

AWJ CIVIL PTY LTD

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

PROJECT: Aliro – Elevation Greystanes
SITE LOCATION: Clunies Ross Street, Greystanes
JOB NUMBER: 831
DATE: 25/06/2021
REVISION: 09

DOCUMENT CONTROL

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SSD CONSENT CONDITION REFERENCE TABLE

SCHEDULE	CONDITION	DESCRIPTION	CEMP SECTION
2	B1/B6	Traffic and Access	Appendix 4
	B9/B10	Aboriginal Heritage Exclusion Zone	Section 1,3
2	B14	Unexpected Finds Protocol – Heritage	Appendix 1
2	B15	Unexpected Finds Protocol – Flora and Fauna	Appendix 1
2	B16/B51	Unexpected Finds Protocol - Contamination	Appendix 1
2	B19	Landscape Management Plan	Section 8 and Appendix 7
2	B27	Erosion and Sediment Control	Section 6 and Appendix 2
2	B39	Hours of Work	Appendix 5
2	B40	Construction Noise Limits	Appendix 5
2	B41	Construction and Noise Management	Appendix 5
2	B42	Construction and Noise Management	Appendix 5
2	B43	Construction and Noise Management	Appendix 5
2	B44	Vibration Criteria	Appendix 5
2	B45	Vibration Criteria	Appendix 5
2	B46	Air Quality	Section 7
2	B47	Air Quality	Section 7
2	B48	Air Quality	Section 7
2	B68	Community Engagement	Appendix 6
2	B51	Validation Report	Section 1.8 and Appendix 1
2	B52	Unexpected Finds	Appendix 1

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	B19/C3	Landscape Management Plan	Appendix 7
	A26/A27	Community Engagement	Appendix 6

ENVIRONMENTAL POLICY STATEMENT

AWJ Civil is committed to the maintenance, preservation and enhancement of the Environment. We recognise our responsibility for the protection of the environment throughout all business activities.

We shall manage the activities under our control to minimise adverse impact on the environment. To achieve this, we:

- Comply with environmental legislation and legal obligations.
- Promote recycling and the economical use of resources to decrease emissions and wastage in order to prevent pollution.
- Will control our work activities via the education and motivation of our personnel to ensure accountability for optimal performance in the protection of the environment.
- Act as good corporate citizens and respect community environmental values.
- Provide a consultative process to encourage our people to participate in the identification and mitigation of environmental risk.
- Provide resources to establish and monitor objectives and set targets to ensure continuous improvement.

Our environmental systems and procedures are integrated within our Management System so that Environmental Management, along with all our other business activities, is controlled at all stages.

Managing Director: Tim Culmone

SIGNATURE:



Date:

24/02/2021

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SECTION 1 - INTRODUCTION**1.1 GENERAL DESCRIPTION OF PROJECT**

AWJ CIVIL is redeveloping the former Boral House and Austral Masonry site on Clunies Ross Street Greystanes. The project involves demolition of structures and hardstand areas, site remediation, bulk earthworks, basin construction and construction of retaining walls. In addition to the above scope AWJ will now also be constructing services infrastructure and spine road for the project.

Erosion and sediment controls will be established as per Erosion and Sediment Control Plan developed by Costin Roe Consulting, refer to drawings C013251.06-DA20 and DA25. Erosion and sediment control devices and structures will be maintained during the construction program. On completion of contract work the controls will be left in place and all adjustments and maintenance will be undertaken by the builder undertaking warehouse construction work on each respective lot.

Site Operating hours for this project are:

Monday to Friday	7.00am – 6.00pm
Saturday	8.00am – 1.00pm

1.2 PURPOSE OF CEMP

This Environmental Management Plan (CEMP) details the environmental management and control measures, which are to be implemented in association with construction activities. The CEMP has been created in accordance with the consent conditions of SSD 10399.

The CEMP sets out safeguards to minimise any short-term, localised adverse environmental impacts. It specifies actions, responsibilities, protocol, conformance, verification and containment activities, to be followed by AWJ Civil before, during and on completion of construction.

An Environmental Policy Statement is attached, expressing our commitment to effective environmental management.

The CEMP is a controlled document under AWJ Civil's management system.

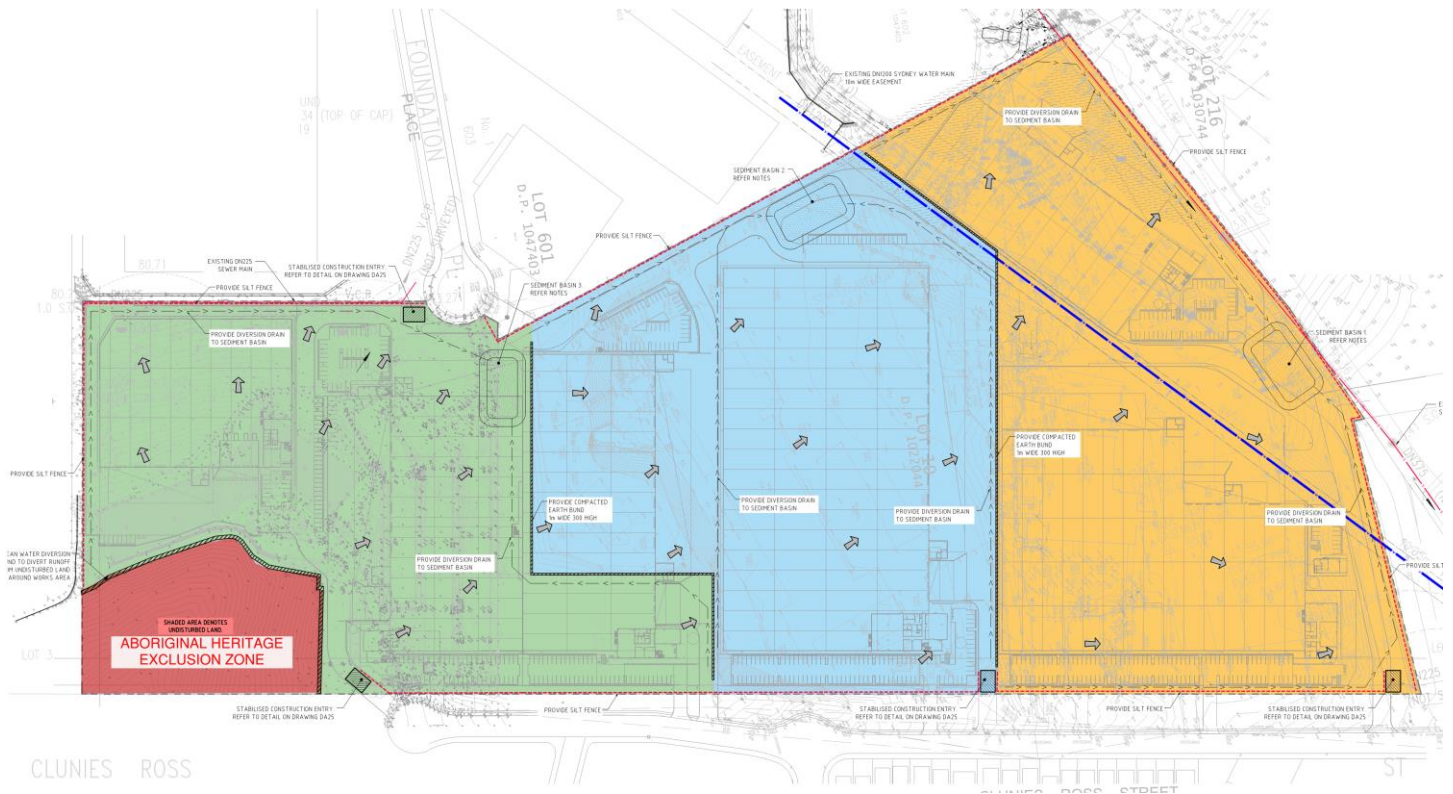
1.3 GENERAL DESCRIPTION OF ENVIRONMENT

The site is located on the Western side of Clunies Ross Street South of the M4 Motorway and has a secondary access point off Foundation Place on the South Western corner. The site area is approximately 18 hectares with commercial warehouses located along the Western boundary, residential dwellings to the East along Clunies Ross Street. There is an existing regional wetland basin and creek along the northern end of the site.

The site consists of a sandy gravelly clay material overlying sedimentary and igneous rock at varying depths. There are a series of native trees across the site that are required to be removed during the redevelopment. A series of erosion and sediment controls will be established and maintained during construction works including the construction of temporary diversion drains and on site stormwater basins.

The risk of erosion and pollution local waterways will be minimised during construction by installation and maintenance of environmental controls as per the approved design documentation by Costin Roe Consulting.

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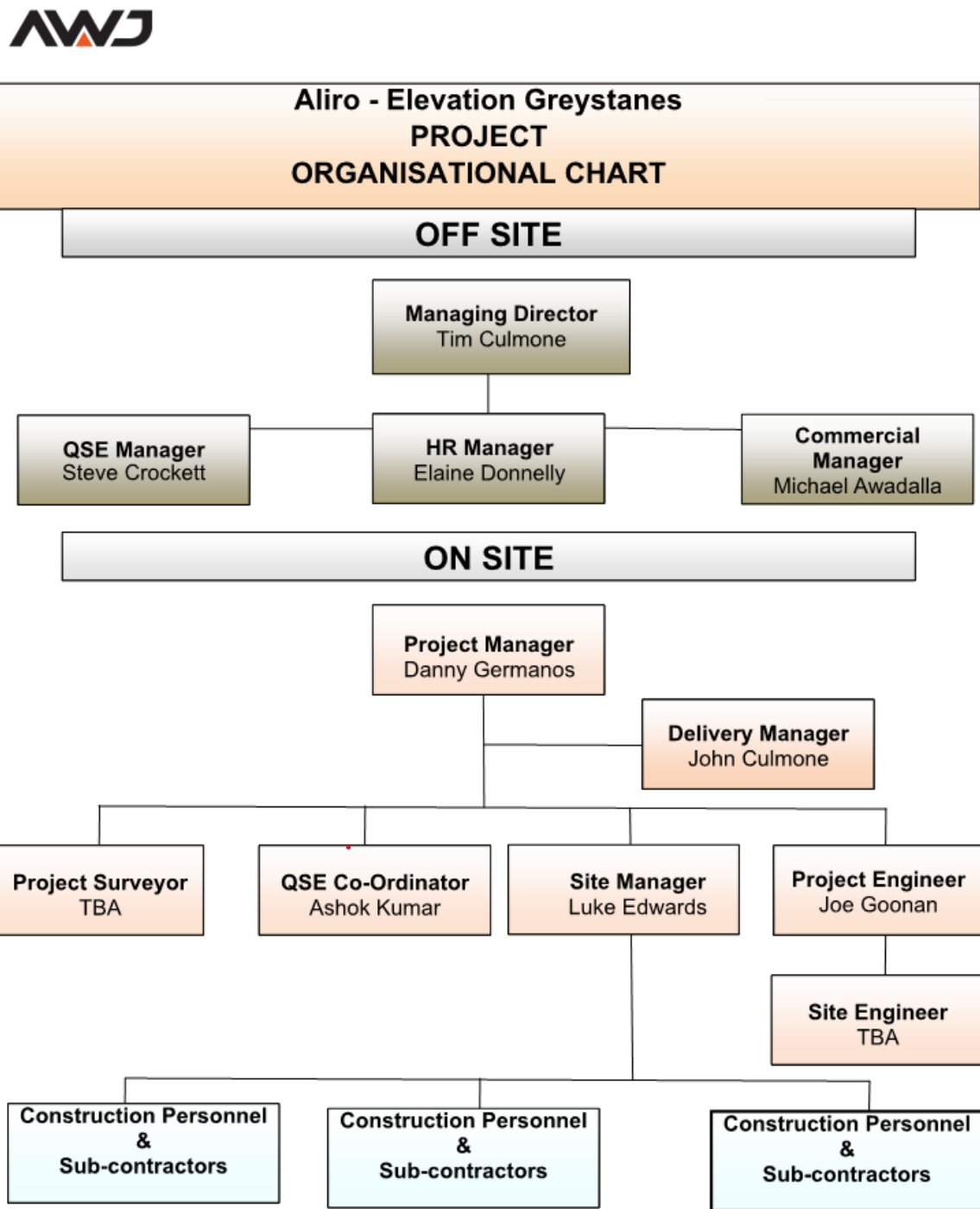
Site layout

IMPORTANT NOTE: Any works or access to the Aboriginal Heritage Zone coloured in red in the Southeast corner of the site is strictly prohibited unless written consent has been received by Aliro or ISPT.

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1.4 PROJECT ORGANISATION AND CONTACTS

Our organisation structure for the project is:



AWJ Civil's Project Manager is the authorised contact person for communication with the Superintendent and EPA. He is responsible for:

- Preparing, approving and implementing the Contractor's Construction Environmental Management Plan (including revisions, where needed);
- instructing project personnel on how to comply with the AWJ Civil's environmental policy and procedures.
- arranging periodic monitoring and inspection by suitably trained personnel;
- monthly evaluation of how effectively environmental controls are performing;

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- liaison with Authorities (see table below) and resolving remedial measures if an environmental incident occurs.
- initiating remedial measures when environmental deficiencies are observed or in response to environmental complaints;
- maintaining a non-conformance reporting system, and restriction of construction activities affected by any environmental deficiencies until remedial action has been taken;
- keeping site environmental performance records.

The Project Manager reports at least monthly to AWJ Civil's Managing Director on the effectiveness of the CEMP and the environmental protection measures. He is required to immediately seek assistance from the Managing Director in the event of any pollution incidents or significant environmental deficiencies. The Managing Director is AWJ Civil's corporate environmental management representative.

The QSE System Manager is the custodian for the CEMP documentation and is responsible for issuing it, including change control for any revisions.

Responsibility for implementing and maintaining each operational control and monitoring control is shown in the Environmental Control Checklist.

The Site Supervisor is responsible for inspecting routine environmental control measures weekly and after rain, maintaining them as required, reporting the outcome of each inspection to the Project Manager and taking prompt containment action if any environmental emergencies occur.

Contact Phone Numbers:

AWJ Civil office: (02) 9757 2999 Fax: (02) 9757 1677

Project Manager: Danny Germanos (mobile): 0405 404 734

Site Supervisor: Luke Edwards (mobile): 0439 942 616

The Project Manager is to liaise with the following public authority contacts regarding any problems with implementing environmental management measures in their respective functions:

Client Representative	David Thomas AUSMAID Ph: 0413 850 688 Responsible for monitoring Contractor's implementation of environmental control measures
EPA	Ph: (02) 9995 5000 Fax: (02) 9995 5999 Water/noise/air pollution or Pollution Line 131555 after hours
Department of Primary Industries – NSW Office of Water	Ph: (02) 6391 3100 Soil erosion and sediment control.
Office of Environment and Heritage (Cultural Heritage Unit)	Ph: 131 555 Flora, fauna and archaeology
Cumberland Council	Ph: (02) 8757 9000 Fax: (02) 9055 3301

Emergency Services are listed in CEMP Section 4.

1.5 SITE FACILITIES AND COMPOUND (ISO 14001:2015 - 8.1)

When selecting the location for the site compound, the Project Manager will consider the following:

- minimise disturbance to natural ground and vegetation

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- minimise nuisance to neighbours (e.g. no loose dirt which could be a source of dust; if noisy equipment is needed, locate work area as far from neighbours as practicable)
- location for office, amenities and dry storage to be above flood level and away from natural surface drainage lines
- vehicles can turn off road into compound without impeding through traffic
- separate storage for fuels, chemicals and hazardous goods, inside bunded area(s)
- minimise potential for work near dry vegetation which could cause unplanned fire (e.g. welding)
- fence compound as necessary for security
- if lighting is required for night time security, locate lights to avoid nuisance to neighbours.

Set out sheds and other facilities to present a neat appearance and provide covered rubbish bins. Erect safety-warning signs as needed.

Keep site compound tidy and dispose of rubbish regularly.

1.6 HANDLING AND STORAGE OF MATERIALS

Handling and storage of materials will be controlled in accordance with SP14 and PQP Clause 14.

When determining if project-specific methods are needed for handling and storage of materials, the Project Manager will include consideration of the potential environmental consequences if materials are handled or stored incorrectly (e.g. weed spray could drift onto other vegetation and damage it).

The Hazardous Substances Register and MSDS are located in the Project Safety Management Plan (behind Form OHS-06).

The Project Manager will ensure that manufacturers' instructions for other materials are obtained and kept in a separate file, which is readily available to site personnel.

1.7 ENVIRONMENTAL CONTROLS FOR SUBCONTRACTED WORK

When setting up subcontracts and selecting subcontractors, the procedures in SP5 will be followed, with particular consideration to environmental requirements. SP5 also applies when engaging subcontractors to perform specialist environmental monitoring activities.

Arrangements for ensuring that effective environmental controls will be implemented on subcontracted work are summarised below.

Subcontractor:	Central Civil		
Contact person/phone no	Sarkis Elias – 0499 010 000		
Site work being performed	Demolition of existing structures		
Will subcontractor prepare their own CEMP?		Yes []	No [<input checked="" type="checkbox"/>]
Describe environmental controls for which subcontractor is responsible <i>See Environmental Control Checklist</i>			
Describe how AWJ Civil will monitor subcontractor's environmental controls <i>Include subcontractor in Project Manager's Weekly environmental inspection (CEMP Sect 3)</i>			
Indicate whether any interfacing/co-ordination is needed between subcontractor's environmental controls and adjacent work areas (e.g. continuation of silt fencing) <i>Nil</i>			
Environmental controls implemented by AWJ Civil on subcontractor's work are included in AWJ Civil's Environmental Control Checklist		Yes [<input checked="" type="checkbox"/>]	No []

Subcontractor:	AWJ Civil
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Contact person/phone no	Danny Germanos – 0405 404 734		
Site work being performed	Remediation		
Will subcontractor prepare their own CEMP?		Yes [] No [✓]	
Describe environmental controls for which subcontractor is responsible <i>See Environmental Control Checklist</i>			
Describe how AWJ Civil will monitor subcontractor's environmental controls <i>Include subcontractor in Project Manager's Weekly environmental inspection (CEMP Sect 3)</i>			
Indicate whether any interfacing/co-ordination is needed between subcontractor's environmental controls and adjacent work areas (e.g. continuation of silt fencing) <i>Nil</i>			
Environmental controls implemented by AWJ Civil on subcontractor's work are included in AWJ Civil's Environmental Control Checklist		Yes [✓] No []	

1.8 REMEDIATION WORKS UNDER THE RAP

AWJ will remediate the site in accordance with the Remedial Action Plan prepared by JBS&G and dated 30 September 2020 and relevant guidelines produced or approved under the *Contaminated Land Management Act 1997*.

JBS&G are the consultants employed on behalf of AWJ to review and test the remediation and ensure it occurs in accordance with their RAP. Within one month of the completion of the remediation works, AWJ will submit a validation report/letter to the satisfaction of the Planning Secretary, which has been prepared, or reviewed and approved, by JBS&G and certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) Scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

SECTION 2 - ENVIRONMENTAL SYSTEM CONTROLS

2.1 DOCUMENT CONTROL (ISO 14001:2015 - 7.5)

Document control for this CEMP, including issue of any amendments will be done in accordance with SP4 Clause 8.

Where subcontractors' environmental control measures are submitted to AWJ Civil, they will be treated as controlled documents, as part of the CEMP and listed in the CEMP Contents Table.

The QSE System Manager will issue the CEMP to the Project Manager and Site Supervisor plus relevant extracts to other parties (on a need to know basis) as controlled copies. Document issue will be controlled by entering the name of each person, position, date of issue and documentation issued on a distribution list, as shown on Form Doc06 (see SP4). The QSE System Manager will follow the change control procedure in SP4.

All documents will be issued in protective binders.

2.2 RECORDS (ISO 14001:2015 - 7.5)

The Project Manager will arrange for environmental records to be filed as part of the project records (refer SP15), including the following (as applicable):

- (a) details of qualifications held by individuals primarily responsible for environmental monitoring;
- (b) environmental monitoring/inspection reports;
- (c) internal environmental audit reports;
- (d) external environmental audit reports;

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- (e) reports of environmental nonconformances, incidents, complaints and follow-up action;
- (f) minutes of CEMP and EMS management review meetings;
- (g) evidence of action taken as a result of such meetings/events;
- (h) environmental induction and training records; and
- (i) records of environmental monitoring by subcontractors against compliance limits.

2.3 AWARENESS AND TRAINING (ISO 14001:2015 - 7.3)

Personnel qualifications/skills related to environmental management activities will be ascertained, training needs will be identified and training undertaken and recorded.

The Project Manager will fully brief the Site Supervisor on the content of this CEMP so that the Site Supervisor can deal with any environmental issues when the Project Manager is not on site.

When new employees or subcontractors commence work on the site, the Project Manager or Site Supervisor is responsible for making them aware of environmental issues at the site.

Environmental induction will be given to all personnel (including subcontractors) whose work may create a significant impact on the environment, to make them aware of the potential environmental impacts and how such impacts may be prevented. It should cover the following topics (where relevant):

General Induction of new Employees - by Project Manager

- issue CEMP Sect 5 **Site Environmental Guidelines** (if not previously issued). Explain that they cover general environmental responsibilities that everyone must follow. Get employee to read **Site Environmental Guidelines**, answer any questions from the Employee.
- explain importance of using plant correctly

Site Orientation of all personnel at site (including subcontractors) - by Project Manager or Site Supervisor

- briefly describe what work is in progress and the site layout
- indicate restricted access areas and limits of clearing
- explain site access and parking arrangements
- explain the importance of keeping erosion/sediment controls in good condition and checking when rain is forecast and prior to non-work days that controls are adequately installed
- explain incident and emergency response/containment procedures, and how/when to use spill kit (see CEMP Sect 4)
- point out waste and litter receptacles and site ablutions.
- hold up **Site Environmental Guidelines** emphasise that environmental protection is everyone's business and that the Company requires care and co-operation by all.

Encourage site personnel to be proactive and report any instances of environmental control measures not operating properly.

Activity Environmental Briefings - arranged by Project Manager

- instruct personnel (including relevant subcontractors) regarding specific environmental controls and responsibilities at toolbox meetings before starting each construction process (as detailed in the Environmental Control Checklist). Records of activity environmental briefings will be kept on Form STF03.

2.4 EXTERNAL COMMUNICATIONS AND COMPLAINTS (ISO 14001:2015 - 8 & 9 & 10.2)

The Project Manager will establish a separate file for all external complaints about environmental activities for the project (refer SP20). He will use a Fix-it Report (SP13) to record details of all complaints, names of complainants, their contact details, action taken and date of response. He will maintain a register at the top of the file showing date of receipt of complaint, nature of complaint and date of response. This will include records of any telephone calls. The Project Manager will respond to environmental complaints promptly. He will also monitor the effectiveness of actions taken to confirm that each legitimate complaint has been satisfactorily resolved.

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2.5 ENVIRONMENTAL AUDIT PROGRAM (ISO 14001:2015 - 9.2.2)

The QSE System Manager is responsible for scheduling environmental audits (refer SP16).

The program for environmental auditing is included with our QA auditing on the Audit Schedule, attached to the Project Quality Plan. This includes a post-completion audit to identify and action any outstanding environmental issues.

Environmental auditing follows the same procedure as for QA auditing (refer SP17).

SECTION 3 - ENVIRONMENTAL PLANNING AND CONTROL

3.1 OPERATIONAL CONTROLS AND MONITORING CONTROLS (ISO 14001:2015 - 8 & 9)

In order to decide what environmental control measures are needed for this project (ISO 14001:2015 - 4.3), the following checklists have been filled out:

1. **Applicable Legislation Checklist** - identifying any permits or licences, which need to be obtained, and any general conditions arising from the legislation, which have to be met.
Where permits or licences are needed, they are attached behind the checklist so additional conditions imposed are also identified.
2. **Environmental Impact Planning Checklist** - identifying potential impacts associated with construction activities, including subcontract work.

This information represents the environmental “targets” and has been used to prepare an **Environmental Control Checklist**. Operational control measures (ISO 14001:2015 - 4.4.6) are listed separately from monitoring controls (ISO 14001:2015 - 4.5.1). Where compliance limits have to be met for any environmental characteristics (e.g. noise levels, dust levels), they are listed with the monitoring controls.

A “cause and effect” assessment has been done to decide which combination of protection measures will be most cost-effective in meeting the environmental characteristics. This considers the continuum from SOURCE ⇒ PATHWAY TO ENVIRONMENT ⇒ END POINT. The END POINT is where the environmental targets should be achieved. It is usually more effective to intercept the environmental effects of construction activities before they reach the END POINT. For example, silt fences intercept sediment from disturbed ground (SOURCE) before the sediment enters a watercourse (END POINT).

The **Environmental Control Checklist** shows the person responsible for each control and the timing. The Checklist also references any additional information explaining how to install operational controls, how (and when) to carry out monitoring tasks or to record inspections.

For any activities that have potential high-risk consequences, the Monitoring column in the **Environmental Control Checklist** shows the inspection regime to be undertaken to progressively monitor the activity plus the person responsible for such monitoring and for reporting inspection outcomes/improvements needed.

The Site Supervisor will inspect the construction site each week to check on the following:

- any disturbed ground which will generate dust in dry windy conditions
- any disturbed ground which is exposed to erosion
- are sediment control devices securely erected and in the right places (record on Inspection Report - *behind Erosion/Sedimentation Impacts and Controls*)

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- construction waste and litter removed.

Record each inspection outcome in site diary.

The Project Manager will inspect the site each month using the ***Environmental Inspection Checklist ENV01*** and review the ***Environmental Control Checklist ENV02*** to evaluate how effectively these controls are protecting the environment as per SSD condition C1.C. Any actions or improvements will be noted in the ***Outcome/Comments*** column.

The Site Supervisor is responsible for keeping operational control measures well maintained so that they function effectively and is required to promptly repair any defective control devices.

The Project Manager is responsible for keeping detailed records of the environmental checks (see Section 2.2) and providing a summary report of these checks at intervals of six months or when requested by AWJ Civil's customer.

3.2 MAINTENANCE OF PLANT AND EQUIPMENT

Plant and equipment are to be maintained in safe operating condition (refer SP21), including compliance with noise and gas emissions as nominated in Noise and Vibration Management Plan in Appendix 3.

3.3 MEASURING AND TEST EQUIPMENT

Measuring equipment used for monitoring will be subject to appropriate servicing and calibration (refer SP9), including any subcontractor equipment.

3.4 NONCONFORMANCE, CORRECTIVE AND PREVENTIVE ACTION (ISO 14001:2015 - 10.2)

Environmental non-conformances will be recorded and rectified in accordance with SP12. Rectification will include containment measures, clean up and restoration of the affected area and of any deficient operational controls or monitoring controls. On completion, the Project Manager will re-inspect the outcomes to ensure that they are acceptable before closing out the Non-conformance Report.

Corrective or preventive action to eliminate the causes of actual or potential environmental non-conformances will be initiated in accordance with SP13 and recorded on a Fix-it Report.

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3.5 ENVIRONMENTAL PLANNING LEGISLATION CHECKLIST

APPLICABLE LEGISLATION CHECKLIST	Permit / Licence Needed?	Control Measure Needed?
Environmental Planning Legislation		
<p><i>Environmental Planning and Assessment Act, 2000 (NSW)</i> <i>Environmental Planning and Assessment Regulation, 2000 (NSW)</i> Establishes a 3-tier system of environmental planning control over the use and development of land in NSW, which comprises:</p> <ul style="list-style-type: none"> - local environmental plans (LEPs) - regional environmental plans (REPs) - state environmental planning policies (SEPPs) <p>Certain SEPPs may be relevant for road/bridge construction SEPP No. 11 – Traffic Generating Developments SEPP No. 14 - Coastal Wetlands SEPP No. 15 - Multiple Occupancy of Rural Roads SEPP No. 19 - Bushland in Urban Areas SEPP No. 26 - Littoral Rainforests SEPP No 44 - Koala Habitat Protection SEPP No. 46 - Protection and Management of Native Vegetation Any applicable consent conditions will generally be identified at the development planning stage A supplementary REF may be needed if the parameters of the project are changed from what was addressed in the original REF (e.g. site concrete batch plant).</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<p><i>Local Government Act, 1993 (NSW)</i> Restricts times when certain activities can be carried out which may disturb nearby residents.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<p><i>Roads Act, 1993 (NSW)</i> Consent is required to undertake any work which will physically affect a public road (except when under the direction of the road authority) Owners of adjoining land have a right of access to a public road. A permit from RTA is required if designated weight restrictions will be exceeded.</p>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<p><i>Soil Conservation Amendment Act, 1986 (NSW)</i> Construction work must be carried out using methods which prevent soil erosion, siltation or land degradation and which conserve water resources. Some waterways and catchments may be classed by DLWC as “protected land”, in which case a Section 21D authority is needed for removal of vegetation.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<p><i>Environmental Reform Act 1999</i> <i>National Parks and Wildlife Conservation Regulation, 2009</i> Prohibits certain activities on Commonwealth land which has been declared as a national park or reserve. Areas adjoining NSW are Jervis Bay National Park and a marine reserve extending from the shore seawards, north of Coffs Harbour.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

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APPLICABLE LEGISLATION CHECKLIST	Permit / Licence Needed?	Control Measure Needed?
Conservation and Heritage Legislation		
<p><i>Local Land Services Act 2013 (NSW)</i></p> <p><i>Biodiversity Conservation Act 2016 (NSW)</i> Construction must be carried out using methods to protect native vegetation of high conservative value, prevent inappropriate clearing of vegetation and re-habitable land with appropriate native vegetation. Certain clearing is permitted under other Acts and is excepted from this Act. This Act is administered by DLWC. Land areas may be gazetted as protected land. Development consent from DLWC may be required to clear native vegetation on protected land. DLWC may issue stop work orders.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<p><i>Coastal Protection Act 1979 (NSW)</i> Controls development within a defined coastal zone to preserve and protect the water, seabed and airspace. Consent from the NSW Minister for Public Works is required to carry out work or clear or propagate vegetation or change the purpose for which the coastal zone is being used.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<p><i>National Parks and Wildlife Act 1974, Amendment 2010 (NSW)</i> <i>National Parks and Wildlife Regulation, 2009 (NSW)</i> Prohibits certain activities which may have an adverse effect on the natural, scientific or cultural significance of the areas within declared national parks and historic sites in NSW. Lists endangered fauna. Any specific additional consent conditions imposed by NPWS will generally be identified at the development planning stage. A permit from NPWS is required to excavate sites and relics. A consent to destroy is needed to deface or damage a relic or Aboriginal place. Picking of native plants is prohibited without a licence.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<p><i>Biodiversity Conservation Act 2016 (NSW)</i> Construction must be carried out using methods that will protect threatened species and their critical habitat, as identified by NPWS.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<p><i>Biodiversity Conservation Act 2016 (NSW)</i> Obligation to preserve native species and ecological communities that are declared as endangered or vulnerable, within Commonwealth Areas. These adjoining NSW are Jervis Bay National Park and a marine reserve extending from the shore seawards, north of Coffs Harbour. Obligation to comply with any conservation orders issued under this Act.</p>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

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<i>Marine Pollution Act, 2012 (NSW)</i> Prohibits discharge of oil or other noxious substances from vessels into navigable waters under the jurisdiction of the NSW Waterways Authority.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
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APPLICABLE LEGISLATION CHECKLIST	Permit / Licence Needed?	Control Measure Needed?
<i>Biosecurity Act 2015</i> Declared noxious weeds are gazetted. Site personnel are responsible for “controlling” any noxious weeds on the site during construction.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<i>Water Management Act, 2000 (NSW)</i> Protect, restore and do not degrade water sources, floodplains, groundwater and wetlands plus habitats, animals and plants that benefit from water. Protect water quality of all water sources. Protect geographical and other features of indigenous, heritage or spiritual significance associated with water sources. When obtaining water, minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, salinity and decline of native vegetation. Obtain access licence from DLWC to take water from classified water source.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<i>Water Management Act, 2000 (NSW)</i> Prohibits extraction of water from any waterway or diversion of any watercourses without a permit from DLWC.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<i>Heritage Act, 1977 (NSW)</i> Establishes authority of Heritage Council to determine controls needed to conserve heritage items such as buildings, works, relics and places of historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance which may be affected by construction. Any specific consent conditions imposed by the Heritage Council will generally be identified at the development planning stage.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<i>Aboriginal and Torres Strait Islander Heritage Protection Act, 2016</i> Aboriginals are entitled to apply to the Commonwealth Minister for the Environment to make a protective declaration where certain areas are under threat of injury or desecration. Any specific areas of significant indigenous heritage will generally be identified at the development planning stage.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Pollution and Waste Management Legislation		
<i>Protection of the Environment Operations Act, 1997 (NSW)</i> Establishes obligations in relation to construction activities which may generate water, air, noise or land pollution.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

