-96	$\frac{5-966}{2}$	
1. ALL PEN	IETRATIC	INS TO BE R	eviewed ai	ND RESO	LVED.				STEEL DET	AILS	S-WE	EB-980 EB-990	D-981 D-991	
2. ALL SER	VICES PE S AND CA	ENETRATION	IS TO BE CO ES FOR STR T	-ORDINA RUCTURA	TED AND AP L STEEL WOF	Provee RK and	) by webber design. Facade to be co-							
4. CONTRA	CTOR SH	HARCHITEC	FOR CONS	TRUCTIO	N JOINTS AS	REQUIF	RED.		GENER	AL ARRANGE	MENT L	EGE	ND	
									xx*	-DENOTES SI AF	3/BAND RF		HICKN	ESS
THE SUSPE	INDED FL		ARE A DES	IGN AND	CONSTRUCT	r compo	DNENT.		6)	-DENOTES COL		2	1	
REFER TO D	orawing G Floof	G S-WEB-003 R SLAB AND	1 & S-WEB-( DESIGN BRI	002 For Ief and (	design and General de	D CONST SIGN &	RUCTION POST- LOADING CRITERIA		Ct _			•		
<u>GENERA</u>	GENERAL NOTES:									DENOTES WAL		<u>רי</u>		
- ALL CON		SLABS AND E	BEAMS TO E	BE POST-	TENSIONED U	U.N.O.				-DENOTES LOAL	) BEARING	á ELEN		JNDER
- SLABS T			mm THICK,	f'c = 40	MPa AND	OIX.				-DENOTES LOAI UNDER & OVER	D BEARING	G ELEN	ΛΕΝΤ	
POST-TE	ENSION E	BY OTHERS U	J.N.O.							-DENOTES BLOO	CK WALL C	OVER		
- THE POS	ST TENSI AL FORC	ONING CON ES AND CRA	TRACTOR SI CKS INDUC	HALL EN: ED BY PF	SURE POTEN	ITIAL G,			<u> </u>	-DENOTES SAW	CUT JOINT	Г		
SHRINK OF REST	AGE, AN	D/OR TEMPE GELEMENTS	AND MAKE	RE CONTR PROVISI	Rolled in Th On For Mov	HE VICII VEMENT	AND		C.J	-DENOTES CON	STRUCTIO	N JOI	ΝT	
JOINTS,	AGE AS F POUR S	TRIPS, LOW	SHRINKAGE	E INCL	UDING MOVE	EIVIEINT			STEP	-DENOTES SLAE	B SETDOW	'N. S FOR		TVFLS
- NO COLL	UMN STI	FFNESS SHO	ould be us	ED IN TH	IE SLAB									
AND BE	AM DESI	GN.												
- SLABS T WITH 10	TO BE CH DO% COL	ECKED FOR UMN STIFFN	PUNCHING NESS. PT CC	SHEAR \ NTRACT	with momen or to make	nt deri Allow	VED ANCE							
FOR SHE PUNCHI	EAR HEA NG SHEA	D REINFORC	CEMENT (WH	HERE RE	QUIRED) TO S	SATISFY								
- leff TO lg	gross MAX	X RATIO TO I	BE DETERM		THE DESIGN	ER BUT								
BEAM C	ALCULAT	TONS.						-	21				FR	
- PT CONT REINFOR	TRACTOF RCEMEN	r to make a T in accore	LLOWANCE	FOR STF HCL9.2.2	RUCTURAL IN 2 OF AS3600	NTEGRIT -2018 f	Y ïOR							
ALL SLA	BS AND	BEAMS.						S	otatus	STRUCTURA		VING		
- PT CONI LOSSES)	TRACTOF	R TO PROVID	E A MINIMU ONCRETE S	JM P/A O SLABS AN	F 1.4MPA (AI	FTER FII ND 2.0	NAL MPa		Λ /				•	
EXPOSEI	d Roofs	, ETC.) PLUS	S SL82 TOP	MESH U	(BALCONIES .N.O.	S, TERR	ACES,		VV					
- ALL EXP TO 0.3m	POSED SL nm MAX.	ABS/BEAMS	CRACK WIE	ОТН ТО В	E LIMITED				ΓT 1					
EXPOSURE	CLASSIF	ICATION							H I					
<ul><li>A2 INTE</li><li>B1 EXTE</li></ul>	RNAL RNAL								H					
- B1 SURF	FACES IN	I CONTACT V	MITH THE G	ROUND					H					
- RESIDEN	NTIAL 9 8K 120	90 MINUTES MINUTES FI	i FRL RI						H					
SERVICEAB	BILITY								ΠL		ΖN			
- TOTAL L CANTILE	.ong tef Ever S	RM DEFLECT PAN / 125 C	TON SPAN R 15mm M	N / 250 0 AXIMUM	R 25mm MAX	XIMUM,			STRUC	CTURAL		INE	ER	ING
- TRANSF	ER SLAB	S & BEAMS - EFLECTION	SPAN/100 LIMITS FOR	DO OR 10 SLABS A	mm Maximu ND Beams	JM			LEVEL 2, 31 QUEEN MELBOURNE, VIC, A T: +61 3 9614 7155	I STREET AUSTRALIA 3000	SUITE 301, LE RUSHCUTTER T: +61 2 9690	EVEL 3, 19 RS BAY, N 2488	9A BOUNE ISW, AUS	DARY STREET TRALIA 2011
- DIFFERE	ENTIAL D	BRITTLE ELE	MENTS SH BETWEEN F	PAN/500, LOORS T	, CANTILEVEN O BE LIMITEI	r Spa d to	W125	CI	LIENT					
SPANJU	JU UK 11			ADE LOUP						TAY	LOR			
	40n	nm CAVITY -	$\neg$		T - REI	FER TO	ARCHITECT	PI	ROJECT		WICK	FA	RM	1
									11-	13 MAN	NIX P	AR/	ADE	,
WIZ HILTHIT-Z-FAT 450 WITH HILTI HIT HY-200-R, x 120 EMBEDMENT							I HIT HY-200-R, EDMENT		WAR	<b>NICK FAF</b>	RM, N	ISN	/ 21	170
							TI	ITLE	<b></b>					
									EVEL 4 -	GENE	-RA			
PROVIDE BACKING 150x150x10 EA SL								Ah	KRANGEN		۲L	AIN		
PROVIDE BACKING						LO EA SHELF ANGLE, ANISED.	D			CHECKED BY				
				$\mathbb{A}$	FIR AR	KE RATII CHITEC	NG TO LS DETAILS		CALES AT A1			AC		
						5	1:20, 1:100	PAC	NOVED BY	PW	1			
SECTION A						JC		DRAWING No.			REV.			
SCALE:	1 : 20		.40						20023	S-WE	в-140			4

LEVEL 4	40mm CAVITY
	PROVIDE BACKING ROD & SEALANT
	v

![](_page_77_Figure_0.jpeg)

										ALL RIGHT RE THE PROPERT WORK SHALL	Served. This iy of webbef be reprodu	s work is CC r design PTY ICED or Copi	)PYRIGHT / / LTD. NO   ED IN ANY	and Remain Part of This ' Form or B
		LEVI	EL 5 - SL	AB SCH	EDUL	E				MEANS (GRAF PHOTOCOPYIN SYSTEMS) WI	'HIC, ELECTRO NG, RECORDIN 'ITHOUT THE F	onic or mec NG or infori Permission (	Hanical, I Mation Re DF Webbe	ncluding Etrieval R design Pt
		REIN	F. RATE	P.T. F	RATE									
THICKN	IESS f'c (N	MPa) (k	g/m <sup>3</sup> )	(kg/ı	m²)	RE	MARKS		Rev.	Description	GS, USE F  า	Eng.	DIVIENS	Date
200 200*	4	0	95 130	4. N/	8 A	P.T. SLAB BY D R.C. CORE SLA	B		1 WORK I	IN PROGRESS ISSU	E	MA	PAC	18.11.20
								_	2 ISSUED 3 ISSUED	FOR TENDER (DRA FOR TENDER (UPE	AFT) DATED)	MA/BT MA/BT	PAC PAC	27.11.20 18.12.20
		LEVEL 5 - C	ONCRET	E COLU	MN S	CHEDULE		٦F	4 ISSUED	) FOR TENDER (UPE	DATED)	MA/BT	PAC	05.02.21
			REI	NF RAT	F			-  E						
MARK	SIZE	f'c (M	Pa) (I	kg/m <sup>3</sup> )	<b>-</b>	REM	ARKS							
C2	250 x 120	00 40 00 40		160 180		TU CONCRETE CO		$\exists$					<u> </u>	
C4	300 x 60	00 <u>40</u> 00 <u>40</u>		160	INSI	TU CONCRETE CO	DLUMN							
<b></b>								_				DEEED		No
		LEV	EL 5 - W	ALL SCH	HEDU	LE			DRAWING	G INDEX		S-WEB-00		
			REINF.	RATE			DVO		GENERAL RETENTIO	<u>l notes</u> On		S-WEB-00 S-WEB-00	<u> </u>	
	200	TC (MPa) 40	(Kg/I 18	m <sup>3</sup> ) 0	INSITU	CONCRETE CORE	E WALL	-	CONCRET	TE COLUMNS WALLS		S-WEB-80 S-WEB-82	<u> 20-819</u> 20-879	
CW3	150	40	18	0		CONCRETE CORE	EWALL		PRECAST SLAB ON	WALLS	AILS	S-WEB-88 S-WEB-99	<u>80-909</u> 50-951	
W1 W2	250	40	18	0	INSITU	CONCRETE WALL	L		SUSPENE POST TEN	DED CONCRETE	SLABS	S-WEB-96 S-WEB-96	50-962 65-966	
NOTES:									R.C. STAI	IR DETAILS		S-WEB-9	70 80-981	
1. ALL PEN	ETRATIONS TO	) be reviewed	AND RESO	LVED.					STEEL DE	ETAILS		S-WEB-99	90-991	
<ol> <li>ALL SERV</li> <li>REBATES</li> </ol>	VICES PENETR S AND CAST IN	RATIONS TO BE N PLATES FOR S	CO-ORDINA STRUCTURA	TED AND A L STEEL W	approv /Ork af	'ed by webber Nd facade to bi	DESIGN. E CO-							
ORDINAT 4. CONTRA	TED WITH ARC	CHITECT. ALLOW FOR COI	NSTRUCTIO	N JOINTS A	AS REQI	JIRED.								
									GENE	RAL ARRAN		NT LEG	END	
POST TF	NSIONED S	SLAB NOTES	S:											
THE SUSPER	NDED FLOOR S	SLABS ARE A D	ESIGN AND	CONSTRU	CT COM	PONENT.	-			-DENOTES	⊃LAR∕RAN	ID RFAM .	THICKN	1522
REFER TO D	)rawing S-WE G Floor Slab	EB-001 & S-WE 3 AND DESIGN E	B-002 For Brief and (	design af General e	ND CON DESIGN	STRUCTION POS & LOADING CRIT	T- TERIA		ct (0)	-DENOTES (	COLUMN	OVER		
GENERAI	NOTES									-DENOTES	WALL OVE	ER		
- ALL CON	<u>CRETE SLABS</u>	AND BEAMS TO	) be post-1	FENSIONE	) U.N.O					-DENOTES	I OAD BEA	ARING FLF	FMFNT	UNDER
PT AND I	REINFORCEME	ENT TO BE DESI	GNED BY P	T CONTRA	CTOR.	•								ONDER
- SLABS TO		VI 200mm THIC	K, f'c = $40$ N	/IPa AND					· · · · · · · · · · · · · · · · · · ·	-DENOTES UNDER & C	load bea )ver	ARING ELE	EMENT	
POST-TE		HERS U.N.U.								-DENOTES	BLOCK W/	ALL OVER	٤	
- THE POS	T TENSIONING	G CONTRACTOR D CRACKS INDU	shall ens Jced by Pr	SURE POTE RESTRESSI	ENTIAL NG,				S.C.J.	-DENOTES	SAWCUT .	JOINT		
SHRINKA OF RESTI	age, and/or 1 Raining elen	TEMPERATURE //ENTS AND MA	ARE CONTR	Rolled in On for M	THE VIO	CINITY NT AND								
SHRINKA JOINTS, J	AGE AS REQUII POUR STRIPS.	RED THROUGH	OUT, INCLU	JDING MO	VEMEN	Т				DENUTES	CONSTRU		лімт	
CONCRE	TE MIX ETC.								STEP	-DENOTES	SLAB SETI	DOWN. Tails for	RALLI	EVELS
- NO COLL	JMN STIFFNES	S SHOULD BE	USED IN TH	E SLAB										
AND BEA	AM DESIGN.													
- SLABS TO WITH 10	0 be checkee 0% column \$	) for punchin Stiffness. Pt	NG SHEAR V CONTRACTO	vith mom Dr to maþ	ent de Ke allo	RIVED WANCE								
FOR SHE	AR HEAD REIN	NFORCEMENT ( NFORCEMENTS	WHERE REC	QUIRED) T(	O SATISI	FY								
						гт								
IN NO IN	ISTANCE SHAL	L BE GREATER	THAN 0.7 F	FOR THE SI	LAB ANI	D								
BEAM CA	ALCULATIONS.									SSUED	FOR <sup>-</sup>	TEND	<b>DER</b>	
- PT CONT REINFOR	RACTOR TO M	1ake allowan Ccordance w	CE FOR STR 1TH CL9.2.2	2 of AS360	INTEGF 00-2018	rity 3 for			Yotuo					
ALL SLAE	BS AND BEAM	S.											<u> </u>	
- PT CONT LOSSES)	RACTOR TO PL TO ALL INTER	ROVIDE A MINII	MUM P/A OF E SLABS AN	<sup>-</sup> 1.4MPA ( D BEAMS.	AFTER	FINAL .OMPa				3110010			<u> </u>	
(AFTER F	TINAL LOSSES)	TO ALL EXTER	NAL AREAS	(BALCONI	ES, TEF	RRACES,			Λ					
									ΥΥ					
TO 0.3m	m MAX.	EAIVIS URAUN V												
EXPOSURE (	CLASSIFICATIO	<u>NN</u>												
<ul><li>A2 INTEF</li><li>B1 EXTER</li></ul>	RNAL RNAL													
- B1 SURF	ACES IN CONT	TACT WITH THE	GROUND						H					
FIRE RATING	<u>g</u> Itial 90 mir	NUTES FRL							ЦL					
- CARPARI	K 120 MINU	ITES FRL							$\mathbf{H}$	F				
SERVICEABI	LITY			2 25mm M		Л			\ L			N		
CANTILE	VER SPAN /	125 OR 15mm	MAXIMUM			vi,			STRU MELBOURNE OFI	CTURA	L E N	GIN EY OFFICE:	EER	ING
- TRANSFE - INCREME	er slabs & Be Ental Deflec	LAMS SPAN/I CTION LIMITS FO	OOO OR 101 OR SLABS A	mm Maxin ND Beams	ium S				LEVEL 2, 31 QUE MELBOURNE, VIO T: +61 3 9614 715	EN STREET C, AUSTRALIA 3000 55	SUITE RUSH( T: +61	301, LEVEL 3, CUTTERS BAY 2 9690 2488	19A BOUNE , NSW, AUS	JARY STREET
- DIFFEREI	ting brittl Ntial deflec	E ELEMENTS TION BETWEEN	SPAN/500, NFLOORS T(	Cantilev d be limit	'er Sf 'ed to	PAN/125		С	LIENT					
SPAN/50	0 OR 15mm N	Maximum at fa	ACADE LOCA	TIONS						ТД		R		
										۲ <i>۲</i>				
									ROJECT					
	л		TT	┢ <u>॑</u> _			ITECT			AHC WA	RWI(	CK FA	4RN	1
	4(								11	-13 MA	NNIX		<b>ADI</b>	Ξ,
			$\searrow$			M12 HILTI HIT-Z- WITH HILTI HIT H	-F AT 450 CTS. HY-200-R,		WAR		ARM.	, NSV	N 2	170
					)	K 120 EMBEDME	NT	Т	ITLE	• • •				
										LEVEL 5	5 - GF	NER	AL	
A A A									Δ	RRANG			AN	
	_ ~								7 \			I L	· · · · ·	
	PR( ROI	JVIDE BACKING D & SEALANT			1 H	L50x150x10 EA S H.D. GALVANISE	Shelf Angle, D.	D	ATE		CHECKE	ED BY		
					F				1907 2020	, MA/B1		Α	0	
					ŀ	NOTITEUTS DEI		S	CALES AT A1	DRAWN BY	APPROV	/ED BY	w.	
								1	1.20, 1:10U		1	P		