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<ul style="list-style-type: none"> - construction activity must not pollute any waters or cause or permit any waters to be polluted - plant must be maintained in an efficient condition and operated in a proper and efficient manner to restrict air or noise emissions which could unduly disturb the community - air impurities must not be emitted in excess of the standard concentration prescribed by Clean Air Regulations, or if none are prescribed, use such practicable means as may be necessary to prevent or minimise air pollution - construction activity must not cause or permit the emission of any offensive odour, except under the conditions of a licence issued by EPA - EPA may make orders to unconditionally or conditionally prohibit the burning of fires in the open or in incinerators - waste must be disposed of in a place which can lawfully be used as a waste facility for that waste - it is an offence to deposit litter in a public place, except for in receptacles provided by public authorities. This includes causing, permitting or allowing litter to fall, descend, blow, be percolated or otherwise escape into or onto the public place. A licence from EPA is required if any part of the site comprises "scheduled development work", including: <ul style="list-style-type: none"> - asphalt plant: intended production capacity over 150t/day or 30000t/year. Temporary production plant set up on a construction site for less than 12 months is exempted - concrete plant: intended production capacity over 30000t/year - quarrying/crushing plant: intended production capacity over 150t/day or 30000t/year - excavation from cuttings: intended quantity over 30000m³/year - freeway/tollway contribution larger than 1 km in metropolitan area or 5 km outside metropolitan area - disturbing an area of contaminated soil larger than 3 hectares (aggregate) - contaminated soil treatment on-site or off-site over 1000m³/year - generating, transporting or storage of hazardous waste, industrial waste, non-aqueous liquid <p>Environmental Protection Notices (EPNs) may be issued by EPA in relation to licensed (scheduled) development work. Local Councils are given similar authority in relation to minimising air pollution at non-scheduled premises. There are three types of EPN:</p> <ul style="list-style-type: none"> • Clean-up Notices (ordering clean-up of pollution incidents) • Prevention Notices • Prohibition Notices <p>There is an obligation to notify EPA of any pollution incidents on or around the construction site if:</p> <ol style="list-style-type: none"> a) there is actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial; or b) actual or potential loss or property damage (including clean-up costs) exceeds \$10,000. <p>The Act provides for restoration, compensation and payment</p>		
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of damages in the event of wilful or negligent pollution or disposal of waste.		
<i>Protection of the Environment Operations (Waste) Regulation, 2014</i> A licence is required from EPA for prescribed waste activities, waste facilities and transporters (e.g. contaminated soil, asbestos, concrete batching plant).	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<i>Waste Avoidance and Resource Recovery Act, 2001 (NSW)</i> Consumption of material resources should be minimised, and surplus material generated during construction should be recycled when practicable to minimise disposal as waste. Any waste from construction sites should be stored, transported and disposed of lawfully.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

APPLICABLE LEGISLATION CHECKLIST	Permit / Licence Needed?	Control Measure Needed?
Contaminated Land Legislation		
<i>Contaminated Land Management Act, 2008 (NSW)</i> Areas of land which are contaminated and present significant risk of harming human health and other aspects of the environment must be investigated and appropriately remediated. EPA may issue investigation orders and remediation orders.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<i>Unhealthy Building Land Act 1999 (NSW)</i> It is an offence to erect a structure on any land, which is gazetted as unhealthy building land by EPA.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Fire Control		
<i>Rural Fires Act, 2013 (NSW)</i> Construction must be carried out using methods, which will prevent the initiation of bush fires. Fire bans must be observed.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Hazardous Substances		
<i>Environmentally Hazardous Chemicals Act, 1985 (NSW)</i> Certain chemicals and chemical wastes can be declared environmentally hazardous by EPA (e.g. asbestos, organochlorins pesticides, copper/chrome/arsenic wastes). The storage, use, transport and disposal of such substances are prohibited without a licence from EPA.	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
<i>Dangerous Goods (Road and Rail Transport) Act 2008</i> Vehicles must be licenced to transport dangerous goods	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
<i>Dangerous Goods (Road and Rail Transport) Act 2008</i> Prohibits transport and storage of dangerous goods (including explosives, flammable and toxic substances) without a licence from Work Cover	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

3.6 ENVIRONMENTAL IMPACT PLANNING CHECKLIST

ENVIRONMENTAL IMPACT PLANNING CHECKLIST		YES / N/A
Construction Activities Required for the Project		
General		
Control of traffic?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Clearing to establish survey control marks?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Temporary roadways, side-tracks, access tracks?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Adjust utilities?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Roadworks		
Clearing and grubbing, strip topsoil?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Construct stormwater drainage culverts and associated inlet/outlet structures?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Install subsurface drains?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Install open drains, batter drains etc?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Excavate from cuttings, borrow pits or remove existing formation/pavement?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Cold milling?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Construct embankments, selected material zone, flexible pavement?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Protection of potential scour areas with rock armour, rock mattresses etc?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Retaining walls, rock anchors, shotcrete?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Kerb and/or gutter, general concrete paving?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Construct concrete or asphalt pavement?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Bituminous surfacing?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Roadside furnishings, traffic signals, street lighting, emergency telephones?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Pavement marking?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Revegetation, landscaping?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Fencing, noise walls?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Disposal of spoil or demolished materials?		YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:		YES <input type="checkbox"/> N/A <input type="checkbox"/>
Bridgeworks		
Excavation for foundations etc?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Piled foundations, spread footings?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Abutments, piers?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Erection of girders, PSC planks etc?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Deck construction?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Demolition of existing structures?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other:		YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Access and Traffic Management		
Will construction work interfere with traffic flow?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will construction work interfere with pedestrians?		YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

ENVIRONMENTAL IMPACT PLANNING CHECKLIST	YES / N/A
Will construction work interfere with access for local residents?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will access to site by construction vehicles interfere with traffic flow?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Could parking arrangements for Employee vehicles interfere with traffic flow?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Erosion, Sedimentation and Surface Water Quality	
Will re-direction of waterway channel or culvert produce more concentrated flow of water?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will banks of waterways be disturbed and susceptible to erosion?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will ground surface be disturbed and be susceptible to erosion in storms, surface run-off or flooding?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Are cuttings or embankments being constructed, with exposure of batters to potential erosion?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Does sediment have to be trapped before run-off enters waterways?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Can surface run-off flowing through construction site become unclean before entering creek or river?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will unclean water need to be released from detention areas (e.g. sediment basin, bunded refuelling area) into creek or river?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is water quality monitoring needed?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Could mud or litter be deposited from construction vehicles onto trafficked roadway?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other: Water quality testing required prior to discharging	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Air Quality	
Will dust be generated from construction site by plant/vehicle movements, haulage or processing operations or in dry, windy conditions?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will dust be generated from stockpiles in dry, windy conditions?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Is dust monitoring needed?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Are fires proposed to burn cleared vegetation or other waste material or litter?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is there potential for unplanned fires (e.g. dry grass)?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Could type of plant used produce visible smoke emission?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Noise, Ground Vibration and Air Blast	
Will construction equipment generate significant noise that could unduly disturb neighbouring residents?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Are there any nearby premises which are particularly noise-sensitive (e.g. school, hospital)?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is it likely that noisy construction work may be performed outside normal working hours?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Could vibration from construction plant or operations damage adjacent buildings?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>

Are there any nearby structures which are particularly vibration-sensitive (e.g. historic buildings)?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Could vibration or air blast from construction plant or operations cause undue disturbance to neighbouring residents?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
ENVIRONMENTAL IMPACT PLANNING CHECKLIST	YES / N/A
Are noise or vibration compliance limits specified?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Is noise or vibration monitoring needed?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Vegetation and Fauna	
Is there vegetation adjacent to work areas which will need to be retained?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Could construction activity introduce or spread weeds?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Can disturbed topsoil be re-used?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Can cleared vegetation be re-used?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will earthworks batters, etc. need to be revegetated or landscaped?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will areas of disturbed ground (e.g. access roads, storage areas) need to be revegetated?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is native fauna present that will be disturbed by construction work?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Could fish in permanent water courses be disturbed by construction work?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Contaminated Ground	
Is there a possibility that areas of contaminated soil could be expected (e.g. acid sulphate soil)?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Is there a possibility of surface run-off flowing over contaminated ground?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will construction involve treatment on off-site disposal of contaminated soil?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Fuels and Chemicals	
Will plant or vehicles be refuelled on site?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will fuel be stored on site?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will pesticides be used during construction?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will other hazardous chemicals be used during construction?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will hazardous chemicals be stored on site?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Indigenous and Non-Indigenous Heritage	
Is the work site in an area where items of Aboriginal origin could be encountered?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Is the work site in an area where items of value as non-indigenous relics could be encountered?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>



ISSUE: Waste Management	
Will construction generate surplus material that can be recycled?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will construction generate waste material that can be disposed on site?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Will construction generate waste material that will have to be disposed off site?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will amenities for site personnel generate effluent?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will site personnel generate litter or rubbish?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>
ISSUE: Restoration of Site	
Are construction operations likely to disturb ground around the site such that restoration treatment will be needed on completion of construction?	YES <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Will there be any fuel storage areas or plant servicing areas etc that will need checking for ground contamination when dis-establishing the site?	YES <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Other:	YES <input type="checkbox"/> N/A <input type="checkbox"/>

SECTION 4 - INCIDENT MANAGEMENT AND EMERGENCY RESPONSE

4.1 OVERVIEW AND RESPONSIBILITIES

An environmental incident is an unplanned event, which occurs on site and causes significant adverse environmental impacts. The general emergency response to environmental incidents is:

1. Site Supervisor - Ensure site safety, move people from immediate area
2. Site Supervisor - Warn traffic of any hazard, which affects traffic (use lights, warning signs, etc).
3. Site Supervisor - Take any practical steps to contain the hazard and prevent it from spreading.
4. Project Manager - Notify Client and relevant authority (CEMP Section 1.4 or emergency contact listed below)
5. Project Manager - Decide with Client and relevant authority how to clean up and remediate the site.

Potential environmental incident situations and containment guidelines are described below. The Project Manager will arrange for appropriate containment equipment to be held at the site and will instruct site staff periodically on how to carry out the emergency procedures.

MSDS for chemicals are located in the Project Safety Management Plan.

4.2 EMERGENCY CONTACTS

Notify the EPA Regional Manager (or the EPA Pollution Line on telephone 131555 outside normal business hours) of pollution incidents on or around the site which have occurred in the course of the Contractor's activities in the following circumstances:

- if the actual or potential harm to the health or safety of human beings or ecosystems is not trivial,
- if actual or potential loss or property damage (including clean-up costs) associated with a pollution incident exceeds \$10,000.

EMERGENCY CONTACT NUMBERS	
CONTACTS:	NO'S:
AWJ Office	(02) 9757 2999
Site Manager:	0439 942 616
Project Manager:	0405 404 734
WHS Co-ordinator:	0401 853 632
Site First Aid Officer:	0439 942 616
Ambulance:	000
Fire Brigade:	000
Police:	000
Police Assistance (non-emergency)	13 14 44
HAZMAT:	000
Poisons Information Service:	13 11 26
Safe Work Australia:	13 10 50
EPA Pollution Line:	13 15 55
Dial-before-you-dig:	1100

4.3 EMERGENCY RESPONSE PROCEDURES

4.3.1 Emergency Response to Fuel, Oil or Chemical Spill

1. Stop flow of the spillage/discharge from source, if possible.
2. Set up traffic controls and direct passers-by around spillage, if needed.
3. Construct bunds of Spill Kit pillows to stop fuel, oil or chemical spreading out. Especially, prevent discharge into stormwater drainage, natural watercourses or onto private property.
For large spill, use grader to construct earth bunds around spill or use sandbags.
4. For small spill, spread absorbent material from Spill Kit to absorb fuel, oil or chemical.
For large spill, spread sand on ground to soak up fuel, oil or chemical
5. If discharge enters waterway and mixes with water, isolate it by booms.
6. Report incident to Superintendent ASAP.
7. To clean up after small spills, load used pads, pillows and absorbent material into watertight container for disposal at appropriate waste site.
8. To clean up large spills, load sand/earth/sandbags into watertight container on utility (small quantities) or truck lined with plastic (large quantities) for disposal at appropriate waste site.
Sweep site with broom to collect all sand or earth for disposal, as appropriate.

4.3.2 Pollution of Waterway

Uncontrolled release of dirty water into waterway from water quality control structure or bunded area. If discharge enters waterway and mixes with water, isolate it by booms.

Ring EPA Pollution Line 131555.

4.3.3 Cut Overhead or Underground Services

Secure and isolate problem area and notify relevant utility authority

Utilities	
Sydney Water	132090
Endeavour Energy	131003
Jemena	131909
Telstra	132203
Optus	1800 500 253
NBN Co	1800 626 329

4.3.4 Uncontrolled Fire

Follow guidelines in Safety & Environment Handbook for using fire extinguishers (if very small fire).

Contact Fire Brigade.

Take precautions to protect adjacent houses from fire (fill gutters with water, close windows and doors, etc).

If vapour from burning of toxic material is released into air, move people away from area.

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SECTION 5 - SITE ENVIRONMENTAL GUIDELINES

5.1 GENERAL

When carrying out construction activities, personnel are required to:

- minimise noise and dust generation,
- minimise traffic disruption,
- minimise erosion and sedimentation, runoff of unclean water into waterways,
- avoid spillage of fuels and chemicals onto the ground,
- avoid surface and groundwater contamination,
- minimise disturbance to vegetation or fauna, or spread of noxious weeds,
- avoid disturbance to any items which may have heritage significance, and
- dispose of refuse and waste to approved waste disposal sites

To minimise dust generation, plan work to minimise amount of disturbed ground (which is exposed to dry winds) for access tracks, working area, excavation and stockpiles.

Cover site stockpiles and remove surplus material from site promptly.

Water disturbed areas when needed to prevent wind picking up dust particles.

Keep truck movements to a minimum. Trucks should use firm, tight surfaces (preferably sealed) wherever possible to minimise dust generation.

When wind velocity exceeds 10m/sec for more than 10 minutes, halt construction activity that generates dust unless dust is adequately controlled by water or other acceptable means.

Disturbed areas are to be revegetated progressively.

To minimise smoke and fumes, do not burn cleared vegetation or other waste material or litter.

Also keep plant well maintained with effective exhaust systems. Switch off plant when not in use rather than leaving engines idling.

To minimise erosion/sedimentation problems:

- limit the time during which unprotected graded areas are exposed to wind and rain
- intercept, divert and safely dispose of clean run-off flowing on all disturbed or critical areas, including soil stockpiles
- erect sediment fences downslope of disturbed ground and site stockpiles to prevent sediment running into the surface water drainage system
- place straw bales around gully pits to catch sediment before it enters stormwater pipes
- control waste water discharge from any dewatering, washing out concrete trucks/mixers, washing vehicles or plant.

To minimise loss of vegetation, carefully choose off-road parking and turning areas. Fence off limits of working area to prevent plant unnecessarily disturbing vegetation. Also fence off any vegetation inside the working area which is to be retained.

To minimise damage to tree roots and trunks, do not park equipment or place stockpiles under the canopy of any vegetation.

To prevent the spread of noxious weeds, use work methods that will minimise spread of weeds. Check with local Council Weeds Officer on correct way to treat weeds, if necessary. Remove any noxious weeds within the work area which have been cleared, and store in sealed containers. Dispose of containers appropriately.

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To encourage revegetation, separate site topsoil when clearing, and respread it on disturbed areas at some thickness, before grass seeding.

To minimise noise disturbance, all plant and equipment should be maintained to comply with EPA Guidelines. Report any noisy mufflers etc promptly to Project Manager so maintenance can be arranged.

When noisy work has to be done, plan this work to minimise disturbance to neighbours.

Choose suitable plant, equipment and work methods to minimise disturbance and/or damage from vibration and air blast.

To minimise pollution from fuels and chemicals:

- Use transporting, handling and storage methods that will prevent chemical, fuel and lubricant spillage on or around the site. Polluting or permitting pollution of any waterway by a chemical, fuel or lubricant, or any waste material is illegal.
- Store any herbicide or other chemical classified as a Dangerous Goods Class 6 Poison strictly in accordance with the manufacturer's instructions and the relevant Materials Safety Data Sheets (MSDS).
- Do not refuel or service plant and equipment on site unless appropriate Temporary bunding is provided.
- Keep spill kit on truck to counteract spillage of fuel or chemicals.

To minimise disturbance to heritage items which may be uncovered

- Should any relic, artefact or material (including skeletal remains) suspected of being of Aboriginal origin be encountered, cease all construction work that might affect the relic, artefact or material and protect the relic, artefact or material from damage or disturbance. Notify the National Parks and Wildlife Service.
- Similarly, should any item be encountered which is suspected to be a relic of heritage value, cease all construction work that might affect the item and protect the item from damage or disturbance. Notify the Heritage Office.

Waste includes all debris, spoil, rubbish, oil, used containers, glass, litter etc, and must be recycled or taken to approved waste disposal sites. Always cover loads, when travelling.

5.2 SITE SPECIFIC GUIDELINES FOR MANAGEMENT OF FLORA AND FAUNA

The Prospect logistics Estate, Biodiversity Development Assessment Report prepared by Eco Logical Australia dated 21st July 2020 found that no threatened flora and fauna species were recorded within the development site during their investigations.

We still however might come into contact with fauna during the works. If this occurs AWJ will employ their unexpected finds protocol found in appendix 1 of this Management Plan. High risk activities such as the reclamation of the Boral Basin should be done in accordance with the detailed methodology in Appendix 9 of this management plan.

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SECTION 6 - EROSION AND SEDIMENTATION IMPACTS AND CONTROLS

6.1 PLANNING

When deciding how to minimise potential for erosion and sedimentation, consider the following:

- will banks of waterways be disturbed and susceptible to erosion?
- will ground surface be disturbed and be susceptible to erosion in storms, surface run-off or flooding?
- are trenches or filling being constructed, with exposure of batters to potential erosion?
- does sediment have to be trapped before run-off enters waterways?
- can surface run-off flowing through construction site become unclean before entering waterway or stormwater drainage system?
- will unclean water need to be released from detention areas (eg. sediment basin, bunded refuelling area) into waterway or stormwater drainage system?
- could mud or litter be deposited from construction vehicles onto trafficked roadway?

Erosion and sediment control is a two-stage process. Firstly, erosion control measures need to be established within the site to minimise erosion.

Secondly, acknowledging that some erosion is going to occur anyway steps must be taken to intercept and retain mobile sediment within the work site.

An erosion/sedimentation control plan (ESCP) has been prepared by Costin Roe Consulting which show the sediment control devices, diversion drains and structures to be used on the project, refer to drawings. C013251.06-DA20 & DA25. Weekly monitoring, consideration and ongoing site assessments will be made during construction to identify high risk areas and any gaps in the erosion and sediment control plans developed by Costin Roe Consulting, consideration of the following points will be included in regular assessments of the site,

- timing of works
- locations of lands where a protective ground cover will, as far as it practicable, be maintained
- access protection measures
- nature and extent of earthworks, including the amount of any cut and fill
- where applicable, the diversion of run-off from upslope lands around the disturbed areas
- location of all soil and other material stockpiles including topsoil storage, protection and reuse methodology
- location and type of proposed erosion and sediment control measures
- site rehabilitation proposals, including schedules
- frequency and nature of any maintenance program
- other site-specific soil or water conservation structures.

Note: Further guidelines on the preparation of ESCPs are provided in the NSW Housing Department publication "Managing Urban Stormwater".

To minimise erosion/sedimentation problems:

- minimise the length and steepness of the slopes
- limit the time during which unprotected graded areas are exposed to wind and rain
- intercept, divert and safely dispose of clean run-off flowing on all disturbed or critical areas, including soil stockpiles
- erect sediment fences downslope of disturbed ground and site stockpiles to prevent sediment running into the surface water drainage system
- place straw bales around gully pits to catch sediment before it enters stormwater pipes
- install permanent stormwater drainage works as the first stage of construction

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- reduce run-off velocities by minimising the length of flow path constructing channels with gentle gradients and by providing rough linings to the steeper channels
- control wastewater discharge from any dewatering, washing out concrete trucks/mixers, washing vehicles or plant.

6.2 CONSTRUCTION PROGRAM

Clearing is started by removing what is required for the drainage system (catch drains, cross drainage, culverts and sediment control structures).

General clearing and topsoil stripping operations should not commence until the major earthworks operations are ready to begin.

During the earthworks operations, take care to dispose of run-off from the construction site without causing silt and sediment to enter natural watercourses. The permanent drainage systems (as per the plan) should be constructed at the earliest opportunity. Additional Temporary drainage measures may be required during construction to control run-off from exposed slopes. **These short term erosion controls are progressively implemented and will require frequent alteration.**

All earthworks activities should be co-ordinated and completed in stages to avoid leaving large areas exposed for long periods.

Revegetation should be carried out progressively as the earthworks operations proceed.

6.3 DRAINAGE STRUCTURES FOR EROSION PROTECTION

6.3.1 Catch Drains

To control erosion, catch drains are located at the top of proposed cuttings where the natural run-off drains towards the cutting. They are used to direct water to diversion drains or to the inlets of cross-drainage culverts, to avoid mixing run-off from outside the construction area with any sediment laden water.

Drains are stabilised with vegetation, stone pitching or concrete lining. Stabilisation with vegetation is preferred wherever practicable. Synthetic woven fabric or jute mesh will provide Temporary protection until vegetation establishes. In steep terrain or highly erodible soils, stone pitching or concrete lining may be required.

6.3.2 Diversion Drains

Diversion drains take the form of a channel, constructed across a slope, with a minor ridge on its lower side. They are used to protect slopes by intercepting surface water and diverting it to a stable outlet at a non-erosive velocity.

When used for “erosion control”, diversion drains intercept water from catch drains and intercept run-off from outside the construction area flowing towards the toes of embankments.

6.3.3 Through Drainage Culverts

Through drainage culverts are required where the route of the road intercepts creeks, depressions and natural drainage channels.

At culverts, water should generally enter and discharge at the natural surface, since changes in level may cause erosion. Outlets should be suitably protected to prevent scour by using rip-rap, gravel baffles, etc.

6.3.4 Energy Dissipators

Energy dissipators are used to reduce flow energy, and therefore erosion potential, by interrupting the flow of surface water in a channel.

When required, details of energy dissipators will be shown on the road plans or ESCP.

6.4 DRAINAGE STRUCTURES FOR SEDIMENT CONTROL

6.4.1 Sediment Traps

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These are used to filter run-off from small areas of the site (0.5 hectares or less). They are designed to collect sediment before it enters culverts, channels or natural water courses. Typical sediment traps include silt fences, straw bales, drop inlet structures, gabions, and sandbags filled with gravel or stone.

6.4.2 Sedimentation Basins

These are dam type structures, designed to still run-off from the construction site and allow sediment to settle before the run-off enters the natural watercourse. It is preferable that basins be located away from the natural watercourses so that they receive run-off only from the area disturbed by construction. Where a culvert is to be constructed in a natural watercourse, sedimentation basins are best sited adjacent to the culvert inlet and outlet, clear of the watercourse. Access should be provided for maintenance purposes.

6.4.3 Diversion Drains

As “sediment control” measures, these drains are used where practicable to collect run-off from exposed areas (including batter slopes). By providing diversion drains at regular intervals along the toe line of the batter (spaced to restrict run-off to non-erodible velocity). The sediment laden run-off may be dispersed through sediment traps into stable land areas.

6.4.4 Batter Toe Drains

Batter toe drains are required where it is not possible to divert run-off from batter slopes to stable locations. These drains are located at the toes of fill batters and are designed to collect run-off from batter slopes and direct it through sediment traps to drainage culverts or natural watercourses. Drains should be suitably lined to prevent scour.

6.5 TEMPORARY EROSION AND SEDIMENTATION CONTROL

6.5.1 General

Temporary drains and temporary sediment traps used during construction should be provided by construction personnel **as and where required** (daily if necessary). This will allow sediment-laden run-off to be disposed of without causing serious damage until the permanent drainage system has been fully installed and is functioning properly.

6.5.2 Temporary Drains

Run-off from areas exposed during the works can be controlled by temporary contour and diversion drains. These drains generally take the form of a channel constructed across a slope, with a ridge on its lower side.

(a) Contour Drains

Contour drains are drains which follow points of the land of approximately the same elevation. They should be provided immediately after a construction site is cleared to intercept and divert run-off from the site to nearby stable areas at non-erosive velocities. The drains should be formed with a gentle grade (1-1.5%) and spaced at intervals between 20 m and 50 m, depending on the erodibility of the exposed soil.

(b) Diversion Drains

Diversion drains should be provided across haul roads and access tracks when these are identified as potential erosion hazard due to either their steepness, soil erodibility or potential for concentrating run-off flow. The drains intercept and divert run-off from the road or track to stable outlets. Close spacing of these drains is generally required to maintain run-off at non-erosive velocities.

(c) Silt Traps and Fencing

Silt fencing should be installed downslope of stockpiles and embankment batters prior to revegetation.

Straw bale check dams should be placed along drainage lines to intercept dirty water and trap sediment.

Silt fencing and hay bales need to be embedded into the ground to be fully effective.

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6.5.3 Construction Methods

The following techniques will assist in minimising scour of new-formed fill batters (during embankment construction) by diverting run-off from the formation away from the batter until vegetation has established:-

- shaping the fill with an artificial superelevation during earthworks so that run-off is directed towards the upstream edge of the formation. The formation should also be “hogged” above the line of any cross-drainage culverts so that run-off can be directed to sedimentation basins or traps located at both sides of the culvert inlet. This technique is also particularly effective in cut-fill (ie. sidling) formations
- at the completion of the earthworks phase, during construction of relatively impervious sub-base and basecourse layers, construction of berms at the edge of the fill to contain run-off inside the construction area. Run-off can be drained to the toes of batters by flexible plastic chutes spaced at suitable intervals. These measures can be removed once vegetation has been established on the batter.

6.5.4 Outlet Protection

At drainage outlets, it may be necessary to make temporary protection measures, such as crushed stone, to diffuse concentrated flows and prevent scouring.

6.6 INSPECTION AND MAINTENANCE

6.6.1 Inspections

All erosion and sedimentation control works shall be inspected weekly or within 24 hours after each rainfall event in excess of 10 mm in 24 hours and during periods of prolonged rainfall using the attached Inspection Report.

6.6.2 Sediment Basins

Sediment basins should be cleaned out whenever the accumulated sediment has reduced the capacity of the basin by about 60 percent or if the sediment has built up to within 300 mm below the spillway crest.

Accumulated sediment must be removed from permanent sedimentation control structures in such a manner as not to damage the structures.

6.6.3 Silt Fences, Diversion Drains, Check Dams etc

Where damage or deficiencies to other erosion/sediment control structures such as silt fences, diversion drains or check dams are observed, either during inspections or during construction operations, remedial work is to be undertaken within 24 hours (or immediately if weather forecasts predict inclement weather). Remedial/maintenance actions are recorded on the Inspection Report for Erosion/Sediment Controls.

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SECTION 7 – DUST MANAGEMENT AND CONTROLS

Elevated dust levels can be a source for nuisance and potential environmental, safety and health hazards. Many earthworks activities can create dust and, in some circumstances, if not managed these levels can be above an acceptable level. Many factors can contribute to elevated dust levels. Some of these factors are:

- Method of construction/earthworks
- Site surface conditions
- Dry and windy weather conditions

AWJ will take all reasonable and practicable measures to prevent or minimise the generation of dust from all earthworks operations by managing the above factors which lead to excessive dust being generated from the site.

7.1 Dust Management Practice

During the construction/earthworks AWJ will continually need to monitor and control the dust generated by the site to ensure it stays below acceptable levels.

AWJ will do this by:

- Monitoring the future weather conditions: AWJ must ensure that only minor works occur during high wind conditions and all measures are taken to seal off the site. When wind velocity exceeds 10m/sec for more than 10 minutes, halt construction activity that generates dust unless dust is adequately controlled by water or other acceptable means.
- Project Planning: To minimise dust generation, plan work to minimise amount of disturbed ground (which is exposed to dry winds) for access tracks, working area, excavation and stockpiles. Cover site stockpiles and remove surplus material from site promptly.
- Utilisation of multiple site watercarts: Water disturbed areas when needed to prevent wind picking up dust particles. Exposed surfaces and stockpiles should be suppressed with regular watering.
- Sprinklers, hoses and general water for activities that generate dust: AWJ will set up sprinklers and provide hoses or water tanks at any work front that will generate excessive dust. The water will be sprayed on the activity to keep the dust down to an acceptable level.
- Managing truck movements: All trucks entering or leaving the site should have their loads covered. Trucks leaving site should clean their tyres and travel over cattle grids installed as to not track dirt onto the roads
- Disturbed areas are to be sealed or revegetated progressively: As soon as reasonably practical any completed areas should be revegetated with spray grass or the final landscape treatment. If this is not reasonable these areas should be sealed and limited to traffic so that the done break up and become dusty.
- Minimise smoke and fumes: To minimise smoke and fumes, do not burn cleared vegetation or other waste material or litter. Also keep plant well maintained with effective exhaust systems. Switch off plant when not in use rather than leaving engines idling.

By implementing the above practices AWJ will limit the dust to an acceptable level during our works at the Elevation Greystanes project.

SECTION 8 – LANDSCAPE MANAGEMENT PLAN

A Landscape Management Plan is requested in the SSD under condition C3(d). See appendix 7 for the Landscape Management Plan.

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APPENDIX 1 – UNEXPECTED FINDS PROTOCOLS (AS PER CONDITION B14-B16 AND B52 OF THE SSD)



artefact

Unexpected Finds Protocol - Archaeological items

Project: Prospect Logistics Estate, Prospect and Pemulwuy, Blacktown / Cumberland LGA	Date: 18 June 2021
	Author: Michael Lever (Heritage Consultant)

PROJECT DESCRIPTION

This document refers to proposed development by Aliro Management Pty Ltd of the Prospect Logistics Estate at Clunies Ross Street, Prospect, Lot 10 DP 1022044, Lot 107 DP 1028208, Lot 63 DP752051, Lot 216 DP1030744, and Lot 601 DP 1047403 in the Blacktown and Cumberland Local Government Areas (LGAs). The proposed development has been deemed a State Significant Development (SSD) – Application number SSD 10399. The Planning Secretary's Environmental Assessment Requirements (SEARs) were issued on 16 December 2019.

This document provides an Unexpected Finds Protocol (UFP), as required by the draft Conditions of Consent for the proposal as provided to Artefact Heritage by the proponent.

Table 1: Unexpected Finds Protocol

Condition #	Condition	Action
B14 If any item or object of Aboriginal heritage significance is identified on site:	a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and c) Heritage NSW must be contacted immediately	Refer to UFP
B.15	Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the National Parks and Wildlife Act 1974 (NSW)	Refer to the Office of Environment and Heritage 2011 Guide to Investigating, assessing and reporting on Aboriginal cultural heritage in NSW: Part 6 National Parks and Wildlife Act 1974
B.16	If any archaeological relics are during the course of works then all works must cease immediately in that area. Unexpected finds must be evaluated and recorded in accordance the requirements of Heritage NSW	The significance of unexpected finds will be assessed against the seven heritage criteria as outlined in the NSW Heritage Manual, including historical, associative, aesthetic or technical, social, research potential, rarity, and representativeness criterion. The aim of assessing significance is to identify if an unexpected find is of local or state significance. The assessment will guide recommendations for further management, approvals, and mitigations measures that may be required prior to commencement

This UFP should be implemented if any potentially significant Aboriginal object or Non-Aboriginal archaeological remains are identified during proposed groundworks.

Examples of types of unexpected archaeological finds include:

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- Potential Aboriginal flaked items
- Concentrations of artefacts – this may take the form of a number of artefacts concentrated in a single location, typically associated with a dark silty soil deposit. Artefacts may include complete or broken glass bottles and ceramic items, animal bone and other domestic items.
- Structural remains i.e. brick or stone footings, areas of buried paving.

NSW HERITAGE LEGISLATION AND PROTECTION

Three Acts afford protection to cultural heritage and archaeology in NSW:

- National Parks and Wildlife Act 1974 (NPW Act)
- Heritage Act 1977 (Heritage Act)
- Environmental Planning and Assessment Act 1979 (EP&A Act).

Aboriginal sites are protected by all three acts. It is an offence to knowingly or unknowingly damage or disturb an Aboriginal site without the appropriate approval. Fines and prison sentences may apply.

Historical archaeological sites in NSW are protected by the Heritage Act. Sections 139-145 of the Heritage Act 1977 prevent the excavation or disturbance of land known or likely to contain Historic Archaeological Relics, unless in accordance with an excavation permit or with the conditions of approval for a State Significant Development. If an archaeological site or object is damaged or disturbed prosecution may result.

UNEXPECTED FINDS PROTOCOLS

Staff involved with ground disturbing works must be made aware of the potential for archaeological remains to be present. Clear lines of communication must be established for the reporting of any such finds and for procedures to be rapidly implemented. Unexpected Finds Procedures must be made clear to all staff. Images to assist with the identification of potential finds are provided at the end of this document.

HUMAN REMAINS

In the event that skeletal remains are encountered which may be human remains, the following steps must be followed:

- NSW Police must be informed immediately.
- A qualified heritage consultant must be engaged to assist in assessment of the find.
- The remains must not be moved at all.
- The remains may not be left unattended prior to the arrival of NSW Police.
- All ground disturbing work within 20m of the remains must cease.
- The remains must be screened from view and must be enclosed in fencing or bollards.
- No access to the enclosed area of the remains is to be permitted other than to those staff who are required for essential management or as directed by NSW Police.
- If it emerges that the remains are ancestral Aboriginal remains, then the Local Aboriginal Lands Council must be notified.