										(		All Right Reserv The property of Work shall be r	'ED. THIS V WEBBER EPRODUC	WORK IS CO DESIGN PTY ED OR COPII	PYRIGHT # LTD. NO F ED IN ANY	AND REMAIN Part of the Form or e
				LEVEL	_ 5 - SI	AB SCH	EDUL	E		]   \	Ň	MEANS (GRAPHIC, PHOTOCOPYING, RI SYSTEMS) WITHOU LTD.	ELECTRON ECORDING JT THE PE	NIC OR MECH GOR INFORM RMISSION C	Hanical, I Mation Re )F webbef	NCLUDING TRIEVAL R DESIGN P
THICKN	ESS	f'c (M	Pa)	REINF. (kg/i	RATE m <sup>3</sup> )	P.T. F	RATE m <sup>2</sup> )	RFM	ARKS		DO NOT SC/	ALE DRAWINGS,	USE FI	gured i	DIMENS	SIONS
200		40	1 0)	9! 12	5	4.	8	P.T. SLAB BY D&	C CONTRACTOR	Rev	/. WORK IN F	Description PROGRESS ISSUE		Eng. MA	Draft. PAC	Date 18.11.20
200"		40		15	0	IN/	Α	R.C. CORE SLAB		2	ISSUED FO	R TENDER (DRAFT) R TENDER (UPDATE		MA/BT MA/BT	PAC PAC	27.11.20
		L	EVEL	5 - CO	NCRE	TE COLU	MN S	CHEDULE		4	ISSUED FO	R TENDER (UPDATE	D)	MA/BT	PAC	05.02.2
					REI	NF. RAT	E			$\neg \vdash$						
MARK C2	250	SIZE 0 x 1200	0	C (MPa 40	a) (	. <b>kg/m³)</b> 160	INSIT	REMA U CONCRETE COL	RKS UMN							
C3 C4	200 30	0 x 1400 0 x 600	0	40 40		180 160	INSIT INSIT	U CONCRETE COL U CONCRETE COL	UMN UMN	$\exists \vdash$						
										- [[	DRAWIN	G REFERENC	CEF	REFER	ENCE	No.
					_ 5 - W	ALL SCI	HEDUL	_E			DRAWING II GENERAL N	NDEX IOTES	S	-WEB-00 -WEB-00	)0 )1-002	
MARK	WID	тн	f'c (M	IPa)	(kg/	(m <sup>3</sup> )		REMAR	KS	F	RETENTION	COLUMNS	S	-WEB-01	10-029 00-819	
CW1 CW3	20 15	0	40 40	)	18	30 30	INSITU ( INSITU (	CONCRETE CORE V	VALL VALL		N-SITU WA PRECAST W SLAB ON GE	ILLS /ALLS ROLIND DETAILS		-WEB-82 -WEB-88 -WEB-94	<u>20-879</u> 30-909 50-951	
W1 W2	20 25	0	50 40	)	18 18	30 30	INSITU INSITU	CONCRETE WALL			SUSPENDEL POST TENSI	OCONCRETE SLA	ABS S	-WEB-96 -WEB-96	50-962 55-966	
NOTES:										F	R.C. STAIR I MASONRY D	DETAILS DETAILS	S	-WEB-97 -WEB-98	70 30-981	
. ALL PENI	ETRATIC	ONS TO ENETRA	BE REV	IEWED A	ND RESO	OLVED. ATED AND A	APPROV	ED BY WEBBER DE	ESIGN.		STEEL DETA	AILS	S	S-WEB-99	<del>)</del> 0-991	
ORDINAT	ED WIT	AST IN I TH ARCH HALL AL	PLATES HITECT.	FOR STE		N IOINTS	IORK AN	D FACADE TO BE (	0-							
											GENERA	AL ARRANGE	MEN	T LEGI	<u>end</u>	
OST TEN	SION	ied sl	LAB N	OTES:							XX*	-DENOTES SLA	B/BAN[	) beam <sup>-</sup>	THICKN	IESS
HE SUSPEN EFER TO D	NDED FL RAWIN(	LOOR SL G S-WEE	LABS AF B-001 &	RE A DES S-WEB-	IGN AND	CONSTRU	CT COMI	PONENT. STRUCTION POST-	ΔΙΔ		-10	-DENOTES COL	.UMN C	VER		
		FS.	AND DE	SIGN BR	IEF AND	GENERAL I	JESIGN	X LUADING CRITER			Gr 	-DENOTES WAL	_L OVEI	7		
ALL CON	CRETE S	<u>lo.</u> Slabs a	AND BEA	AMS TO E	BE POST-	TENSIONEI	) U.N.O.					-DENOTES LOA	.D BEAF	ring ele	EMENT	UNDER
PT AND F					NED BY F		CTOR.					-DENOTES LOA	.D BEAF	ring ele	EMENT	
POST-TE	NSION E	BY OTHE	ERS U.N	1.0.	10 - 40	VIFA AIND					///////////////////////////////////////	UNDER & OVEF -DENOTES BLO	₹ ICK WA	ll over	)	
THE POS INTERNA	t tensi L forci	oning Es and	CONTR/ CRACK	actor s s induc	Hall en Ed by Pi	SURE POTE RESTRESSI	ENTIAL NG,				<u>S.C.J.</u>	-DENOTES SAW	VCUT J(	DINT		
OF REST	AGE, AN RAINING GE AS E	d/or te 3 eleme 3 folur	EMPERA ENTS AN ED THR	ND MAKE	RE CONT	Rolled in Ion for M Liding MC	THE VIC OVEMEN	INITY IT AND -			C.J	-DENOTES CON	ISTRUC	CTION JO	INT	
JOINTS, F	Pour s Te mix e	TRIPS, L ETC.	LOW SH	RINKAGE	Ë							-DENOTES SLA	B SETC	OWN.		
NO COLU	IMN STI	FFNESS	SHOUL	.D BE US	ED IN TH	HE SLAB						REFER TO ARC	H. DET	AILS FOF	₹ ALL LI	EVELS.
SLABS TO	) BE CH	GN.	For Pu	INCHING	SHEAR	WITH MOM	ent def	RIVED								
WITH 10 FOR SHE	0% COL AR HEA	UMN ST D REINI	TIFFNES FORCEM	S. PT CO IENT (WI	ONTRACT HERE RE	or to Mał Quired) to	(E ALLO) D SATISF	WANCE Y								
PUNCHIN	IG SHEA	AR REIN						т								
IN NO IN BEAM CA	STANCE	SHALL	BE GRE	EATER TH	HAN 0.7	FOR THE S	LAB AND	)								
PT CONT REINFOR ALL SLAE	RACTOF CEMEN <sup>T</sup> 3S AND	r to ma t in aco beams.	AKE ALLO CORDAN	OWANCE NCE WITI	FOR STI H CL9.2.	RUCTURAL 2 of AS360	INTEGR 00-2018	ity For		Stat	US US	SUED FC	)r t	END	)ER	
	RACTOF					F 1.4MPA						STRUCTURA	1L DR	AWIN	G	
(AFTER F EXPOSED	INAL LC ROOFS	)SSES) 1 5, ETC.)	TO ALL I PLUS SI	EXTERNA L82 TOP	AL AREAS MESH L	BALCON J.N.O.	IES, TER	RACES,			Λ					
ALL EXPO	)SED SL	ABS/BE	AMS CF	ack WI	отн то е	BE LIMITED										
TO 0.3mr XPOSURF (	n MAX. CLASSIF		N							⊢	++					
A2 INTER B1 EXTER	RNAL RNAL		-								$\mathbf{H}$					
B1 SURF	ACES IN	I CONTA	ACT WIT	'H THE G	ROUND						$\mathbf{H}$					
RESIDEN CARPARI	<u>-</u> TIAL 9 ( 120	90 MINU MINUT	utes ff 'Es frl	RL							51		N			
ERVICEABI										<b> </b>	٦L		コ	Ν		
CANTILE TRANSEE	/ER S R SI AB	RM DEFI PAN / 1 S & BFA	LECTION .25 or 1 AMS S	N SPAN 15mm M 300/100	n / 250 C Aximum 30 or 10	0R 25mm M 0mm MAXIN	iaximun //um	1,		S MEL	TRUC BOURNE OFFICE			GIN OFFICE:	E E R	ING
INCREME	INTAL D	EFLECT BRITTLE	TON LIN	AITS FOR NTS SI	SLABS A	AND BEAMS , CANTILEV	S ER SP	AN/125		MEL T: +(	BOURNE, VIC, AU 61 3 9614 7155	JSTRALIA 3000	RUSHCI T: +61 2	UTTERS BAY, 9690 2488	NSW, AUS	TRALIA 2011
DIFFEREN SPAN/50	NTIAL D D OR 15	EFLECT 5mm MA	ION BE	rween f I at fac <i>i</i>	LOORS T ADE LOC	O BE LIMIT ATIONS	ED TO					<b>T A</b> \ <i>I</i>				
												IAY	LOF	κ		
										PROJ	ECT					
		401	mm CAV	/ITY —	$\setminus \square$		F	REFER TO ARCHITE	ECT				vvic	K F/	ארא יחמי	1 =
							N	/12 HILTI HIT-Z-F VITH HILTI HIT HY	AT 450 CTS. -200-R.		LI- WARV	TO IVIAINI	MS MS	NSV	λυτ V 2'	_, 170
							×	120 EMBEDMEN	Г	TITLE	- <i>• •</i> • • • • •					_, _
	A										Lł	EVEL 5 -	GE	NER	AL	
						110					AR	RANGEN	/IEN	T PL	AN	
		PRO\ ROD	vide Ba & Seal	.CKING - ANT			1 F	50x150x10 EA SH I.D. GALVANISFD	IELF ANGLE,	DATE	NOV 2020		CHECKED	BY		
							F A	IRE RATING TO RCHITECT'S DETA	ILS	SCAL	ES AT A1	DRAWN BY	APPROVE	A D BY		
										1	:20, 1:100	PAC		P	w	

20023

S-WEB-150

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									ALL RIGHT RESERVI	ed. This W Webber [ Produce	Vork is coi Design Pty D or copie	PYRIGHT A LTD. NO I	and Remain Part of This form or B
		LEVI	EL 5 - SL	AB SCH	EDULE				MEANS (GRAPHIC, E PHOTOCOPYING, RE SYSTEMS) WITHOU	ELECTRON	IC OR MECH OR INFORM RMISSION O	ianical, i 1ation re F webbei	NCLUDING ETRIEVAL R DESIGN PT
		REIN	F. RATE	P.T. F	RATE		—    -						
THICKN	ESS f'c (N	MPa) (k	g/m <sup>3</sup> )	(kg/i	n <sup>2</sup> )			ev.	Description		Eng.	Draft.	Date
200*	4	.0	95 130	4. N/	A R.C. COR	E SLAB			PROGRESS ISSUE		MA MA/BT	PAC	18.11.20
·								3 ISSUED FO	DR TENDER (UPDATE	) )	MA/BT	PAC	18.12.20
		LEVEL 5 - C	ONCRET	E COLU	MN SCHEDUL	E			JR TENDER (OPDATEI	<i>)</i> ]		PAC	05.02.21
MADK	SIZE	fo (M	REIN	NF. RAT	E								
C2	250 x 12	00 40	ra) (i	160	INSITU CONCRE								
C3 C4	200 x 14 300 x 60	00 40 00 40		180 160	INSITU CONCRE	ETE COLUMN ETE COLUMN							
								DRAWIN			2 EFFRI	FNCE	No
	1	LEV	EL 5 - W		IEDULE				NDEX		WEB-00	)0 )1 002	
MARK	WIDTH	f'c (MPa)	REINF. (kg/r	RATE m <sup>3</sup> )	R	EMARKS		RETENTION		<u> </u>	-WEB-00 -WEB-01 -WEB-80	.0-029 .0-819	
CW1	200	40	18	0	INSITU CONCRETE	CORE WALL		IN-SITU WA	ALLS VALLS	<u>S-</u>	-WEB-82 -WEB-88	<u>20-879</u> 30-909	
W1	200	50	18	0	INSITU CONCRETE	WALL		SLAB ON G	ROUND DETAILS D CONCRETE SLA	BS S <sup>.</sup>	-WEB-95 -WEB-96	50-951 50-962	
	250	40	18	0	INSITU CONCRETE	WALL	] [	POST TENS R.C. STAIR	IONING DETAILS DETAILS	S- S·	-WEB-96 -WEB-97	5-966 0	
<u>INOTES:</u> 1. ALL PEN	ETRATIONS TO	) be reviewed	) and reso	LVED.				MASONRY I STEEL DET/	DETAILS AILS	S- S·	-WEB-98 -WEB-99	30-981 30-991	
2. ALL SER 3. REBATES	VICES PENETF 5 AND CAST IN	RATIONS TO BE N PLATES FOR S	CO-ORDINA STRUCTURA	TED AND A L STEEL W	Approved by wee ork and facade	BBER DESIGN. TO BE CO-							
ORDINAT 4. CONTRA	red with arc Ctor shall <i>f</i>	CHITECT. ALLOW FOR COI	NSTRUCTIO	N JOINTS A	S REQUIRED.								
								<u>GENER</u>	AL ARRANGE	<u>MEN</u>	T LEGE	<u>END</u>	
POST TEI	NSIONED S	SLAB NOTES	<u>S:</u>					XX*	-DENOTES SLA	3/BAND	BEAM 1	HICKN	IESS
REFER TO D	NDED FLOOR S RAWING S-WI	SLABS ARE A DI EB-001 & S-WE	ESIGN AND B-002 FOR I	CONSTRUCT DESIGN AN	T COMPONENT.	N POST-		6	-DENOTES COL	umn o'	VER		
		S AND DESIGN E		JEINERAL L	ESIGN & LUADING			G	-DENOTES WAL	L OVEF	8		
- ALL CON	<u>_ INUTES:</u> CRETE SLABS	AND BEAMS TO	) RF POST-T	FNSIONE						D RFAR	ING ELE	MENT	
PT AND I	REINFORCEME	ENT TO BE DESI	GNED BY P	T CONTRAC	CTOR.								ONDER
- SLABS TO POST-TE	o be minimun Nsion by oth	M 200mm THIC HERS U.N.O.	K, f'c = 40N	/IPa AND					UNDER & OVER				
- THE POS	T TENSIONING	G CONTRACTOR	SHALL ENS	SURE POTE	NTIAL				-DENOTES BLO	jk vval	L OVER		
INTERNA SHRINKA	AL FORCES AN	D CRACKS INDU	JCED BY PR ARE CONTR	ESTRESSII	NG, THE VICINITY			<u>S.C.J.</u>	-DENOTES SAW	CUT JC	NINT		
OF REST	RAINING ELEN AGE AS REQUI	MENTS AND MA	KE PROVISIO OUT, INCLU	JN FOR MO JDING MO	OVEMENT AND VEMENT			C.J	-DENOTES CON	STRUC	TION JO	NT	
CONCRE	TE MIX ETC.	, LUW SHRINKA	GE					STEP	-DENOTES SLAP	3 SETD( H. DET/	OWN. All S FOR		EVELS.
- NO COLL	JMN STIFFNES M DESIGN.	SS SHOULD BE I	USED IN TH	E SLAB									
- SLABS TO	O BE CHECKEI	d for punchin	NG SHEAR V	VITH MOM	ENT DERIVED								
WITH 10 FOR SHE	0% Column Ar head reii	STIFFNESS. PT ( NFORCEMENT (	CONTRACTO	or to mak Quired) to	E ALLOWANCE ) SATISFY								
PUNCHI	NG SHEAR REI	INFORCEMENTS	5										
- leff TO lg IN NO IN	ross MAX RATI STANCE SHAL	IO TO BE DETER _L BE GREATER	rmined by Than 0.7 F	THE DESIG FOR THE SI	NER BUT .AB AND								
	ALCULATIONS.				INTEODITY			IS	SUED FC	)R T	ENC	)ER	
REINFOR	CEMENT IN A	CCORDANCE W	1TH CL9.2.2	2 OF AS360	0-2018 FOR		Sta	atus					
- PT CONT	RACTOR TO P	ROVIDE A MINII	mum p/a of	- 1.4MPA (	AFTER FINAL				STRUCTURA	L DR	AWING	3	
Losses) (After f	TO ALL INTER INAL LOSSES)	RNAL CONCRETE ) TO ALL EXTER	e slabs an Nal Areas	d Beams, (Balconi	AND 2.0MPa ES, TERRACES,		Ν	Λ/					
EXPOSED	) ROOFS, ETC.	) Plus sl82 to	op mesh u.	N.O.				<u>V</u>					
- ALL EXPO TO 0.3m	dsed Slabs/B m Max.	BEAMS CRACK V	VIDTH TO BI	E LIMITED									
		<u>NC</u>						J					
- B1 EXTER	RNAL RNAL ACES IN CONT	TACT WITH THE	GROUND					T					
FIRE RATIN	G						1						
- RESIDEN - CARPARI	itial 90 mii K 120 minu	NUTES FRL JTES FRL						シト	TCY	N			
<u>SERVICEABI</u>	LITY									ר '	N		
- TOTAL LO	ONG TERM DE VER SPAN /	FLECTION SP 125 OR 15mm	AN / 250 OF MAXIMUM	R 25mm M	AXIMUM,		S	TRUC	TURAL ≞	EN ( sydney	GIN OFFICE:	EER	ING
- INCREME	ENTAL DEFLEC	EAIVIS SPAINT CTION LIMITS FO	OCO OR TOP OR SLABS A	ND BEAMS			M T:	EVEL 2, 31 QUEEN ELBOURNE, VIC, A +61 3 9614 7155	USTRALIA 3000	SUITE 30 RUSHCU T: +61 2 9	)1, LEVEL 3, 7 ITTERS BAY, 9690 2488	I9A BOUNL NSW, AUS	JARY STREET
- DIFFERE	NTIAL DEFLEC	TION BETWEEN	I FLOORS TO CADE LOCA	D BE LIMIT	EN SI AIVIZS ED TO			ENI					
									TAY	LOR			
	Λ.						PR		HC WAR	WIC	K FA	١RM	1
	4							11-	13 MAN	ΝIX	PAR	AD	Ξ,
						пн-2-н АТ 450 СТ8 - HIT HY-200-R, Ермемт	э. <b>Г</b>	WARV	VICK FAF	۲M,	NSV	<b>V 2</b> 2	170
A A A	A - A						— TIT	LE _	<b>n</b> /=: -	<u> </u>			
								L	EVEL 5 -	GEN		ΆL	
								AH	KANGEN	'IEIN	I PL	AN	
	PR( ROI	OVIDE BACKING D & SEALANT	i — /		—— 150x150x10 Н. р. салуа	0 ea shelf angle Nised	, DA		DESIGNED BY	CHECKED	BY		
					FIRE RATIN	G TO S DETAILS		INUV ZUZU		APPPOV (57	A	,	
			_				SC/	1:20, 1:100	PAC	-1 FRUVED	P\	N	

LEVEL 5

![](_page_77_Picture_32.jpeg)

![](_page_77_Picture_33.jpeg)

![](_page_78_Figure_0.jpeg)

r							ALL RIGHT RESERVE THE PROPERTY OF WORK SHALL BE RE	ED. THIS WORK WEBBER DESIGN PRODUCED OR	S COPYRIG PTY LTD. 1 OPIED IN /	ht and remains No part of this Any form or by
		ROOF - SLAI	B SCHEDULE			N	Means (graphic, e Photocopying, re Systems) withou LTD.	CORDING OR IN THE PERMISSI	Formation Tormation On of wee	AL, INCLUDING N RETRIEVAL BBER DESIGN PTY
THICKNESS	f'c (MPa)	(kg/m <sup>3</sup> )	(kg/m <sup>2</sup> )		D	O NOT SCA	LE DRAWINGS,	USE FIGURI	ED DIME	INSIONS
220	40	120	6.5 N/A	P.T. SLAB BY D&C CONTRACTOR	Rev.	WORK IN P	Description ROGRESS ISSUE	Er	ig. Dra 1A PA	ft. Date C 18.11.20
					2	ISSUED FOR	R TENDER (DRAFT) R TENDER (UPDATEL	D) MA	/BT PA	C 27.11.20 C 18.12.20
NOTES:					4	ISSUED FOF	R TENDER (UPDATEI	D) MA	/BT PA	C 05.02.21
2. ALL SERVICES 3. REBATES AND	PENETRATION CAST IN PLAT	NS TO BE CO-ORDINA TES FOR STRUCTURA	TED AND APPROVE STEEL WORK AN	ED BY WEBBER DESIGN. D FACADE TO BE CO-						
ORDINATED WI 4. CONTRACTOR S	ITH ARCHITEC SHALL ALLOW	CT. V FOR CONSTRUCTION	n Joints as requ	IRED.						
POST TENSIO	NED SLAE	<u>3 NOTES:</u> s are a design and	CONSTRUCT COM	PONENT.			G REFERENC	E REFI	ERENC 3-000	CE No.
REFER TO DRAWI	ng S-Web-oc Dr Slab and	01 & S-WEB-002 FOR DESIGN BRIEF AND (	DESIGN AND CONS GENERAL DESIGN	STRUCTION POST- & LOADING CRITERIA	G R	ENERAL NO	DTES	S-WEE	3-001-00 3-010-02	02 29
GENERAL NO	TES:					I-SITU WAL	LS ALLS	S-WEB S-WEB S-WEB	3-800-8 3-820-8 3-880-9(	79 79 09
- ALL CONCRETE PT AND REINFO	e slabs and Orcement to	Beams to be post- to be designed by p	TENSIONED U.N.O. T CONTRACTOR.		SI SI	LAB ON GR USPENDED	OUND DETAILS	S-WE	3-950-9 3-960-9	51 62
- SLABS TO BE N POST-TENSION	MINIMUM 220 N BY OTHERS	Omm THICK, f'c = 40N U.N.O.	/IPa AND		R	.C. STAIR D	DETAILS ETAILS ETAILS	S-WE	3-970 3-980-98	81
- THE POST TEN		NTRACTOR SHALL EN			S	TEEL DETA	ILS	S-WE	3-990-99	91
SHRINKAGE, A	ND/OR TEMP	erature are contr S and make provisi	RESTRESSING, ROLLED IN THE VIC ON FOR MOVEMEN	XINITY IT AND						
SHRINKAGE AS JOINTS, POUR	S REQUIRED 1 STRIPS, LOW	Throughout, inclu / Shrinkage	JDING MOVEMEN	Γ		GENERA	L ARRANGE	MENT LE	GEND	2
- NO COLUMN S	TIFFNESS SH	ould be used in th	IE SLAB			xx*	-DENOTES SLAB	/Band Bea	M THICH	(NESS
AND BEAM DE	SIGN. CHECKED FOR					,0) ,†	-DENOTES COLU	IMN OVER		
WITH 100% CO FOR SHEAR HE	DLUMN STIFF	NESS. PT CONTRACTOR CEMENT (WHERE REC	OR TO MAKE ALLO QUIRED) TO SATISF	WANCE TY		4	-DENOTES WALL			
PUNCHING SH	EAR REINFOF	RCEMENTS BE DETERMINED BY	THE DESIGNER BL	IT			-DENOTES LOAD	BEARING I		
IN NO INSTANO BEAM CALCUL	CE SHALL BE ATIONS.	GREATER THAN 0.7 F	For the slab and	)			UNDER & OVER -DENOTES BLOC	K WALL OV	ER	
- PT CONTRACTOR	or to make / Int in accor	ALLOWANCE FOR STR RDANCE WITH CL9.2.2	RUCTURAL INTEGR 2 OF AS3600-2018	ITY For		<u>S.C.J.</u>	-DENOTES SAWC	CUT JOINT		
ALL SLABS AN	d Beams. Or to provid		Ε 1 ΛΜΡΔ (ΔΕΤΕΡ Ι	ΞΙΝΔΙ	_	C.J.	-DENOTES CONS	STRUCTION	JOINT	
LOSSES) TO AL (AFTER FINAL	L INTERNAL ( LOSSES) TO A	CONCRETE SLABS AN ALL EXTERNAL AREAS	D BEAMS, AND 2 (BALCONIES, TER	INAL OMPa RACES,	ST	EP	-DENOTES SLAB	SETDOWN		LEVELS
- ALL EXPOSED SED S	FS, ETC.) PLU SLABS/BEAMS	IS SL82 TOP MESH U S CRACK WIDTH TO B	.N.O. E LIMITED							
TO 0.3mm MAX	X.									
- A2 INTERNAL - B1 EXTERNAL	<u>IFICATION</u>									
- B1 SURFACES	IN CONTACT	WITH THE GROUND								
- RESIDENTIAL - - CARPARK 12	- 90 minutes 20 minutes f	S FRL FRL				100				2
<u>SERVICEABILITY</u> - TOTAL LONG T	FRM DEFLEC	TION SPAN / 250 O	R 25mm MAXIMUN	Λ	Statu	IS				`
CANTILEVER - TRANSFER SLA	SPAN / 125 ( ABS & BEAMS	OR 15mm MAXIMUM SPAN/1000 OR 10		,		-	STRUCTURA	L DRAW	ING	
<ul> <li>INCREMENTAL</li> <li>SUPPORTING</li> <li>DIFFERENTIAL</li> </ul>	BRITTLE ELE DEFLECTION	I LIMITS FOR SLABS A EMENTS SPAN/500, BETWEEN FLOORS TO	.ND BEAMS CANTILEVER SF O BE LIMITED TO	PAN/125		Λ/				
SPAN/500 OR	15mm MAXIN	IUM AT FACADE LOCA	TIONS		<b> </b> ¥	Å				
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![](_page_79_Figure_0.jpeg)

![](_page_79_Figure_2.jpeg)

LEVEL 1 - LOADING PLAN SCALE: 1:200

![](_page_79_Figure_4.jpeg)

LEVEL 3 - LOADING PLAN SCALE: 1:200

		-						
	LOADING PLAN LEGEND RESIDENTIAL SIDL = 1.0 kPa LL = 1.5 kPa		R	ALL RIGHT RESERVE THE PROPERTY OF V WORK SHALL BE RE MEANS (GRAPHIC, E PHOTOCOPYING, RE SYSTEMS) WITHOUT LTD.	D. THIS WO VEBBER DE PRODUCED LECTRONIC CORDING C I THE PERM	DRK IS CO SIGN PTY OR COPII OR MECH OR INFORM MISSION C	PYRIGHT LTD. NO ED IN ANY HANICAL, MATION RI IF WEBBE	AND REMAINS PART OF THIS Y FORM OR BY INCLUDING ETRIEVAL R DESIGN PTY
	<u>NON-ACCESSIBLE ROOF</u> SIDL = 2.0 kPa	D Rev.	O NOT SCA	LE DRAWINGS, U Description	JSE FIG	URED [ Eng.	DIMENS	SIONS Date
	$LL = 1.5 \text{ kPa}$ $\frac{\text{TERRACES}}{\text{SIDL} = 2.0 \text{ kPa}}$ $LL = 4.0 \text{ kPa}$	1 2	ISSUED FOR	TENDER (DRAFT) TENDER (UPDATED	))	MA/BT MA/BT	PAC PAC	27.11.20 18.12.20
	<u>BALCONIES</u> SIDL = 1.5 kPa LL = 2.0 kPa							
	<u>CARPARK</u> SIDL = 0.5 kPa LL = 2.5 kPa							
	<u>BATHROOM / WET AREAS</u> SIDL = 2.0 kPa LL = 1.5 kPa		RAWING IN	G REFERENC	E RI	EFER	ENCE	No.
	<u>CORRIDOR / FIRE STAIR</u> SIDL = 1.5 kPa LL = 4.0 kPa	GRICI≦PIS	ETENTION ONCRETE C I-SITU WAL RECAST WA LAB ON GRO	OLUMNS LS ALLS OUND DETAILS	S-\ S-\ S-\ S-\ S-\ S-\	VEB-01 VEB-80 VEB-82 VEB-88 VEB-88	10-029 00-819 20-879 30-909 50-951	
	<u>COURTYARD / LANDSCAPE</u> SIDL = 2.0 kPa LL = 4.0 kPa MIN. OR 18.0 kPa (PER METRE OF SOIL DEPTH)		USPENDED OST TENSIC .C. STAIR D ASONRY DI	CONCRETE SLAI DNING DETAILS ETAILS ETAILS	3S S-\ S-\ S-\ S-\	NEB-96 NEB-96 NEB-97 NEB-98	50-962 55-966 70 30-981	
	SUBSTATION SIDL = TBC LL = TBC				<u> </u>	VEB-95	<u>10-991</u>	
	<u>WASTE</u> SIDL = 0.5 kPa LL = 3.0 kPa							
	<u>LIGHT PLANT</u> SIDL = 2.0 kPa LL = 5.0 kPa							
TO FURTH REFER LIF LIFT PIT / I	ER COORDINATION WITH BUILDER. T CONTRACTOR DETAILS FOR LID LOADING, AND LIFTING HOOK SET OUT.				R TI	ΞΝΓ	)FR	
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![](_page_80_Figure_0.jpeg)

LEVEL 4 - LOADING PLAN SCALE: 1:200

![](_page_80_Figure_2.jpeg)

![](_page_80_Figure_3.jpeg)

![](_page_80_Figure_5.jpeg)

LEVEL 5 - LOADING PLAN SCALE: 1:200

ROOF - LOADING PLAN SCALE: 1:200

								AND REMAINS
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	<u>TERRACES</u> SIDL = 2.0 kPa LL = 4.0 kPa							
	<u>BALCONIES</u> SIDL = 1.5 kPa LL = 2.0 kPa							
	<u>CARPARK</u> SIDL = 0.5 kPa LL = 2.5 kPa			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~	
	<u>BATHROOM / WET AREAS</u> SIDL = 2.0 kPa LL = 1.5 kPa		RAWING IN	G REFERENC	CE RI	EFERI WEB-OC	ENCE	No. {
	<u>CORRIDOR / FIRE STAIR</u> SIDL = 1.5 kPa LL = 4.0 kPa	C I P S	ONCRETE C I-SITU WAL RECAST WA	COLUMNS LS ALLS OUND DETAILS	S-\ S-\ S-\ S-\ S-\	WEB-80 WEB-82 WEB-88 WEB-88	0-819 0-879 0-879 0-909 0-951	
	<u>COURTYARD / LANDSCAPE</u> SIDL = 2.0 kPa LL = 4.0 kPa MIN. OR 18.0 kPa (PER METRE OF SOIL DEPTH)		USPENDED OST TENSIC .C. STAIR D IASONRY D TEEL DETAI	CONCRETE SLA DNING DETAILS DETAILS ETAILS LS	BS S-\ S-\ S-\ S-\ S-\	NEB-96 NEB-96 NEB-97 NEB-98 NEB-98	0-962 5-966 0 0-981 0-991	
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	<u>WASTE</u> SIDL = 0.5 kPa LL = 3.0 kPa							
	<u>LIGHT PLANT</u> SIDL = 2.0 kPa LL = 5.0 kPa							
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![](_page_81_Figure_0.jpeg)

$\overline{\mathcal{N}}$	DENOTES 1200 x 1200 LOCALLY INCREASED SLAB fc ZONE.
	LOCAL SLAB ZONE f'c SHALL BE $\geq 0.75$ COLUMN f'c

![](_page_81_Figure_5.jpeg)

- LOCATION OF CONCEALED PIPES.
- 2. NON-STRUCTURAL ZONE TO BE FORMED AND POURED MONOLITHICALLY WITH STRUCTURAL ZONE.