ABORIGINAL ARCHAEOLOGICAL MATERIAL

In the event that suspected Aboriginal archaeological material is identified, the following steps must be followed:

- All ground disturbing work within 10m of the remains must cease.
- The find must not be moved.
- The find must be appropriately protected from potential damage.
- A qualified heritage consultant must be engaged to assist in assessment of the find to:
 - Assist in assessment of the find.
 - Provide management recommendations, which may include the need for further assessment and archaeological testing.

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HISTORICAL ARCHAEOLOGICAL MATERIAL

This is likely to take the form of historical footings or infrastructure and associated historical relics. In the event that such items are identified the following steps must be followed:

- All ground disturbing work within 20m of the remains must cease.
- The finds must not be moved.
- The find must be appropriately protected from potential damage.
- A qualified heritage consultant must be engaged to:
 - Assist in assessment of the find.
 - Provide management recommendations, which may include the need for further assessment and archaeological testing.

ARTEFACT HERITAGE CONTACT

Artefact Heritage, 02 9518 8411, admin@artefact.net.au

Figure 1: Aboriginal stone tools



Figure 2: Historical artefacts



Figure 3: Historical footings



Figure 4: Historical footings



UNEXPECTED FINDS PROCEDURE – CONTAMINATION

1. SCOPE

This procedure covers the method of operation to be adopted on-site when an unexpected find has been identified regarding contamination at the Aliro – Elevation Greystanes project. This is as per condition B51 of SSD10399.

2. POLICY

All personnel starting work at this project will be inducted into the procedure during the site-specific induction process before starting work on site.

3. TYPES OF UNEXPECTED CONTAMINATION

An 'unexpected contamination' means any unanticipated discovery of outside of the RAP provided pre-remediation works. These discoveries can include but are not limited to;

- Asbestos
- Hydrocarbons
- Acid Sulphate Soils
- Heavy Metals

4. OBJECTIVES

- The objectives of this guideline are to ensure that:
- Site personnel and visitors are not placed at risk to their health, safety, or welfare
- Incidence of an Unexpected find are managed and dealt with quickly and efficiently
- Good communication is maintained throughout the site to enable proper management of active work areas

5. RESPONSIBILITIES

Role	Responsibility
Project Manager	<p>Ensure the process for unexpected finds is included as part of all site inductions.</p> <p>Ensure that this protocol is implemented, and all personnel is aware of their responsibilities.</p>
Construction Supervisor	<p>Ensure this protocol is understood and implemented on-site.</p> <p>Stops works immediately adjacent to any unexpected findings until they have been assessed in accordance with this protocol.</p> <p>Report any unexpected finds to the Project Manager</p> <p>Ensure remediation is done in accordance with the project hygienist recommendations.</p>
Project Hygienist	<p>Confirm the material is hazardous or contaminated.</p> <p>Provide advice on specific remediation action based on the type of contamination</p> <p>Confirm remediation has occurred in accordance with the recommended remediation process.</p> <p>Give clearance to the area once remediation has been completed</p>

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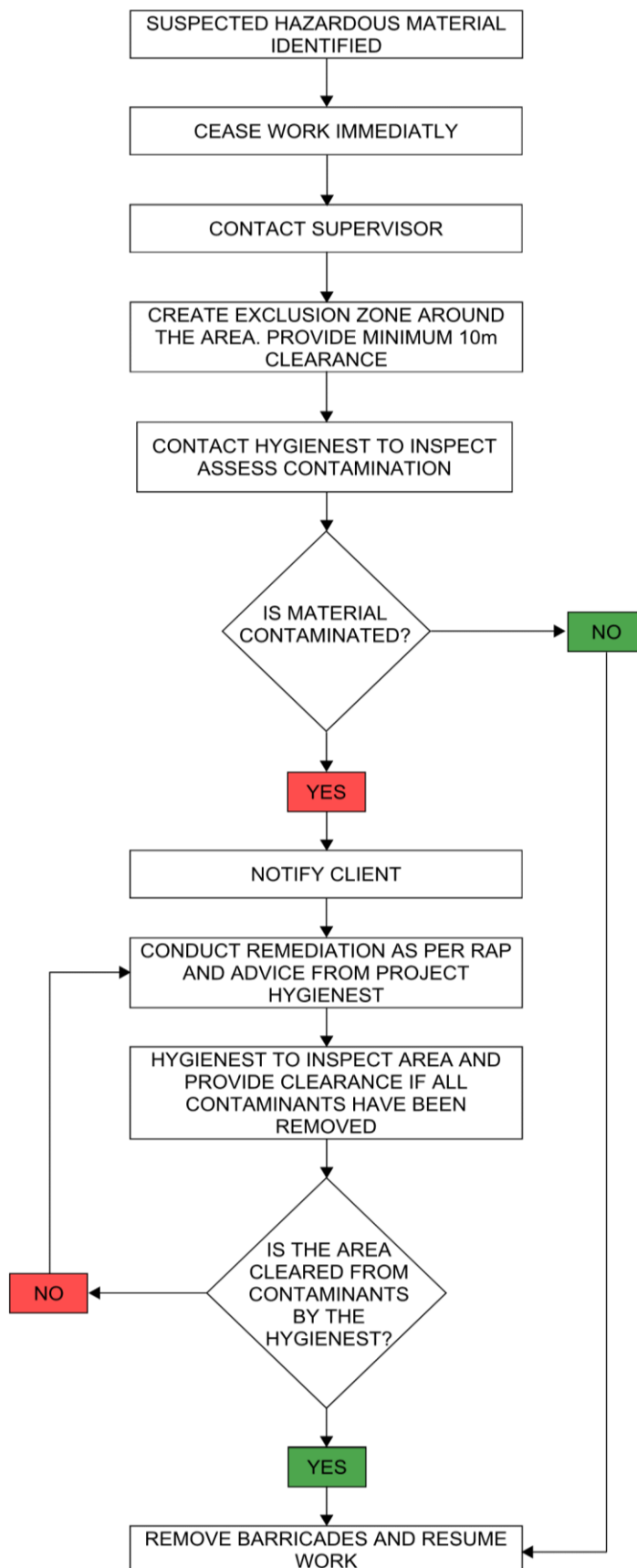
All Personnel

Be familiar with the type, location, and remediation being conducted onsite.

Understand what areas of the site are, exclusion zones

Be familiar with the unexpected finds protocol and report finds to the construction supervisor or project manager.

6. UNEXPECTED PROCEDURE - FLOW CHART



7. CONTACT DETAILS

Position	Name	Phone Number
Project Manager	Danny Germanos	0405 404 734
Project Engineer	Joe Goonan	0403 045 458
Site Supervisor	Luke Edwards	0439 942 616
QSE Manager	Steven Crockett	0428 631 302
Hygienist JBS&G	Chris Kauffman	0425 229 447

UNEXPECTED FINDS PROCEDURE – FLORA AND FAUNA

1. SCOPE

This procedure covers the method of operation to be adopted onsite when an unexpected find has been identified at the Elevations Greystanes project

2. POLICY

All personnel starting work at this project will be inducted into the procedure during the site-specific induction process prior to starting work onsite.

3. TYPES OF UNEXPECTED FLORA AND FAUNA ITEMS AND THEIR LEGAL PROTECTION

An 'unexpected flora and fauna items' means any unanticipated discovery of native protected species and geological features. These discoveries can be categorized as either;

- Flora
- Fauna
- Geological Features or Significant Landforms

4. OBJECTS OF CONSERVATION

The National Park and Wildlife Act 1974 objects of this Act are as follows:

The conservation of nature, including, but not limited to, the conservation of:

- a. *habitat, ecosystems and ecosystem processes, and*
- b. *biological diversity at the community, species and genetic levels, and*
- c. *landforms of significance, including geological features and processes, and*
- d. *landscapes and natural features of significance including wilderness and wild rivers,*

5. RESPONSIBILITIES

Role	Responsibility
Project Manager	<p>Ensure the process for unexpected finds is included as part of all site inductions.</p> <p>Ensure that this protocol is implemented, and all personnel are aware of their responsibilities.</p>
Construction Supervisor	<p>Ensure this protocol is understood and implemented on site.</p> <p>Stops works immediately adjacent to any unexpected findings until they have been assessed in accordance with this protocol.</p> <p>Report any unexpected finds to the Project Manager</p>
NSW Department of Planning, Industry and Environment	<p>On call to provide professional assistance should there be an unexpected find.</p> <p>Contact: 131 555</p>
Ecologist	<p>A suitably qualified Ecologist to provide professional advice on the unexpected find.</p>
All personnel	<p>Be familiar with this protocol and report any unexpected finds to their construction supervisor or project manager.</p>

6. UNEXPECTED ITEMS PROCEDURE

Step	Action
1	Stop work, protect item and inform the site supervisor
1.1	Stop all work in the immediate area of the item and notify the Project Manager
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical
1.3	Inform all site personnel about the no-go zone.
1.4	Notify client of find
1.5	Inspect, flora, fauna or geological formation and photograph.
2	Contact and engage a suitably qualified Ecologist to provide advice
2.1	Discuss the location and extent of the discovery and arrange a site inspection, if required. If requested, provide photographs.
3	Preliminary assessment and recording of the find
3.1	In a minority of cases, it may be determined from the photographs that no site inspection is required Any such advice should be provided in writing (e.g. via email) and confirmed by the Project Manager
3.2	Arrange site access for Ecologist to inspect the item as soon as practicable.
3.3	Existing protective fencing established in Step 1 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.

3.4	Consultant may provide advice after the site inspection and preliminary assessment; any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Project Manager
4	Prepare management requirements for site
4.1	An Environmental Management plan is developed outlining management actions to ensure damage to the site is minimized and work can recommence. This plan will be developed by the Ecologist in consultation with Current EMP Procedures.
5	Notify the Office of Environment and Heritage, if required.
5.1	If notification is required, contact: <ul style="list-style-type: none"> • OEH Environment Line Ph: 131 555 • Email: info@environment.nsw.gov.au
5.2	Forward the signed notification letter to OEH and the Secretary.
5.3	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Project Manager
6	Resume work
6.1	The management plan is implemented and the project construction environmental management plan (CEMP) is updated to reflect any additional controls and requirements
6.2	Seek written clearance to resume project work from the Ecologist and if required the Environment and Planning Manager. Clearance would only be given once above procedures and/or recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project approvals/determinations.

7. CONTACT DETAILS

Position	Name	Phone Number
Project Manager	Danny Germanos	0405 404 734
Project Engineer	Craig Gamble	0403 045 458
OEH: Environment Line	<ul style="list-style-type: none"> OEH Environment Line Ph: 131 555 Email: info@environment.nsw.gov.au 	



APPENDIX 2 – SEDIMENT AND EROSION CONTROL PLAN

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LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED.

- SILT FENCE
- SILT FENCE WITH CATCH DRAIN
- DIVERSION DRAIN
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- DIRECTION OF OVERLAND FLOW
- DENOTES CATCHMENT 1
- DENOTES CATCHMENT 2
- DENOTES CATCHMENT 3

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C013251.06-DA25
SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'
CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 85th PERCENTILE INTENSITY (32.2mm).

APPROXIMATE AREA OF DISTURBED SITE = 17.8 ha

SEDIMENT BASIN 1:
CATCHMENT AREA = 6.44 ha
REQUIRED BASIN VOLUME = 1,555m³
BASE DIMENSIONS (L X W) = 20m x 38m
TOP DIMENSIONS (L X W) = 29m x 47m
MAX SIDE SLOPE = 1V:3H
DEPTH = 1.5m
PROVIDED BASIN VOLUME = 1,570m³

SEDIMENT BASIN 2:
CATCHMENT AREA = 6.18 ha
REQUIRED BASIN VOLUME = 1,492m³
BASE DIMENSIONS (L X W) = 19m x 38m
TOP DIMENSIONS (L X W) = 28m x 47m
MAX SIDE SLOPE = 1V:3H
DEPTH = 1.5m
PROVIDED BASIN VOLUME = 1,506m³

SEDIMENT BASIN 3:
CATCHMENT AREA = 5.17 ha
REQUIRED BASIN VOLUME = 1,249m³
BASE DIMENSIONS (L X W) = 17m x 34m
TOP DIMENSIONS (L X W) = 26m x 43m
MAX SIDE SLOPE = 1V:3H
DEPTH = 1.5m
PROVIDED BASIN VOLUME = 1,250m³

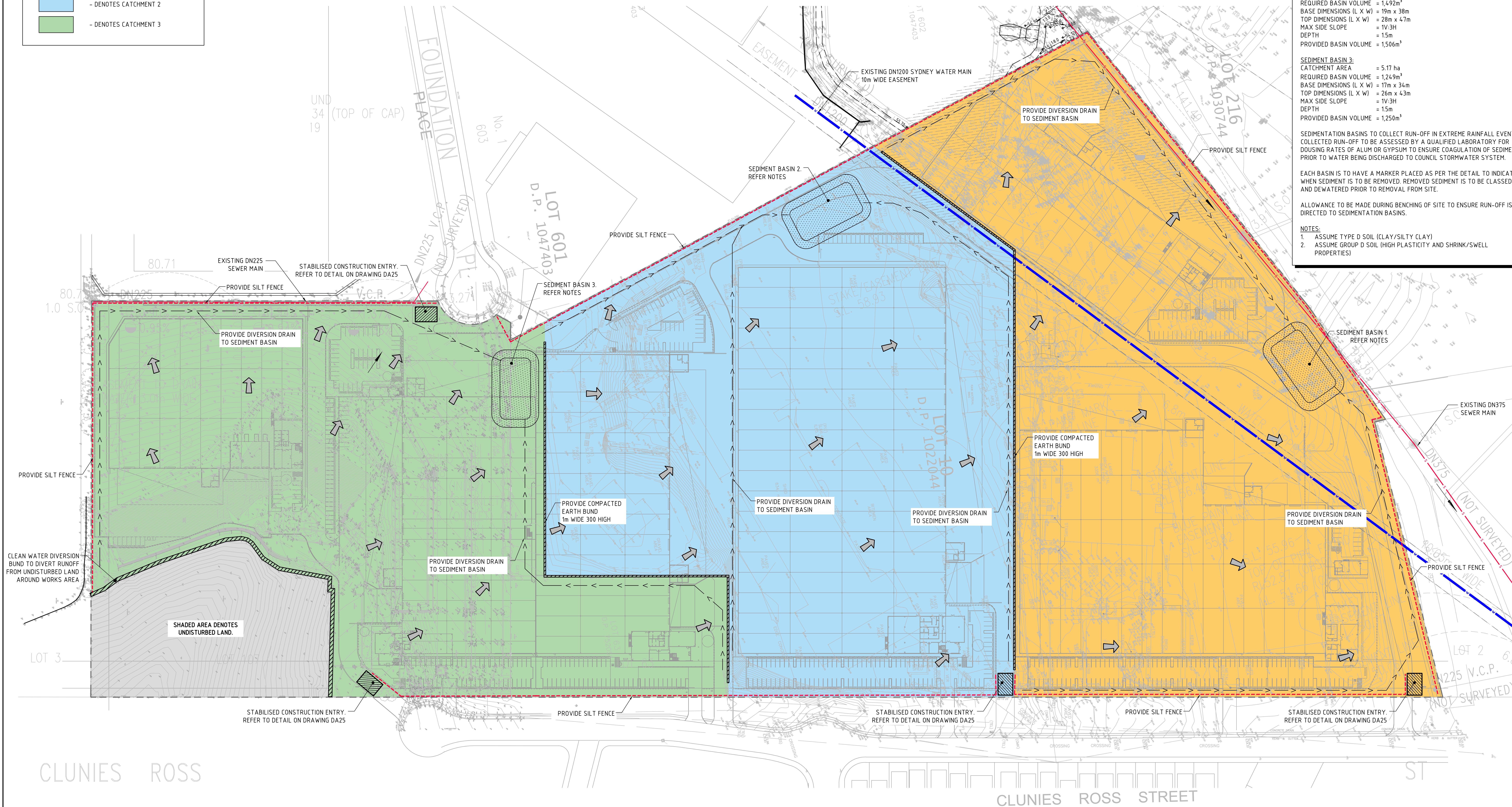
SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:

1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)



EROSION SEDIMENT CONTROL PLAN
SCALE 1:750

FOR DEVELOPMENT APPLICATION

6m 0 15 30 45 60 75m
SCALE 1:750 AT A0 SIZE SHEET

PROJECT STATE SIGNIFICANT DEVELOPMENT APPLICATION 44 CLUNIES ROSS STREET, GREYSTANES				CLIENT Aliro				ARCHITECT SB				CONSULTING ENGINEERS Costin Roe Consulting				DRAWING TITLE EROSION SEDIMENT CONTROL PLAN			
DESIGNED: [NAME] DATE: [DATE] CHECKED: [NAME] DATE: [DATE] SIZE: [SIZE] SCALE: [SCALE] CAD REF: [REF]				PRECISION COMMUNICATION ACCOUNTABILITY				DRAWING No. C013251.06-DA20				ISSUE B							



APPENDIX 3 – ENVIRONMENTAL CHECKLISTS ENV01 AND ENV-02

CEMP Master Issue 6	19 th Jan 2021	Job Issue No: 3	Date: 23 rd June 2021
Authorised by: Tim Culmone	Managing Director	Authorised by: Danny Germanos	Project Manager
Project: Aliro – Elevation Greystanes			

ENVIRONMENTAL INSPECTION CHECKLISTS ENV01

PROJECT:	ELEVATION GREYSTANES	DATE:	
ITEM	YES / NO	COMMENTS	
Staff Awareness			
Ensure that all employees are aware of their environmental responsibilities	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Ensure that all subcontractors are aware of their environmental responsibilities	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Site Planning			
Mark limits of work site, storage and accesses to minimise the ground area affected by road maintenance activity	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Plan order of work to minimise period of exposure of disturbed ground to weather	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Locate services (including water, sewerage, electricity etc)	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Identify site placement for work materials and fuel storage	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Set up secure storage for fuel, oil or other chemicals on site, and bunded around	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Identify site placement for spoil, topsoil and waste (not under tree canopies)	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Heritage/Archaeology/Flora and Fauna			
Locate any heritage items, archaeological/Aboriginal sites or relics noted in REF	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Locate sensitive areas and/or areas containing flora and fauna to be protected	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Install exclusion fences around trees and saplings to prevent damage from machinery or vehicles	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Do not park equipment under tree canopies	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Control or prevent spread of weeds	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Community Liaison	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Inform occupants of any restriction to property access	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Access and Traffic Management			
Prepare traffic control plan	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Set up traffic controls	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Monitor traffic response to traffic controls and rectify any problems.	YES <input type="checkbox"/> NO <input type="checkbox"/>		
Arrange parking for construction plant and employee vehicles so that through traffic is not impeded.	YES <input type="checkbox"/> NO <input type="checkbox"/>		

ITEM	YES / NO	COMMENTS
Erosion and Sediment Controls		
Is an Erosion/Sedimentation Plan prepared for the site? If so, is it on site and has it been implemented?	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Identify drainage and slope to and from site	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Correctly locate erosion control devices and structures, eg, diversion drains, silt fences, hay bales, sandbags, detention basins	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Truck carries sandbags, silt fencing etc to use if work is interrupted by rain	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Correctly maintain erosion control devices for job duration	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Is a concrete washout needed/installed?	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Soil Impacts		
Cover stockpiled soil and separate topsoil	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Minimise compaction of topsoil due to use of heavy machinery	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Water Quality		
Provide spill kit on truck, in case of fuel or chemical spills	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Divert surface run-off around contaminated ground	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Air Quality		
Do not use plant which exceeds 10 sec continuous visible smoke from exhaust	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Keep loose surfaces on site damp in windy weather, to lay dust	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Dispose of excess spoil promptly or cover stockpiles	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Cover truck trays when transporting dry material	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Do not burn off waste materials	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remove any mud or debris deposited by construction vehicles on sealed road	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Noise Control		
Check that mufflers on plant meet EPA requirements	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Install silencing devices or noise reducing barriers if necessary	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Restrict construction noise levels by using plant responsibly	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Notify neighbours if maintenance outside normal hours of work is planned	YES <input type="checkbox"/> NO <input type="checkbox"/>	



ITEM	YES / NO	COMMENTS
Fire Control		
Ensure no cutting, welding or grinding on 'fire ban' days	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Keep flammable materials in clearly signed secure area	YES <input type="checkbox"/> NO <input type="checkbox"/>	
No open fires allowed	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Hazardous Substances		
Are hazardous substances (eg chemicals) being used?	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Are appropriate environmental safeguards in place?	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Waste Management and Disposal		
Maintain worksite in clean, rubbish-free state	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Inspect plant for fuel, oil or hydraulic fluid leaks. Repair leaks before using plant	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Carry out any on-site refuelling and servicing within bunded area at least 20m from natural or built drainage lines.	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Identify wastes generated and method of disposal, incl recycling where possible	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Appropriately contain wastes stored on site	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Dispose of waste in accordance with legal requirements, including treatment, if required	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Ensure waste is transported securely	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Rehabilitation of Site		
Ensure soil is made stable (especially when soil slopes)	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Revegetate site with indigenous species (if required)	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remove soil and erosion controls after soil is made stable	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remove all waste materials or liquids from site	YES <input type="checkbox"/> NO <input type="checkbox"/>	
Remove site sheds and amenities	YES <input type="checkbox"/> NO <input type="checkbox"/>	
PROJECT MANAGER:		SIGNATURE:

ENVIRONMENTAL CONTROL CHECKLISTS ENV02

PROJECT:		831 - ELEVATION GREYSTANES					MONTH:		
(mark each box with ✓ or X to indicate ACCEPTABLE or NON-CONFORMANCE)									
1		Are temporary drains and dykes effective in diverting all runoff from exposed areas to silt traps or other sediment control structures before leaving the site?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
2		Are there new areas that have been disturbed lacking temporary drains and/or dykes?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
3		Are there any disturbed areas where work is sufficiently advanced for re-vegetation to be undertaken?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
4		Is any dirty runoff water bypassing or overflowing existing silt traps /sediment control structures? Do existing traps need to be increased in capacity? Are additional traps needed?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
5		Do any silt traps/sediment control structures need maintenance or repair to operate effectively?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
6		Are any silt traps/sediment control structures more than 60% full or otherwise in need of cleaning out?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
7		Are actions taken after last inspection adequate and effective?							
Week	1	2	3	4	5	If NON-CONFORMANCE , state location, action needed and priority			
✓ / X									
SIGNED:									



APPENDIX 4 – CTMP

(AS PER CONDITION B1 OF THE SSD)

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

Allroad Group Pty Ltd

Construction Traffic Management Plan (CTMP)

AWJ Civil

44 Clunies Ross St, Prospect

44 Clunies Ross St,
Prospect, NSW 2148

Allroad Group Pty Ltd
2 Enterprise Pl,
Wetherill Park, NSW 2164

Document & Version Control

Project Name: 44 Clunies Ross St, Prospect
Client: AWJ Civil
File Reference: ARG 21-011 TMP

Version	Date	Author	Approved by
V 1.0	22/06/2021	R. Gandhi	D. Germanos
V 1.1	06/08/2021	R. Gandhi	D. Germanos

Allroad Groups consultants are qualified personal, with the relevant "Prepare a Work Zone Traffic Management Plan" accreditation.

This CTMP has been prepared for the Client and for the specific purpose of seeking approval for their works, as stated in the document.

Allroad Group does not accept any responsibility for any amendments of the content of this report by a third party.

This document has been prepared based on the Client's descriptions, their requirements and other information provided by the Client and other third parties.

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1. Introduction

This Construction Traffic Management Plan (CTMP) has been commissioned by AWJ Civil for the construction works at 44 Clunies Ross St, Prospect.

The purpose of this report is to detail the Traffic Management during the construction works, which would minimise traffic impacts on the surrounding road network, ensure safety and efficiency for workers, pedestrians and road users, and provide information regarding the construction vehicle access routes and any changed road conditions (if applicable).

The CTMP and Traffic Guidance Schemes (TGSs) have been prepared in accordance with:

- Australian Standards 1742.3 2009
- RMSs "Traffic Control at Work Sites Technical Manual" V5.0 & V6.0
- Austroads "Temporary Traffic Management Manual" 2019

The Applicant is not allowed to commence constructions until the CTMP has been approved by the Planning Secretary as per item B1 of the SSDA.

Allroad Group is responsible for the preparation of this CTMP and the Traffic Guidance Schemes (TGSs) only and not for its implementation, which is the responsibility of the Contractor. Allroad Group will take no responsibility for any amendments of the documents and plans by a 3rd party.

2. Key Stakeholders

The table below shows the Key Stakeholders of the project.

Company	Contact Name	Position	Contact Details
Aliro Group	Colin MacDonald	Development Manager	cmacdonald@aliro.com.au 0403 539 875
Ausmaid	David Thomas	Director	david.thomas@ausmaid.com.au 0431 850 688
AWJ Civil	Danny Germanos	Infrastructure Manager	danny@awj.com.au 0405 404 734
ISPT Pty Ltd	Athlene Kyle	Development Manager	akyle@ispt.net.au (02) 8239 8526

Table 1 - Key Stakeholders

3. Construction Site Location & Context

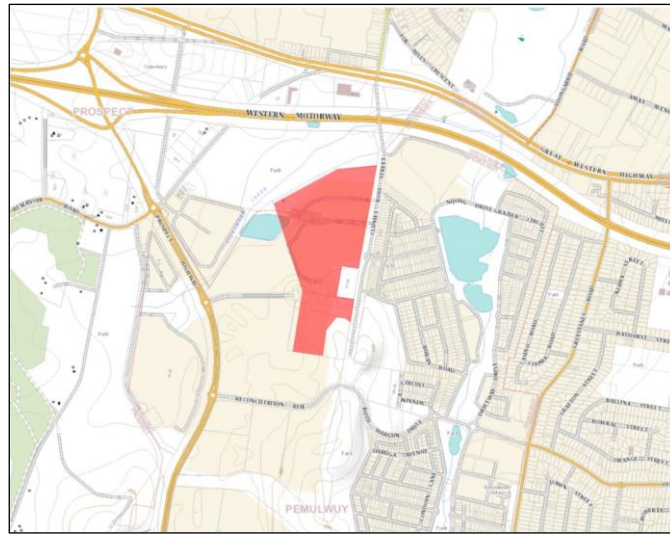


Figure 1 - Construction Site Location

3.1 Site Location

The construction site is located at 44 Clunies Ross St in the suburb of Prospect and under the jurisdiction of the Blacktown City Council and Cumberland Council. The site is bounded by the following roads:

East: Clunies Ross St
West: Foundation Pl

3.2 Road Hierarchy

The road hierarchy within the area of the construction site is presented in *Figure 2* and described below:

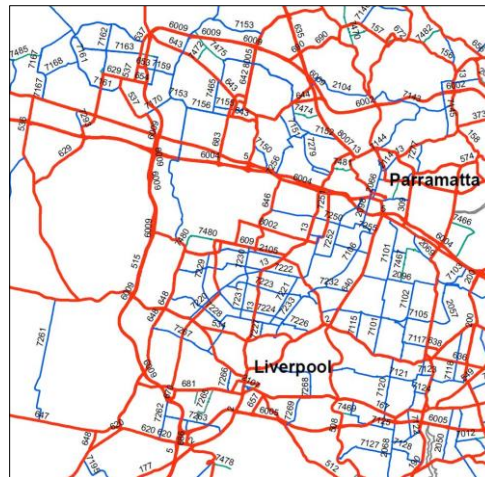


Figure 2 - Road Hierarchy

3.2.1 State Roads

Great Western Hwy (MR 5) is a 6-lane, 2-way divided road in Prospect. It runs in an East –West direction in the vicinity of the site. The road provides a link between Princess Hwy to the South and to Mitchells Pass to the North.

Speed Limit: 80km/h

Distance to Site: 450m approx. (via Clunies Ross St)

Western Motorway (MR 644) is a 6-lane, 2-way divided road in Prospect. It runs in an East –West direction in the vicinity of the site. The road provides a link between Great Western Hwy to the South and Great western Hwy to the West.

Speed Limit: 100km/h

Distance to Site: 750m approx. (via Foundation Pl)

3.2.2 Council Roads

Clunies Ross St is a 2-lane, 2-way road in Prospect. It runs in a North - South direction in the vicinity of the site. The road provides a link between Great Western Hwy to the North and ends in the suburb of Prospect.

Speed Limit: 60km/h

Distance to Site: 0m (via Clunies Ross St)

Wombat St is a 2-lane, 2-way road in Prospect. It runs in an East - West direction. The road provides a link between Clunies Ross St to the East and to Nijong Dr to the West.

Speed Limit: 50km/h

Distance to Site: 0m (via Clunies Ross St)

Warin Ave is a 2-lane, 2-way road in Prospect. It runs in an East - West direction. The road provides a link between Clunies Ross St to the East and to Nijong Dr to the West.

Speed Limit: 50km/h

Distance to Site: 0m (via Clunies Ross St)

Muftong St is a 2-lane, 2-way road in Prospect. It runs in a North- South direction. The road provides a link between Burraga Way to the North and to Warin Ave to the South.

Speed Limit: 50km/h

Distance to Site: 70m approx. (via Clunies Ross St)

Prospect Hwy is a 2-lane, 2-way road in Prospect. It runs in a North- South direction. The road provides a link between Blacktown Rd to the North and to Widemere Rd to the South.

Speed Limit: 60km/h

Distance to Site: 330m approx. (via Foundation Pl)

4. Council Permits and Road Occupancy Licenses

4.1 Council Permits

The Applicant has to ensure that all required council permits have been applied from the Blacktown City Council and Cumberland Council before commencing works.

5. Construction & Traffic Management

AWJ Civil has been engaged for the construction of seven warehouses and associated infrastructure at 44 Clunies Ross St, Prospect.

5.1 Construction Stages: Dates & Work Hours

The project consists of 1 Stage. The start and end date as well as the working hours are shown in the table below:

Dates and Times	
Duration of Entire Project excluding unexpected events such as weather etc.:	24 Months
Stage 1	
Beginning Stage 1:	01/07/2021
Finish Date Stage 1:	01/07/2023
Hours of Work during Stage 1:	Mo – Fr: 7am – 5pm
	Sa: 7am – 1pm

Table 2 - Construction Stage Overview Part 1

5.2 Description of Works, Duration & Traffic Management

The tables below provide an overview of the construction stage, its duration, the description of works as well as the traffic management.

Stage 1

Stage 1.1 (Duration: 5 Days)	
Construction Works	<ul style="list-style-type: none"> construction of seven warehouses and associated infrastructure
Traffic Management	<ul style="list-style-type: none"> Heavy Vehicle Movement Signages ARG 21-665 TGS

Table 3 - Stage 1 Overview

The Traffic Guidance Schemes for this project are shown in **Appendix A**.

5.3 Impact on nearby Construction Sites

There are no construction works in the proximity of the construction site.

5.4 Resident Access to Properties

All residents will be able to access their properties at all times.

5.5 Traffic Controller Requirements

All Traffic Controllers (TCs) who attend the construction site must hold the following accreditation in order to perform their Traffic Control duties:

- Traffic Controller Ticket
- Implement Traffic Control Plans Ticket

All Traffic Controllers must also wear the appropriate PPE for the time of day & weather.

Before commencing work all Traffic Controllers are required to attend inductions for the project if mandatory and attend toolbox talks prior to each shift.

All Traffic Controllers need to have suitable TCPs and SWMS for the project on site, any modifications to the TCPs have to be signed off by a Traffic Control Team Leader who holds at least a "Implement Traffic Control Plan" ticket.

The traffic control devices such as signage and delineation must be in place before the Traffic Controllers commence work.

5.6 Long Term Temporary Signage

Any signage that is in place for more than 2 weeks and is continuously required, should, where appropriate, be erected in a permanent manner on signposts sunk into the ground in accordance with AS 1742.3 CL 4.7.5. Where 2 signs are to be displayed together at one location, they may be displayed on the same mounting, either side by side or one above the other if suitable. If one of the 2 displayed signs is a Roadwork Speed Zone sign, it has to be placed closest to the traffic. Roadwork Speed Zone Signs shall be erected at a min. of 600mm between the ground and the underside of the sign. Sign sizes will be determined in accordance to AS 1742.3 CI 3.2.3.

Long Term Temporary Signage must be installed by an experienced person holding a Transport for NSW accreditation of no less than an "Implement Traffic Control Plan" ticket.

Long Term Temporary Signage must accommodate daytime, nighttime & adverse weather conditions. All signs must meet the Australian Standards and Transport for NSW Specifications as per AS 1742.3 2009, Section 3.4.2 as well as the Austroads "Guide to Temporary Traffic Management".

6. Safety Devices

To protect workers from oncoming or passing traffic as well as road users from hazards within the construction site, safety measurements have to be taken.

Static Construction Sites that are closer than 3m to the edge of a live traffic lane require protection by safety barrier systems.

All Safety Barriers shall conform to the requirements of "Road Safety Barrier Systems" AS 3845 and be approved by Transport for NSW.

6.1 Fencing

Combo of ATF fencing along with permanent fencing will be erected along the entire boundary of the site and will be maintained for the duration of the construction works. The fencing is to ensure that only authorized personal can enter the site. The site access gates will be located on Clunies Ross St and Foundation Pl.

6.2 Street Lighting

The street lighting at the construction site is sufficient for nighttime works. No additional lighting is required for the duration of the construction works.

7. Construction Site Management

7.1 Site Compound

The Site Compound of the construction site is located at 44 Clunies Ross St within the construction area.

Access to the site compound is via Clunies Ross St.



Figure 3 - Location of Site Compound

7.2 Contractor Parking Arrangements

Parking Spaces for staff and contractors are within the site compound.

If all spaces are occupied, staff and contractors must park in designated parking areas on Clunies Ross St and Foundation Pl.

7.3 Incident and Complaint Management

Management and Reporting Protocols are outlined in AWJ Civil's Construction Environmental Management Plan.

7.4 Material Handling

Handling of all materials throughout the constructions shall comply to the following:

- all loading operations of materials will occur within the construction site boundary
- no loading outside of provisioned areas
- equipment, materials and waste will be kept within the construction site boundary

7.5 Environmental Procedures

A range of measurements, including those outlined in the Environmental and Sedimental Control Plan (ESCP) shall be implemented to ensure the following:

- no dirt or debris from construction vehicles is tracked onto the public road network
- reduce impacts to sensitive receivers, including, where practicable, operating noisy equipment away from sensitive receivers and implementing respite periods
- watering of dusty activities will be undertaken, or activities temporarily halted and then resumed once weather conditions have improved
- spill kits will be provided at appropriate locations and near the site compound, parking area, dangerous goods areas, and the main project work area
- all vibratory compactors must not be used closer than 30m from residential buildings, unless vibration monitoring confirms compliance with the vibration criteria.
 - AWJ has installed two noise and vibrator monitors to confirm compliance
- Large heavy-duty driveways are present onsite from previous site use, as Austral masonry manufacturing yard. AWJ will have cattle grids and water points for wheel washing at all entry and exit.

8. Construction Site Access Management

The site access for each stage including Heavy Vehicle Routes will be outlined in the sections below. Construction Vehicles will use the indicated site accesses and ingress/egress the site in a forward motion, no reverse movements are allowed. Any turning movements will be carried out within the construction site boundaries.

No construction vehicles should obstruct any pedestrian crossings or footpaths. No Traffic Controller should stop general traffic to allow construction vehicles to enter or exit the site, without an approved ROL.

Definition of Light & Heavy Vehicles for the purpose of this CTMP:

- Light Vehicles – Car, Ute, Four-Wheel Drive, small bus and concrete trucks up to 9.6m in length
- Heavy Vehicles – range from a 12.5m Heavy Rigid Vehicle (HRV) up to 26.0m B-Doubles

All drivers must comply with the Driver Code of Conduct, outlined in Section 8.2.

All heavy construction vehicles will consult the NHVR Route Planner to determine their movements to and from site. The NHVR Route Planner can be viewed at <https://www.nhvr.gov.au/road-access/journey-planner>.

Transport for NSWs Oversize Over Mass Unit will be notified of the roadworks in the event that an oversized load needs to pass the worksite.

8.1 Site Access

The Site Entrances via Clunies Ross St and Foundation Pl as shown in the VMP (**Appendix B**).

Heavy Construction Vehicles will use the following routes to enter and leave the site:

Ingress via Clunies Ross St

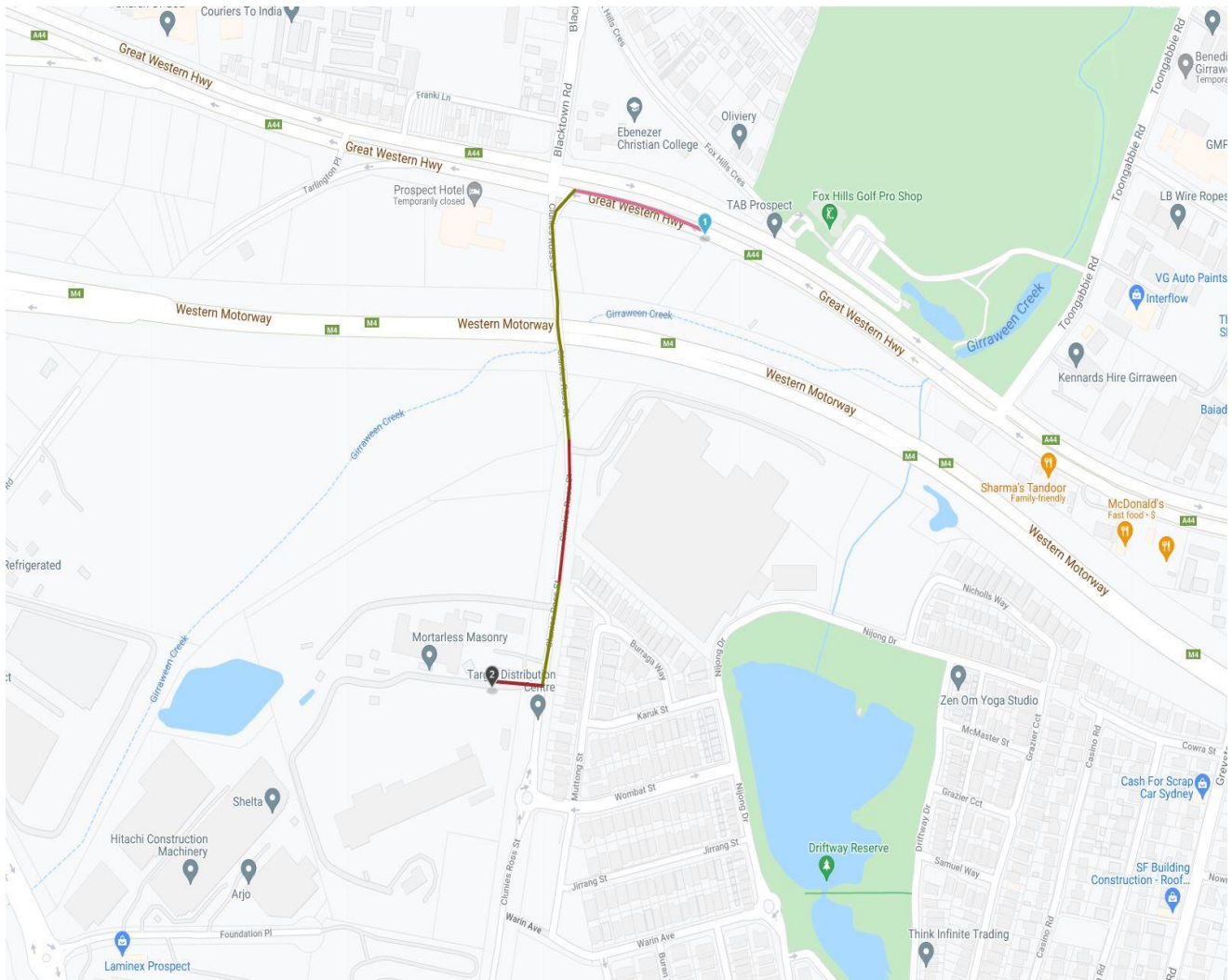


Figure 4 - Ingress via Clunies Ross St

Construction Ingress via:

- Great Western Hwy (EB or WB)
- Clunies Ross St (SB)

Egress via Clunies Ross St

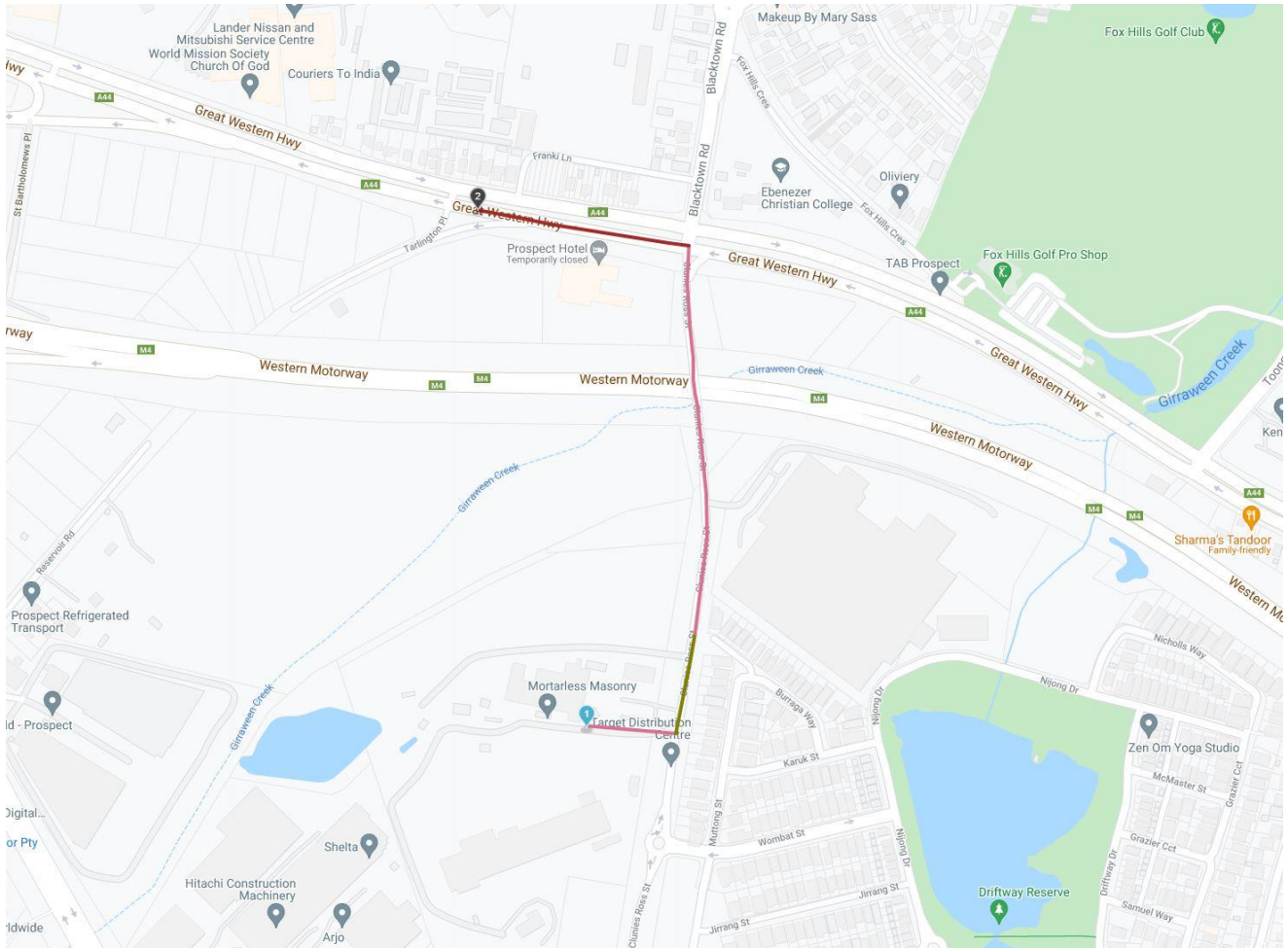


Figure 5 - Egress via Clunies Ross St

Construction Egress via:

- Clunies Ross St (NB) with "NO RIGHT TURN" sign to the Clunies Ross St
- Great Western Hwy (EB or WB)

Ingress via Foundation PI

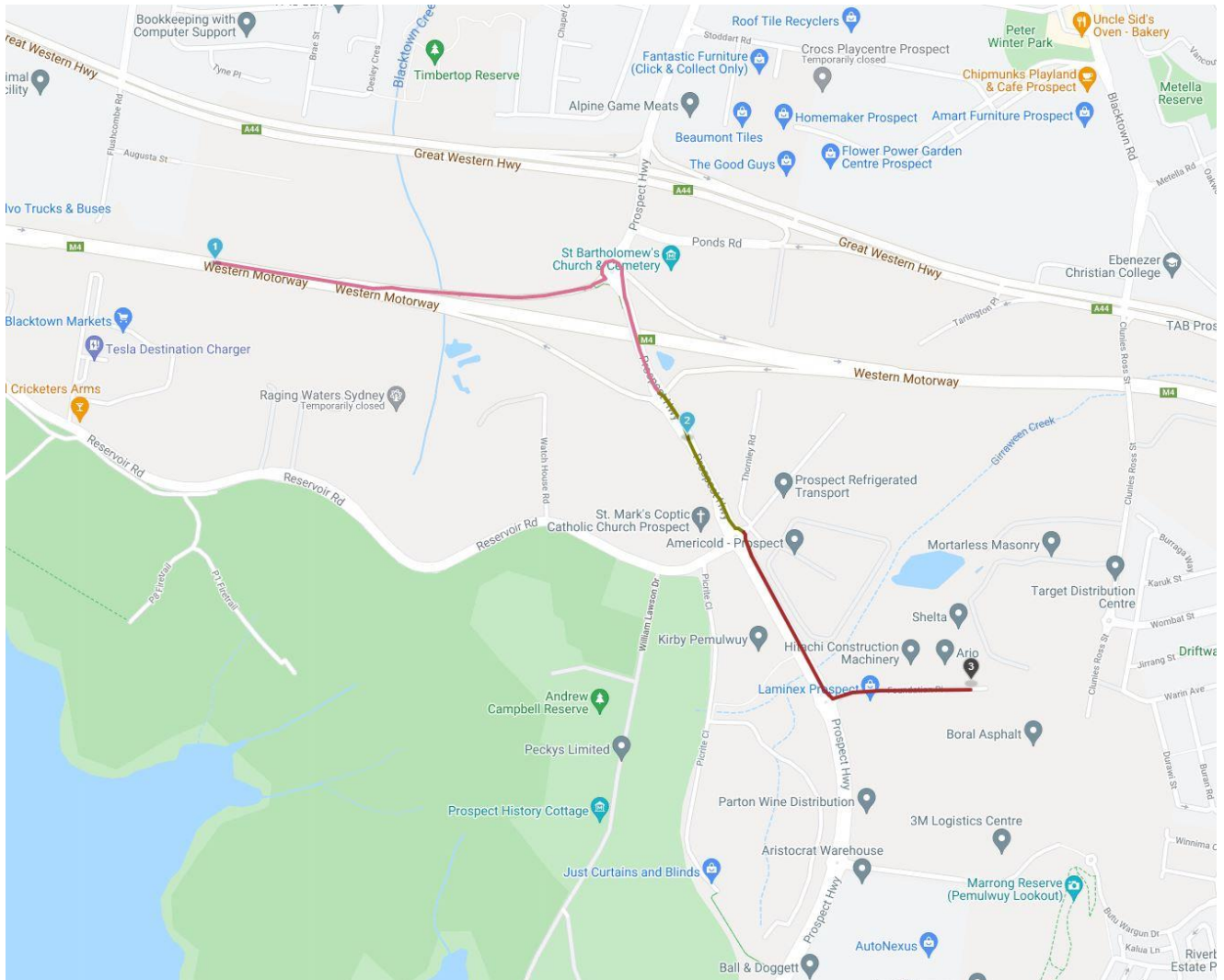


Figure 6 - Ingress via Foundation PI

Construction Ingress via:

- Western Motorway (EB or WB)
- Prospect Hwy (SB)
- Foundation PI (EB)

Egress via Foundation PI

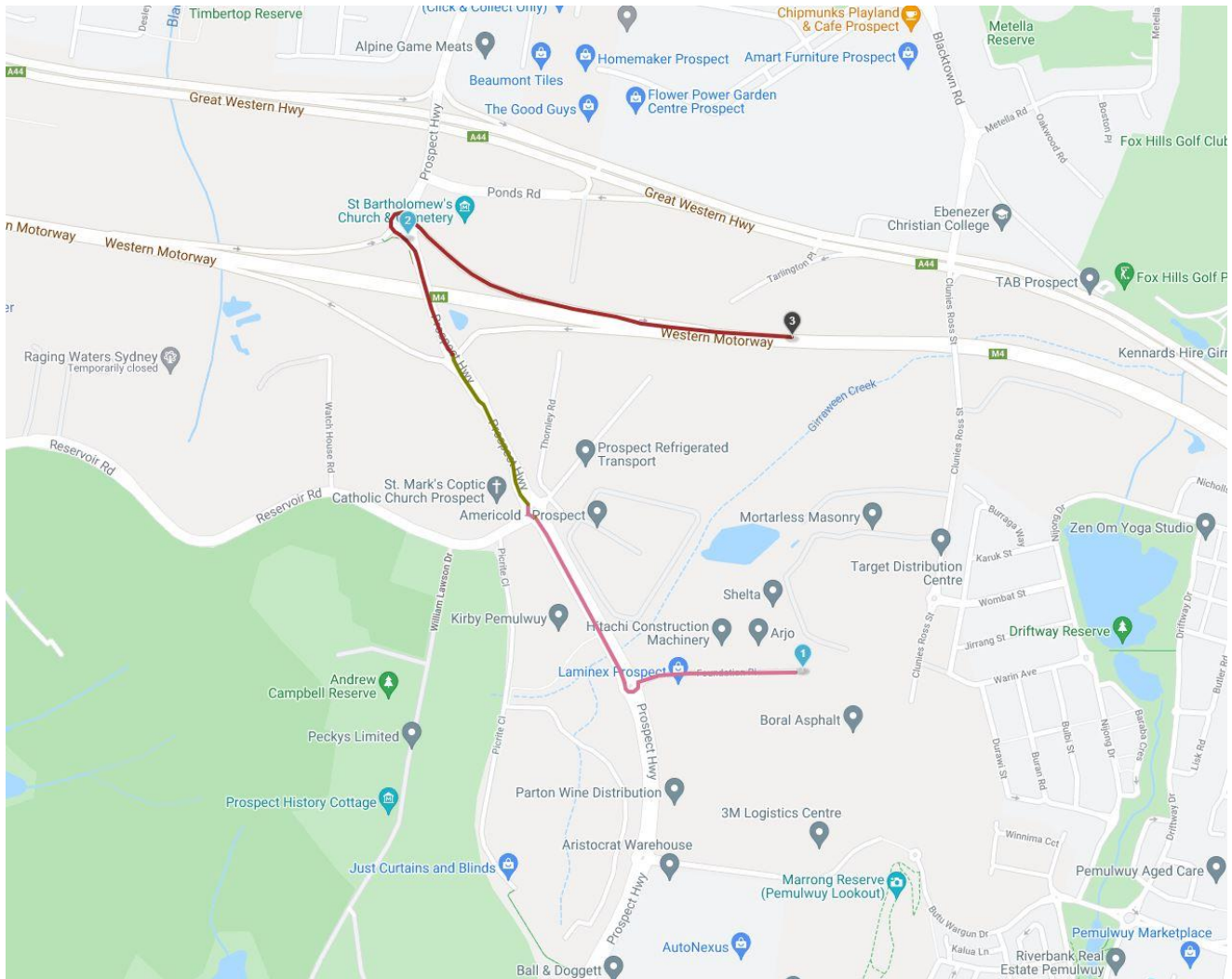


Figure 7 - Egress via Foundation PI

Construction Egress via:

- Foundation PI (WB)
- Prospect Hwy (NB)
- Western Motorway (EB or WB)

8.1.1 Construction Vehicle Movements per Day

The following Construction Vehicles will be on site:

- Cars
- Utes
- Trucks and Dogs
- Excavators
- Semi – Trailers
- Scrapers 827

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Light Vehicles	≤30	≤30	≤30	≤30	≤30	≤30	/
Heavy Vehicles	≤30	≤30	≤30	≤30	≤30	≤30	/

Table 4 - Construction Vehicle Movements Stage 1

8.2 Driver Code of Conduct

All Drivers on Site must:

- be responsible and accountable for their own actions while operating a company vehicle
- must have a current Driver License for the class of vehicle they are operating
- comply with all traffic and road legislations
- undertake daily pre-start checks of oil, tyre pressures, radiator and battery levels of company vehicles that they regularly use
- drive within the legal speed limit incl. driving to the environmental conditions
- not drive outside the approved Heavy Vehicle Routes
- be cognizant of the noise and emission requirements imposed within the Environmental Impact Statement (EIS)
- not queue on public roads unless an approval has been sought
- never drive under the influence of alcohol and other drugs, incl prescriptions and over the counter medication that cause drowsiness, influences brain functions, neural activities and various vital functions of the body
 - report to their supervisor if they have been prescribed medication prior to the start of the works
- avoid distraction when driving
 - adjust car stereos/ mirrors etc. before setting off or pull over to safely do so
 - not play with their mobile phone while operating the vehicle
- report ALL near-misses, crashes, and scrapes to their manager
- report vehicle defects to a manager prior to the next use of the vehicle
- keep loads covered at all times

8.3 Work site inspections, recording and reporting

The inspection, review and audit of temporary traffic management (TTM) arrangements are critical to ensure that the work site is operating safely. As such, the structure, schedule and frequency of these activities must be considered and identified during the TTM planning phase. These aspects will vary depending on the size, complexity and duration of works as per TCWS technical manual V6 (2020) section 8.

Weekly inspections must only be carried out by a PWZTMP qualified person. Weekly inspections must be carried out when a site is first open and at least once every week thereafter.

Weekly TTM inspection checklist is shown in **Appendix D**.

9. Public Transport Services

9.1 Railway Services

The *Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area* (Transport for NSW – December 2013) states that rail services influence the travel choices of areas that are within 800m (10min walk) of a railway station.

The closest station to the construction site is Pendle Hill Station and is approx. 4km north-east of the site. This suggests that the construction works have minimal impact on the commute by rail.

9.2 Bus Services

The *Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area* (Transport for NSW – December 2013) states that bus services influence the travel choices of areas that are within 400m (5min walk) of a bus stop.

The closest bus stop to the construction site is "Clunies Ross St opp Wombat St".

Busways are currently providing route services within the vicinity of the proposed construction site on Clunies Ross St.

The table below shows the Control Methods for the affected Bus Routes:

Bus Route	Direction	Bus Stop ID	Control Method
800	Clunies Ross St opp Wombat St	2145673	Bus Stops are not affected by the construction works.
800	Clunies Ross St at Wombat St	2145674	

Table 5 - Bus Services in the vicinity of the construction works

10. Impacts on the Community

10.1 Communication Strategy

A communication Strategy will be established by AWJ Civil to inform residents in the area, schools and businesses of the proposed construction works. Resident access will be maintained at all times. The table below outlines the communication strategy to ensure that adequate communication with key stakeholders have been met.

Risk	Strategy	Communication Channel
Wider Traffic Disruption	Wider Community and Stakeholders informed through letter box drops	Letter Box Drops by AWJ Civil
Construction Related Traffic	<p>Ensure that Heavy Construction Vehicles use routes as identified in the CTMP</p> <p>and</p> <p>Ensure that residents in the area are notified in advance to any traffic changes that may affect them</p>	

Table 6 - Communication Strategy

10.2 Pedestrian Management

Pedestrians will not be affected by the construction works.

Pedestrian Movement as shown in **Appendix C**.

10.3 Cyclist Management

Cyclist can either use the road together with the vehicles on the road and obey the rules of the road or dismount their bicycles, cross the road as per Pedestrian Movement Plan and pass the work area.

10.4 Emergency Services

Emergency vehicle can ingress and egress the site using the indicated site access on Clunies Ross St and Foundation Pl.

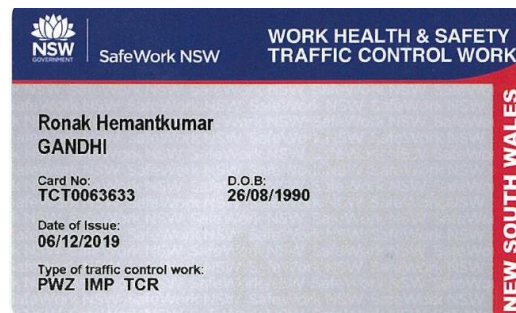


Ronak Gandhi
Planner

B.E. Civil

ME/MEM Civil

PWZTMP No: TCT0063633



Appendix A – Traffic Guidance Schemes



Compliance Notes: 1. Plans Scale 1:500 2. A or B size signs are to be used 3. 700mm cones are required with retroreflective bands 4. Cone spacing is in accordance with AGTMM-19 5. Appropriate PPE is to be worn for the conditions 6. Traffic Controllers to use radios when verbal communication is required 7. Any site specific conditions to be noted 8. All signs subject to +25%, -10% tolerances 9. Sign checks are required every hour 10. Any active Traffic Controllers to have escape route and 1.5 D sight site distance at their location 11. Drawn IAW AS 1742.3 2009, TCAWS V5 2018 & AGTMM-19	Designed by: Ronak Gandhi	Legend Work Area			Site Specific Notes: Long Term Works Heavy Vehicles	Project: 44 Clunies Ross St
	License No: TCT 0063633					Work Location: 44 Clunies Ross St, Prospect, NSW 2148
	Signature: 					Drawing No: ARG 21-665 TGS Page: 01 of 0
	Date: 22/06/2021				Client: 	


Appendix B – Vehicle Movement Plan



Compliance Notes: 1. Plans Scale 1:500 2. A or B size signs are to be used 3. 700mm cones are required with retroreflective bands 4. Cone spacing is in accordance with AGTMM-19 5. Appropriate PPE is to be worn for the conditions 6. Traffic Controllers to use radios when verbal communication is required 7. Any site specific conditions to be noted 8. All signs subject to +25%, -10% tolerances 9. Sign checks are required every hour 10. Any active Traffic Controllers to have escape route and 1.5 D sight site distance at their location 11. Drawn IAW AS 1742.3 2009, TCAWS V5 2018 & AGTMM-19	Designed by: Ronak Gandhi	Legend Vehicle Egress Vehicle Igress Work Area	 ALLROAD GROUP	Site Specific Notes: Long Term Works Vehicle Movement plan	Project: 44 Clunies Ross St
	License No: TCT 0063633				Work Location: 44 Clunies Ross St, Prospect, NSW 2148
	Signature: 				Drawing No: ARG 21-666 TGS Page: 01 of 0
	Date: 22/06/2021			Client: AWJ	

Appendix C – Pedestrian Movement Plan



Compliance Notes: 1. Plans Scale 1:500 2. A or B size signs are to be used 3. 700mm cones are required with retroreflective bands 4. Cone spacing is in accordance with AGTMM-19 5. Appropriate PPE is to be worn for the conditions 6. Traffic Controllers to use radios when verbal communication is required 7. Any site specific conditions to be noted 8. All signs subject to +25%, -10% tolerances 9. Sign checks are required every hour 10. Any active Traffic Controllers to have escape route and 1.5 D sight site distance at their location 11. Drawn IAW AS 1742.3 2009, TCAWS V5 2018 & AGTMM-19	Designed by: Ronak Gandhi	Legend ● Pedestrian Path ■ Work Area		 ALLROAD GROUP	Site Specific Notes: Long Term Works Pedestrian Movement Plan	Project: 44 Clunies Ross St
	License No: TCT 0063633					Work Location: 44 Clunies Ross St, Prospect, NSW 2148
	Signature: 					Drawing No: ARG 21-667 TGS Page: 01 of 0
	Date: 22/06/2021				Client: 	

Appendix D – Weekly TTM inspection checklist

E.3 Weekly TTM inspection checklist

Weekly inspections must only be carried out by a PWZTMP qualified person. Weekly inspections must be carried out when a site is first open and at least once every week thereafter.

Completed by:			
Name:		Signature:	
TMP Reference:		TGS Reference:	
Date:		Inspection type	<input type="checkbox"/> Pre-opening <input type="checkbox"/> Weekly
Desktop review			
Is a copy of the location TMP and relevant TGS available?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no inspection must not be undertaken until documents are obtained</i>			
Details of TMP and TGS:			
Are the location TMP and relevant TGS approved?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, work must be stopped until documents are approved</i>			
Comments or details of action taken:			
Site Inspection			
Inspection completed:	<input type="checkbox"/> During the day <input type="checkbox"/> During the night		
Signs and devices positioned as prescribed and commanding attention?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no provide details and rectify signs</i>			
Comments or details of action taken:			

Site Inspection		
Sign sizes as prescribed?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details and rectify signs		
Comments or details of action taken:		
Signs are mounted level and suitably clear of travel lanes?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details and rectify signs		
Comments or details of action taken:		
Has temporary delineation been applied as prescribed, with permanent markings obliterated?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details of action required to rectify delineation		
Comments or details of action taken:		
Are registered trailers i.e. VMS / light towers; suitably clear of travel lanes and delineated?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details and rectify location		
Comments or details of action taken:		
Are temporary speed zones operating as prescribed?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details and discuss with work supervisor		
Comments or details of action taken:		
Are PTCD positioned as prescribed in TGS?		<input type="checkbox"/> Yes <input type="checkbox"/> No
If no provide details of action required to rectify		
Comments or details of action taken:		

Site Inspection

Are manual traffic controllers clear of travel lane, have suitable escape route?

If no provide details of action required to rectify

☐ Yes

☐ No

Comments or details
of action taken:

Are site accesses and egresses well defined and safe for work vehicles?

If no provide details of action required to rectify

☐ Yes

☐ No

Comments or details
of action taken:

Termination signs are suitably located? i.e. D downstream of last activity.

If no provide details of action required to rectify

☐ Yes

☐ No

Comments or details
of action taken:



APPENDIX 5 – NOISE AND VIBRATION MANAGEMENT PLAN

(AS PER CONDITION B41 – B45 OF THE SSD)

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

ELEVATION @ GREYSTANES

Construction Noise and Vibration Management Plan SSD 10399

Prepared for:

Aliro Group
Level 38
Gateway
1 Macquarie Place
Sydney NSW 2000

SLR Ref: 610.30560-R01
Version No: -v1.1
September 2021



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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Aliro Group (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30560-R01-v1.1	27 September 2021	Steven Luzuriaga	Antony Williams	Antony Williams
610.30560-R01-v1.0	23 September 2021	Steven Luzuriaga	Antony Williams	Antony Williams

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APPENDICES

Appendix A	Acoustic Terminology
Appendix B	Community Consultation Minutes

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Aliro Group (Aliro) to prepare a Construction Noise and Vibration Management Plan (CNVMP) for construction works associated with the development of Elevation @ Greystanes (the development/project) at 44 Clunies Ross Street, Lot 107 Clunies Ross Street, Prospect NSW and 615A Great Western Highway Pemulwuy, NSW.

This CNVMP addresses the potential noise and vibration impacts associated with the construction of the development and details the mitigation and management procedures for dealing with potential impacts. Construction noise and vibration impacts were previously assessed as part of the *SSD 10399 – Prospect Logistics Estate – Noise Impact Assessment* prepared by White Noise Acoustics in August 2020 (the NIA).

SLR is suitably qualified to produce this CNVMP and is a member of the Australian Acoustical Society (AAS). SLR is also a member firm of the Association of Australasian Acoustical Consultants (AAAC). Specific acoustic terminology is used in this report. An explanation of common acoustic terms is provided in **Appendix A**.

2 Development Overview

The development comprises the construction, fit out and operation of seven warehouses, offices, a cafe, and associated infrastructure with a combined gross floor area of 95,150 m².

Key components of the project include:

- Site preparation works including the demolition of existing structures, removal of hardstand and ancillary infrastructure and vegetation clearing
- Remediation, bulk earthworks and supporting structures
- Land stabilisation and rehabilitation
- Construction of seven warehouse buildings, ancillary offices and a café
- Provision of car parking spaces
- Landscaping works.

The buildings are expected to be used as warehouse and distribution centres. Vehicle access to the site will be provided via Foundation Place to the west and Clunies Ross Street to the east.

The location of the development and surrounding receivers are shown in **Figure 1**. The layout is shown in **Figure 2**.

Table 1 Surrounding Sensitive Receivers

ID	Address	Receiver Type	Distance (m) from Site Boundary	Direction
R01	33 Burraga Way, Pemulwuy NSW	Residential	35	East
R02	27 Muttong St, Pemulwuy NSW	Residential	40	East
R03	34 Wombat St, Pemulwuy NSW	Residential	35	East
R04	59 Muttong St, Pemulwuy NSW	Residential	35	East
R05	10 Durawi St, Pemulwuy NSW	Residential	175	East
R06	3M logistics - 5 Reconciliation Rise, Pemulwuy NSW	Commercial	10	South
R07	Laminex Prospect - 2 Foundation Pl, Prospect NSW	Commercial	10	South
R08	Shelta Umbrellas - 4/1 Foundation Pl, Pemulwuy NSW	Commercial	10	West
R09	32 Great Western Hwy, Prospect NSW	Residential	300	North

3 Development Consent

This CNVMP has been prepared to accompany the Construction Environmental Management Plan (CEMP) for the development.

Development Consent for the project was approved by the Minister for Planning and Public Spaces in SSD 10399, dated 2 July 2021. The conditions relevant to this CNVMP are reproduced in **Table 2**.