![](_page_81_Picture_10.jpeg)

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	Rev Description Eng Draft. Date
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	2 ISSUED FOR TENDER (UPDATED) MA/BT PAC 18.12.20
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	DRAWING INDEX S-WEB-000
	RETENTION S-WEB-010-029
	CONCRETE COLUMNS S-WEB-800-819
	PRECAST WALLS S-WEB-880-909
_	SLAB ON GROUND DETAILS S-WEB-950-951
_	POST TENSIONING DETAILS S-WEB-965-966
	MASONRY DETAILS S-WEB-980-981
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	MELBOURNE, VIC, AUSTRALIA 3000     SUITE 301, LEVEL 3, 19A BOUNDARY STREET       MELBOURNE, VIC, AUSTRALIA 3000     RUSHCUTTERS BAY, NSW, AUSTRALIA 2011       T: +61 3 9614 7155     T: +61 2 9690 2488
	CLIENT
	TAYLOR
	PROJECT
	LAHC WARWICK FARM
	11-13 MANNIX PARADE
	$  \mathbf{A} / \mathbf{A} \mathbf{D}   \mathbf{A} /   \mathbf{C} / \mathbf{C}   \mathbf{A}   \mathbf{A} \mathbf{D}   \mathbf{A} /   \mathbf{C} / \mathbf{C}   \mathbf{C}   \mathbf{A}   \mathbf{A}   \mathbf{C}   \mathbf{A} /   \mathbf{C}   C$
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	NOV 2020 MA/BT AC
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UR BEAMS.	
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![](_page_82_Figure_0.jpeg)

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## **IN-SITU WALL REINFORCEMENT & CONCRETE NOTES:**

1. ALL SERVICES PENETRATION TO BE COORDINATED AND APPROVED BY WEBBER DESIGN.

 $\square$ 

- 2. CONTRACTOR SHALL ALLOW FOR CONSTRUCTION JOINT AS REQUIRED. 3. PROVIDE 25mm CLEAR COVER TO CORE WALL REINFORCEMENT (U.N.O.).
- 4. WHERE BARS OF DIFFERENT DIAMETERS ARE SPLICED, USE THE SPLICE OF THE LARGER BAR DIAMETER.
- BY 1.4
- 6. UNLESS SHOWN ON DRAWINGS, THE SPLICE LOCATIONS MUST BE APPROVED BY THE ENGINEER.
- 7. IF BARS HAVE STANDARD COGS AT THE ENDS, HALVE THE ABOVE LENGTHS. 8. N36 AND N40 BARS IN TENSION ARE NOT TO BE SPLICED.

NOTES:-CO-ORDINATE ALL PENETRATION SIZES AND LOCATIONS WITH SERVICES CONSULTANTS. NO PENETRATION TO BE INCREASED IN SIZE OR MOVED WITHOUT THE WRITTEN AGREEMENT OF WEBBER DESIGN PTY. LTD.

ANCHORAGE AND S INSITU/PRECAS	PLICE LENGTH FO ST WALLS UNO.			
N12	600			
N16	800			
N20	1000			
N24	1200			
N28	1400			
N32	1400			
N36	1400 (COMPRESSION SF			
GENERAL	45 BAR DIA.			

![](_page_82_Figure_14.jpeg)

## HEADER BEAM DETAIL FOR IN-SITU WALLS SCALE 1:20

- . REFER TO LIFT SHAFT MANUFACTURER SHOP DRAWINGS FOR LIFT DETAILS,
- REQUIREMENTS AND DIMENSIONS. . CO-ORDINATE ALL LIFT SHAFT PENETRATION SIZES AND LOCATIONS WITH
- SERVICES CONSULTANTS. NO PENETRATION TO BE INCREASED IN SIZE OR MOVED WITHOUT THE WRITTEN AGREEMENT OF THIS OFFICE.
- 3. REFER TO LIFT MANUFACTURER FOR ALL ADDITIONAL CAST IN ITEMS AND BLOCK OUTS.
- A. REFER TO LIFT SUPPLIERS DRAWINGS FOR DETAILS AND LOCATIONS OF ALL CAST IN FERRULES, UNI-STRUTS ETC. FOR FIXING OF ALL LIFT EQUIPMENT.

	IN-SITU CORE HEADER BEAM SCHEDULE											
MARK	WIDTH	DEPTH	LEVEL	REINF. (kg/m <sup>3</sup> )								
CW1	200	800	BASEMENT 1 - LEVEL 3	220								
CW2	250	800 MIN.	LEVEL 4 - LEVEL 5	200								

5. FOR WALLS WITH BARS ANCHORED OR SPLICED AT LESS THAN 150 CTS. MULTIPLY THE ABOVE LENGTHS

![](_page_82_Picture_26.jpeg)

REFER HEADER BEAM SCHEDULE FOR REINF. DETAILS AND SIZE.

D	DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS						
Rev.	Description	Eng.	Draft.	Date			
1	ISSUED FOR TENDER (DRAFT)	MA/BT	PAC	27.11.20			
2	ISSUED FOR TENDER (UPDATED)	MA/BT	PAC	18.12.20			
3	ISSUED FOR TENDER (UPDATED)	MA/BT	PAC	05.02.21			
			_				
	DRAWING REFERENCE   REFERENCE No.						

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	INCLUNCE INC.
DRAWING INDEX	S-WEB-000
GENERAL NOTES	S-WEB-001-002
RETENTION	S-WEB-010-029
CONCRETE COLUMNS	S-WEB-800-819
IN-SITU WALLS	S-WEB-820-879
PRECAST WALLS	S-WEB-880-909
SLAB ON GROUND DETAILS	S-WEB-950-951
SUSPENDED CONCRETE SLABS	S-WEB-960-962
POST TENSIONING DETAILS	S-WEB-965-966
R.C. STAIR DETAILS	S-WEB-970
MASONRY DETAILS	S-WEB-980-981
STEEL DETAILS	S-WEB-990-991

# **ISSUED FOR TENDER**

Status STRUCTURAL DRAWING GINEERING MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T: +61 3 9614 7155 SYDNEY OFFICE: SUITE 301, LEVEL 3, 19A BOUNDARY STREET RUSHCUTTERS BAY, NSW, AUSTRALIA 2011 T: +61 2 9690 2488 TAYLOR LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM, NSW 2170 CORE KEY PLANS

DATE	DESIGNED BY	CHECKED BY	
NOV 2020	MA/BT	AC	
SCALES AT A1	DRAWN BY	APPROVED BY	
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![](_page_83_Figure_0.jpeg)

![](_page_83_Figure_1.jpeg)

			ALL RIGHT RESERVED. TH THE PROPERTY OF WEBB WORK SHALL BE REPROD MEANS (GRAPHIC, ELECTF PHOTOCOPYING, RECORD SYSTEMS) WITHOUT THE LTD.	HIS WORK IS COF ER DESIGN PTY DUCED OR COPIE RONIC OR MECH DING OR INFORM PERMISSION OI	Pyright A LTD. No F D In Any Anical, I Anical, F Webbef	and Remain Part of Thi Form or B Ncluding Trieval R Design Pt
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		ONCRETE C	OLUMNS	S-WEB-80	0-029	
		N-SITU WAL PRECAST WA	LS ILLS	S-WEB-82 S-WEB-88	0-879	
		LAB ON GRO	OUND DETAILS CONCRETE SLABS	S-WEB-95 S-WEB-96	0-951	
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![](_page_84_Figure_0.jpeg)

![](_page_84_Figure_1.jpeg)

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2	ISSUED FOR	TENDER (UPDATED)		MA/BT	PAC	18.12.20
3	ISSUED FOR	TENDER (UPDATED)		MA/BT	PAC	05.02.2
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![](_page_84_Figure_4.jpeg)

![](_page_84_Picture_5.jpeg)

![](_page_85_Figure_0.jpeg)

## <u>GROUND FLOOR - INSITU WALL KEY PLAN</u> SCALE: 1 : 200

![](_page_85_Figure_2.jpeg)

INSITU WALL SCHEDULE							
MARK	MARK WIDTH ffc (MPa) (kg/m <sup>3</sup> ) REMARKS						
W1	200	50	220	INSITU CONCRETE WALL			
W2	250	40	180	INSITU CONCRETE WALL			

## **IN-SITU WALL REINFORCEMENT & CONCRETE NOTES:**

1. ALL SERVICES PENETRATION TO BE COORDINATED AND APPROVED BY WEBBER DESIGN. 2. CONTRACTOR SHALL ALLOW FOR CONSTRUCTION JOINT AS REQUIRED.

3. PROVIDE 25mm CLEAR COVER TO CORE WALL REINFORCEMENT (U.N.O.).

4. WHERE BARS OF DIFFERENT DIAMETERS ARE SPLICED, USE THE SPLICE OF THE LARGER BAR DIAMETER. 5. FOR WALLS WITH BARS ANCHORED OR SPLICED AT LESS THAN 150 CTS. MULTIPLY THE ABOVE LENGTHS BY 1.4 6. UNLESS SHOWN ON DRAWINGS, THE SPLICE LOCATIONS MUST BE APPROVED BY THE ENGINEER.

7. IF BARS HAVE STANDARD COGS AT THE ENDS, HALVE THE ABOVE LENGTHS. 8. N36 AND N40 BARS IN TENSION ARE NOT TO BE SPLICED.

NOTES:-CO-ORDINATE ALL PENETRATION SIZES AND LOCATIONS WITH SERVICES CONSULTANTS. NO PENETRATION TO BE INCREASED IN SIZE OR MOVED WITHOUT THE WRITTEN AGREEMENT OF WEBBER DESIGN PTY. LTD.

ANCHORAGE AND SPLICE LENGTH FOR INSITU/PRECAST WALLS UNO.					
600					
800					
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1400					
1400 (COMPRESSION SPLICE)					
45 BAR DIA.					

# LEVEL 1 - INSITU WALL KEY PLAN (LEVELS 2-5 SIMILAR)

R	ALL THE WO MEA PHC SYS LTD
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STEEL DETAILS

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**2** 

L RIGHT RESERVED. THIS WORK IS COPYRIGHT AND REMAINS E PROPERTY OF WEBBER DESIGN PTY LTD. NO PART OF THIS ORK SHALL BE REPRODUCED OR COPIED IN ANY FORM OR BY EANS (GRAPHIC, ELECTRONIC OR MECHANICAL, INCLUDING HOTOCOPYING, RECORDING OR INFORMATION RETRIEVAL YSTEMS) WITHOUT THE PERMISSION OF WEBBER DESIGN PT

S-WEB-990-991

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS							
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	.C. STAIR DETAILS	S-V	VEB-97	0		13	
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# **ISSUED FOR TENDER**

## STRUCTURAL DRAWING

![](_page_85_Picture_21.jpeg)

# LAHC WARWICK FARM 11-13 MANNIX PARADE, WARWICK FARM, NSW 2170

# IN-SITU WALL KEY PLANS & ELEVATION

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![](_page_86_Figure_0.jpeg)

![](_page_87_Figure_0.jpeg)

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2N16 TOP
N12-200 HORIZONTAL EACH FACE
N12-200 VERTICAL EACH FACE
ALTERNATIVELY DRILL & EPOXY VERTICAL BARS. 120 MIN. EMBEDMENT
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![](_page_88_Figure_1.jpeg)

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![](_page_90_Figure_1.jpeg)

TYPICAL PIT/SUMP/GRATED TRENCH DETAIL SCALE 1:20

![](_page_90_Figure_5.jpeg)