Table 2 Development Consent Conditions

Development Consent	Where Addressed								
Noise									
<p>Hours of Work</p> <p>B38. The Applicant must comply with the hours detailed in Table 3, unless otherwise agreed in writing by the Planning Secretary.</p> <p>Table 3 <i>Hours of Work</i></p> <table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td rowspan="2">Earthworks and Construction</td><td>Monday – Friday</td><td>7 am to 6 pm</td></tr><tr><td>Saturday</td><td>8 am to 1 pm</td></tr></table>	Activity	Day	Time	Earthworks and Construction	Monday – Friday	7 am to 6 pm	Saturday	8 am to 1 pm	Section 6.2
Activity	Day	Time							
Earthworks and Construction	Monday – Friday	7 am to 6 pm							
	Saturday	8 am to 1 pm							
<p>B39. Works outside of the hours identified in condition B38 may be undertaken in the following circumstances:</p> <ul style="list-style-type: none">a) works that are inaudible at the nearest sensitive receivers;b) works agreed to in writing by the Planning Secretary;c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; ord) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.	Section 6.2								
<p>Construction Noise Limits</p> <p>B40. The development must be constructed to achieve the construction noise management levels detailed in the <i>Interim Construction Noise Guideline</i> (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the approved Construction Noise and Vibration Management Plan required by condition B41.</p>	Section 6, 7								

Development Consent	Where Addressed
Construction Noise and Vibration Management Plan	
<p>B41. Prior to the commencement of earthworks, the Applicant must prepare a Construction Noise and Vibration Management Plan for the development to the satisfaction of the Planning Secretary. The Plan must form part of a CEMP in accordance with condition C2 and must:</p> <ul style="list-style-type: none"> a) be prepared by a suitably qualified and experienced noise expert whose appointment has been endorsed by the Planning Secretary; b) describe procedures for achieving the noise management levels in EPA's <i>Interim Construction Noise Guideline</i> (DECC, 2009) (as may be updated or replaced from time to time); c) describe the measures to be implemented to manage high noise generating works such as jackhammering, concrete sawing and piling, including the use of temporary acoustic screens or barriers and monitoring during high noise generating works; d) include strategies that have been developed with the community for managing high noise generating works, such as work scheduling and respite periods; e) describe the community consultation undertaken to develop the strategies in condition B41(d); and f) include a complaints management system that would be implemented for the duration of construction. 	<p>This CNVMP</p> <p>Section 1</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7.1</p> <p>Section 7.4</p>
<p>B42. The Applicant must:</p> <ul style="list-style-type: none"> a) not commence earthworks for the development until the Construction Noise and Vibration Management Plan required by condition B41 is approved by the Planning Secretary; and b) implement the most recent version of the Construction Noise and Vibration Management Plan approved by the Planning Secretary for the duration of earthworks and construction. 	<p>This CNVMP</p> <p>Section 7.8</p>
VIBRATION	
<p>Vibration Criteria</p> <p>B43. Vibration caused by earthworks and construction at any residence or structure outside the site must be limited to:</p> <ul style="list-style-type: none"> a) for structural damage, the latest version of <i>DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures</i> (German Institute for Standardisation, 1999); and b) for human exposure, the acceptable vibration values set out in the <i>Environmental Noise Management Assessing Vibration: a technical guideline</i> (DEC, 2006) (as may be updated or replaced from time to time). 	<p>Section 5.4</p>

Development Consent	Where Addressed
Environmental Management	
<p>Management Plan Requirements</p> <p>C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <ul style="list-style-type: none"> a) details of: <ul style="list-style-type: none"> (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; c) a program to monitor and report on the: <ul style="list-style-type: none"> (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to paragraph (b) above; d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; e) a program to investigate and implement ways to improve the environmental performance of the development over time; f) a protocol for managing and reporting any: <ul style="list-style-type: none"> (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and g) a protocol for periodic review of the plan. <p><i>Note: the Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans</i></p>	<p>This CNVMP</p> <p>Section 5</p> <p>Section 5</p> <p>Section 7</p> <p>Section 7</p> <p>Section 7.3</p> <p>Section 7.3</p> <p>Section 7.5</p> <p>Section 7.8</p> <p>Section 7.5</p> <p>Section 7.4</p> <p>Section 7.5</p> <p>Section 7.8</p>
Appendices	
<p>Appendix 2 – Noise and Vibration</p> <ul style="list-style-type: none"> • all plant and equipment are to be maintained such that they are in good working order • a register of complaints is to be recorded in the event of complaints being received, including location, time of complaint, nature of complaint and actions resulting from the complaint • if required a noise level measurement of the offending plant item generating complaints is to be conducted and noise mitigations undertaken to reduce noise levels to within the Noise Management levels in the event magnitude of noise levels is found to be above suitable levels • the use of percussive and concrete sawing should be undertaken behind a closed façade when possible • the use of high noise generating equipment including hydraulic hammers, rock cutters or the like should not be undertaken prior to 8am Monday to Friday or 8:30am Saturdays 	<p>Section 7</p> <p>Section 7.4</p> <p>Section 7.4</p> <p>Section 7.4</p> <p>Section 7.4</p> <p>Section 7.4</p>

Development Consent	Where Addressed
<ul style="list-style-type: none">the loading of trucks should be conducted such that there is not a requirement to stack truck on the roadways adjacent to residential receiversa construction and vibration management plan to be prepared to include mitigation measures to be implemented to minimise construction and manage all construction impacts	Section 7.4 This CNVMP

4 Existing Noise Environment

Unattended noise monitoring was completed at the site between January and February 2020 as part of the NIA. The measured noise levels have been used to determine the existing noise environment and to set the criteria used to assess the potential impacts from the project.

The monitoring equipment was positioned to measure existing noise levels that are representative of receivers potentially most affected by the project.

The noise monitoring equipment continuously measured existing noise levels in 15-minute periods during the daytime, evening and night-time.

The noise monitoring locations are shown in **Figure 1** and the results are summarised in **Table 3**. Further information regarding the monitoring, including methodology and detailed data, is provided in the NIA.

Table 3 Summary of Ambient and Background Noise Levels

ID	Address	Measured Noise Levels (dBA)					
		Background Noise (RBL)			Average Noise (LAeq)		
		Day	Evening	Night	Day	Evening	Night
North	Clunies Ross Street, Prospect NSW	52	50	44	58	54	52
South	Clunies Ross Street, Prospect NSW	48	46	40	52	51	44

Note 1: The assessment periods are the daytime which is 7 am to 6 pm Monday to Saturday and 8 am to 6 pm on Sundays and public holidays, the evening which is 6 pm to 10 pm, and the night-time which is 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sunday and public holidays. See the NSW EPA *Noise Policy for Industry*.

5 Assessment Criteria

5.1 Construction Noise and Vibration Guidelines

The standards and guidelines relevant to the development are listed in **Table 4**. These guidelines aim to protect the community and environment from excessive noise and vibration impacts during construction of projects.

Table 4 Construction Noise and Vibration Standards and Guidelines

Guideline/Policy Name	Where Guideline Used
<i>Interim Construction Noise Guideline</i> (ICNG) (DECC, 2009)	Assessment of airborne noise impacts on sensitive receivers
<i>Construction Noise and Vibration Guideline</i> (CNVG) (Roads and Maritime Services, 2016)	Assessment and management protocols for noise and vibration impacts
<i>Road Noise Policy</i> (RNP) (DECCW, 2011)	Assessment of construction traffic impacts
<i>BS 7385 Part 2-1993 Evaluation and measurement for vibration in buildings Part 2</i> , BSI, 1993	Assessment of vibration impacts (structural damage) to non-heritage sensitive structures
<i>DIN 4150:Part 3-2016 Structural vibration – Effects of vibration on structures</i> , Deutsches Institute fur Normung, 1999	Screening assessment of vibration impacts (structural damage) to heritage sensitive structures, where the structure is found to be unsound
<i>Assessing Vibration: a technical guideline</i> (DEC, 2006)	Assessment of vibration impacts on sensitive receivers

5.2 Interim Construction Noise Guideline

The NSW *Interim Construction Noise Guideline* (ICNG) is used to assess and manage impacts from construction noise on residences and other sensitive land uses in NSW.

The ICNG contains procedures for determining project specific Noise Management Levels (NMLs) for sensitive receivers based on the existing background noise in the area. The 'worst-case' noise levels from construction of a project are predicted and then compared to the NMLs in a 15-minute assessment period to determine the likely impact of the project.

The NMLs are not mandatory limits, however, where construction noise levels are predicted or measured to be above the NMLs, feasible and reasonable work practices to minimise noise emissions are to be investigated.

Residential Receivers

The ICNG approach for determining NMLs at residential receivers is shown in **Table 5**.

Table 5 ICNG NMLs for Residential Receivers

Time of Day	NML LAeq(15minute)	How to Apply
Standard Construction Hours Monday to Friday 7:00 am to 6:00 pm Saturday 8:00 am to 1:00 pm No work on Sundays or public holidays	Noise affected RBL ¹ + 10 dB	<ul style="list-style-type: none"> The noise affected level represents the point above which there may be some community reaction to noise Where the predicted or measured LAeq(15minute) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly Noise Affected 75 dBA	<ul style="list-style-type: none"> The Highly Noise Affected (HNA) level represents the point above which there may be strong community reaction to noise Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restructuring the hours that the very noisy activities can occur, taking into account: <ul style="list-style-type: none"> Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools or mid-morning or mid-afternoon for works near residences) If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Standard Construction Hours	Noise affected RBL + 5 dB	<ul style="list-style-type: none"> A strong justification would typically be required for works outside the recommended standard hours The proponent should apply all feasible and reasonable work practices to meet the noise affected level Where all feasible and reasonable practises have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.

Note 1: The RBL is the Rating Background Level and the ICNG refers to the calculation procedures in the NSW *Industrial Noise Policy* (INP). The INP has been superseded by the NSW EPA *Noise Policy for Industry* (NPfi).

‘Other Sensitive’ Land Uses and Commercial Receivers

The ICNG NMLs for ‘other sensitive’ non-residential land uses are shown in **Table 6**.

Table 6 NMLs for 'Other Sensitive' Receivers

Land Use	Noise Management Level LAeq(15minute) (dBA) (Applied when the property is in use)	
	Internal	External
ICNG 'Other Sensitive' Receivers		
Classrooms at schools and other educational institutions	45	55 ¹
Hospital wards and operating theatres	45	65 ²
Places of worship	45	55 ¹
Active recreation areas (characterised by sporting activities and activities which generate noise)	-	65
Passive recreation areas (characterised by contemplative activities that generate little noise)	-	60
Commercial	-	70
Industrial	-	75
Non-ICNG 'Other Sensitive' Receivers		
n/a	-	-

Note 1: It is assumed that these receivers have windows partially open for ventilation which results in internal noise levels being around 10 dB lower than the external noise level.

Note 2: It is assumed that these receivers have fixed windows which conservatively results in internal noise levels being around 20 dB lower than the external noise level.

Sleep Disturbance

A method for assessing sleep disturbance is contained in the NPfI. Although the NPfI sleep disturbance criteria relates to industrial noise, it is also considered relevant for reviewing potential impacts from construction noise as a screening criteria to identify the need for further assessment. The NPfI notes that a detailed maximum noise level assessment should be undertaken where a project results in night-time noise levels which exceed 52 dBA LA_{Fmax} or the prevailing background level plus 15 dB, whichever is the greater.

Works will be undertaken during standard daytime construction hours, in accordance with Condition B38. Should works be required during out of hours periods, and be approved under Condition B39, the sleep disturbance screening level of night-time RBL plus 15 dB will be applied.

NML Summary

The NMLs for the project have been determined in accordance with the requirements of the ICNG and are shown in **Table 7**.

Table 7 Construction NMLs

ID	Receiver Type	Representative Logger Location	Noise Management Level (LAeq(15minute) – dBA)				Sleep Disturbance Screening Level (RBL+15 dB) (LAmax dBA)
			Standard Construction Hours (RBL+10dB)	Out of Hours ¹ (RBL+5dB)			
			Daytime	Daytime ²	Evening	Night-time	Night-time
R01	Residential	North	62	57	55	49	59
R02							
R03	Residential	South	58	53	51	45	55
R04							
R05							
R06	Commercial	-	70	70 (when in use)			-
R07							
R08							
R09	Residential	North	62	57	55	49	59

Note 1: Works will be undertaken during standard daytime construction hours, in accordance with Condition B38. Where out of hours works are required, and are approved under Condition B39, the out of hours NMLs would apply.

Note 2: Daytime out of hours is 7 am to 8 am and 1 pm to 6 pm on Saturday, and 8 am to 6 pm on Sunday and public holidays.

5.3 Construction Road Traffic Noise Guidelines

The potential impacts from construction traffic on public roads are assessed under the NSW EPA *Road Noise Policy* (RNP) and Roads and Maritime (now Transport for NSW) *Construction Noise and Vibration Guideline* (CNVG).

An initial screening test is first applied to evaluate if existing road traffic noise levels are expected to increase by more than 2.0 dB as a result of construction traffic. Where this is considered likely, further assessment is required using the RNP base criteria shown in **Table 8**.

Table 8 RNP Criteria for Assessing Construction Vehicles on Public Roads

Road Category	Type of Project/Land Use	Assessment Criteria (dBA)	
		Daytime (7 am – 10 pm)	Night-time (10 pm – 7 am)
Freeway/ arterial/ sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	LAeq(15hour) 60 (external)	LAeq(9hour) 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	LAeq(1hour) 55 (external)	LAeq(1hour) 50 (external)

The NIA predicted construction traffic to result in a minimal increase (ie less than 2 dB) in the overall traffic noise levels along the construction haulage routes. As such, construction traffic noise impacts have not been assessed further.

5.4 Vibration Guidelines

The effects of vibration from construction work can be divided into three categories:

- Those in which the occupants of buildings are disturbed (**human comfort**). People can sometimes perceive vibration impacts when vibration generating construction work is located close to occupied buildings. Vibration from construction work tends to be intermittent in nature and the EPA's *Assessing Vibration: a technical guideline* (2006) provides criteria for intermittent vibration based on the Vibration Dose Value (VDV), as shown in **Table 9**.
- Those where building contents may be affected (**building contents**). People perceive vibration at levels well below those likely to cause damage to building contents. For most receivers, the human comfort vibration criteria are the most stringent and it is generally not necessary to set separate criteria for vibration effects on typical building contents. Exceptions to this can occur when vibration sensitive equipment, such as electron microscopes or medical imaging equipment, are in buildings near to construction work. No such equipment has been identified in the study area.
- Those where the integrity of the building may be compromised (**structural/cosmetic damage**). If vibration from construction work is sufficiently high, it can cause cosmetic damage to elements of affected buildings. Industry standard cosmetic damage vibration limits are specified in British Standard BS 7385 and German Standard DIN 4150. The limits are shown in **Table 10** and **Table 11**.

Table 9 Human Comfort Vibration – Vibration Dose Values for Intermittent Vibration

Building Type	Assessment Period	Vibration Dose Value ¹ (m/s ^{1.75})	
		Preferred	Maximum
Critical Working Areas (eg operating theatres or laboratories)	Day or night-time	0.10	0.20
Residential	Daytime	0.20	0.40
	Night-time	0.13	0.26
Offices, schools, educational institutions and places of worship	Day or night-time	0.40	0.80
Workshops	Day or night-time	0.80	1.60

Note 1: The VDV accumulates vibration energy over the daytime and night-time assessment periods, and is dependent on the level of vibration as well as the duration.

Table 10 Cosmetic Damage – BS 7385 Transient Vibration Values for Minimal Risk of Damage

Group	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures. Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Note 1: Where the dynamic loading caused by continuous vibration may give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values may need to be reduced by up to 50%.

Table 11 Cosmetic Damage – DIN 4150 Guideline Values for Short-term Vibration on Structures

Group	Type of Structure	Guideline Values Vibration Velocity (mm/s)				
		Foundation, All Directions at a Frequency of			Topmost Floor, Horizontal	Floor Slabs, Vertical
		1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All frequencies	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified as Group 1 or 2 and are of great intrinsic value (eg heritage listed buildings)	3	3 to 8	8 to 10	8	20 ¹

Note 1: It may be necessary to lower the relevant guideline value markedly to prevent minor damage.

5.4.1 Heritage Buildings or Structures

Heritage listed buildings and structures should be considered on a case-by-case basis but as noted in BS 7385 should not be assumed to be more sensitive to vibration, unless structurally unsound. Where a heritage building is deemed to be sensitive, the more stringent DIN 4150 Group 3 guideline values in **Table 11** can be applied.

No heritage buildings have been identified in the vicinity of the development.

5.4.2 Minimum Working Distances for Vibration Intensive Works

Minimum working distances for typical vibration intensive construction equipment are provided in the RMS (now Transport for NSW) CNVG and are shown in **Table 12**. The minimum working distances are for both cosmetic damage (from BS 7385 and DIN 4150) and human comfort (from the NSW EPA *Assessing Vibration: a technical guideline*). They are calculated from empirical data which suggests that where work is further from receivers than the quoted minimum distances then impacts are not considered likely.

Table 12 Recommended Minimum Working Distances from Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage		Human Response (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
	<200 kN (4–6 tonne)	12 m	25 m	40 m
	<300 kN (7–13 tonne)	15 m	31 m	100 m
	>300 kN (13–18 tonne)	20 m	40 m	100 m
	>300 kN (>18 tonne)	25 m	50 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Large Hydraulic Hammer	1,600 kg (18 to 34 t excavator)	22 m	44 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	5 m to 40 m	20 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	4 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

The minimum working distances are indicative and will vary depending on the particular item of equipment and local geotechnical conditions. The distances apply to cosmetic damage of typical buildings under typical geotechnical conditions.

6 Construction Noise and Vibration Impacts

6.1 Construction Airborne Noise Assessment Methodology

A noise model of the study area has been used to predict noise levels from the proposed construction work to all surrounding receivers. The model uses ISO 9613 algorithms in SoundPLAN V8.2 software.

Local terrain, receiver buildings and structures were digitised in the noise model to develop a three-dimensional representation of the construction sites and surrounding areas.

6.1.1 Construction Activities

The construction activities required to build the development are shown in **Table 13**. Sound power levels for individual items of equipment and the overall activity are shown in the table.

The assessment uses 'realistic worst-case' scenarios to determine the impacts from the noisiest 15-minute period that are likely to occur for each work scenario, as required by the ICNG.

Table 13 Sound Power Levels for Construction Equipment

ID	Construction Activity	Equipment	Operating minutes in 15-min period ²	No of items in same location	Sound Power Level Lw (dBA)	
					Item	Activity
W.001	Site Establishment	Excavator - Rockbreaker	5	1	121	123
		Excavator 30T	10	3	109	
		Excavator 15T	10	1	97	
		Articulated Dump Truck (40t)	10	6	107	
		Grader	15	2	108	
		20T Roller	15	2	98	
		Truck (water cart)	10	1	107	
		Compactor	10	3	108	
		Scraper	10	3	116	
W.002	Hardstand, Stormwater and Pavements (including piling)	Piling - Bored	15	1	111	120
		Excavator 15T	15	1	97	
		Concrete Mixer Truck	10	1	103	
		Mobile Crane - Franna	15	1	98	
		Articulated Dump Truck (40t)	15	6	107	
		Excavator 30T	15	1	109	
		Excavator - Rockbreaker	5	1	121	
		Front End Loader	7.5	1	104	
		Truck (water cart)	10	1	107	
		20T Roller	15	1	98	
		Roller - Vibratory (12 tonne)	15	1	109	
		Grader	15	1	108	

ID	Construction Activity	Equipment	Operating minutes in 15-min period ²	No of items in same location	Sound Power Level Lw (dBA)	
					Item	Activity
W.003	Warehouse construction and fitout	Mobile Crane (100 tonne)	15	1	100	113
		Mobile Crane - Franna	15	1	98	
		Elevated Working Platform	15	10	97	
		Hand Tools	15	10	94	
		Truck (water cart)	10	1	107	
		Concrete Pump	10	1	106	
		Concrete Mixer Truck	10	2	103	
		Scissor Lift	15	4	92	

Note 1: The ICNG requires 'annoying' activities (such as jackhammering, rock breaking and power saw operations) to have a 5 dB 'penalty' applied to the source sound power level.

Note 2: This refers to the amount of time in minutes that individual items of equipment would likely be in use for during the worst-case 15-minute assessment period.

6.2 Hours of Construction

Condition B38 requires construction activities to only be undertaken during the following hours:

- 7:00 am to 6:00 pm, Mondays to Fridays
- 8:00 am to 1:00 pm on Saturdays
- at no time on Sundays or Public Holidays.

Notwithstanding, Condition B39 allows out of hours work to be undertaken in the following circumstances:

- Works that are inaudible at the nearest sensitive receivers
- Works agreed to in writing by the Planning Secretary
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

6.3 Construction Noise Predictions

The following overview is based on the predicted impacts at the most affected receivers and is representative of the worst-case noise levels that are likely to occur during construction.

The assessment shows the predicted impacts based on the exceedance of the management levels, as per the categories in **Table 14**.

Table 14 Exceedance Bands and Impact Colouring

Exceedance of Management Level	Subjective Classification	Impact Colouring
No exceedance	Negligible	
1 to 10 dB	Low impact	
11 dB to 20 dB	Moderate impact	
>20 dB	High impact	

A summary of the predicted noise levels (without mitigation) for the various work activities is shown in **Table 15**. For most construction activities, it is expected that the construction noise levels would frequently be lower than predicted, as the noise levels presented in this report are based on each scenario occurring at the site boundary which is the closest point to each receiver.

The assessment is generally considered conservative as the calculations assume several items of construction equipment are in use at the same time within individual scenarios. In reality, there would frequently be periods when construction noise levels are much lower than the worst-case levels predicted as well as times when no equipment is in use and no noise impacts occur.

Table 15 Predicted Worst-Case Construction Airborne Noise Levels

NCA	Receiver Type	NML	Predicted Noise Level - LAeq(15 minutes) (dBA)																	
			Warehouse 01			Warehouse 02			Warehouse 03			Warehouse 04/05			Warehouse 06			Warehouse 07		
			W.001	W.002	W.003	W.001	W.002	W.003	W.001	W.002	W.003	W.001	W.002	W.003	W.001	W.002	W.003	W.001	W.002	W.003
R01	Residential	62	78	75	68	67	64	57	62	59	52	59	56	49	57	54	47	68	65	58
R02	Residential	62	74	71	64	76	73	66	69	66	59	63	60	53	60	57	50	64	61	54
R03	Residential	58	72	69	62	77	74	67	79	76	69	70	67	60	65	62	55	64	61	54
R04	Residential	58	66	63	56	71	68	61	82	79	72	77	74	67	68	65	58	62	59	52
R05	Residential	58	52	49	42	53	50	43	54	51	44	49	46	39	47	44	37	51	48	41
R06	Commercial	70	52	49	42	58	55	48	61	58	51	64	61	54	94	91	84	53	50	43
R07	Commercial	70	58	55	48	63	60	53	68	65	58	71	68	61	89	86	79	57	54	47
R08	Commercial	70	65	62	55	76	73	66	83	80	73	72	69	62	66	63	56	64	61	54
R09	Residential	62	58	55	48	56	53	46	55	52	45	52	49	42	52	49	42	58	55	48

Note: The predictions do not include any effect for screening that previously constructed warehouses would provide. Noise levels would, therefore, be lower than presented where intervening warehouses have been completed and provide screening to sensitive receivers.

The above assessment of the predicted worst-case noise levels shows:

- Construction noise levels are predicted to comply with the NMLs during many stages of the work, particularly during less noisy activities, such as during *W.003 – Warehouse construction and fitout*, or where works are in parts of the site distant from the nearest receivers.
- The highest impacts are expected to occur when noise intensive equipment such as rockbreakers or concrete saws are being used as part of *W.001 – Site Establishment* during the early phases of the work. These items of equipment would, however, only be required occasionally and would be unlikely to be in use for long periods of time.
- The highest noise levels at residential receivers are predicted to be around 70 to 80 dBA at the nearest receivers when noise intensive equipment, such as a rockbreaker, is being used nearby. Residential receivers adjacent to the site, across Clunies Ross Street, are predicted to be most affected during construction of Warehouse 03. Noise levels during construction of the other warehouses are predicted to be lower due to increased separation distance.
- Noise levels at the nearest residential receivers are predicted to be Highly Noise Affected (ie greater than or equal to 75 dBA) during certain noisy activities. This would likely only occur infrequently when high noise generating activities are being completed adjacent to these receivers.
- Commercial receivers are close to Warehouse 06 and noise levels of around 90 dBA may occur when noise intensive equipment is being used adjacent to these receivers. Noise levels at these receivers when work is in other parts of the site are predicted to be much lower, and mostly below the management levels.
- Works would only occur during Standard Daytime Construction Hours. There is no expectation for evening or night-time work to be required.

All appropriate feasible and reasonable construction noise mitigation measures will be applied to works where exceedances of the NMLs are predicted. Construction noise mitigation measures are discussed in **Section 7**.

6.4 Construction Vibration

Vibration intensive items of equipment that would be required during the construction include rock breakers and vibratory rollers. These items of equipment are required during *W.001 – Site Establishment* and *W.002 – Hardstand, Stormwater and Pavements*.

Offset distances for the vibration intensive equipment have been determined from the CNVG minimum working distances for cosmetic damage and human response (see **Table 12**). Buildings within the minimum working distances are shown in **Figure 3** to **Figure 8**.

Figure 3 Construction Vibration Assessment – Warehouse 01



Figure 4 Construction Vibration Assessment – Warehouse 02

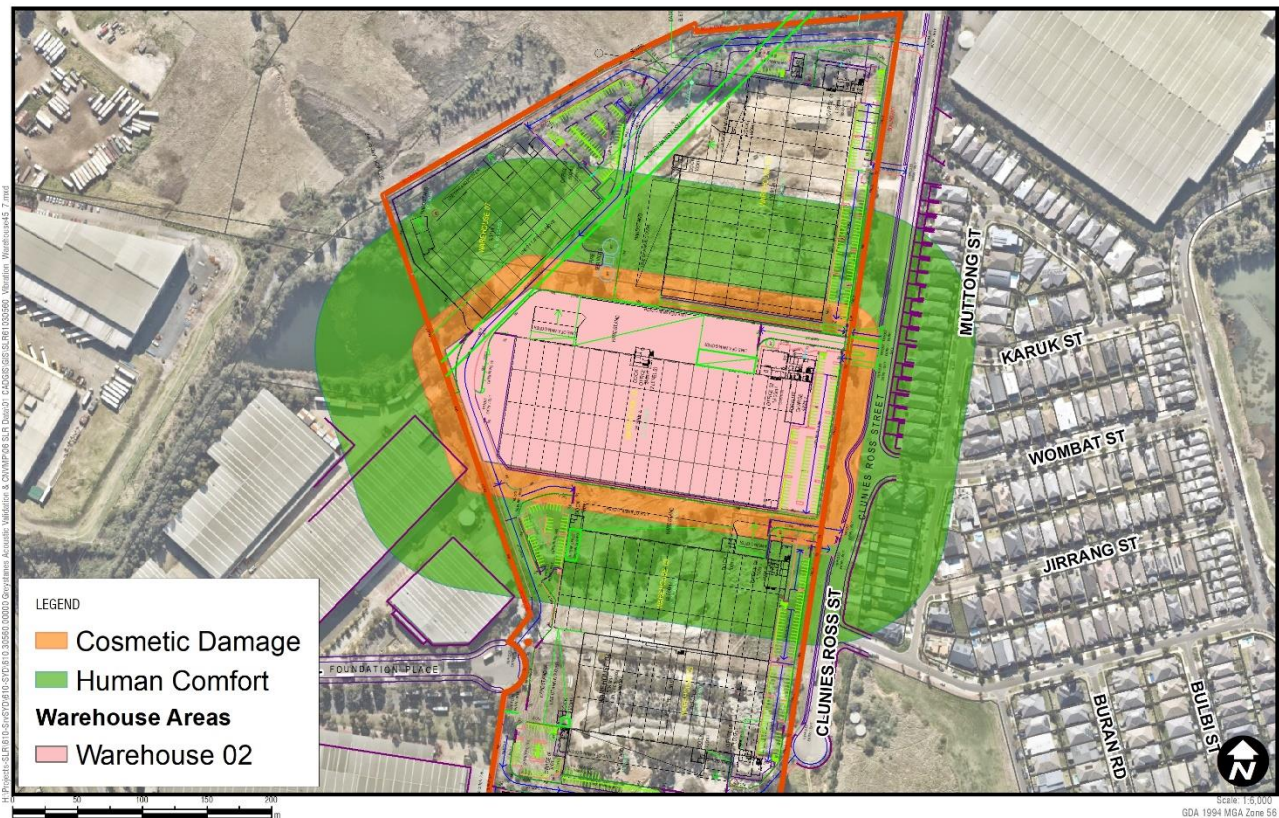


Figure 5 Construction Vibration Assessment – Warehouse 03

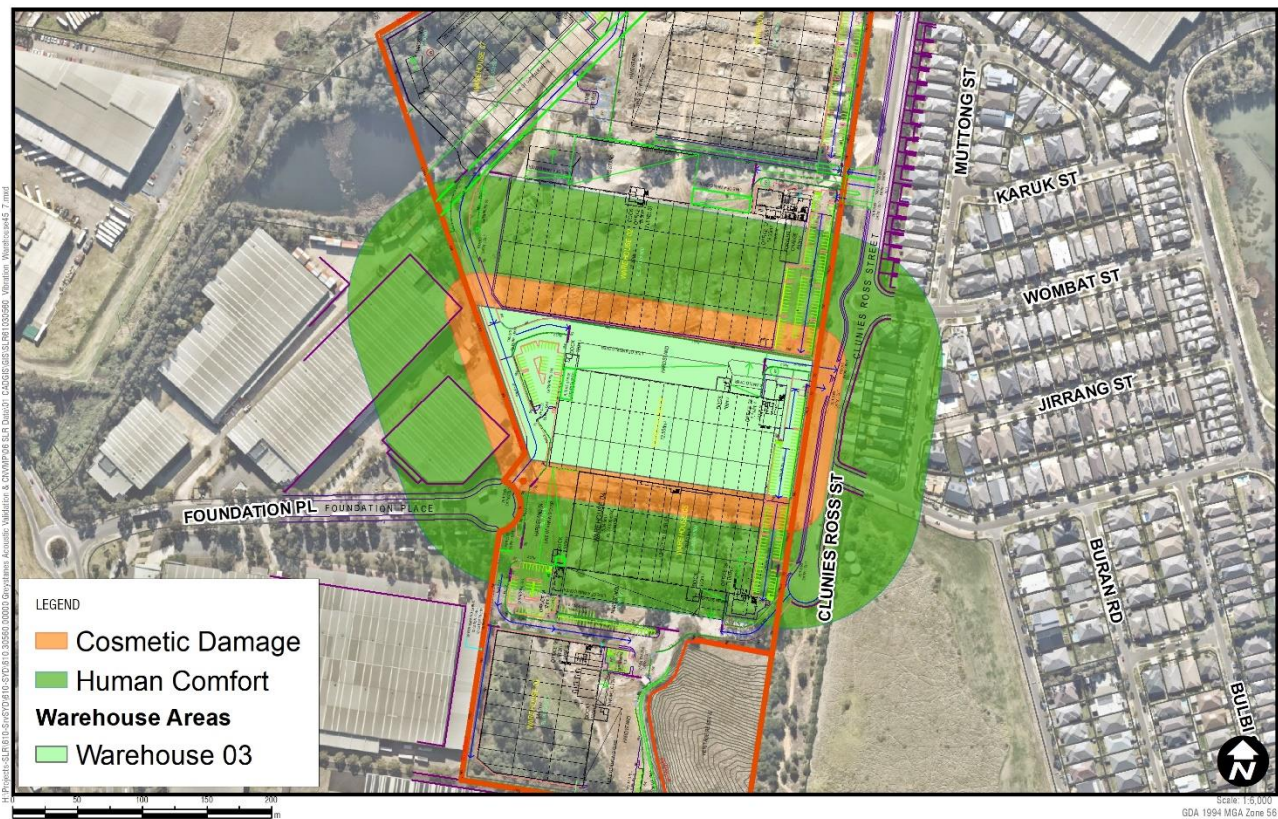


Figure 6 Construction Vibration Assessment – Warehouse 04/05



Figure 7 Construction Vibration Assessment – Warehouse 06

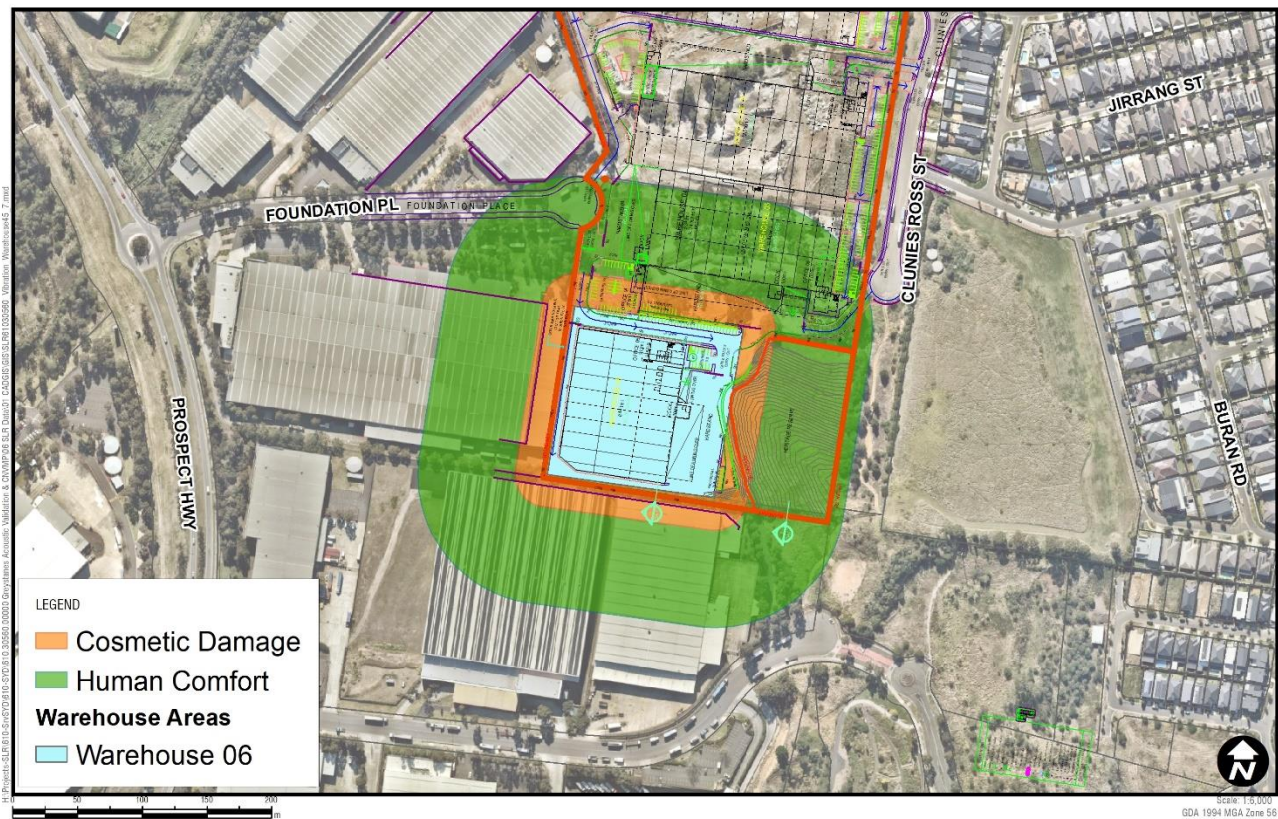
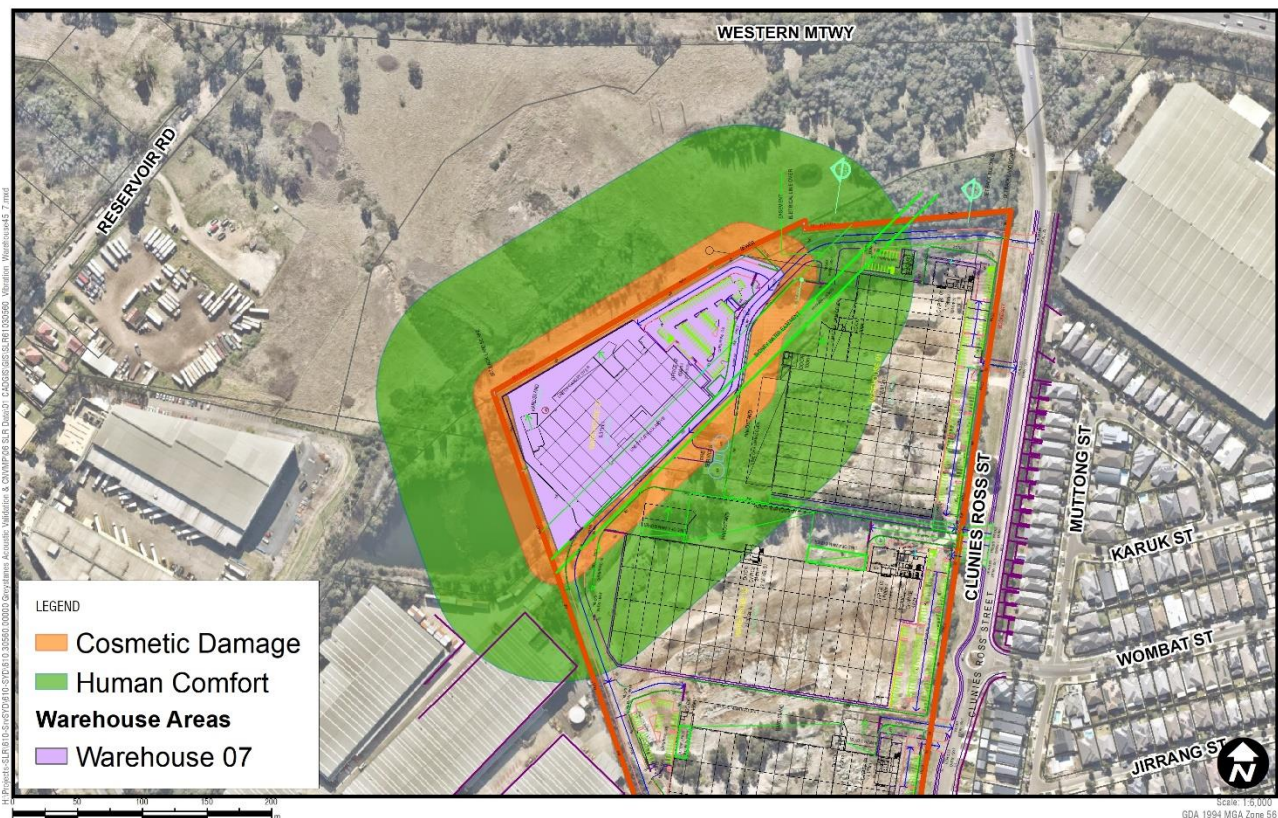


Figure 8 Construction Vibration Assessment – Warehouse 07



Cosmetic Damage Assessment

The above figure shows that certain commercial buildings near to the work are likely to be within the minimum working distance for cosmetic damage when vibration intensive works are being completed adjacent to these buildings. Residential buildings are sufficiently distant from the site to be outside the minimum working distance and cosmetic damage impacts are not considered likely. Construction vibration mitigation measures are discussed in **Section 7**.

Human Comfort Vibration Assessment

Certain receivers are also within the human comfort minimum working distances and occupants of affected buildings may be able to perceive vibration impacts at times when vibration intensive equipment is in use. Where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is nearby.

7 Mitigation and Management Measures

The ICNG acknowledges that due to the nature of construction works it is inevitable that there will be impacts where construction is near to sensitive receivers. The worst-case noise impacts during construction of the project are predicted to be moderate to high, however, this would likely only occur on an infrequent basis when noise intensive works are being completed near to receivers.

All appropriate feasible and reasonable mitigation measures will be applied to the work to minimise the potential impacts, as far as practicable.

7.1 Consultation Undertaken to Date

A community consultation session was held on 22 September 2021 (minutes are provided in **Appendix B**). The session included:

- An overview of the project
- Details of previous consultation and feedback received
- Details of how the project are responding to feedback, including measures to control noise and vibration impacts
- Question time where community members could raise any concerns.

7.2 Standard Mitigation and Management Measures

The mitigation and management measures that would be applied to the project are detailed in **Table 16**.

Table 16 Environmental Management Controls for Construction Noise and Vibration

Measure	Person Responsible	Timing / Frequency	Reference / Notes
Project Planning			
Use quieter and less vibration emitting construction methods, where feasible and reasonable.	Project Manager	Ongoing	Best practice
Works will be completed during standard daytime construction hours outlined in Section 6.2 .			
Truck routes to site should be limited to major roads.			
Scheduling			
The use of high noise generating equipment including hydraulic hammers, rock cutters or the like hydraulic hammers, rock cutters or the like would not be undertaken prior to 8 am Monday to Friday or 8:30 am Saturdays	Project Manager/ Communications and Community Liaison Representative	Ongoing	Best practice
Respite periods would be used where high noise and vibration generating activities are near receivers. As a guide, work would be carried out in blocks that do not exceed three hours, with a minimum respite period of one hour between each block.			
Consult with the affected community to determine the need for respite periods.			

Measure	Person Responsible	Timing / Frequency	Reference / Notes
Site Layout			
Compounds and worksites will be designed to promote one-way traffic and minimise the need for vehicle reversing.	Project Manager	Ongoing	Best practice
Where practicable, work compounds, parking areas, and equipment and material stockpiles will be positioned away from noise-sensitive locations and take advantage of existing screening from local topography.			
Equipment that is noisy will be started away from sensitive receivers			
Training			
Training will be provided to all personnel on noise and vibration requirements for the project. Inductions and toolbox talks to be used to inform personnel of the location and sensitivity of surrounding receivers.	Project Manager	Ongoing	Best practice
Plant and Equipment Source Mitigation			
Where practicable, tonal reversing alarms (beepers) will be replaced with non-tonal alarms (squawkers) on all equipment in use (subject to occupational health and safety requirements).	Project Manager	Ongoing	Best practice
Noisy equipment will be sited behind structures that act as barriers, or at the greatest distance from the noise-sensitive area. Equipment will be oriented so that noise emissions are directed away from any sensitive areas.			
Noise generating equipment will be regularly checked and effectively maintained, including checking of hatches/enclosures regularly to ensure that seals are in good condition and doors close properly against seals.			
Noise monitoring spot checks of equipment will be completed to ensure individual items are operating as expected			
Dropping materials from a height will be avoided.			
Loading and unloading will be carried out away from noise sensitive areas, where practicable.			
Trucks will not queue outside residential properties. Truck drivers will avoid compression braking as far as practicable.			
Truck movements will be kept to a minimum, ie trucks will be fully loaded on each trip.			
Screening			
Where possible, purpose-built screening or enclosures will be built around long-term fixed plant that has the potential to impact nearby receivers	Project Manager	Ongoing	Best practice

Measure	Person Responsible	Timing / Frequency	Reference / Notes
The layout of the site will take advantage of existing screening from local topography, where possible. Site huts, maintenance sheds and/or containers will be positioned between noisy equipment and the affected receivers.			
Community Consultation			
Notifications will be provided to the affected community where high impacts are anticipated or where out of hours works are required. Notification will be a minimum of 24 hours.	Communications and Community Liaison Representative	Ongoing	Best practice
Where complaints are received, work practices will be reviewed and feasible and reasonable practices applied to minimise any further impacts. See Section 7.4 .			
Monitoring			
Noise and/or vibration monitoring will be conducted (as appropriate) in response to any complaints received to verify that levels are not substantially above the predicted levels.	Environmental Coordinator	Ongoing	Best practice
See Section 7.3 for details of monitoring requirements.			
Vibration			
If vibration generating works are required within the minimum cosmetic damage working distances and considered likely to exceed the criteria: <ul style="list-style-type: none">Different construction methods with lower source vibration levels will be investigated and implemented, where feasibleAttended vibration measurements will be undertaken at the start of the works to determine actual vibration levels at the item. Works will cease if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria.	Environmental Coordinator	Ongoing	Best practice
Where works are required within the cosmetic damage minimum working distances, building condition surveys will be completed before and after the works to ensure no cosmetic damage has occurred.			

7.3 Monitoring

Noise and/or vibration monitoring would be completed in response to any formal complaints. All monitoring will be completed by suitably qualified acoustic specialists. The location and extent of attended monitoring will be determined in consultation with project staff and would be dependent on the activities taking place.

The monitoring will take place during the expected noisiest construction periods and be representative / indicative of the impacts at the potentially affected sensitive receivers.

All items of acoustic instrumentation utilised will be designed to comply with IEC 61672.1-2004 *Electroacoustics – Sound level meters* (AS IEC 61672) and carry current calibration certificates.

A monitoring report will be prepared after each monitoring survey. Monitoring reports will be provided to the relevant regulatory authorities after review, unless otherwise agreed by the relevant regulatory authorities. Monitoring reports would include the following details, at a minimum:

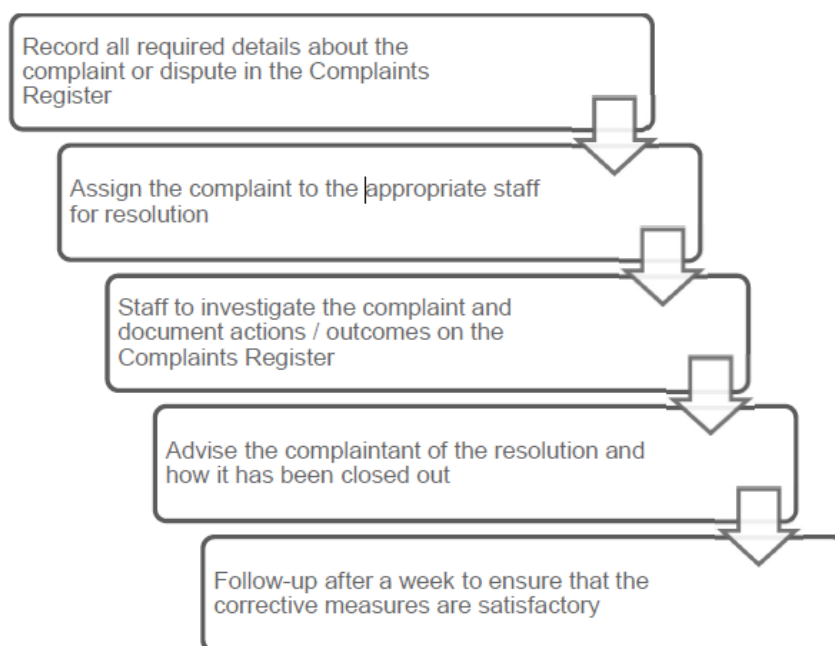
- Noise monitoring locations
- Date, time and length of noise monitoring/measurements
- Weather conditions during the measurements
- Name and position of personnel undertaking measurements
- Construction activities being undertaken during measurements
- Locations of construction equipment and distance from monitoring location
- Measured L_{Aeq} and L_{Amax} noise levels during construction works (for each activity) along with a comparison to the predicted noise levels
- Measured L_{A90} background noise level in absence of the construction works
- Operator observations noting any extraneous noise sources or other points of relevance.

7.4 Complaints Handling and Response Procedure

A Community communication Strategy has been prepared for the project which details the complaints handling process. Complaints are able to be made via a phone (1800 244 8630) and email (engagement@urbis.com.au). Contact details will be included on site signage and on the project website (elevationestate.com.au).

The mechanism in **Figure 3** outlines the procedure for complaints and disputes raised through the project contact point. The required details to be recorded in the complaints register include the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint.

Figure 9 Complaints and Disputes Resolution Procedure



7.5 Contingency Management Plan

The following Contingency Plan will be applied where a non-compliance (ie exceedance of the criteria and/or predicted levels, or failure to comply with appropriate statutory requirements) is identified:

- The Contractor will report any non-compliance to the relevant regulatory authorities within five working days.
- The Contractor will identify an appropriate course of action with respect to the identified impact(s), in consultation with appropriate specialists and the relevant regulatory authorities, as necessary.
- The Contractor will notify affected landholders and tenants at the location of the exceedance within five working days and provide them with details of actions taken, including noise or vibration monitoring results (if applicable), until it can be shown that the site is complying with the requirements.
- The Contractor will, on request, submit the proposed course of action to the relevant regulatory authorities for approval.
- The Contractor will implement the approved course of action.

7.6 Internal Audits

Periodic internal audits will be conducted to ensure that the development consent conditions and environmental management controls outlined in this CNVMP are being implemented. Audit reports will be used to inform of any corrective actions.

7.7 Roles and Responsibilities

Overall roles and responsibilities relating to the project are outlined in the overarching CEMP. The key responsibilities specifically for noise and vibration management are as follows:

Contractor's Project Manager

- Ensuring appropriate resources are available to implement the measures in this CNVMP
- Assessing data from inspections and providing project-wide advice to ensure consistent approach and outcomes are achieved
- Providing necessary training for project personnel to adequately cover noise and vibration management
- Reviewing and updating this CNVMP, where necessary
- Commissioning suitably qualified consultants to complete noise and vibration monitoring. Ensuring environmental coordinators appropriately undertake attended noise and vibration measurements required by this CNVMP
- Assessing and (as required) mitigating risks of high noise and vibration levels before commencing works and ensuring that the appropriate controls are implemented
- Ceasing works in the event of excessive noise and vibration generation
- Recording complaints and appropriately responding in accordance with the procedures outlined in **Section 7.4**

Environmental Coordinator

- Coordinating noise and/or vibration monitoring program, where required
- Review control measures in accordance with this CNVMP
- Identifying and reporting any high or non-compliant noise and vibration emissions.

All Workers on Site

- Observing any noise and vibration emission control instructions and procedures that apply to their work
- Taking action to prevent or minimise noise and vibration emission incidents
- Identifying and reporting any high or non-compliant noise and vibration emissions.

7.8 Review and Improvement of the CNVMP

This CNVMP will be reviewed, and if necessary, updated in the following circumstances:

- Significant changes to the equipment, machinery and plant operated within the site
- Where it is identified via monitoring that the performance of the project is not meeting the objectives of the CNVMP
- At the request of the relevant regulatory authority or other relevant government agency.

All employees and contractors will be informed of any revisions to the CNVMP by Site Management during toolbox talks. The most recent version of the CNVMP as approved by the Planning Secretary, will be implemented for the duration of construction works.

APPENDIX A

Acoustic Terminology

1. Sound Level or Noise Level

The terms 'sound' and 'noise' are almost interchangeable, except that 'noise' often refers to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range with the loudest sound pressure to which the human ear can respond being ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols SPL, L or LP are commonly used to represent Sound Pressure Level. The symbol LA represents A-weighted Sound Pressure Level. The standard reference unit for Sound Pressure Levels expressed in decibels is 2×10^{-5} Pa.

2. 'A' Weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People's hearing is most sensitive to sounds at mid frequencies (500 Hz to 4,000 Hz), and less sensitive at lower and higher frequencies. Different sources having the same dBA level generally sound about equally loud.

A change of 1 dB or 2 dB in the level of a sound is difficult for most people to detect, whilst a 3 dB to 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change corresponds to an approximate doubling or halving in loudness. The table below lists examples of typical noise levels.

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to quiet
50	General Office	
40	Inside private office	Quiet to very quiet
30	Inside bedroom	
20	Recording studio	Almost silent

Other weightings (eg B, C and D) are less commonly used than A-weighting. Sound Levels measured without any weighting are referred to as 'linear', and the units are expressed as dB(lin) or dB.

3. Sound Power Level

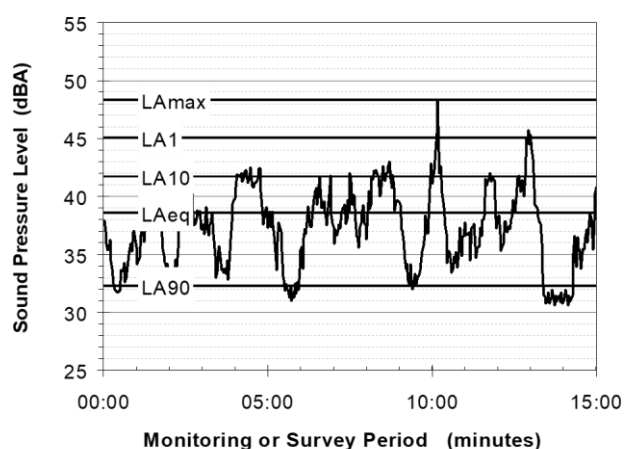
The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10^{-12} W.

The relationship between Sound Power and Sound Pressure is similar to the effect of an electric radiator, which is characterised by a power rating but has an effect on the surrounding environment that can be measured in terms of a different parameter, temperature.

4. Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time, LA10 the noise exceeded for 10% of the time, and so on.

The following figure presents a hypothetical 15 minute noise survey, illustrating various common statistical indices of interest.



Of particular relevance, are:

LA1 The noise level exceeded for 1% of the 15 minute interval.

LA10 The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

LA90 The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

LAeq The A-weighted equivalent noise level (basically, the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

5. Frequency Analysis

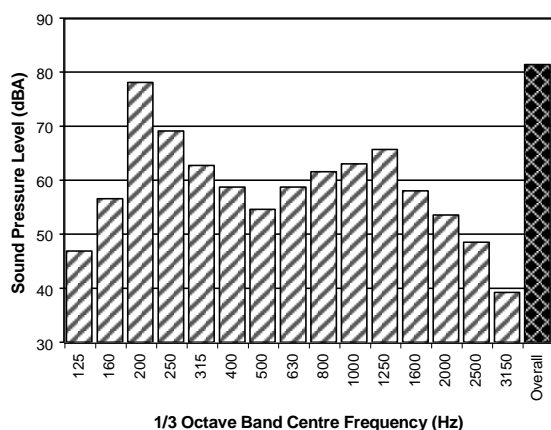
Frequency analysis is the process used to examine the tones (or frequency components) which make up the overall noise or vibration signal.

The units for frequency are Hertz (Hz), which represent the number of cycles per second.

Frequency analysis can be in:

- Octave bands (where the centre frequency and width of each band is double the previous band)
- 1/3 octave bands (three bands in each octave band)
- Narrow band (where the spectrum is divided into 400 or more bands of equal width)

The following figure shows a 1/3 octave band frequency analysis where the noise is dominated by the 200 Hz band. Note that the indicated level of each individual band is less than the overall level, which is the logarithmic sum of the bands.



6. Annoying Noise (Special Audible Characteristics)

A louder noise will generally be more annoying to nearby receivers than a quieter one. However, noise is often also found to be more annoying and result in larger impacts where the following characteristics are apparent:

- **Tonality** - tonal noise contains one or more prominent tones (ie differences in distinct frequency components between adjoining octave or 1/3 octave bands), and is normally regarded as more annoying than 'broad band' noise.
- **Impulsiveness** - an impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.
- **Intermittency** - intermittent noise varies in level with the change in level being clearly audible. An example would include mechanical plant cycling on and off.
- **Low Frequency Noise** - low frequency noise contains significant energy in the lower frequency bands, which are typically taken to be in the 10 to 160 Hz region.

7. Vibration

Vibration may be defined as cyclic or transient motion. This motion can be measured in terms of its displacement, velocity or acceleration. Most assessments of human response to vibration or the risk of damage to buildings use measurements of vibration velocity. These may be expressed in terms of 'peak' velocity or 'rms' velocity.

The former is the maximum instantaneous velocity, without any averaging, and is sometimes referred to as 'peak particle velocity', or PPV. The latter incorporates 'root mean squared' averaging over some defined time period.

Vibration measurements may be carried out in a single axis or alternatively as triaxial measurements (ie vertical, longitudinal and transverse).

The common units for velocity are millimetres per second (mm/s). As with noise, decibel units can also be used, in which case the reference level should always be stated. A vibration level V , expressed in mm/s can be converted to decibels by the formula $20 \log (V/V_0)$, where V_0 is the reference level (10^{-9} m/s). Care is required in this regard, as other reference levels may be used.

8. Human Perception of Vibration

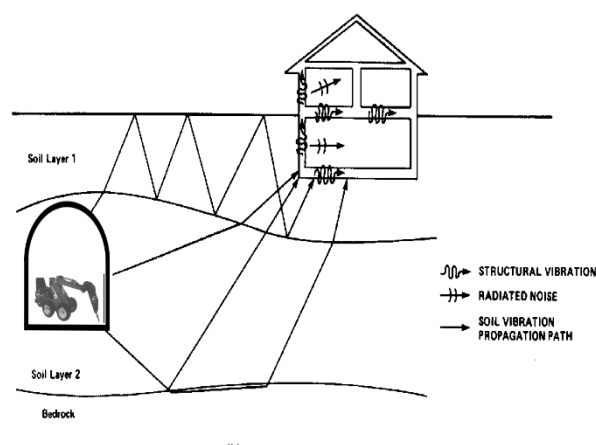
People are able to 'feel' vibration at levels lower than those required to cause even superficial damage to the most susceptible classes of building (even though they may not be disturbed by the motion). An individual's perception of motion or response to vibration depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as 'normal' in a car, bus or train is considerably higher than what is perceived as 'normal' in a shop, office or dwelling.

9. Ground-borne Noise, Structure-borne Noise and Regenerated Noise

Noise that propagates through a structure as vibration and is radiated by vibrating wall and floor surfaces is termed 'structure-borne noise', 'ground-borne noise' or 'regenerated noise'. This noise originates as vibration and propagates between the source and receiver through the ground and/or building structural elements, rather than through the air.

Typical sources of ground-borne or structure-borne noise include tunnelling works, underground railways, excavation plant (eg rockbreakers), and building services plant (eg fans, compressors and generators).

The following figure presents an example of the various paths by which vibration and ground-borne noise may be transmitted between a source and receiver for construction activities occurring within a tunnel.



The term 'regenerated noise' is also used in other instances where energy is converted to noise away from the primary source. One example would be a fan blowing air through a discharge grill. The fan is the energy source and primary noise source. Additional noise may be created by the aerodynamic effect of the discharge grill in the airstream. This secondary noise is referred to as regenerated noise.

APPENDIX B

Community Consultation Minutes



COMMUNITY SESSION MINUTES

Date:	Wednesday 22 September 2020, 6:00pm-7:30pm
Platform:	Zoom – https://us02web.zoom.us/j/83448302043
Subject:	Community Session on Impacts, Elevation at Greystanes
Presenters:	<ul style="list-style-type: none">• Urbis (facilitator) – Stephanie Potter• Urbis – Penny Cannan• Aliro Group – Colin MacDonald, Andy Lloyd, Andrew Simpson, Sam Bowie• ISPT - Athlene Kyle• SLR – Antony Williams & Dominik Duschlbauer
Attendees:	<ul style="list-style-type: none">• Ashwini Chand• Naveen Shally Puri

Time	Item	Lead
6:00pm	Open session and house keeping	Stephanie Potter, Urbis
6:05pm	Project overview <ul style="list-style-type: none">• ISPT and Aliro Group are long term stakeholders• Site context: State-significant employment area• Proposed and allowed uses• Project changes after community feedback:<ul style="list-style-type: none">◦ Height reduced◦ Views from Prospect Hill considered What we heard <ul style="list-style-type: none">• What we heard from members of the community• How we are responding	Colin MacDonald, Aliro Group
6:15pm	Dust control measures <p>Key control measures are:</p> <ul style="list-style-type: none">• Watercarts• Sprinklers• Sweeping• Hydromulching	Stephanie Potter, Urbis

6:25pm	Construction noise mitigation <ul style="list-style-type: none"> • Heavy construction vehicle noise • General construction works • High impact works 	Stephanie Potter, Urbis
6:35pm	Warehouse operation noise reduction <ul style="list-style-type: none"> • Design approach and detailing • Typical warehouse operations • Validation on completion 	Stephanie Potter, Urbis
6:45pm	Traffic noise mitigation <ul style="list-style-type: none"> • Site access and egress 	Stephanie Potter, Urbis
6:55pm	Planning pathway and next steps	Stephanie Potter, Urbis
7:05pm	Facilitated question time	Stephanie Potter, Urbis

Questions raised by community members:

- How will the project cover damage to private property from ground movement?
- How will the health risk from dust during construction be managed? Will the project clean our backyards and homes?
- How will you manage traffic on Clunies Ross Road with the high volumes of employees using it to access staff parking?
- How will you ensure construction noise impacts are managed given the proximity of your site to our homes? How will you ensure the operational mitigations you have proposed will actually mitigate noise once you have finished construction and left the site?
- How will you effectively respond to residents' complaints and mitigate risks on all matters after construction?
- Who will address our concerns after construction?

Ashwini Chand
and Naveen Shally
Puri

Project response:

Ground movement:

The development works involve demolition of the existing structures on the site which is now complete. Earthmoving works are currently underway and will be followed by construction works for the new warehouses. We understand some noise was the cause for concern during the demolition works. Sensitive noise and vibration monitors have been located on the site boundary from commencement of the demolition works, which have measured the noise and vibration levels of all works to date. The results have been below the threshold limits for both noise and vibration. The ongoing works proposed for the development are not anticipated to generate noise or vibrations that would result in any physical impact to nearby properties.

Dust circulation:

ISPT and Aliro are committed to implementing dust control measures during construction to minimise the generation of dust. While some dust may be generated during earthmoving and construction works, over the long term the air quality is likely to improve compared with current operation of the Austral site. An air quality impact assessment was undertaken on the proposed development. To keep construction dust down, the site has increased the number of full-time water carts, and a number of sprinklers across the site. The majority of these are focused along Clunies Ross Street. Regular sweeping of hard surfaces to collect any material from vehicle movements is ongoing, and once the earthworks are complete the exposed surfaces are anticipated to be sealed with a suitable dust mitigating product such as an environmentally friendly polymer sealer.

Traffic:

As part of the State Significant Development Application (SSDA) process, a Traffic Impact Assessment (TIA) was completed. The TIA noted Clunies Ross Street access is anticipated as a secondary access to the proposed development, with most of the traffic expected to travel to and from the estate via Foundation Place. The Traffic Impact Assessment also reviewed the performance of the Clunies Ross Street / Wombat Street roundabout. According to the simulation this roundabout will operate with minimum delays and queues for 10 years' time. Please also note, the proposed development and its associated traffic are in line with permissible land-use on this site.

The TIA also assessed the impacts of traffic generated during the construction and operation of the development. It showed that the increased traffic would not substantially degrade the performance of the surrounding road network. All heavy vehicles travelling between the site and the regional road network would use Foundation Place and Clunies Ross Street. The TIA notes that most heavy vehicles will access the estate via Foundation Place as it provides better access to the Prospect Highway and M4 Motorway.

To help make positive traffic changes in the future, ISPT and Aliro will prepare a Green Travel Plan to encourage reduced reliance on private vehicle use (including carpooling, public transport and cycling to work).

Noise:

We understand your concerns around operational noise from the proposed development.

A Noise Impact Assessment was completed as part of the SSDA process. It demonstrated that the construction and operation of the development would comply with NSW Government noise policy requirements. This will be validated on completion to ensure the measures implemented during the design and construct are effective and meet the requirements of the SSDA.

Noise impacts in the Pemulwuy estate from traffic associated with the development will be reduced given the primary site

access is expected to be via Foundation Place rather than Clunies Ross Street.

Please note that the existing Austral site previously operated on a 24-hour basis.

Ongoing communications and future risk mitigation:

Should you have any further concerns during construction, you can contact the Urbis Engagement team on: engagement@urbis.com.au or call 1800 244 863.

ISPT and Aliro are committed to ongoing community engagement and plan to keep the community informed as the development evolves.

Addressing concerns after construction:

ISPT invests on behalf of many of Australia's top superannuation funds. As such, they expect to be a long-term owner of the site. Should any operational issues arise after construction finishes, ISPT are happy to listen and respond appropriately.

7:30pm

Close

Stephanie Potter,
Urbis

NOTE: A full recording of this session is available on request.

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APPENDIX 6 – URBIS COMMUNICATION STRATEGY

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

The logo for URBIS, featuring the word "URBIS" in a bold, white, sans-serif font. The text is positioned to the left of a white square frame that is partially open on the right side. A white line extends from the top of the frame, running horizontally across the top of the page.

URBIS

COMMUNITY COMMUNICATION STRATEGY

Elevation at Greystanes

Prepared for
ISPT
July 2021

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Associate Director	Stephanie Potter
Senior Consultant	Erin Riley
Project Code	P0016828
Report Number	Final [revised 9/08/2021]

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

All information supplied to Urbis in order to conduct this research has been treated in the strictest confidence. It shall only be used in this context and shall not be made available to third parties without client authorisation. Confidential information has been stored securely and data provided by respondents, as well as their identity, has been treated in the strictest confidence and all assurance given to respondents have been and shall be fulfilled.

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1. INTRODUCTION

This Community Communication Strategy (the strategy) has been prepared in line with the requirements of Development Consent Condition A26 for Elevation at Greystanes (SSD-10399). This strategy has been prepared by Urbis Pty Ltd, a communications consultant engaged by ISPT, the landowner.

This strategy will be implemented and maintained throughout construction of the project by Aliro on behalf of ISPT. This strategy life cycle covers a period no later than two weeks before the commencement of earthworks and for a period of 6 months following construction. This strategy will be updated by ISPT for operation of the development.

ISPT developed this document as the framework to guide all community communication recommendations provided in the Operational Traffic Management Plan, Construction Noise and Vibration Management Plan and Construction Environmental Management Plan and the Operational Environmental Management Plan.

1.1. CROSS-REFERENCE OF CONSENT REQUIREMENTS

Table 1 identifies the reference/s within this strategy as they relate to the requirements under Development Consent Condition A26 – Community Communication Strategy.

Table 1 Consent conditions and report references

Consent condition Reference	Consent condition	Report reference
A26.	The Applicant must prepare a Community Communication Strategy for the development to the satisfaction of the Planning Secretary.	This document
A26.	The Community Communication Strategy is to provide mechanisms to facilitate communication between the Applicant, CCC and BCC and the community (including adjoining affected landowners and businesses), during the earthworks, construction and operation of the development. The Community Communication Strategy must:	This document
A26. (a)	Assign a central contact person to keep the nearby sensitive receivers regularly informed throughout the development	Section 5.2
A26. (b)	Detail the mechanisms for regularly consulting with the local community throughout the development, such as holding regular meetings to inform the community of the progress of the development and report on environmental monitoring results	Section 5.1
A26. (c)	Detail a procedure for consulting with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities or manage traffic disruptions;	Section 5.3

Consent condition Reference	Consent condition	Report reference
A26. (d)	Include contact details for key community groups, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders; and	Section 4
A26. (e)	<p>Include a complaints procedure for recording, responding to and managing complaints, including:</p> <ul style="list-style-type: none"> (i) email, toll-free telephone number and postal addresses for receiving complaints; (ii) advertising the contact details for complaints before and during operation, via the local newspaper and through on-site signage; (iii) a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and (iv) procedures for the resolution of any disputes that may arise during the course of the development. 	Section 5.4

2. PROJECT OVERVIEW

Elevation at Greystanes (the project) involves the redevelopment of the industrial and logistics estate at 44 Clunies Ross Street, Prospect, NSW (the site). This project will create a high-quality logistics and industrial estate, including seven warehouses with ancillary offices, car parking, landscaping and associated facilities.