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AR SIZE	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700	PRAGE AND SPLIC DN BARS IN BEAD Omm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650	CE LENGTHS OF MS AND SLABS MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900	mm OF CONCRETE IZONTAL BAR TE GRADE >=32 MPa 500 600 800		ISSUED FOR Status STRUCTURAL	R TENDE	ER
AR SIZE          N10         N12         N16         N20	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900	PRAGE AND SPLIC         ON BARS IN BEAD         Omm OF CONCRETE         RIZONTAL BAR         ETE GRADE         400         450         650         800	CE LENGTHS OF MS AND SLABS MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200	nm OF CONCRETE IZONTAL BARTE GRADE>=32 MPa $500$ $600$ $800$ $1100$		ISSUED FOR Status STRUCTURAL		ER
BAR SIZE N10 N12 N16 N20 N24	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100	PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE   >=32 MPa   400   450   650   800   1000	CE LENGTHS OF MS AND SLABS MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550	$\frac{1000}{1300}$		STRUCTURAL STRUCTURAL		ER
AR SIZE N10 N12 N16 N20 N24 N28	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250	PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE   >=32 MPa   400   450   650   800   1000   1100	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750	mm OF CONCRETE IZONTAL BARTE GRADE>=32 MPa $500$ $600$ $800$ $1100$ $1300$ $1600$		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL E BELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET	R TENDE	ER E R I N
AR SIZE N10 N12 N16 N20 N24 N28 N32	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600	PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE   >=32 MPa   400   450   650   800   1000   1100   1400	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1200 1550 1750 2100	mm OF CONCRETE IZONTAL BARTE GRADE $>=32$ MPa5006008001100130016001850		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL ENCLOSTREET MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 3, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 3, 31 QUEEN STREET MELBOURNE STREET MELBOURN	R TENDE	ER ERIN BOUNDARY STRE
AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE   >=32 MPa   400   450   650   800   1000   1100   1400   1700	CE LENGTHS OF         MORE THAN 3000         BELOW HOR         CONCRE         25 MPa         500         650         900         1200         1550         1750         2100         2600	mm OF CONCRETE         ZONTAL BAR         TE GRADE         >=32 MPa         500         600         800         1100         1300         1600         1850         2200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL EVEL 2, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T: +61 3 9614 7155	R TENDE	ER BOUNDARY STRE W, AUSTRALIA 201
AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         DTES:	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	$   \begin{array}{r} PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE                                     $	CE LENGTHS OF         MORE THAN 3000         BELOW HOR         CONCRE         25 MPa         500         650         900         1200         1550         1750         2100         2600	mm OF CONCRETE IZONTAL BARTE GRADE>=32 MPa $500$ $600$ $800$ $1100$ $1300$ $1850$ $2200$		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL ELEVEL 31 QUENT STRUCTURAL E MELBOURNE OFFICE: LEVEL 31 QUENT STREET MELBOURNE OFFICE: LEVEL 31 QUENT STREET MELBOURNE VIC, AUSTRALIA 3000 T: +61 3 9614 7155 CLIENT	R TENDE	ER BOUNDARY STRE W, AUSTRALIA 201
BAR SIZE          N10         N12         N16         N20         N24         N28         N32         N36	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC DN BARS IN BEAD Dmm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2600	mm OF CONCRETE IZONTAL BARTE GRADE $>=32$ MPa50060060080011001300160018502200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL EVEL2.31 QUEEN STRET MELBOURNE, VIC, AUSTRALIA 3000 T: +61 3 9614 7155 CLIENT	R TENDE DRAWING DRAWING	ERIN BOUINDARY STRE
BAR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         OTES:         THESE LENGTH         THESE LENGTH         THESE ON THE	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC DN BARS IN BEAD Dmm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1100 2 8EAMS AND SLABS. REINFORCEMENT BARS ARE TO SS-WEB-001	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1200 1200 1200 1200 2100 2600	mm OF CONCRETE         ZONTAL BAR         TE GRADE         >=32 MPa         500         600         800         1100         1300         1600         1850         2200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRU	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A SUSHCUTTERS BAY, NS T: +61 2 9690 2488	ER BOUNDARY STRE SW, AUSTRALIA 201
BAR SIZE N10 N12 N16 N20 N24 N28 N32 N36 DTES: THESE LENGTH THE MINIMUM NOTES ON THE THE MINIMUM FOR ALL SLABS	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC   DN BARS IN BEAD   Dmm OF CONCRETE   RIZONTAL BAR   ETE GRADE   >=32 MPa   400   450   650   800   1000   1100   1400   1700   2   BEAMS AND SLABS.   REINFORCEMENT BARS ARE TO SS-WEB-001.   BARS MUST BE GREATER THAN   150mm CENTRES TO BE ANCHORS	DE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAG	mm OF CONCRETE IZONTAL BARTE GRADE>=32 MPa $500$ $600$ $800$ $1100$ $1300$ $1600$ $1850$ $2200$ E REINFORCEMENT R. EE AND SPLICE LENGTHS		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A SUSHCUTTERS BAY, NS F: +61 2 9690 2488 OR OR	ERIN BOUNDARY STRE W, AUSTRALIA 201
AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         OTES:         THESE LENGTH         THE MINIMUM         NOTES ON THE         THE MINIMUM         FOR ALL SLABS         NOTED ABOVE         UNI FSS SHOW	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC DN BARS IN BEAD Omm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 2 BEAMS AND SLABS. REINFORCEMENT BARS ARE TO SS-WEB-001 BARS MUST BE GREATER THAN 150mm CENTRES TO BE ANCHO 4.	CE LENGTHS OF MS AND SLABS MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1200 1200 1200 1200 1200 1200	mm OF CONCRETE IZONTAL BAR TE GRADE >=32 MPa 500 600 800 1100 1300 1600 1850 2200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL EVEL2,31 QUEN STREET MELBOURNE OFFICE: LEVEL2,31 QUEN STREET MELBOURNE VIC, AUSTRALIA 3000 T: +61 3 9614 7155 CLIENT TAYL	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A SUSHCUTTERS BAY, NS F: +61 2 9690 2488 OR OR	ER ERIN BOUNDARY STRE W, AUSTRALIA 201
AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         DTES:         THESE LENGTH         THESE LENGTH         THE MINIMUM         NOTES ON THE         THE MINIMUM         FOR ALL SLABS         NOTED ABOVE         UNLESS SHOW         IF BARS HAVE S	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000	PRAGE AND SPLIC DN BARS IN BEAT Dmm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1000 1100 1000 1100 1000 1100 1000 1000 1100 1000 1100 1000 1100 1000 1100 1100 1000 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100	CE LENGTHS OF MORE THAN 300 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2100 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAC	mm OF CONCRETE IZONTAL BAR TE GRADE >=32 MPa 500 600 800 1100 1300 1600 1850 2200 E REINFORCEMENT R. E AND SPLICE LENGTHS		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL ENCLOYNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T: H01 3014 7155 CLIENT TAYL	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A SUSHCUTTERS BAY, NS SUSHCUTTERS BAY, NS SUSHCUTTE	ERIN BOUNDARY STRE W, AUSTRALIA 201
AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         DTES:         THESE LENGTH         THESE LENGTH         THE MINIMUM         NOTES ON THE         THE MINIMUM         FOR ALL SLABS         NOTED ABOVE         UNLESS SHOW         IF BARS HAVE S         N40 AND N50         FOR PLAIN BAF	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000 1100 1250 1600 2000	PRAGE AND SPLIC DN BARS IN BEAD Dmm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1100 110	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2100 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAG	mm OF CONCRETE   ZONTAL BAR   TE GRADE   >=32 MPa   500   600   800   1100   1300   1600   1850   2200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRU	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A SUSHCUTTERS BAY, NS SUSHCUTTERS BAY, NS SUSHCUTTERS BAY, NS COR OR /ICK FAF IX PARA V, NSW	ERIN BOUNDARY STRE BOUNDARY STRE W, AUSTRALIA 201
BAR SIZE N10 N12 N16 N20 N24 N28 N32 N36 DTES: THESE LENGTH THE MINIMUM NOTES ON THE THE MINIMUM FOR ALL SLABS NOTED ABOVE UNLESS SHOW IF BARS HAVE S NOTED ABOVE IF BARS HAVE S	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000 is APPLY FOR ALL BARS IN F CONCRETE COVER TO ALL 1250 1600 2000 is APPLY FOR ALL BARS IN F CONCRETE COVER TO ALL GENERAL NOTES DRAWING CLEAR SPACING BETWEEN GENERAL NOTES DRAWING CLEAR SPACING BETWEEN S WITH BARS AT LESS THAN MUST BE MULTIPLIED BY 1. NON THE DRAWINGS, THE STANDARD COGS AT THE EN BARS IN TENSION ARE NOT R PLAIN BARS MUST BE AND GE LENGTH OF HARD DRAW	PRAGE AND SPLIC DN BARS IN BEAD Dmm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1100 110	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAGE PROVED BY WEBBER DESIGN. TED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN. TED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN.	mm OF CONCRETE IZONTAL BAR TE GRADE >=32 MPa 500 600 800 1100 1300 1100 1300 1600 1850 2200 E REINFORCEMENT R. BUT NOT LESS THAN		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL CLENT TAYL PROJECT LAHC WARW 11-13 MANN WARWICK FARI	R TENDE DRAWING DRAWING N G I N E SUTE 301, LEVEL 3, 19A USHCUTTERS BAY, NS F: +61 2 9690 2488 OR OR /ICK FAF IX PARA V, NSW	ERIN BOUNDARY STRE W, AUSTRALIA 201 RM DE, 2170 SI AR
BAR SIZE N10 N12 N16 N20 N24 N28 N32 N36 DTES: THESE LENGTH THE MINIMUM NOTES ON THE THE MINIMUM FOR ALL SLABS NOTED ABOVE UNLESS SHOW IF BARS HAVE S NOTED ABOVE IF BARS HAVE S NOTED ABOVE IF BARS HAVE S NOTED ABO	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000 85 APPLY FOR ALL BARS IN E CONCRETE COVER TO ALL F GENERAL NOTES DRAWING CLEAR SPACING BETWEEN GENERAL NOTES DRAWING CLEAR SPACING BETWEEN S WITH BARS AT LESS THAN MUST BE MULTIPLIED BY 1. NON THE DRAWINGS, THE STANDARD COGS AT THE EN BARS IN TENSION ARE NOT RS USED AS LIGATURES OR R PLAIN BARS MUST BE AND GE LENGTH OF HARD DRAW	PRAGE AND SPLIC ON BARS IN BEAD Omm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1000 1100 1000 1100 1000 1100 1000 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 10	CE LENGTHS OF MORE THAN 3000 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1550 1750 2100 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAG PROVED BY WEBBER DESIGN. TED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN. TED ABOVE CAN BE HALVED. PROVED BY THE ENGINEER. SHALL BE 40 BAR DIAMETERS OK OR COG.	mm OF CONCRETE   ZONTAL BAR   TE GRADE   >=32 MPa   500   600   800   1100   1300   1600   1850   2200		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRU	R TENDE DRAWING DRAWING N G I N E SYDNEY OFFICE: SUTT 301, LEVEL 3, 19A SUTT 301, LEVEL 301, LEVEL 301, LEVEL 301,	ERIN BOUNDARY STRE W, AUSTRALIA 201 RM DE, 2170 SLAB
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AR SIZE          N10         N12         N16         N20         N24         N28         N32         N36         OTES:         THESE LENGTH         THESE LENGTH         THE MINIMUM         NOTED ABOVE         UNLESS SHOW         IF BARS HAVE S         N40 AND N50         FOR PLAIN BAF         300mm. OTHEF         THE ANCHORAGE	ANCHO TENSIC LESS THAN 300 BELOW HOP CONCRE 25 MPa 400 500 700 900 1100 1250 1600 2000 85 APPLY FOR ALL BARS IN F CONCRETE COVER TO ALL F GENERAL NOTES DRAWING CLEAR SPACING BETWEEN GENERAL NOTES DRAWING CLEAR SPACING BETWEEN S WITH BARS AT LESS THAN MUST BE MULTIPLIED BY 1. N ON THE DRAWINGS, THE STANDARD COGS AT THE EN BARS IN TENSION ARE NOT RS USED AS LIGATURES OR R PLAIN BARS MUST BE AND GE LENGTH OF HARD DRAW	PRAGE AND SPLIC DN BARS IN BEAD Omm OF CONCRETE RIZONTAL BAR ETE GRADE >=32 MPa 400 450 650 800 1000 1100 1100 1100 1100 1100 110	CE LENGTHS OF MORE THAN 300 BELOW HOR CONCRE 25 MPa 500 650 900 1200 1200 1200 1200 1200 2600 BE IN ACCORDANCE WITH THE TWICE THE COVER TO THE BA ORED OR SPLICED, ANCHORAC PROVED BY WEBBER DESIGN. FED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN. FED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN. FED ABOVE CAN BE HALVED. PROVED BY WEBBER DESIGN.	mm OF CONCRETE IZONTAL BAR TE GRADE >=32 MPa 500 600 800 1100 1300 1600 1850 2200 E REINFORCEMENT R. BUT NOT LESS THAN		ISSUED FOR Status STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL ELEVEL2,31 QUEEN STREET MELBOURNE OFFICE: LEVEL2,31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T. + 61 3 9614 7155 CLIENT TAYL PROJECT LAHC WARWA 11-13 MANN WARWICK FARI TYPICAL SUSPI DETAILS - ST NOV 2020 MA/BT	R TENDE DRAWING DRAWING N G I N E SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFICE: SUPPOFFI	ER ERIN BOUNDARY STRE BOUNDARY STRE SW, AUSTRALIA 201 RM DE, 2170 SLAB 3
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![](_page_94_Figure_0.jpeg)

![](_page_95_Figure_0.jpeg)

<u>PLAN VIEW</u>

## TYPICAL INTERNAL STRESSING POCKET SCALE 1:10

1. REFER TO PLAN FOR ADDITIONAL REINFORCEMENT.

![](_page_95_Figure_4.jpeg)

# TYPICAL LIVE END BLOCK REINFORCEMENT

![](_page_95_Figure_6.jpeg)

![](_page_95_Figure_7.jpeg)

# TYPICAL DEAD END BLOCK REINFORCEMENT

![](_page_95_Figure_9.jpeg)

6 7 8 9 10 \_\_\_\_\_ | \_\_\_ |

SECTION 1-1

![](_page_95_Figure_17.jpeg)

	ALL RIGHT RESERVED. T THE PROPERTY OF WEBI WORK SHALL BE REPRO MEANS (GRAPHIC, ELECT PHOTOCOPYING, RECOR SYSTEMS) WITHOUT TH LTD	HIS WORK IS COPYRIGHT AND REMAINS BER DESIGN PTY LTD. NO PART OF THIS DUCED OR COPIED IN ANY FORM OR BY IRONIC OR MECHANICAL, INCLUDING DING OR INFORMATION RETRIEVAL E PERMISSION OF WEBBER DESIGN PTY
	DO NOT SCALE DRAWINGS. USE	FIGURED DIMENSIONS
	Rev. Description	Eng. Draft. Date
	1 ISSUED FOR TENDER (DRAFT) 2 ISSUED FOR TENDER (UPDATED)	MA/BT PAC 27.11.20
	2 ISSUED FOR TENDER (UPDATED)	
		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	DRAWING REFERENCE	REFERENCE No.
	CRAWING INDEX	S-WEB-000 S-WEB-001-002
	RETENTION CONCRETE COLUMNS	S-WEB-010-029 S-WEB-800-819
2	IN-SITU WALLS	S-WEB-820-879
<u> </u>	SLAB ON GROUND DETAILS SUSPENDED CONCRETE SLABS	S-WEB-950-951 S-WEB-960-962
	POST TENSIONING DETAILS	S-WEB-965-966
		S-WEB-980-981
	PURPOSES ONLY. SUB-CONTRAT THEIR OWN SUSPENDED SLAB TO WEBBER DESIGN FOR REVIE PRIOR TO CONSTRUCTION ONSI	CTOR TO PROVIDE TYPICAL DETAILS W AND APPROVAL TE.
	ISSUED FOR Status STRUCTURAL I	<b>TENDER</b> DRAWING
	STRUCTURAL E MELBOURNE OFFICE: LEVEL 2, 31 QUEEN STREET MELBOURNE, VIC, AUSTRALIA 3000 T: +61 3 9614 7155 CLIENT	NGINEERING DNEY OFFICE: ITE 301, LEVEL 3, 19A BOUNDARY STREET SHCUTTERS BAY, NSW, AUSTRALIA 2011 +61 2 9690 2488
	PROJECT	
	LAHC WARW 11-13 MANNI WARWICK FARM	ICK FARM X PARADE, 1, NSW 2170
	TYPICAL POST T DETAILS - S	ENSIONING HEET 2
	DATE DESIGNED BY CHEC NOV 2020 MA/BT SCALES AT A1 DRAWN BY APPF	CKED BY AC ROVED BY
	1:10 PAC	PW REV.
	20023 S-WEB-9	2

![](_page_96_Figure_0.jpeg)

- MAIN WIRES TO BE LOWER MOST WITH 20mm COVER TO TRAY FORMWORK. 4.
- LANDING REINFORCEMENT MUST NOT BE INTERRUPTED BY SIDES OF FLIGHTS CONTINUOUS INTO LANDING. 5.