2.1. THE SITE

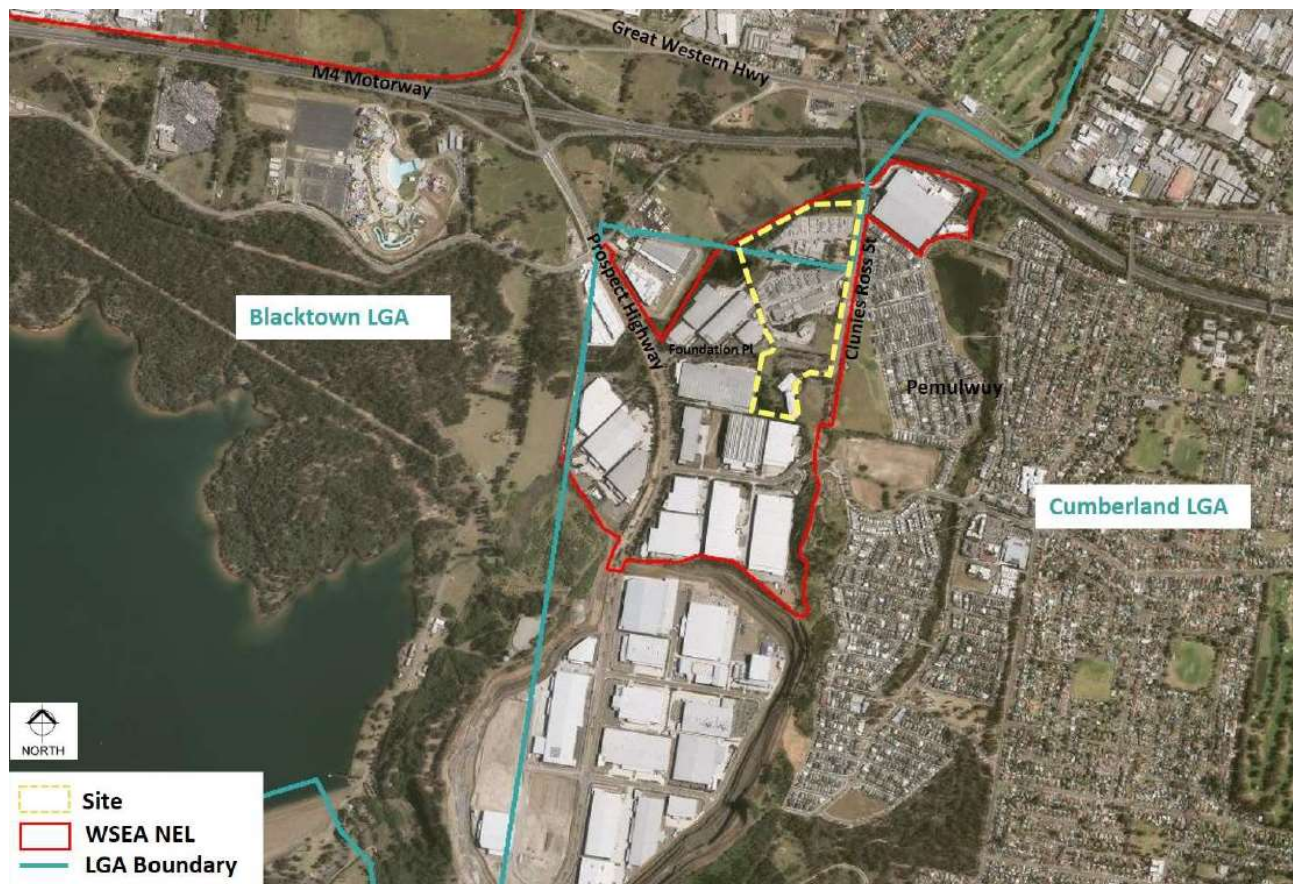
The site is located at 44 Clunies Ross Street, Prospect, NSW (as indicatively shown in Figure 1).

The site is approximately 7 km west of the Parramatta CBD and approximately 26 km west of the Sydney CBD. The site encompasses three adjoining industrial properties located in the Blacktown and Cumberland Local Government Areas.

The site is located within Precinct 10 - Greystanes Northern Employment Lands under the Western Sydney Employment Area (WSEA), State Environment Planning Policy (SEPP). Elevation at Greystanes has the potential to play an important role as a major local employment hub in both NSW Government and the Cumberland Council planning strategies, including the Cumberland Council Employment and Innovation Lands Strategy.

The precinct is shown in red and the project construction site is shown in yellow.

Figure 1 Aerial photograph of the site



Source: Keylan Consulting PTY LTD

2.2. THE SURROUNDING COMMUNITY

The site is generally surrounded by industrial facilities, with residential properties located behind a noise wall on the opposite side of Clunies Ross Street.

Immediately surrounding the site are:

- **North:** undeveloped stormwater retarding basin, including Girraween Creek, then the M4 Motorway.
- **East:** Clunies Ross Street, with residential properties located behind a noise wall on the eastern side of the street.
- **South west:** industrial facilities: 3M Logistics Centre and Iron Mountain.
- **South east:** Prospect Hill Heritage Area
- **West:** industrial estate with tenants including Arjo and Allied Moving Services.

2.3. THE PROJECT

Elevation at Greystanes (the project) comprises the construction of seven industrial warehouses, associated offices, hardstand (a paved area for parking heavy vehicles), car parking areas and a small local cafe on a terraced landform. The key features of the proposal are:

- Seven warehouses, ranging in size between 5,349-21,782m² and 13.7-25 metres in height
- Ancillary offices to support the operation of the warehouses between 376-1,400m²
- Associated parking provisions
- 146m² café
- Internal estate road

3. PEOPLE TO BE CONSULTED DURING THE DEVELOPMENT

Elevation at Greystanes is immediately surrounded by industrial facilities, with residential properties located behind a noise wall on the eastern side of Clunies Ross Street. It will be important to make sure near neighbours are well informed about construction activity and impacts.

The sensitive receivers, relevant regulatory authorities and other interested stakeholders who will be informed and consulted are outlined in Table 2. The table also outlines communication mechanisms and potential stakeholder concerns. Section 5 describes the mechanisms in detail. This table will be reviewed and updated as needed by Aliro on behalf of ISPT.

Table 2 Stakeholders, activities, and concerns

People to be consulted (Stakeholders)	Communication activities (see Section 5)	Concerns
Individual households and businesses within a 500m radius (See Appendix B) of the construction zone including: Residents located on: <ul style="list-style-type: none">- Clunies Ross St- Muttong St- Wombat St- Burraga Way	Enquires and feedback response Issues resolution and mediation of disputes Incident management Construction updates as required. Construction signage.	During Environmental Impact Statement (EIS) consultation, local residents and businesses identified the following concerns: Traffic management Parking impacts and obstruction of neighbourhood driveways View impacts and privacy Impacts of construction activities including noise, dust and vibrations

People to be consulted (Stakeholders)	Communication activities (see Section 5)	Concerns
<ul style="list-style-type: none"> - Jirrang St - Warin Ave - Durawi St - Buran Rd - Nijong Dr - Baraba Cres - Winnima Cct <p>Businesses</p> <ul style="list-style-type: none"> - Mortarless Masonry - Boral Asphalt - Arjo - Hitachi Construction Machinery - Shelta - Prospect Refrigerated Transport - Americold - Prospect 		
<p>Regulatory agencies and utilities:</p> <ul style="list-style-type: none"> - Blacktown City Council - Cumberland City Council - New South Wales Environment Protection Authority - Endeavour Energy - Heritage NSW – Aboriginal cultural heritage (ACH) - Heritage NSW - Transport for NSW - Sydney Water - Fire + Rescue NSW 	<p>Contact is covered by relevant approvals.</p>	<p>Traffic management</p> <p>Visual impacts</p> <p>Construction activities</p> <p>Environmental impacts</p>

People to be consulted (Stakeholders)	Communication activities (see Section 5)	Concerns
<ul style="list-style-type: none"> - The Prospect Heritage Trust - Registered Aboriginal Parties - Jemena 		
Department of Planning, Industry and Environment	Contact is covered by relevant approvals.	Regulatory oversight of Development Consent for SSD-10399.

4. STAKEHOLDER CONTACTS

Table 3 Stakeholder contacts

Stakeholder	Contact details
Department of Planning, Industry and Environment	Deana Burns Senior Environmental Assessment Officer T +612 9274 6453 E deana.burn@planning.nsw.gov.au
Department of Planning, Industry and Environment – Biodiversity and Conservation Division	Bronwyn Smith Senior Conservation Planning Officer T +612 9873 8604 E Bronwyn.smith@environment.nsw.gov.au
Blacktown City Council	Sara Smith Senior Town Planner T (02) 9839 6262
Cumberland City Council	William Attard Senior Development Planner T (02) 8757 9924
New South Wales Environment Protection Authority	Claire McQueeney Operations Officer T (02) 8837 6393 E Claire.mcqueeney@epa.nsw.gov.au.
Endeavour Energy	Cornelis Duba Development Application Specialist Network Environment & Assessment E cornelis.duba@endevourenergy.com.au
Heritage NSW – Aboriginal cultural heritage (ACH)	Sam Gibbins Heritage NSW T (02) 9895 6586 E Samantha.gibbins@environment.nsw.gov.au
Heritage NSW	Tim Olliver Senior Heritage Assessment Officer T (02) 4927 3203 E timothy.oliver@environment.nsw.gov.au
Transport for NSW	Vic Naidu A/Senior Land Use Planner Land Use Planning and Development E development.sydney@rms.nsw.gov.au
Sydney Water	Growth Planning Team T 13 20 92 E urbangrowth@sydneywater.com.au

Stakeholder	Contact details
Fire + Rescue NSW	Brendan Hurley Team Leader Infrastructure Liaison Brendan.m.hurley@fire.nsw.gov.au 0438 601 582
The Prospect Heritage Trust	Jill Finch President T 02 9621 8225
Registered Aboriginal Parties	<ul style="list-style-type: none"> ▪ A1 Indigenous Services <ul style="list-style-type: none"> – Carolyn Hickey ▪ Amanda Hickey Cultural Services (AHCS) <ul style="list-style-type: none"> – Amanda Hickey ▪ Aragung Aboriginal Cultural Heritage Site Assessments <ul style="list-style-type: none"> – James Eastwood ▪ Barking Owl Aboriginal Corporation <ul style="list-style-type: none"> – Jody Kulakowski – T +61 426 242 015 – E barkingowlcorp@gmail.com ▪ Barraby Cultural Services <ul style="list-style-type: none"> – Lee Field ▪ Butucarbin Aboriginal Corporation <ul style="list-style-type: none"> – Jennifer Joan Beale – T (02) 9832 7167 – E koori@ozemail.com.au ▪ Didge Ngunawal Clan <ul style="list-style-type: none"> – Lilly Lea Carrol – T +61 426 823 944 – E lillycarroll@y7mail.com ▪ Ginninderra Aboriginal Corporation <ul style="list-style-type: none"> – Krystle Lea Carroll – T +61 451 016 224 – E ginninderra.corp@gmail.com ▪ Goodradigbee Cultural & Heritage Aboriginal Corporation <ul style="list-style-type: none"> – Caine Carroll – T +61 452 100 716 – E info@gcahac.com.au

Stakeholder	Contact details
	<ul style="list-style-type: none"> ▪ Kamilaroi Yankuntjatjara Working Group <ul style="list-style-type: none"> – Philip Khan – T +61 434 545 982 – E philipkhan.acn@live.com.au ▪ Prospect Logistics Estate ACHAR ▪ Marigram ▪ Muragadi (Muragadi Heritage Indigenous Corporation)? <ul style="list-style-type: none"> – Jesse John Johnson – T +61 418 970 389 – E muragadi@yahoo.com.au ▪ Murra Bidgee Mullangari Aboriginal Corporation <ul style="list-style-type: none"> – Darleen Joyce Johnson – T +61 490 051 102 – E murrabidgeemullangari@yahoo.com.au ▪ Murramarang ▪ Widescope Indigenous Group <ul style="list-style-type: none"> – Steven Hickey ▪ Yulay Cultural Services <ul style="list-style-type: none"> – Arika Jalomaki <p>Where contact details are not available, Cumberland City Council's Aboriginal Liaison office can be contacted:</p> <p>P: 02 8757 9000</p> <p>E: council@cumberland.nsw.gov.au</p> <p>W: https://www.cumberland.nsw.gov.au/aboriginal-and-torres-strait-islander</p>
Neighbouring businesses	<ul style="list-style-type: none"> ▪ Mortarless Masonry <ul style="list-style-type: none"> – T 02 4092 2086 – E email@mortarless.com.au ▪ Boral Asphalt <ul style="list-style-type: none"> – T (02) 9033 5000 ▪ Arjo <ul style="list-style-type: none"> – T 1800 072 040 – E enquiries.au@arjo.com ▪ Hitachi Construction Machinery <ul style="list-style-type: none"> – T (02) 8863 4800

Stakeholder	Contact details
	<ul style="list-style-type: none"> ▪ Shelta <ul style="list-style-type: none"> – T (02) 8863 0400 – E admin@shelta.com.au ▪ Prospect Refrigerated Transport <ul style="list-style-type: none"> – T (02) 9631 4320 – E enquiries@prospectrt.com.au ▪ Americold – Prospect <ul style="list-style-type: none"> – T (02) 9840 5200

5. PROCEDURES AND MECHANISMS

5.1. INFORMATION PROVISION

Information about the Project will be provided to residents in line with the requirements of Development Consent Condition A26 (b) through the communication activities outlined in Table 4 Communication activities for information provision.

Table 4 Communication activities for information provision.

Activity	Description	Stakeholder	Timing
Enquires and feedback response	<p>The community will use a project contact point (See Section 5.2) to provide feedback or make enquiries and complaints.</p> <p>This contact point will also be the central contact person for nearby sensitive receivers.</p> <p>The process for responding is outlined in Sections 5.2, 5.3 and 5.4.</p>	Individual households and businesses within a 500m radius of the project	Ongoing
Advertisement in local newspapers	At the start of construction and at key development milestones, ISPT will place an ad in the local newspaper outlining construction timeline, impacts and mitigations, and the project contact point.	Individual households and businesses within a 500m radius of the construction zones	Prior to work commencing.
Signage	Signage at the front of the site will include details for providing feedback or making enquires and complaints.	Individual households and businesses within a 500m radius of the project	Ongoing

Activity	Description	Stakeholder	Timing
Notifications	At the start of construction and at key development milestones, ISPT will send a letter to neighbours outlining construction timeline, impacts and mitigations, and the project contact point. See Appendix A.	Individual households and businesses within a 500m radius of the project	No less than 14 days before start of construction
Sensitive receiver consultation procedure	For high noise generating works, vibration intensive activities or potential traffic disruptions, sensitive receivers will be informed ahead of time. See Section 5.3 for more detail.	Individual households and businesses within a 500m radius of the project	No less than 7 days before works planned, or when reasonably practical
Community meetings	Depending on the level of stakeholder interest and feedback in the first three months of construction, ISPT will consider the establishment of regular community meetings to inform the community of the progress of the development and report on environmental monitoring results.	Individual households and businesses within a 500m radius of the project	As required

5.2. ENQUIRIES AND FEEDBACK RESPONSE

As outlined in Table 5, project contact points will be established and maintained for design and construction of the Project.

Table 5 Project contact points

Channel	Details
Point of contact	ISPT c/o Aliro (Development Manager) Colin MacDonald
Mailing address	Level 38 Gateway Tower 1 Macquarie Place Sydney NSW 2000
Phone number	1800 244 863
Email	engagement@urbis.com.au
Website	elevationestate.com

All feedback and enquires will be answered in accordance with the timeframes below:

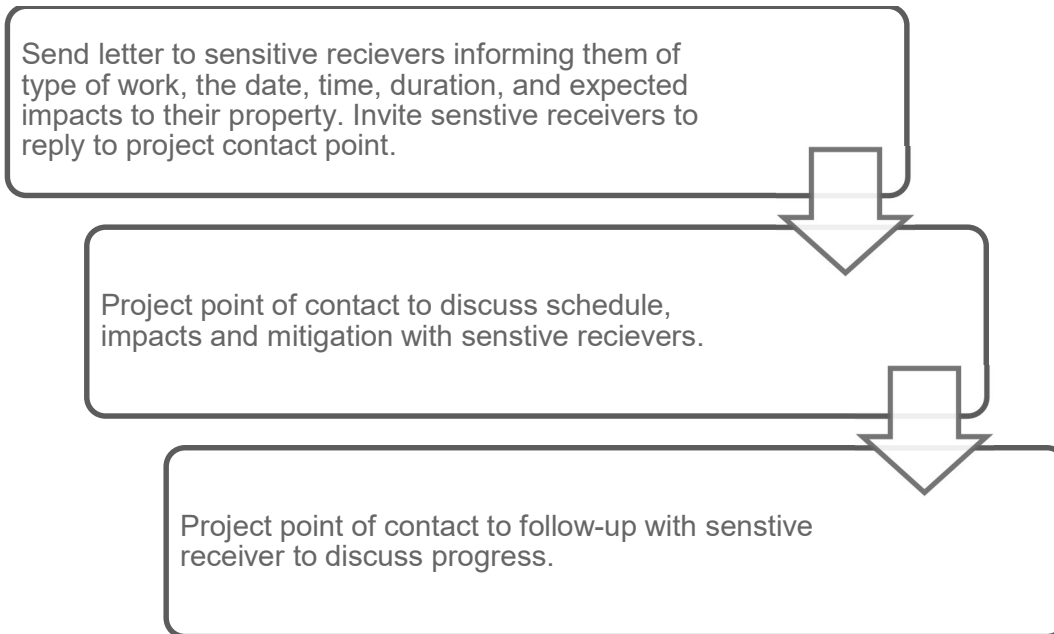
Table 6 Response times

Channel	Response time
Email	Two business days
On-site inquiry	Five business days
Project phone line	Thirty minutes (during business hours)
Website contact	Three business days

5.3. SENSITIVE RECEIVER CONSULTATION PROCEDURE

ISPT will consult with nearby sensitive receivers to schedule high noise generating works, vibration intensive activities and management of any potential traffic disruptions. This includes ensuring the community is informed of disruptive works in advance. This mechanism is outlined in Figure 2 Sensitive receivers consultation procedure

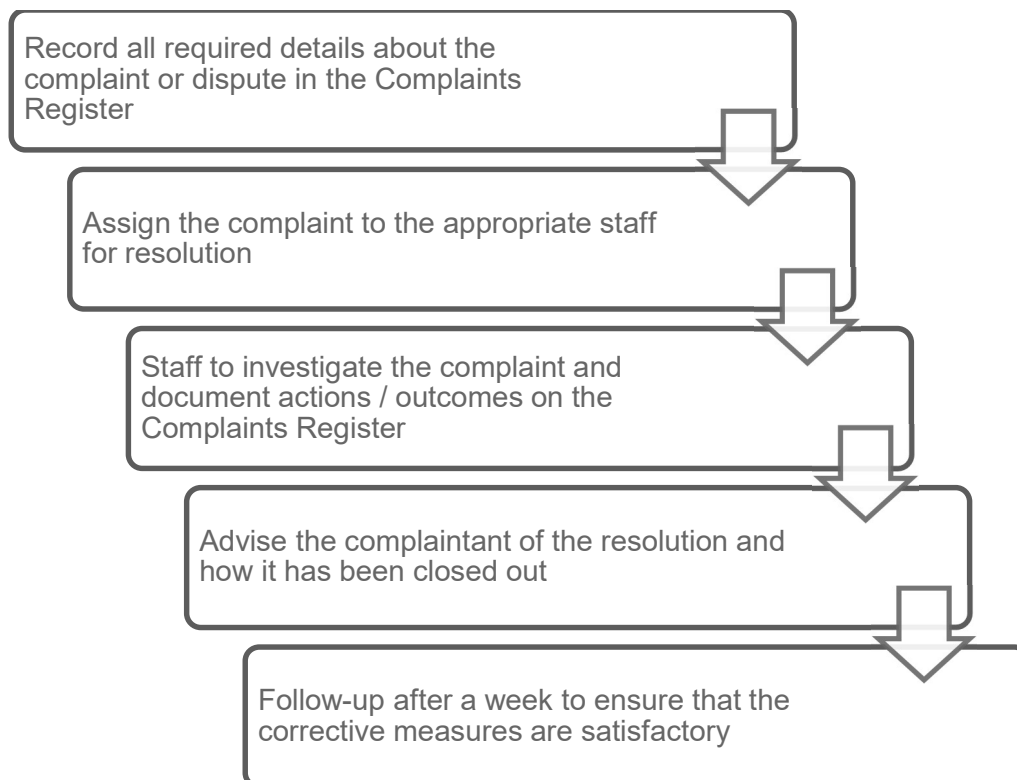
Figure 2 Sensitive receivers consultation procedure



5.4. COMPLAINTS AND DISPUTES RESOLUTION PROCEDURE

The mechanism in Figure 3 Complaints and disputes resolution procedure outlines the procedure for complaints and disputes raised through the project contact point. The required details to be recorded in the complaints register include the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint.

Figure 3 Complaints and disputes resolution procedure



DISCLAIMER

This report is dated 1 July 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of ISPT Pty Ltd (**Instructing Party**) for the purpose of Community Communication Strategy for Elevation at Greystanes (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A

NOTIFICATION LETTER

EXAMPLE NOTIFICATION LETTER

Dear Resident

[Description of work as title]

ISPT and Aliro are seeking to create a high-quality warehousing, distribution and logistics hub at 44 Clunies Ross Street Prospect.

As part of this project, construction phase [X] will start in week commencing [insert date] 2021. This will include:

- [Brief description of work and tools used].

You may notice some additional noise and dust, but we will be implementing dust mitigation and sediment and erosion control measures to minimise these impacts where possible. Construction staff will park on the site where possible to avoid traffic impacts along Clunies Ross Street. We expect this phase of construction to be finished by [insert date], weather permitting.

We thank you in advance for your patience and cooperation during these work. Should you have any questions or feedback about this work, please contact [name and role] on [contact number]

Regards,

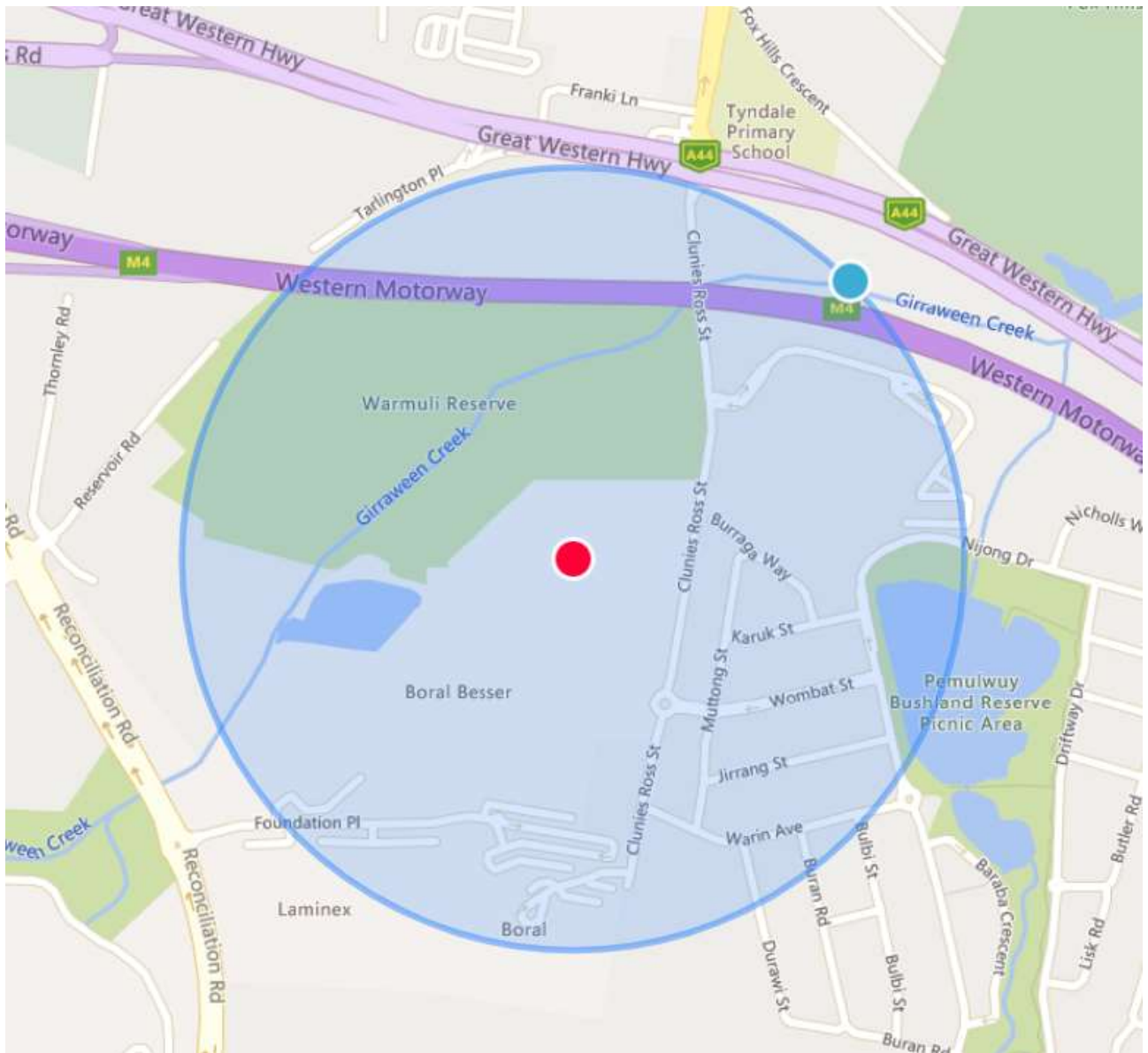
Colin MacDonald

Aliro

Development Manager

APPENDIX B

NOTIFICATION AREA







APPENDIX 7 – LANDSCAPE MANAGEMENT PLAN

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

ELEVATIONS AT GREYSTANES

LOTS 107, 63 & 10 CLUNIES ROSS ST, GREYSTANES NSW

LANDSCAPE MANAGEMENT PLAN

17.09.2021

ISSUE C

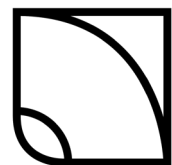
FOR:



SSD 10399

ISSUE	DESCRIPTION	SIGNED	DATE
A	Draft Issued for Review	DV	10.09.21
B	Draft Issued for Review	DV	14.09.21
C	Draft Issued for Review	DV	17.09.21

PREPARED BY:



HABIT8

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1.0 INTRODUCTION

This Landscape Management Plan has been prepared by Habit8 on behalf of ISPT. It accompanies the supporting documents prepared and submitted under State Significant Development SSD10399 Condition of Consent B19 for the redevelopment of Lots 107, 63 and 10 Clunies Ross St, Pemulwuy.

Due to its landscape setting, the site has a unique position between industrial warehouses, residential subdivision and the Prospect Hill recreation and heritage area. The ongoing management of the site landscape is therefore fundamental in reinforcing the canopy cover and screening of the development to surrounding land uses.

This Landscape Management Plan has been developed to manage the revegetation and landscaping works on-site. The Plan:

- details the species to be planted on-site
- describes the monitoring and maintenance measures to manage revegetation and landscaping works; and
- is consistent with and implements management and mitigation measures from Appendix 2 of SSD 10399.

1.1 The Site

The site is located on multiple parcels of land at Clunies Ross Street, over two suburbs, Prospect in the Blacktown Local Government Area (LGA) and Pemulwuy in the Cumberland LGA. The site is approximately 7 km west of the Parramatta CBD and approximately 26 km west of the Sydney CBD

The site is bounded by existing warehouse and distribution facilities and light industrial development to the west, south and northeast, with the residential development of Pemulwuy to the east. An acoustic wall separates the western boundary of the residential area from Clunies Ross Street and the site. To the north of the site is vacant land which is subject to a Gateway Determination (PP_2018_BLACK_008_00 issued 22 November 2018) to rezone the land under the Blacktown LEP 2015, to establish industrial land in the western portion and maintain the current operation of the eastern portion as a stormwater detention basin. The site in context to the surrounding locality is shown in Figure 1.



Figure 1: Regional Context

The site slopes moderately from the south near Prospect Hill to the north towards Girraween Creek, with an approximate 45 metre fall over 600 metres (5% slope on average). Parts of the site have been levelled with retaining walls to provide level surfaces for the existing uses. Historical land use included agricultural land uses and material storage and processing associated with nearby quarrying and manufacturing operations. More recently, the Boral site has been redeveloped to facilitate commercial office spaces for commercial/industrial land use.

The northern portion of the site (Lot 10 in DP 1022044) previously operated as the Austral masonry and building products facility. The southern portion of the site (Lot 107 in DP 1028208) comprised the former corporate headquarters of Boral Brickworks which included a large multi- storey office building and carparking areas which have been terraced into the existing landscape. These improvements on the site from the former use have now been demolished.

The site includes an easement for a water supply pipeline managed by Sydney Water, remnant vegetation along the northern boundary, between buildings and hardstand areas and flood retention basin in the north west corner of the site. The site is subject to Positive Covenants under section 88B of the Conveyancing Act 1919 which requires the landowner to establish and maintain the flood detention basin at the north west of the site.

The site is accessed via Clunies Ross Street or from the Prospect Highway via Foundation Place. The Prospect Highway, M4 Motorway and Great Western Highway are State roads and Clunies Ross Street and Foundation Place are within the control of Blacktown City Council or Cumberland Council.



Figure 2: Lot Boundary

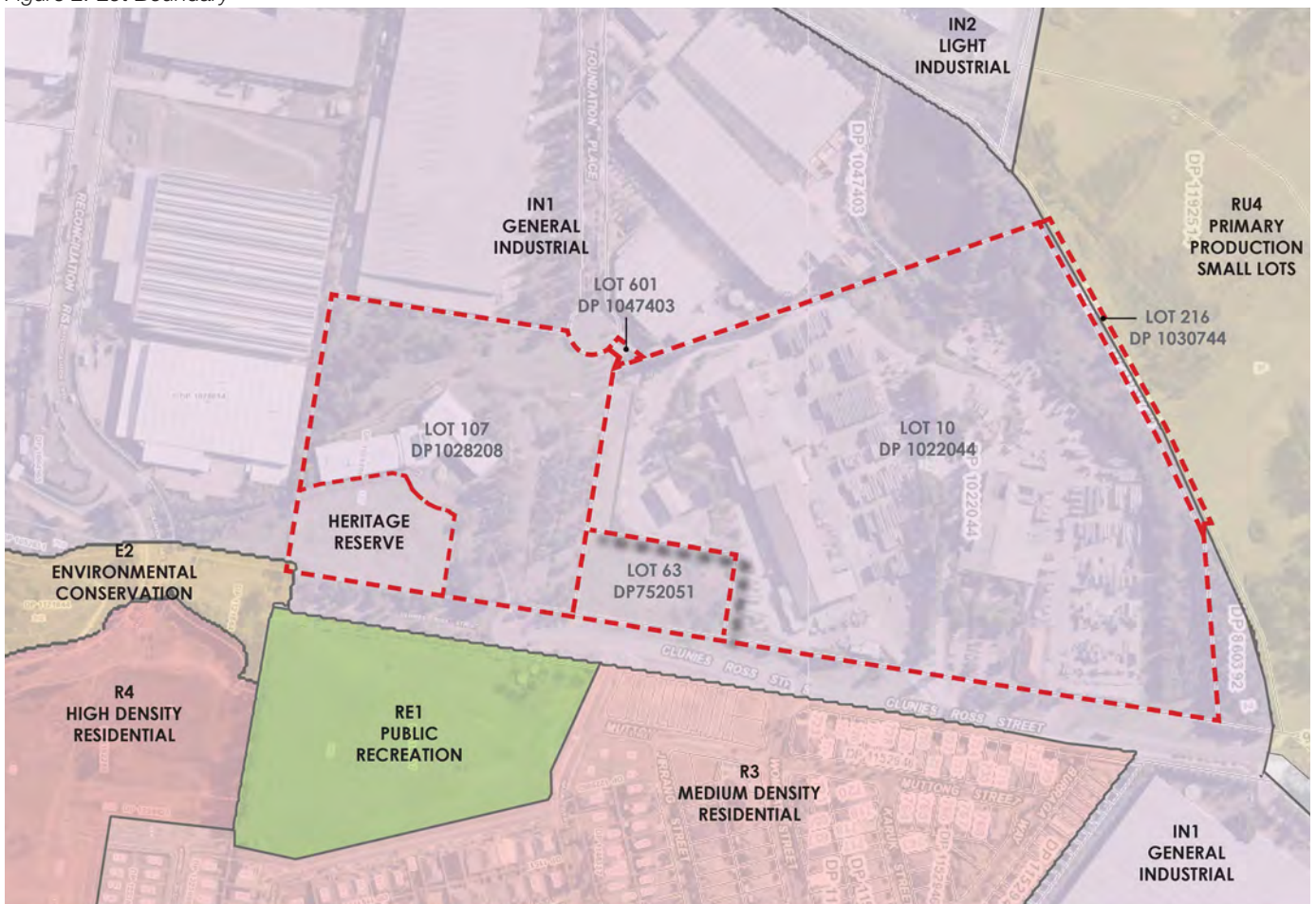


Figure 3: Site Zoning

GENERAL

--- PROPERTY BOUNDARY

DESIGN NOTES

1. FEATURE SITE ENTRY STATEMENT
2. BOUNDARY SCREEN PLANTING
3. CARPARK WITH SHADE TREES
4. STREET SETBACK PLANTING
5. INTERNAL DRIVEWAY WITH STREET TREES
6. EXISTING TURF VERGE SETBACK RETAINED

SOFTSCAPE

- MASS PLANTING BEDS
Refer Notes & Details
- EXISTING LANDSCAPE (TURF)
Retained
- LARGE CANOPY TREES
AS SPECIFIED
Refer to Schedule & Details
- SMALL CANOPY TREES
AS SPECIFIED
Refer to Schedule & Details

HARDSCAPE

- RETAINING WALL
Refer to Detail
To Architect's Specification
- PAVED SURFACE
As specified
- CONCRETE SURFACE
As specified
- CASION WALL
To Engineer's Details
- FENCE 01
- FENCE 02
- CONCRETE EDGE

DESIGN PRECEDENT IMAGES



Figure 4: Landscape Masterplan

LOT	FEATURES
South	Boral Office building (vacant) Large office building, landscaping and car parking. Laminex Warehouse
North	Girraween Creek corridor M4 Motorway corridor
East	Clunies Ross Street. Acoustic wall, residential housing, residential lots landscaping.
West	Industrial Warehouses and Offices Shelta

2.0 MONITORING AND MAINTENANCE MEASURES

2.1 Landscape Management Principles

The following landscape management principles have been identified as being consistent with the Landscape Plans;

- Minimise environmental impacts that may result from landscape management activities and utilise environmentally sustainable practices
- Preserve, enhance and improve the landscape character of the industrial estate
- For new and replacement plantings, the use of endemic plant species where appropriate
- Provide a safe environment, minimising potential risks to people, buildings and property
- Apply best practise landscape maintenance in landscape areas
- Target noxious weeds and feral animals through the use of integrated pest management approaches
- Maintain high quality outdoor spaces and streetscapes
- Maintain high quality passive recreation areas
- Appropriate funding, planning and management of landscape maintenance to provide a measurable improvement of the landscape appearance, safety and amenity.