STAIR THROAT THICKNESS (T) mm	STAIR LANDING THICKNESS (D) mm	MAXIMUM FLIGHT SPAN (L) mm	COMMENT
150	150	3200	-
160	160	3500	-
170	170	3800	-
180	180	4000	-
190	190	4300	-
200	200	4600	-
250	250	5600	-

## <u>NOTES</u>

1. MAXIMUM SPANS NOTED ABOVE FOR STAIR SLIGHTS ASSUME SPAN TO CENTRE LINES OF LANDINGS AND THAT LANDING SPANS

ACROSS TO THE ADJACENT LOAD BEARING WALLS (ie WALLS THAT RUN PARALLEL TO STAIR FLIGHTS). 2. DESIGN LOADING FOR STAIRS = 4.0 kPa LIVE LOAD.

4. REFER TO PLANS FOR LOCATIONS.

SECTION 1-1

		WORK SHALL BE RI MEANS (GRAPHIC, I PHOTOCOPYING, RI SYSTEMS) WITHOL LTD.	EPRODUCED ELECTRONIC ECORDING OI IT THE PERM	OR COPIE OR MECH R INFORM ISSION OI	d in Any Anical, I Ation Re Webber	Form or by NCLUDING TRIEVAL R DESIGN PTY
	DO NOT SCA Rev. 1 ISSUED FOF	LE DRAWINGS, Description R TENDER (DRAFT)	USE FIGU	JRED D Eng. MA/BT	DIMENS Draft. PAC	Date 27.11.20
	2 ISSUED FOR	R TENDER (UPDATE	D)	MA/BT	PAC	18.12.20
	DRAWING IN DRAWING IN GENERAL NO	G REFERENC IDEX DTES	CE RE S-V S-V S-V	FERE VEB-00 VEB-00 VEB-01	0 1-002 0-029	No. 5
2	CONCRETE C IN-SITU WAL PRECAST WA SLAB ON GR SUSPENDED	COLUMNS LS ALLS OUND DETAILS CONCRETE SLA	S-V S-V S-V BS S-V S-V	VEB-80 VEB-82 VEB-88 VEB-95 VEB-96 VEB-96	0-819 0-879 0-909 0-951 0-962 5-966	
	A R.C. STAIR D MASONRY D STEEL DETAI	DETAILS ETAILS ILS	S-V S-V S-V	VEB-90 VEB-97 VEB-98 VEB-99	0-981 0-991	
	ISS	SUED FC	R TE	END	ER	
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	STRUC MELBOURNE OFFICE: LEVEL 2, 31 QUEEN S' MELBOURNE, VIC, AU T: +61 3 9614 7155 CLIENT	T U R A L TREET STRALIA 3000	ENG SUITE 301, RUSHCUTT T: +61 2 969	IN EFICE: LEVEL 3, 1 ERS BAY, 90 2488	E E R 9A BOUNE NSW, AUS	ING
		TAY	LOR			
	PROJECT LAF 11-1 WARM	HC WARY 13 MANI /ICK FAF	WICH NIX F	K FA PAR	ADE	 <u>=</u> ,   70
		C. STAIR	DET ET 1	AIL	s -	
	DATE NOV 2020	DESIGNED BY MA/BT	CHECKED BY	AC	;	
	SCALES AT A1 1:20	DRAWN BY PAC	APPROVED B	Y PV	V	
	JOB No. 20023	DRAWING No.	B-970		REV.	2

ALL RIGHT RESERVED. THIS WORK IS COPYRIGHT AND REMAINS THE PROPERTY OF WEBBER DESIGN PTY LTD. NO PART OF THIS

![](_page_97_Figure_0.jpeg)

7 8 9 10

![](_page_98_Figure_0.jpeg)

2700	3000
0x100x6.0 EA	100x100x6.0 EA
0x100x6.0 EA	150x90x8.0 UA
0x90x8.0 UA	150x90x8.0 UA
0x90x8.0 UA	150x90x8.0 UA
0x90x8.0 UA	150x100x10.0 UA
x100x10.0 UA	

LOCATION OF FENCES ARE APPROXIMATE ONLY ONLY VISIBLE SERVICES HAVE BEEN LOCATED ACCURATELY NO UNDERGROUND SERVICES SEARCH HAS BEEN CARRIED OUT

![](_page_99_Figure_1.jpeg)

# BOUNDARY DIMENSIONS AND AREAS ARE SUBJECT TO FINAL SURVEY

No.	DATE	NOTATION/AMENDMENT	No.	DATE	NOTATION/AMENDMENT		CONTOUR INTERVAL: 0.5m	
								DATUM: A.H.D
								ORIGIN OF DATUM: S.S.M
								14.738 SCIMS
								100 YEAR FLOOD RL:
				FILE		FILE SIZE (MB)	CHECKED BY	RECOMMENDED MINIMUM FLOOR RL:
								SOURCE OF FLOOD INFO:

m I.D. .M. 38840	LEGEND OF COMMONLY USED SYMBOLS WATER	REDUCTION RATIO         1         250 @ A1 500 @ A1           0         12.5         25	DATE OF SURVEY: 16 / 06 /2016 SURVEY CONSULTANT:	<b>NSW</b> Family & Community Services	LOCATION WARWICK FARM	
	ELECTRICITY       O/H       U/G       E       PP       Street       Consumer       Connection Box       E       Distribution         TELECOM       O/H       U/G       T       Pit       T       Distribution       Pillar       T         GAS      G       Valve       0       G       Pit       Pit       Pite	LAND TITLE INFORMATION LOT: 6, 7, 8, 9, 10, 14, 15, 24, 25, 26 & 27 PLAN NO : D.P. 36641	Degotardi Smith & Partners CONSULTING SURVEYORS ESTABLISHED 1957 1/19-23 Bidge Street   Pymble   NSW 2073   Australia L (+61) 2 9440 1100   L (+61) 2 9440 1055 e. survey@degotardi.com.au	DRAWING TITLE PROPOSED SUBDIVISION	STREET ADDRESS MANNIX PARADE, HINKLER AVENUE & MCGIRR PARADE	TYPE LUA
	- Main 525 dia BENCH MARK A SURVEY CONTROL MARK SSM	OTHER: AREA: TOTAL 6582.4m <sup>2</sup>	REGISTERED SURVEYOR PAUL GARRETT REF. 34441A01.DWG		JOB NUMBER BGMLG	SHT. 1 OF 1

PARADE

![](_page_99_Picture_6.jpeg)

![](_page_99_Picture_7.jpeg)

\$.7

MGA

![](_page_99_Picture_8.jpeg)

## L.G.A. OF LIVERPOOL

<b></b>		J	
LEGEND :		Notes:	λ
+36.41	- DENOTES SPOT LEVEL	TREE SIZES ARE ESTIMATES ONLY	$\wedge$
+36.41A	- DENOTES AWNING		
+33.27TK	- DENOTES TOP OF KERB LEVEL	CONTOURS ARE INDICATIVE ONLY. CONTOUR INTERVAL     0.5m.	
+30.12G	- DENOTES GUTTER FLOWLINE LEVEL		$\langle \mathcal{R} \rangle$
+30.17LIP	- DENOTES LIP OF KERB	ONLY VISIBLE SERVICES HAVE BEEN LOCATED IN THIS     SURVEY	KARA KARA KARA KARA KARA KARA KARA KARA
+37.76FL	- DENOTES FLOOR LEVEL	Solver.	LUJ
+30.17VFL	- DENOTES VERANDAH FLOOR LEVEL	SERVICE & UTILITIES SHOWN ON PLAN HAVE BEEN     LOCATED BY DHYSICAL EVIDENCE ON SITE SOME BITS MAX	۴
+37.76DFL	- DENOTES DECK FLOOR LEVEL	NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY.	
+33.15VC	- DENOTES VEHICLE CROSSING	NEITHER EXCAVATION NOR POTHOLING HAVE BEEN CARRIED	
+45.40GUT.	- DENOTES TOP OF GUTTER	SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE	<u> </u>
+41.92TW	- DENOTES TOP OF WALL	AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION.	T
+40.19BW	- DENOTES BOTTOM OF WALL	• LOT DIMENSIONS AND SITE AREA ARE TAKEN FROM THE	
+49.15RR	- DENOTES ROOF/RIDGE	TITLE DIAGRAM.	A.
VC	- DENOTES VEHICLE CROSSING	ALL DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ANY	
	- DENOTES GATE.	CONSTRUCTION.	8
۲	- DENOTES WATER STOP VALVE	• THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE LISE	$ \phi$
WM 🖸	- DENOTES WATER METER	OF NSW LAND AND HOUSING CORP.	
HY	- DENOTES WATER HYDRANT		
	- DENOTES WATER TAP	AND IS SHOWN TO TOPOGRAPHIC ACCURACIES. IF	
<u> </u>	- DENOTES SINGLE TELSTRA PIT	CLEARANCES TO BOUNDARIES OR OTHER FEATURES ARE	
	- DENOTES TELSTRA TWIN CONC. PIT	SURVEY MAY BE REQUIRED.	
$\Theta$	- DENOTES TELSTRA DISTRIB. PILLAR		
DP•	- DENOTES DOWN PIPE	BOUNDARIES HAVE BEEN DEFINED AS PART OF THIS     SURVEY	
	- DENOTES GRATED DRAIN.		
	- DENOTES DRAIN	ANY CONSTRUCTION ON OR NEAR BOUNDARIES WILL     REQUIRE FURTHER SURVEY IN ORDER THAT MARKS DEFINING	
PP O	- DENOTES POWER POLE	BOUNDARIES CAN BE PLACED.	
LP 🔆	- DENOTES LIGHT POLE		
(A)	- DENOTES BOUNDARY CORNER	• BEARING AND DISTANCES OF BOONDARIES ARE BY TITLE ONLY WITH BEARINGS RELATED TO M.G.A	
$\triangleleft$	- DENOTES PHOTO LOCATION		
Ρ	- DENOTES SIGN	• IF ACCURATE TRUE NORTH IS REQUIRED A FURTHER SURVEY WOULD BE NECESSARY.	
SMH	- DENOTES SEWER MANHOLE	• COPYRIGHT © DEGOTARDI SMITH & PARTNERS SURVEYORS	
	- DENOTES MAILBOX	2017.	
LH	- DENOTES LAMPHOLE	NO PART OF THIS SURVEY MAY BE REPRODUCED, STORED IN	
SIP	- DENOTES SEWER INSPECTION POINT	WITHOUT THE WRITTEN PERMISSION OF THE COPYRIGHT	
GAS	- DENOTES GAS METER	OWNER EXCEPT AS PERMITTED BY THE COPYRIGHT ACT 1968.	
——— E ———	- DENOTES OVERHEAD ELEC. LINE	ANY PERMITTED DOWNLOADING, ELECTRONIC STORAGE,	
w	- DENOTES WATER MAIN (DBYD)	DISPLAY, PRINT, COPY OR REPRODUCTION OF THIS SURVEY	
s	- DENOTES SEWER LINE (DBYD)	ORIGINAL SURVEY.	
G	- DENOTES GAS LINE (DBYD)		GRASS
т	- DENOTES TELSTRA LINE	THIS NUTICE MUST NOT BE ERASED.	
EU - EU -	- DENOTES U/G ELEC. LINE (DBYD)		×
	- DENOTES TELEPHONE LINE		* CONC.
D	- DENOTES DRAINAGE LINE		*
<b>—</b> c <b>—</b> c <b>—</b> c <b>—</b> c <b>—</b> c	- DENOTES COMMUNICATIONS		allo a
L			N. 12 3 3 1 1
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			N, N, 66, 0
			NV. NV. 53
			COA.
			-SIVC.
			N. N.
			w w w /

LOTS 6, 7, 8, 9, 10, 14, 15, 24, 25, 26 & 27 BOUNDARY CORNERS					
	M.G.A. COORDIN	ATES			
CORNER	EASTING	NORTHING			
Α	308708.103	6245611.961			
В	308776.985	6245617.303			
С	308780.058	6245613.973			
D	308766.486	6245527.875			
E	308766.331	6245512.318			
F	308768.031	6245506.464			
G	308716.532	6245509.742			
Н	308725.630	6245535.944			
I	308700.419	6245553.693			
J	308699.077	6245559.062			
K	308702.526	6245567.799			
L	308705.445	6245581.200			
М	308705.733	6245595.217			
N	308704.739	6245608.031			

36 D.P. 36641 GRASS

No.	DATE	NOTATION/AMENDMENT	No.	DATE	NOTATION/AMENDMENT		CONTOUR INTE	ERVAL: 0.	
1	DD/MM/YY	FINAL ISSUE						DATUM:	A.
								ORIGIN OF DAT	TUM: S.
								14.738	SCIMS
								100 YEAR FLOO	OD RL:
				FILE FILE SIZE (MB) CHECKED I		CHECKED BY	RECOMMENDE FLOOR RL:		
								SOURCE OF FL	OOD INFO:

![](_page_100_Figure_6.jpeg)

![](_page_101_Figure_0.jpeg)

	ONLY VISIB SURVEY.	BLE SERVICES HAVE BEEN	LOCATED IN THIS
	SERVICE & LOCATED BY NOT HAVE B NEITHER EXC OUT TO CON SHOULD BE AUTHORITY E	UTILITIES SHOWN ON PLA PHYSICAL EVIDENCE ON S EEN OPENED TO VERIFY T AVATION NOR POTHOLING FIRM UNDERGROUND LOCA CONFIRMED WITH THE RELI DURING DESIGN & PRIOR T	N HAVE BEEN SITE. SOME PITS MAY HE TYPE OF UTILITY. HAVE BEEN CARRIED TION. SERVICE DETAILS EVANT SERVICE O ANY CONSTRUCTION.
	LOT DIMENT TITLE DIAGRA	SIONS AND SITE AREA AR	E TAKEN FROM THE
	ALL DIMENS CONSTRUCTION	SIONS MUST BE VERIFIED	ON SITE PRIOR TO ANY
	• THIS PLAN OF NSW LAN	HAS BEEN PREPARED FO D AND HOUSING CORP.	R THE EXCLUSIVE USE
	THE POSITI AND IS SHOW CLEARANCES CRITICAL ANI SURVEY MAY	ION OF SURVEYED DATA H MN TO TOPOGRAPHIC ACCU TO BOUNDARIES OR OTHI D DIMENSIONS ARE NOT S BE REQUIRED.	AS BEEN LOCATED JRACIES. IF ER FEATURES ARE HOWN FURTHER
	• BOUNDARIE SURVEY.	S HAVE BEEN DEFINED AS	S PART OF THIS
- DENOTES SPOT LEVEL	ANY CONS REQUIRE FUR BOUNDARIES	TRUCTION ON OR NEAR BO RTHER SURVEY IN ORDER CAN BE PLACED.	DUNDARIES WILL THAT MARKS DEFINING
- DENOTES TOP OF KERB LEVEL - DENOTES GUTTER ELOWLINE LEVEL	• BEARING A ONLY WITH E	ND DISTANCES OF BOUND BEARINGS RELATED TO M.G	ARIES ARE BY TITLE A
- DENOTES LIP OF KERB - DENOTES FLOOR I FVFI	• IF ACCURA SURVEY WOU	TE TRUE NORTH IS REQUI	RED A FURTHER
- DENOTES VERANDAH FLOOR LEVEL	• COPYRIGHT 2017.	© DEGOTARDI SMITH & F	ARTNERS SURVEYORS
- DENOTES VEHICLE CROSSING - DENOTES TOP OF GUTTER - DENOTES TOP OF WALL	NO PART OF A RETRIEVAL WITHOUT THE OWNER EXCE	THIS SURVEY MAY BE RE SYSTEM OR TRANSMITTED WRITTEN PERMISSION OF PT AS PERMITTED BY THE	PRODUCED, STORED IN IN ANY FORM, THE COPYRIGHT COPYRIGHT ACT 1968.
- DENOTES BOTTOM OF WALL - DENOTES ROOF/RIDGE - DENOTES VEHICLE CROSSING	ANY PERMITI DISPLAY, PRI SHOULD CON ORIGINAL SUI	TED DOWNLOADING, ELECTF INT, COPY OR REPRODUCT ITAIN NO ALTERATION OR RVEY.	RONIC STORAGE, ION OF THIS SURVEY ADDITION TO THE
- DENOTES GATE. - DENOTES WATER STOP VALVE	THIS NOTICE	MUST NOT BE ERASED.	
- DENOTES WATER METER - DENOTES WATER HYDRANT			
- DENOTES WATER TAP - DENOTES SINGLE TELSTRA PIT	LOTS 6,	7, 8, 9, 10, 14,	15, 24, 25, 26
- DENOTES TELSTRA TWIN CONC. PIT - DENOTES TELSTRA DISTRIB. PILLAR	& 27	BOUNDARY	CORNERS
- DENOTES DOWN PIPE - DENOTES GRATED DRAIN		M.G.A. COORDIN	IATES
- DENOTES DRAIN	CORNER	EASTING	NORTHING
- DENOTES POWER POLE - DENOTES LIGHT POLE	A	308708.103	6245611.961
- DENOTES BOUNDARY CORNER	В	308776.985	6245617.303
- DENOTES PHOTO LOCATION	С	308780.058	6245613.973
DENOTES SIGN	D	308766.486	6245527.875
DENOTES SEWER MANHOLE	E	308766.331	6245512.318
	F	308768.031	6245506.464
	G	308716.532	6245509.742
DENOTES LAMPHOLE DENOTES SEWER INSPECTION POINT	-		0045505.044
DENOTES LAMPHOLE DENOTES SEWER INSPECTION POINT DENOTES GAS METER	Н	308725.630	6245535.944
DENOTES LAMPHOLE DENOTES SEWER INSPECTION POINT DENOTES GAS METER DENOTES OVERHEAD ELEC. LINE DENOTES WATER MAIN (DRYD)	H	308725.630 308700.419	6245535.944
DENOTES LAMPHOLE DENOTES SEWER INSPECTION POINT DENOTES GAS METER DENOTES OVERHEAD ELEC. LINE DENOTES WATER MAIN (DBYD) DENOTES SEWER LINE (DBYD)	H	308725.630 308700.419 308699.077	6245553.693 6245559.062
- DENOTES LAMPHOLE - DENOTES SEWER INSPECTION POINT - DENOTES GAS METER - DENOTES OVERHEAD ELEC. LINE - DENOTES WATER MAIN (DBYD) - DENOTES GAS LINE (DBYD) - DENOTES GAS LINE (DBYD)	H I J	308725.630 308700.419 308699.077	6245533.944 6245553.693 6245559.062
- DENOTES LAMPHOLE - DENOTES SEWER INSPECTION POINT - DENOTES GAS METER - DENOTES OVERHEAD ELEC. LINE - DENOTES WATER MAIN (DBYD) - DENOTES GAS LINE (DBYD) - DENOTES TELSTRA LINE - DENOTES TUG ELEC LINE (DBYD)	H I J K	308725.630 308700.419 308699.077 308702.526	62455335.944 6245553.693 6245559.062 6245567.799
<ul> <li>DENOTES LAMPHOLE</li> <li>DENOTES SEWER INSPECTION POINT</li> <li>DENOTES GAS METER</li> <li>DENOTES OVERHEAD ELEC. LINE</li> <li>DENOTES WATER MAIN (DBYD)</li> <li>DENOTES SEWER LINE (DBYD)</li> <li>DENOTES GAS LINE (DBYD)</li> <li>DENOTES TELSTRA LINE</li> <li>DENOTES U/G ELEC. LINE (DBYD)</li> <li>DENOTES TELEPHONE LINE</li> </ul>	H I J K L	308725.630 308700.419 308699.077 308702.526 308705.445	62455335.944           6245553.693           6245559.062           6245567.799           6245581.200
<ul> <li>DENOTES LAMPHOLE</li> <li>DENOTES SEWER INSPECTION POINT</li> <li>DENOTES GAS METER</li> <li>DENOTES OVERHEAD ELEC. LINE</li> <li>DENOTES WATER MAIN (DBYD)</li> <li>DENOTES SEWER LINE (DBYD)</li> <li>DENOTES GAS LINE (DBYD)</li> <li>DENOTES TELSTRA LINE</li> <li>DENOTES U/G ELEC. LINE (DBYD)</li> <li>DENOTES TELEPHONE LINE</li> <li>DENOTES DRAINAGE LINE</li> </ul>	H I J K L M	308725.630 308700.419 308699.077 308702.526 308705.445 308705.733	62455335.944           6245553.693           6245559.062           6245567.799           6245581.200           6245595.217

<u>Notes:</u>

• TREE SIZES ARE ESTIMATES ONLY

• CONTOURS ARE INDICATIVE ONLY. CONTOUR INTERVAL 0.5m.

\$Z

N.24 GUC

Family & Community Services	WARWICK FARM	
TAIL & LEVEL SURVEY	STREET ADDRESS 3-13 MANNIX PARADE, 2-6 HINKLER AVENUE & 2-4 MCGIRR PARADE	TYPE S
-	SITE LAYOUT JOB	SHT. 2
		OF 6

	y W						
No. DATE	NOTATION/AMENDMENT	No.	DATE	NOTATION/AME	NDMENT	CONTOUR INTER	RVAL: 0.5
1 DD/MM/YY	FINAL ISSUE					DATUM:	A.H
						ORIGIN OF DATU	JM: S.S
						14.738 S	CIMS
						100 YEAR FLOOI	D RL:
			FILE	FILE SIZE (MB)	CHECKED BY	RECOMMENDED	) MINIMUM
						SOURCE OF FLC	od info:

LOTS 6,	7, 8, 9, 10, 14,	15, 24, 25, 26
& 27	BOUNDARY C	ORNERS
	M.G.A. COORDIN	ATES
CORNER	EASTING	NORTHING
А	308708.103	6245611.961
В	308776.985	6245617.303
С	308780.058	6245613.973
D	308766.486	6245527.875
Е	308766.331	6245512.318
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L	308705.445	6245581.200
М	308705.733	6245595.217
N	308704.739	6245608.031

ANY PERMITTED DOWNLOADING, ELECTRONIC STORAGE, DISPLAY, PRINT, COPY OR REPRODUCTION OF THIS SURVEY SHOULD CONTAIN NO ALTERATION OR ADDITION TO THE ORIGINAL SURVEY. THIS NOTICE MUST NOT BE ERASED.						
LOTS 6,	7, 8, 9, 10, 14,	15, 24, 25, 26				
& 27	BOUNDARY C	ORNERS				
	M.G.A. COORDIN	ATES				
CORNER EASTING NORTHING						
А	308708.103	6245611.961				
В	308776.985	6245617.303				
С	308780.058	6245613.973				
D	308766.486	6245527.875				
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Н	308725.630	6245535.944				
I	308700.419	6245553.693				
J	308699.077	6245559.062				
K	308702.526	6245567.799				

<ul> <li>THE POSITION OF SURVEYED DATA HAS BEEN LOCATED AND IS SHOWN TO TOPOGRAPHIC ACCURACIES. IF CLEARANCES TO BOUNDARIES OR OTHER FEATURES ARE CRITICAL AND DIMENSIONS ARE NOT SHOWN FURTHER SURVEY MAY BE REQUIRED.</li> <li>BOUNDARIES HAVE BEEN DEFINED AS PART OF THIS SURVEY.</li> </ul>	
• ANY CONSTRUCTION ON OR NEAR BOUNDARIES WILL REQUIRE FURTHER SURVEY IN ORDER THAT MARKS DEFINING BOUNDARIES CAN BE PLACED.	PP O
• BEARING AND DISTANCES OF BOUNDARIES ARE BY TITLE ONLY WITH BEARINGS RELATED TO M.G.A	
• IF ACCURATE TRUE NORTH IS REQUIRED A FURTHER SURVEY WOULD BE NECESSARY.	
$\bullet$ COPYRIGHT $@$ DEGOTARDI SMITH & PARTNERS SURVEYORS 2017.	SMH
NO PART OF THIS SURVEY MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM, WITHOUT THE WRITTEN PERMISSION OF THE COPYRIGHT OWNER EXCEPT AS PERMITTED BY THE COPYRIGHT ACT 1968.	LH () SIP (2) 645
ANY PERMITTED DOWNLOADING, ELECTRONIC STORAGE, DISPLAY, PRINT, COPY OR REPRODUCTION OF THIS SURVEY SHOULD CONTAIN NO ALTERATION OR ADDITION TO THE ORIGINAL SURVEY.	E W 
THIS NOTICE MUST NOT BE ERASED.	G T

LEGEND :	
+36.41	- DENOTES SPOT LEVEL
+36.41A	- DENOTES AWNING
+33.27TK	- DENOTES TOP OF KERB LEVEL
+30.12G	- DENOTES GUTTER FLOWLINE LEVEL
+30.17LIP	- DENOTES ELCOR LEVEL
+30.17VEL	- DENOTES VERANDAH FLOOR LEVEL
+37.76DFL	- DENOTES DECK FLOOR LEVEL
+33.15VC	- DENOTES VEHICLE CROSSING
+45.40GUT.	- DENOTES TOP OF GUTTER
+41.92TW	- DENOTES TOP OF WALL
+40.19BW	- DENOTES BOTTOM OF WALL
+49.15RR	- DENOTES ROOF/RIDGE
	- DENOTES GATE.
	- DENOTES WATER STOP VALVE
WM 🖸	- DENOTES WATER METER
HY	- DENOTES WATER HYDRANT
	- DENOTES WATER TAP
	- DENOTES SINGLE TELSTRA FIT
$\overline{\oplus}$	- DENOTES TELSTRA DISTRIB. PILLAR
DP•	- DENOTES DOWN PIPE
	- DENOTES GRATED DRAIN.
	- DENOTES DRAIN
	- DENOTES POWER POLE
A A	- DENOTES EIGHT FOLL
$\checkmark$	- DENOTES PHOTO LOCATION
	- DENOTES SIGN
	- DENOTES SEWER MANHOLE
	- DENOTES MAILBOX - DENOTES LAMPHOLE
SIP	- DENOTES SEWER INSPECTION POINT
GAS	- DENOTES GAS METER
E	- DENOTES OVERHEAD ELEC. LINE
w	- DENOTES WATER MAIN (DBYD)
s	- DENOTES SEWER LINE (DBYD)
G	- DENOTES GAS LINE (DBTD)
EU - EU -	- DENOTES U/G ELEC. LINE (DBYD)
- TEL - TEL -	- DENOTES TELEPHONE LINE
D	- DENOTES DRAINAGE LINE
	- DENOTES COMMUNICATIONS

![](_page_102_Picture_5.jpeg)

GRASS

14.74.701P

ADJOINS SHEET 5

![](_page_102_Picture_6.jpeg)

<u>Notes:</u>

• TREE SIZES ARE ESTIMATES ONLY

CONTOURS ARE INDICATIVE ONLY. CONTOUR INTERVAL
0.5m.

ONLY VISIBLE SERVICES HAVE BEEN LOCATED IN THIS SURVEY.

• SERVICE & UTILITIES SHOWN ON PLAN HAVE BEEN LOCATED BY PHYSICAL EVIDENCE ON SITE. SOME PITS MAY NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY. NEITHER EXCAVATION NOR POTHOLING HAVE BEEN CARRIED OUT TO CONFIRM UNDERGROUND LOCATION. SERVICE DETAILS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION.

• LOT DIMENSIONS AND SITE AREA ARE TAKEN FROM THE TITLE DIAGRAM.

• ALL DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ANY CONSTRUCTION.

• THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF NSW LAND AND HOUSING CORP.

37 D.P. 36641

10, 3, 3, 6 · ·

13:10 L.

<u></u> PP 🗶

NA. CO

14.23

KIMALER

, 22 ×

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![](_page_102_Figure_10.jpeg)

![](_page_103_Figure_0.jpeg)

# ADJOINS SHEET 2

<u>Notes:</u>

• TREE SIZES ARE ESTIMATES ONLY

![](_page_103_Figure_2.jpeg)

DENOTES SPOT LEVEL DENOTES AWNING DENOTES TOP OF KERB LEVEL DENOTES GUTTER FLOWLINE LEVEL DENOTES LIP OF KERB DENOTES FLOOR LEVEL DENOTES VERANDAH FLOOR LEVEL DENOTES VERANDAH FLOOR LEVEL DENOTES DECK FLOOR LEVEL DENOTES DECK FLOOR LEVEL DENOTES TOP OF GUTTER DENOTES TOP OF GUTTER DENOTES TOP OF WALL DENOTES BOTTOM OF WALL DENOTES BOTTOM OF WALL DENOTES ROOF/RIDGE DENOTES WATER STOP VALVE DENOTES WATER STOP VALVE DENOTES WATER METER DENOTES WATER METER DENOTES WATER TAP DENOTES SINGLE TELSTRA PIT DENOTES TELSTRA TWIN CONC. PIT DENOTES TELSTRA DISTRIB. PILLAR DENOTES DOWN PIPE DENOTES DOWN PIPE	
DENOTES SIGN	
JENOTES SEWER MANHOLE	
DENOTES MAILBOX DENOTES LAMPHOLE DENOTES SEWER INSPECTION POINT DENOTES GAS METER DENOTES OVERHEAD ELEC. LINE DENOTES WATER MAIN (DBYD)	
DENOTES SEWER LINE (DBYD)	
DENOTES GAS LINE (DBTD)	
DENOTES U/G ELEC. LINE (DBYD)	

<ul> <li>CONTOURS ARE INDICATIVE ONLY. CONTOUR INTERVAL 0.5m.</li> </ul>
ONLY VISIBLE SERVICES HAVE BEEN LOCATED IN THIS SURVEY.
• SERVICE & UTILITIES SHOWN ON PLAN HAVE BEEN LOCATED BY PHYSICAL EVIDENCE ON SITE. SOME PITS MAY NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY. NEITHER EXCAVATION NOR POTHOLING HAVE BEEN CARRIED OUT TO CONFIRM UNDERGROUND LOCATION. SERVICE DETAILS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION.
• LOT DIMENSIONS AND SITE AREA ARE TAKEN FROM THE TITLE DIAGRAM.
ALL DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ANY CONSTRUCTION.
• THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF NSW LAND AND HOUSING CORP.
• THE POSITION OF SURVEYED DATA HAS BEEN LOCATED AND IS SHOWN TO TOPOGRAPHIC ACCURACIES. IF CLEARANCES TO BOUNDARIES OR OTHER FEATURES ARE CRITICAL AND DIMENSIONS ARE NOT SHOWN FURTHER SURVEY MAY BE REQUIRED.
• BOUNDARIES HAVE BEEN DEFINED AS PART OF THIS SURVEY.
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THIS NOTICE MUST NOT BE ERASED.
LOTS 6, 7, 8, 9, 10, 14, 15, 24, 25, 26
& 27 BOUNDARY CORNERS
M.G.A. COORDINATES

CORNER	EASTING	NORTHING
А	308708.103	6245611.961
В	308776.985	6245617.303
С	308780.058	6245613.973
D	308766.486	6245527.875
Е	308766.331	6245512.318
F	308768.031	6245506.464
G	308716.532	6245509.742
Н	308725.630	6245535.944
Ι	308700.419	6245553.693
J	308699.077	6245559.062
К	308702.526	6245567.799
L	308705.445	6245581.200
М	308705.733	6245595.217
Ν	308704.739	6245608.031

	Family & Community Services	WARWICK FARM		NARWICK FARM		
TAIL & LEVEL SURVEY		STREET ADDRESS 3-13 MANNI 2-6 HINKLEF 2-4 MCGIRR	X PARADE, R AVENUE & PARADE		TYPE S	
		SITE	LAYOUT J	OB	SHT. 4	
			/ /		OF 6	

![](_page_104_Figure_0.jpeg)

No.	DATE	NOTATION/AMENDMENT	No.	DATE	NOTATION/AME	NDMENT		TERVAL: 0.
1	DD/MM/YY	FINAL ISSUE					DATUM:	A
							ORIGIN OF DA	ATUM: S
							14.738	SCIMS
							100 YEAR FLC	DOD RL:
			FILE		FILE SIZE (MB)	CHECKED BY	Y RECOMMENDED M FLOOR RL:	
							SOURCE OF F	FLOOD INFC

![](_page_105_Figure_0.jpeg)

![](_page_105_Figure_2.jpeg)

- DENOTES SPOT LEVEL - DENOTES AWNING - DENOTES TOP OF KERB LEVEL - DENOTES GUTTER FLOWLINE LEVE - DENOTES LIP OF KERB - DENOTES FLOOR LEVEL	ΞL
<ul> <li>DENOTES VERANDAH FLOOR LEVE</li> <li>DENOTES DECK FLOOR LEVEL</li> <li>DENOTES VEHICLE CROSSING</li> <li>DENOTES TOP OF GUTTER</li> <li>DENOTES TOP OF WALL</li> <li>DENOTES BOTTOM OF WALL</li> <li>DENOTES ROOF/RIDGE</li> <li>DENOTES VEHICLE CROSSING</li> <li>DENOTES WATER STOP VALVE</li> <li>DENOTES WATER STOP VALVE</li> <li>DENOTES WATER METER</li> <li>DENOTES WATER HYDRANT</li> <li>DENOTES SINGLE TELSTRA PIT</li> <li>DENOTES TELSTRA DISTRIB. PILLA</li> <li>DENOTES DOWN PIPE</li> <li>DENOTES DRAIN</li> <li>DENOTES DRAIN</li> <li>DENOTES LIGHT POLE</li> <li>DENOTES BOUNDARY CORNER</li> <li>DENOTES PHOTO LOCATION</li> </ul>	IT R
<ul> <li>DENOTES SIGN</li> <li>DENOTES SEWER MANHOLE</li> <li>DENOTES MAILBOX</li> <li>DENOTES LAMPHOLE</li> <li>DENOTES SEWER INSPECTION PO</li> <li>DENOTES GAS METER</li> <li>DENOTES OVERHEAD ELEC. LINE</li> <li>DENOTES WATER MAIN (DBYD)</li> <li>DENOTES GAS LINE (DBYD)</li> <li>DENOTES TELSTRA LINE</li> </ul>	INT

• TREE SIZES	S ARE ESTIMATES ONLY												
CONTOURS     0.5m.	ARE INDICATIVE ONLY. CON	ITOUR INTERVAL											
• ONLY VISIE SURVEY.	BLE SERVICES HAVE BEEN L	OCATED IN THIS											
SERVICE & LOCATED BY NOT HAVE B NEITHER EXC OUT TO CON SHOULD BE AUTHORITY [	SERVICE & UTILITES SHOWN ON PLAN HAVE BEEN LOCATED BY PHYSICAL EVIDENCE ON SITE. SOME PITS MAY NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY. NEITHER EXCAVATION NOR POTHOLING HAVE BEEN CARRIED OUT TO CONFIRM UNDERGROUND LOCATION. SERVICE DETAILS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN & PRIOR TO ANY CONSTRUCTION.												
LOT DIMEN TITLE DIAGRA	SIONS AND SITE AREA ARE AM.	TAKEN FROM THE											
• ALL DIMENSIONS MUST BE VERIFIED ON SITE PRIOR TO ANY CONSTRUCTION.													
• THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF NSW LAND AND HOUSING CORP.													
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THIS NOTICE	MUST NOT BE ERASED.												
LOTS 6, & 27	7, 8, 9, 10, 14, BOUNDARY C	15, 24, 25, 26 ORNERS											
	M.G.A. COORDIN	ATES											
CORNER	EASTING	NORTHING											
A	308708.103	6245611.961											
В	308776.985	6245617.303											
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J	308699.077	6245559.062
К	308702.526	6245567.799
L	308705.445	6245581.200
М	308705.733	6245595.217
N	200704 720	0045000.004

Appendix C – Tables of Investigation Results

### Table 1: Soil Analytical Results

Sample ID	Depth of Sample (mBGL)	Sampling Date	Heavy Metals								PAHs				втех				TRHs						То	Asbestos			
			As	Cd	Cr*	Cu	РЬ	Hg	Ni	Zn	Carcinogenic PAHs (as B(α)P TEQ)	Benzo(α)pyre ne	Naphthalene	Total PAHs	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1 less BTEX	F2 less Naphth.	F3	F4	OCPs	OPPs	tal PCBs	Visual (Presence / Absence)	Bonded (>7mm)	AF / FA (<7mm)	
(JK, 2020)	•										•				•				•										
BH1	0.0-0.1	26.03.21	18	0.4	19	21	48	<0.1	3	70	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	ND	ND	<0.1	Yes	0.0073	<0.001	
BH1	0.1-0.3	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.0046	<0.001	
BH2	0.0-0.2	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	-	-	
BH2	0.2-0.5	26.03.21	24	<0.4	25	8	20	<0.1	2	13	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	ND	ND	<0.1	Yes	0.0011	<0.001	
BH3	0.0-0.1	26.03.21	11	0.8	21	18	72	<0.1	4	98	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	ND	-	-	
BH3	0.5-0.6	26.03.21	10	<0.4	24	11	12	<0.1	2	5	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	ND	-	-	
BH4	0.0-0.15	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	-	-	
BH4	0.15-0.35	26.03.21	10	<0.4	22	7	18	<0.1	3	11	<0.5	<0.05	<1	0.07	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	ND	-	- 1	
BH5	0.0-0.15	26.03.21	10	<0.4	20	6	42	<0.1	3	28	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	NA	NA	NA	
BH5	0.18-0.3	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	<0.01	<0.001	
BH5	0.5-0.65	26.03.21	12	<0.04	25	6	14	<0.1	2	6	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	ND	-	-	
BH6	0.0-0.1	26.03.21	8	0.5	16	12	50	<0.1	4	64	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	ND	ND	<0.1	Yes	0.1369	0.0112	
BH6	0.12-0.3	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes	0.08	<0.001	
BH7	0.0-0.1	26.03.21	8	<0.04	17	19	75	<0.1	4	93	<0.5	<0.05	<1	<0.05	<0.2	<0.5	<1	<1	<25	<50	<100	<100	NA	NA	NA	ND	-	-	
BH7	0.1-0.4	26.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	-		
(El, 2021)											-				-				-										
TP1_0.2-0.3	0.2-0.3	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	<0.01	<0.001	
TP2_0.2-0.3	0.2-0.3	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes	<0.01	<0.001	
TP3_0.1-0.2	0.1-0.2	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	<0.01	<0.001	
TP4_0.1-0.2	0.1-0.2	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes	<0.01	0.007	
TP5_0.1-0.2	0.1-0.2	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	<0.01	<0.001	
TP6_0.2-0.3	0.2-0.3	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes	<0.01	0.004	
TP7_0.2-0.3	0.2-0.3	30.03.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	<0.01	<0.001	
Adopted Criteria																													
NEPM (2013) Health	Residential with Minimal Soil Access Land Use (HIL-B)		500	150	500 Cr(V1)	30,000	1,200	120	1,200	60,000	4			400									10		1				
investigation Levels (ThEs)	Public Open S	Space (HIL-C)	300	90	300	17,000	600	80	1,200	30,000	3			300															
	HSLA& B - low - high density	(0 m to <1 m BGL)											5		0.7	480	NL	110	50	280									
	residential	(1 m to <2 m BGL)											NL		1	NL	NL	310	90	NL								(	
	Soil texture classification	(2 m to <4 m BGL)											NL		2	NL	NL	NL	150	NL									
	-CLAY '	(4 m + BGL)											NL		3	NL	NL	NL	290	NL									
	HSL C - Recreational / Open	(0 m to <1 m BGL)											NL		NL	NL	NL	NL	NL	NL									
NEPM (2013) Health	Space	(1 m to <2 m BGL)											NL		NL	NL	NL	NL	NL	NL									
Screening Levels (HSLs)	Soil texture classification	(2 m to <4 m BGL)											NL		NL	NL	NL	NL	NL	NL								1	
	-CLAY '	(4 m + BGL)											NL		NL	NL	NL	NL	NL	NL								(	
	Asbestos	Bonded (%w/w)																								>		0.02	
	Recreational (HSL-C)	FA and AF (%w/w)																								>		0.001	
	Asbestos	Bonded (%w/w)																								>		0.04	
	Residential (HSL-B)	FA and AF (%w/w)																								>		0.001	
NEPM (2013) Ecological Criteria <sup>2</sup>	Urban Residential and P	ublic Open Space (B&C)	100		338 <sup>b</sup>	168	1,240		41	419		33 °	170		50	85	70	105	180	120	300 <sup>1</sup>	2,800	180 <sup>d</sup>						
NEPM (2013)	Fine grained <sup>1</sup>	Public Open Space (C)															1												
Management Limits	soil texture	Residential (B)																	700	1,000	3,500	10,000							
		(=)			undan mana mana da	undundundundundu da	rrementer Mille	arren ser	zertetetetetetetetetetetetetetetetetetet							suchunnen ander der der der der der der der der der	an a	rrchttenthenthenthenthenthenthenthenthenthe									sennan manta an		

Notes: All results are recorded in mg/kg, unless otherwise specified.

Highlighted yellow values indicates concentration exceeds human health criteria

NEPM 2013 'B' - Residential with minimal oportunities for soil access; inlcudes dwellings with fully and permenantly paved yard space such as high-rise buildings and apartments. Residential (B) Public Open Space (C) NEPM 2013 'C' - Public open space such as parks, playgrounds, playing fields, secondary schools and footpaths. Results are reported as total Chromium concentrations # NL 'Not Limiting' ND 'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection. NA 'Not Analysed' i.e. the sample was not analysed. F1 TRH C6-C10 less the sum concentration of BTEX. F2 TRH  $C_{>10}$ - $C_{16}$  less the concentration of Naphthalene. TRH C<sub>>16</sub>-C<sub>34</sub> F3 F4 TRH C>34-C40 Fine grained soil values were applied as the most conservative material type. 1 2 Site specific EILs/ESLs were derived using the methodology prescribed by NEPM (2013). See Table 1A for details. Values are for Cr (V) а b Values are for Cr (III) Value derived from CRC Care Report No. 39, Table 11. С d Value shown is for DDT Value shown is for Chlorpyrifos е

## E25074.E06 - Warwick Farm

![](_page_107_Picture_6.jpeg)
Table 2 – Summary	of Groundwater	Investigation	Results 11.1	3 Mannix Parade	Warwick Farm NSW
		investigation i		o manning i araac	

		Heavy Metals								BTEX					VO	)Cs	TRHs				PAHs			
Sample Identification GM	GME date	As	Cd	Cr	Cu	Pb	Ni	Zn	Hg	Benzene	Toluene	Ethylbenzene	o-xylene	m/p-xylene	p-isopropyttoluene	Total VOCs	F1*	F2**	F3 (>C <sub>16</sub> -C <sub>34</sub> )	F4 (>C <sub>34</sub> -C <sub>40</sub> )	Total PAHs	Benzo(a) pyrene	Naphthalene	Phenol
El Australia (2019)													•											
GW_BH1M-1		3	0.5	2	24	3	170	2700	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.5	0.03
GW_BH2M-1	1/4/2021	<1	0.5	<1	12	<1	81	4800	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.5	<0.01
GW_BH3M-1		7	0.6	1	18	1	360	2100	<0.1	<0.5	<0.5	<0.5	<0.5	<1	1.8	<10	<50	800	<500	<500	<1	<0.1	<0.5	0.01
GIL <sup>4</sup> (Marine) NR 0.7 <sup>-3</sup> 27(Cr III) <sup>-1</sup> 1.3 4.4 7 15 <sup>-2</sup> 0.1 <sup>-3</sup>				0.1 <sup>3</sup>	500 <sup>2</sup>	NR	NR	NR	NR									50 <sup>2</sup>	400					
HSL <sup>5</sup>						5,000	NL	NL	NL	NL			6,000	NL					NL					
GIL4 <sup>6</sup> (Fresh Water)		24 (AsIII) 13 (AsV)	0.2	NR (Cr III)	1.4	3.4	11	8 <sup>2</sup>	0.06 <sup>3</sup>	950	NR	NR	350	200									16	320
Drinking Wa	ater 7,8	100	20 NR 20,000 100 200 NR 10 10 8,000 3,000 6,000 NR		0.1	NR	NR																	

Notes:

All values are µg/L unless stated otherwise.

- NA Not analysed
- NR No current published criterion.
- ND 'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.
- \* To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
- \*\* To obtain F2 subtract Naphthalene from the >C10-C16 fraction.
- 1 Values have been calculated using a calculated mean hardness of 30 mg/L CaCO3 refer to ANZECC & ARMCANZ (2000) for further guidance on recalculating for site-specific hardness.
- 2 Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.
- 3 Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
- 4 NEPM (2013) Groundwater Investigation Levels for marine water quality, based on ANZECC & ARMCANZ (2000).
- 5 NEPC (2013) Table 1A(4) Groundwater HSL D for vapour intrusion at the contaminant source depth ranges in sand 2m to <4m.
- 6 NEPM (2013) Groundwater Investigation Levels for fresh water quality, based on ANZECC & ARMCANZ (2000), level of species protection is 90% due to being located in an urbanized area.
- 7 NEPM (2013) Groundwater Investigation Levels for drinking water quality, based on Australian Drinking Water Guidelines (NHMRC 2011).
- 8 Drinking Water value has been used multiplied by a factor of 10 to address the secondary contact recreation.
- 9 NEPC (2013) Table 1A(4) Groundwater HSL D for vapour intrusion at the contaminant source depth ranges in clay 2m to <4m.</p>
- Highlighted indicates analyte concentration value exceeding the Groundwater Investigation Levels for marine water quality
  - Highlighted indicates analyte concentration value exceeding the Groundwater Investigation Levels for drinking water quality



Appendix D – Unexpected Finds Protocol

## **Unexpected Finds Protocol**