Below is a summary of general maintenance and ongoing management requirements for revegetation and landscaping works.

2.2 Tree Protection

Avoid whipper-snipping grass at the base of trees as this can cause ring-barking and tree death. Clip around the base by hand where trees are planted into grass. Where trees are planted in paved areas, adjacent to the trunk, use:

- Ground covers
- Gravel
- Permeable paving surrounds
- Tree grates.

2.3 Fertilizing, Composting and Mulching

All trees whether native or exotic will perform better when the soil conditions are healthy. Building healthy soils is the key to achieving the long-term maintenance goals of landscape areas. Soil health is primarily achieved with regular applications of organic soil conditioners such as animal manures, decomposed green waste or proprietary blends of compost.

Fertilizing and composting are not critical maintenance activities except where there are obvious deficiencies but should be assessed on an annual basis by observation and leaf analysis.

Maintain an adequate level of mulch in planter beds in order to maximize water conservation and suppress weeds.

MAINTENANCE ACTION REQUIRED	FREQUENCY
Where obvious deficiencies are evident 60 grams/plant (trees) controlled release fertiliser such as Nutricote;	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however apply in late spring if required.
3 x 20 grams slow release fertiliser tablet per plant N;P;K ratio – 18:3:10	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however, apply in late spring if required.
Where soils are dry, hydrophobic and as a regular maintenance procedure, top up all garden beds with 30-50mm depth of soil conditioner as composted animal manure.	Bi-annually, applied at any time of the year
Maintain mulch to a depth of 75mm by periodic applications. Use the same mulch as originally specified in the Landscape Plan	As required, generally once per year

2.4 Pruning

All pruning shall be carried out by a qualified arborist AQF Level 3 and to be in accordance with AS 4373-2007 Pruning of Amenity Trees. Pruning will be an ongoing process, which will require the periodic removal of unsightly, dead wood, hazardous branches and view obstructing branches.

Prune trees to maintain driver sight lines, remove dead wood from over hanging paths and carparks to maintain vegetation health and to remove branches that are likely to pose a risk to public safety.

Suitable timing for pruning should be determined by the arborist so as to maintain vegetation health, however all trees should be inspected regularly and especially after high winds to determine if any action is required.

Suggested Inspection times:

Start of Spring (September)

Start of Autumn: (March)

Proposed avenue style tree planting along the internal roads and driveways will require under pruning to accommodate site lines. This should be achieved over a period of time to lift the crown and provide a clear trunk to a maximum height of 3 metres with a desirable height of 2m.

Dead limbs containing hollows should not be removed unless there is a risk to public safety; limbs with hollows that are pruned from trees should be left in a suitable location on the ground to provide habitat.

Removed timber and native vegetation, unless diseased, should be considered for re-use on-site either as habitat logs in bushland areas where appropriate, or mulched in garden beds.

2.5 Soil Management for Trees

Wherever trees are to be planted it is important to understand whether the existing in situ topsoil can be used as backfill, whether new topsoil, soil mix, soil conditioner or amendments needs to be imported, or if a mix of the above is best.

In general, the greater the soil/subsoil depth (the effective root depth) - the larger the tree that can be supported with minimal maintenance. The ideal soil profile for trees will have at least 3 horizons where the "A" horizon is the topsoil, the "B" horizon is Subsoil and the "C" horizon is the Subgrade. The minimum recommended topsoil depth for trees is 250mm with a minimum subsoil depth of 200mm. This will provide the tree with the minimum moisture/nutrient reserve and anchorage capacity.

In addition to a physical inspection of the soil to be used to assess field texture and structure and drainage capability, soils should also be analysed by a soil laboratory for the following properties at a minimum:

- pH
- Salinity (electrical conductivity)
- Cation exchange properties and exchangeable cations
- Major and minor nutrients
- Organic matter (%).

Where tree specimens in container sizes 25 litres or larger are to be planted, the subsoil should also be tested for:

- pH
- Salinity (electrical conductivity)
- Cation exchange properties and exchangeable cations
- Aggregate stability.

The most common amendments used to bring soils up to a standard suitable for plant growth are:

- Lime or dolomite to make acid pH soils more alkaline.
- Lime or Gypsum to enhance exchangeable calcium and eliminate sodicity
- Gypsum to make clay soils more friable
- Composts and/or manures to improve organic matter and nutrients levels
- Single or complete fertilisers often with trace elements to correct a particular deficiency or multiple deficiencies.

It is important that the backfill soil is returned in the layers in which it was excavated so that topsoil with organic content is placed back near the top 300mm of the backfill. Where the existing site topsoil backfill is unsuitable or insufficient it can be made up with:

Sandy loam or site won topsoil mixed with;	70-100% by volume	Eg. 8 parts washed sand/2 parts sandy loam/1 part compost.
Composted soil conditioner conforming with AS 4454	0-30% by volume	Amendments as reported by the soil test results.

Where the tree pit is deeper than 300mm (usually for trees in containers over 45 litres) and the existing site subsoil is unsuitable or insufficient a topsoil medium low in organic matter is required so that the organic matter does not “sour” at depths where there is less oxygen, It can be made up with a sandy, well-drained medium which contains low organic matter An example of the components may be:

Sandy loam	60-80% by volume
On-site clay loam or clay topsoil or subsoil Composted soil conditioner conforming with AS 4454	20-30% by volume

2.6 Tree Replacement

To ensure that the density, species and design intent of established tree plantings is maintained, any trees that die should be replaced immediately with the largest specimen that can be reasonably procured and practically handled into position. All trees supplied are to conform to the recommendations of AS 2303 and be true-to-species and type, and free of disease, fungus, infection and/or any other impediment to their future growth and that they have been fully acclimatized for the conditions of the site. Trees are to be supplied from an accredited plant supplier that will need approval from the project superintendent.
(Please refer to Appendix A for the Landscape documentation and plant schedules.)

Supply trees with the following properties:

- Free from injury.
- With calliper at any given point on the stem greater than the calliper at any higher point on the stem.
- Health: Foliage size, texture and colour at time of delivery consistent with that of healthy specimens for the nominated species.
- Vigour: Extension growth consistent with that exhibited in vigorous specimens of the species nominated.
- Damage: Free from damage and from restricted habitat due to growth in nursery rows.
- Stress: Free from stress resulting from inadequate watering, excessive shade or excessive sunlight experienced at any time during their development.
- Site environment: Grown and hardened off to suit anticipated site conditions at the time of delivery.
- Tree stock in containers less than 45 L: Self-supporting at dispatch.
- Indication of north: Trees in containers greater than 100 L or of Size Index greater than 140: Label the northerly aspect during growth in the nursery and maintain during transit.
- Root development: Grown in their final containers for the following periods:
- Plants < 25 L size: More than 6 weeks.
- Plants > 25 L size: More than 12 weeks.
- Pests and disease: Free from attack by pests or disease.
- Native species with a history of attack by native pests: Restrict plant supply to those with evidence of previous attack to less than 15% of the foliage and ensure absence of actively feeding insects.

REPLACEMENT PLANTING	FREQUENCY
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

2.7 Tree Surrounds and Stakes

Stakes and ties are used to support plants and avoid trampling. Developing plants exposed to high winds may require staking. Replace tree stakes when damaged and/or remove them when no longer required and the plant is self-supporting. All stakes to be installed as per the landscape construction details in the landscape set – Appendix A.

2.8 Planting Areas

In general mass planted beds are either planted with native species or exotic or combination of both. The key difference in the management of native plants are their requirements for low- phosphorous fertilisers and a lower fertiliser rate than exotic species generally.

Natives also have lower water requirements in comparison to exotics and are adapted to the harsher Australian conditions. Endemic native plants will tolerate site soils without amendment better than exotics, and if no fertilisers are added there may be a lesser invasion by exotic weeds. Therefore, for the long-term landscape management, endemic plant species should always be considered first for any new gardens.

The edges of the beds will be defined by garden edging as specified in the landscape documentation in Appendix A. Beds shall be weed free and mulched annually to suppress weed growth and maintain moisture content within the soil. Where irrigation is not present, gardens beds should be watered during dry spells to remove undue plant stress and the potential for die-back.

Pruning will be carried out on shrubs that require it, according to species, to remove the dead and damaged branches and to retain natural shape. Pruning will encourage good flowering to improve health and vigor.

Where die-back is present, new plants are to be planted as soon as possible, using species originally specified in the landscape documentation (Appendix A) or where there are no plants specified then replaced with endemic species where appropriate.

2.9 Pruning of Planted Areas

Ground covers and shrubs should be maintained as a maximum height of 0.5m along path edges. Remove dead or dying plants from mass planted areas as required. This may become necessary as plantings mature, after damage or adverse environmental conditions.

PRUNING MASS PLANTED AREAS	FREQUENCY
For low shrub species as per appropriate type; Tip prune to encourage density to 50- 100mm.	As required after flowering
For low shrub species as per appropriate type; Prune evenly to a height of 500mm above ground along path edges. Prune away from paths where required.	Every 4 years after flowering

2.10 Replacement Planting

Plants that have died or failed shall be replaced with the same species and variety as the closest commercially available size. This is to ensure that the density and species of the established plant material within mass planted areas is maintained.

REPLACEMENT PLANTING IN MASS PLANTED AREAS	FREQUENCY
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

2.11 Planting Conditions

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress.

Remove the plant from the container with minimum disturbance to the root ball. Make sure that the root ball is moist and place it in its final position, in the centre of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil.

In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting. Application rate as per manufacturers details.

Backfill with topsoil mixture. Tamp lightly and water to eliminate air pockets. Make sure that topsoil is not placed over the top of the root ball, so the plant stem remains the same height above ground as it was in the container.

2.12 Mulching

Place mulch to the required depth of 75mm, clear of plant stems, and rake to an even surface flush with the surrounding finished levels. Spread and roll mulch so that after settling, or after rolling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in plantation beds, and not closer to the stem than 50 mm in the case of gravel mulches.

- In mass planted areas: Place after the preparation of the planting bed but before planting and other work.
- In smaller areas (e.g. planter boxes): Place after the preparation of the planting bed, planting and other work.
- Extent: Provide mulch to 750 mm diameter, to surrounds of plants planted in riplines and grass areas.
Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm.

2.13 Weed Management

It is important that weeds are not allowed to establish nor spread to other areas. Weeds are highly invasive species and have the potential to invade newly disturbed sites. A noxious weed is a plant declared to be noxious under the NSW Noxious Weeds Act 1993. Noxious weeds can be agricultural weeds, environmental weeds or have a direct impact on human health. Under the Biosecurity Act 2015, noxious weeds must be controlled. On private land, the responsibility lies with the owner/occupier of that land.

Environmental weeds are non-local plants that can invade and change natural areas and threaten the survival of native plants and animals. After land clearing, environmental weeds are considered to be the next greatest threat to our indigenous biological diversity.

Environmental weeds have the potential to readily invade garden beds and potentially impact on adjacent areas of bushland. In addition to the environmental hazards posed by weeds, weeds occurring in mass planted areas growing from the base of trees and pavements can be unsightly and presents an untidy appearance.

Weed monitoring and hand weeding will be required to be undertaken on a regular basis. The management and control will depend on the species of weeds present and the appropriate measures for mitigating any impacts caused by its management on native species. Generally, weed control measures will include:

- Observation of landscape areas to check for weeds and hand weeding of any weeds identified
- Development and implementation of an eradication plan applicable to the circumstances, which may include manual removal and spot spraying
- Regular contact with neighbouring property owners to attempt to eradicate weeds species from the surrounding area
- Regular mulching to help suppress weeds.

MAINTENANCE ACTION REQUIRED	FREQUENCY
Prevent reproduction of weeds by destroying seedlings and established weeds before they set seed or other propagules form. Remove by hand where infestations are low. Ensure that the entire weed including all roots are removed. Dispose of the weeds off site.	As required
Remove by Herbicide any weeds that cannot be controlled by hand removal. Herbicide application must occur before weed has set seed. Non-targeted species and areas must be reinstated if damaged by herbicide application. Herbicide to be used in accordance with regulation rates and manufacturers recommendations and Safety Data Sheets. After spraying, lop and dead weeds flush with the ground surface and dispose of the cuttings. Use of bio- degradable herbicide is mandatory.	Do not spray in windy conditions or if rain is forecasted within the next 24 hours.

2.14 Lawn Areas

Lawn/grassed areas have high demands for maintenance and require significant resources particularly in irrigation, fertilising and mowing. The level of maintenance required for particular lawn areas should be considered within the context of their intensity of use.

Maintenance and access for mowing of grass on grade is a potential occupational health and safety risk. Embankments steeper than 3:1 should be considered for planting. Restrict the provision of high quality, well maintained lawn to sports fields and premium passive use areas. Aim to reduce the amount of resources dedicated to maintaining lawn and grass areas. Clippings should remain where they fall under most circumstances and should not be raked up and removed. In low use areas, irrigation, fertilisation and maintenance should be reduced.

Mowing and trimming measures may include:

- Litter: Remove litter and fallen branches before mowing.
- Height: Consistent with the growth habit of the grass variety and maintained at 25 mm to 40 mm throughout the year.
- Program: Weekly during the mowing season, November to March, and at bi-weekly intervals during April to October. Do not mow under wet conditions.
- Raking: Once every month before mowing, during the mowing season, with a flexible rake. On alternate mowings, adopt a north-south and east-west pattern.
- Edges: At the same time as mowing, trim lawn edges to plant beds, pathways, base of trees and other obstacles. Ensure trees and shrubs are not damaged.
- Clippings distribution: To be used as compost where possible.

Where compaction of turf areas cannot be managed through prevention, and the quality of turf is declining, special machines that remove cores of soil, make slits or grooves or spike holes must be used. Perform when turf is in active growth in summer but not when temperatures are extreme or there are very drying winds.

Topdressing is applying a thin layer of growing media to the turf. Components are usually sand but it must always be more free-draining than the media under the turf and should always have the same consistency over consecutive applications. Topdressing properly applied will fill hollows and provide a smooth finish. The addition of free-draining sand will also improve drainage and infiltration and therefore improve turf health. Topdressing material for remediation of depressions or irregularities: Apply coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

3.0 PROTECTIVE MEASURES

3.1 Protection of Existing Vegetation

Existing vegetation and newly planted areas need protection during construction and establishment. During construction and establishment periods, temporary fencing should be placed at the extent of area to be protected, preferably beyond the drip-line of trees to be protected.

The fencing methods should include flagging tape, stakes and temporary fencing, clearly identifying the area to be protected and restricting pedestrian and vehicular access to the protected zone.

Following completion of the construction period (including establishment), all temporary works should be removed when they are no longer required.

3.2 Tree Protection

Tree protection on all development sites within the City of Cumberland must comply with Australian Standard 4970 – 2009 Protection of trees on development sites.

The relevant Australian Standards are:

- AS 4970 Protection of trees on development sites.
- AS 4687 Temporary fencing and hoardings.

Compliance with Tree protection requirements of Blacktown City Council is mandatory.

This section is only relevant to sites with existing trees are to be retained.

3.3 Erosion, Contamination and Sedimentation Control

During construction, all precautions necessary should be undertaken to prevent erosion, contamination, and sedimentation of the site, surrounding areas and drainage systems, including but not limited to the following:

- Construction of temporary drains and catch drains
- Diversion and dispersal of concentrated flows to points where the water can pass through the site without detrimental impacts
- Construction and maintenance of silt traps to prevent discharge of scoured material to downstream areas
- Stabilisation of exposed soil surfaces (e.g. through sterile grass seeding, erosion control meshing, or mulching using vegetative material removed from the study area)
- Use of erosion and sediment control measures to collect sediment and to reduce flow velocities
- Construction of temporary fencing
- Regular monitoring and maintenance of all erosion and sediment control structures throughout the construction and operational phases of the development to ensure their effective function.

3.4 Tree Removal and Disposal of Vegetation on Site

All significant trees removed as a result of construction works are to be replaced by the same species and planted in a suitable location corresponding with the relevant vegetation community.

For any significant trees removed for construction works, consideration should be given to retaining the woody parts whole or in sections, and placed on the ground to provide habitat for native fauna.

All other native vegetation that is identified for removal should be chipped for use as mulch. All weed material is to be separated and removed from the cleared material prior to chipping. Mulch should be stockpiled at approved locations around the site and be used in locations from where it was derived to ensure any seed stock located within the mulch will be located in appropriate site conditions.

Any vegetation, topsoil or other materials not identified for re-use shall be either disposal of off-site or in an area where the material will not wash into existing vegetation or onto roads or surrounding creeks.

4.0 MONITORING AND REPORTING

Regular inspections of all landscape areas should be undertaken by the Assets Team to ensure that maintenance is carried out according to the plan. The inspections should not be less frequent than three (3) monthly (or immediately after high rainfall/wind/heat events) with the objective that all areas are visited at least once within that period and an inspection checklist prepared and filled out during each inspection and a Three Monthly Maintenance Audit Form Submitted. (Refer to Appendix B). The inspection should include the ongoing protection of all existing vegetation and new revegetation works during its establishment period.

Maintenance staff should receive the audit form and carry out any remediation work required.

5.0 BUSHFIRE PROTECTION

5.1 Asset Protection Zones

In creating and maintaining a garden that is part of an APZ, the following should be considered:

- Sparse planting in the APZ is acceptable provided that they are well spread out and do not form a continuous path to the warehouse facilities. It should also not retain dead material or deposit quantities of ground fuel in a short or dangerous period. It must also be located far enough from the building so that plants will not ignite the building by direct flame contact or radiant heat emission.
- Plant or clear vegetation into clumps rather than in continuous rows in areas of risk. To prevent ground fire from spreading into trees, pruning of low branches two metres from ground is advised.
- Plant selection should preferably include local endemic species. Remove flammable species especially those with rough, flaky or stringy barks. Remove all noxious and environmental weeds as well.
- Ensure that planting is not positioned directly adjoining built structure. Where this does occur, gardens should contain low-flammability plants and non-flammable ground cover such as pebbles and crushed tile.
- Remove or locate away from the structure items like woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch, stacked flammable building materials etc. These items should have no direct contact with bush fire hazard vegetation.
- Take advantage of existing or proposed protective features as part of the property's APZ. These features are as follows: turf areas, fire trails, gravel paths, rows of trees, dams, creeks, swimming pools, tennis courts, vegetable gardens.
- Rows of trees can serve as wind break that will trap embers and flying debris that could otherwise reach the structure. These trees should be planted the same distance away from the structure as their maximum height.

5.2 Plants for Bush Fire Prone Gardens

In designing the landscape garden, it is essential to consider the type of plant species and their flammability aside from their arrangement and placement in the garden. In general, all plants will eventually burn, however there are plants that are less flammable than others.

Trees with loose, fibrous or stringy barks are flammable. These can easily ignite and encourage the ground fire to spread up to the crown of trees, thus should be avoided. When choosing less flammable plants, be sure not to introduce noxious or environmental weed species into the garden as it will cause greater long-term environmental damage.

Features of a less flammable plant:

- high moisture content
- high levels of salt
- low volatile oil content of leaves
- smooth barks without "ribbons" hanging from branches or trunks; and
- dense crown and elevated branches.

5.3 Inner Protection Areas

The area closest to the building that acts as a defensible space is called the IPA. Vegetation within this area should be kept to a minimum level and litter fuels should be discontinuous and kept below 1cm in height. The IPA consists of a mown lawn and well-maintained gardens.

Tree requirements within IPA:

- Tree canopy cover should be less than 15% at maturity and should not touch or overhang the building.
- Should be pruned to a height of 2m above the ground
- Tree canopies should be 2m to 5m apart
- Smooth barked and evergreen trees are preferred.

Shrubs requirements within IPA:

- Should have large gaps in the vegetation to slow down the threat of fire towards the building.
- Should not be located under trees and not form more than 10% of ground cover
- Should be away from exposed windows and doors at least twice the maturity height of the vegetation.

Grass requirements within IPA:

- Should be kept mown and not be more than 100mm in height.
- Should be clean of leaves and vegetation debris.

5.4 Outer Protection Areas

Located between the IPA and unmanaged vegetation is the OPA and only applicable in forest vegetation. Understories are managed in this area, with some separation in the canopies. It aims to decrease the intensity of an approaching fire on the IPA.

Tree requirements within OPA:

- Tree canopy cover should be less than 30% at maturity
- Tree canopies should be 2m to 5m apart.

Shrubs requirements within OPA:

- Should have large gaps in the vegetation to slow down the threat of fire towards the IPA.
- Should not form more than 20% of ground cover.

Grass requirements within OPA:

- Should be kept mown and not be more than 100mm in height.
- Should be clean of leaves and vegetation debris.

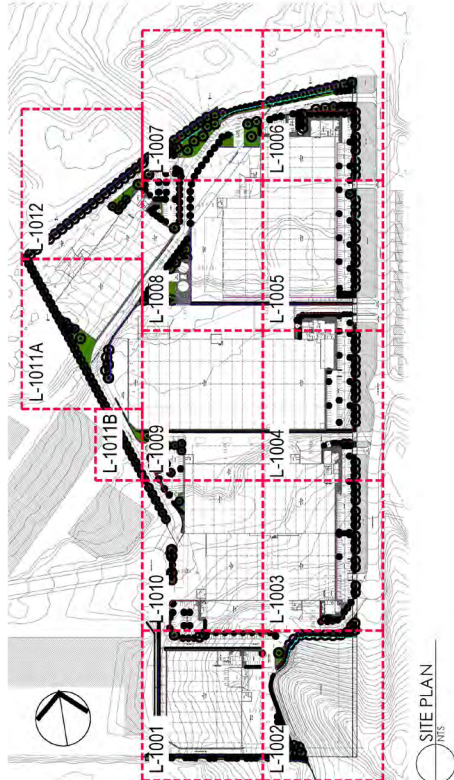
An APZ should be maintained at all times to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

APPENDIX A: LANDSCAPE DOCUMENTATION

ELEVATION LOGISTICS ESTATE

LOTS 107, 63 & 10 CLUNIES ROSS STREET, GREYSTANES NSW

LANDSCAPE DOCUMENTATION
FOR: TENDER



DRAWING REGISTER

L-0001	Landscape - Coversheet
L-0002	Landscape - Plant Schedule
L-1001	Landscape - General Layout Plan 01
L-1002	Landscape - General Layout Plan 02
L-1003	Landscape - General Layout Plan 03
L-1004	Landscape - General Layout Plan 04
L-1005	Landscape - General Layout Plan 05
L-1006	Landscape - General Layout Plan 06
L-1007	Landscape - General Layout Plan 07
L-1008	Landscape - General Layout Plan 08
L-1009	Landscape - General Layout Plan 09
L-1010	Landscape - General Layout Plan 10
L-1011	Landscape - General Layout Plan 11
L-1012	Landscape - General Layout Plan 12
L-2001	Landscape - Section 01
L-2002	Landscape - Section 02
L-2003	Landscape - Section 03
L-2004	Landscape - Section 04
L-3001	Landscape - Details 01
L-3002	Landscape - Details 02
L-3003	Landscape - Specification + Maintenance Notes

LEGEND

---	SITE BOUNDARY
---	PLANTING BED
---	TURF
---	PROPOSED TREES
---	RETAINING WALL
---	EXISTING RETAINING WALL
---	FENCE 01
---	FENCE 02
---	CONCRETE EDGING
---	PAVED / TILED SURFACE
---	CONCRETE SURFACE
---	GASION WALL

GENERAL NOTES

- 1.0 These drawings must be read in conjunction with the drawing package from the consultant team including all engineering drawings.
- 2.0 Do not scale from these drawings - use figured dimensions.
- 3.0 SERVICES
Verify the 'as built' location of all existing services before excavation works are started. Services shown are indicative only. Refer to Engineer's Documentation.
- 4.0 FILLS
All pavement, planting & turf areas to be graded evenly. Paving is unacceptable.
- 5.0 SURFACE LEVELS
Bulk surface levels to be verified on site prior to Civil Contractor works. All adjacent surfaces are to be level and flush unless stated or documented otherwise. Allow for a min 375 mm setback for planting soil mix and mulch.
- 6.0 PLANT PROCUREMENT
Landscape Architect has chosen the tree species + supplier. For a pre-grow
Contact: Carrern Home 0402 741 887
- 7.0 TREE + PLANTING SET OUT
Landscape Architect to approve project set out prior to construction.
Design + Construct by contractor. Confirm extent prior to construction.
- 9.0 All planting to AS 2303 - 2015 - Tree Stock + NatSpec (2003) guide to specifying trees
- 10.0 All soil to comply with AS4419

CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 107, 63 & 10 CLUNIES ROSS STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE - COVERSHEET

SCALE		
NTS		
DRAWN	CHECKED	
KM / DG	DV	
PROJECT NO.	DRAWING NO.	REVISION
H8-21030	L-0001	B
LANDSCAPE ARCHITECT:		



NOT FOR CONSTRUCTION
TENDER PURPOSES ONLY

MASTER PLANT SCHEDULE

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	61
* WFL	Waterhousea floribunda	200L	As Shown	31
* EE	Elaeocarpus eumundi	200L	As Shown	35
* ER	Elaeocarpus reticulatus	200L	As Shown	21
* EMM	Eucalyptus moluccana	200L	As Shown	78
* TL	Tristanopsis lusciosa	200L	As Shown	12
* BA	Brachychiton acerifolius	200L	As Shown	65
* CM	Corymbia maculata	200L	As Shown	10
* FR	Ficus rubiginosa	200L	As Shown	27
* MEX	Magnolia "Esmouth"	200L	As Shown	4
* MEX	Magnolia "Codylyn Glass"	200L	As Shown	31
* FR	Ficus rubiginosa	200L	As Shown	31
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	1942
CLJ	Callistemon 'Little John'	150mm	3/m ²	2732
SSF	Syzygium 'Resilience'	300mm	2/m ²	7794
CC	Callistemon citrinus	300mm	2/m ²	2914
GGG	Grevillea "Honey Gem"	300mm	3/m ²	722
GRG	Grevillea "Robyn Gordon"	300mm	3/m ²	912
PM	Pennisetum "Nafray"	200mm	2/m ²	1211
WF	Westringia frutescens	200mm	2/m ²	130
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	2701
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	3317
MP	Myoporum parvifolium	150mm	4/m ²	1400
HV	Hardenbergia violacea	150mm	4/m ²	1334
PN	Pennisetum "Nafray"	150mm	4/m ²	316
DR	Dianella revoluta	150mm	4/m ²	4441
DR	Dianella revoluta	150mm	4/m ²	2578

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 2 PLANT SCHEDULE (L-1004 to L-1011B)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	5
* WFL	Waterhousea floribunda	200L	As Shown	11
* EE	Elaeocarpus eumundi	200L	As Shown	5
* ER	Elaeocarpus reticulatus	200L	As Shown	1
* BA	Brachychiton acerifolius	200L	As Shown	3
* CM	Corymbia maculata	200L	As Shown	1
* MEX	Magnolia "Esmouth"	200L	As Shown	1
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	40
CLJ	Callistemon 'Little John'	150mm	3/m ²	11
SSF	Syzygium 'Resilience'	300mm	2/m ²	11
CC	Callistemon citrinus	300mm	2/m ²	88
PM	Pennisetum "Nafray"	200mm	2/m ²	46
WF	Westringia frutescens	200mm	2/m ²	50
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	92
CCG	Carpetobrotus glaucescens	150mm	4/m ²	92
PN	Pennisetum "Nafray"	150mm	4/m ²	220
DR	Dianella revoluta	150mm	4/m ²	361

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

CLUNIES ROSS ST. FRONTAGE PLANT SCHEDULE (L-1003 to L-1006)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* AC	Angophora costata	200L	As Shown	23
* MEX	Magnolia "Codylyn Glass"	200L	As Shown	21
* ER	Elaeocarpus reticulatus	200L	As Shown	31
* EMM	Eucalyptus moluccana	200L	As Shown	26
* EE	Elaeocarpus eumundi	200L	As Shown	52
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	1320
CLJ	Callistemon 'Little John'	150mm	3/m ²	1338
SSF	Syzygium 'Resilience'	300mm	2/m ²	766
CC	Callistemon citrinus	300mm	2/m ²	1136
PM	Pennisetum "Nafray"	200mm	2/m ²	1136
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	902
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	1400
GGG	Grevillea "Honey Gem"	150mm	4/m ²	902
GRG	Grevillea "Robyn Gordon"	150mm	4/m ²	902

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 3 PLANT SCHEDULE (L-1003 to L-1004, L-1009 to L-1010)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	2
* WFL	Waterhousea floribunda	200L	As Shown	3
* EE	Elaeocarpus eumundi	200L	As Shown	4
* TL	Tristanopsis lusciosa	200L	As Shown	5
* BA	Brachychiton acerifolius	200L	As Shown	4
* CM	Corymbia maculata	200L	As Shown	6
* MEX	Magnolia "Esmouth"	200L	As Shown	3
* MEX	Magnolia "Codylyn Glass"	200L	As Shown	3
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	242
CLJ	Callistemon 'Little John'	150mm	3/m ²	208
SSF	Syzygium 'Resilience'	300mm	2/m ²	259
GRG	Grevillea "Robyn Gordon"	200mm	2/m ²	500
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	895
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	948
CCG	Carpetobrotus glaucescens	150mm	4/m ²	720
PN	Pennisetum "Nafray"	150mm	4/m ²	82
DR	Dianella revoluta	150mm	4/m ²	39

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

ESTATE ROAD WORKS PLANT SCHEDULE (L-1006 to L-1008, L-1010 to L-1012)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	3
* WFL	Waterhousea floribunda	200L	As Shown	33
* AC	Angophora costata	200L	As Shown	7
* EE	Elaeocarpus eumundi	200L	As Shown	12
* EMM	Eucalyptus moluccana	200L	As Shown	46
* TL	Tristanopsis lusciosa	200L	As Shown	39
* CM	Corymbia maculata	200L	As Shown	10
* MEX	Magnolia "Esmouth"	200L	As Shown	7
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	1008
CLJ	Callistemon 'Little John'	150mm	3/m ²	1565
SSF	Syzygium 'Resilience'	300mm	2/m ²	1702
CC	Callistemon citrinus	300mm	2/m ²	1498
GGG	Grevillea "Honey Gem"	200mm	1/m ²	25
GRG	Grevillea "Robyn Gordon"	200mm	2/m ²	1536
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	110
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	1201
HV	Hardenbergia violacea	150mm	4/m ²	774
CCG	Carpetobrotus glaucescens	150mm	4/m ²	569
PN	Pennisetum "Nafray"	150mm	4/m ²	3283
DR	Dianella revoluta	150mm	4/m ²	1344

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 4 & 5 PLANT SCHEDULE (L-1003)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	8
* WFL	Waterhousea floribunda	200L	As Shown	3
SHRUBS				
CLJ	Callistemon 'Little John'	150mm	3/m ²	15
SSF	Syzygium 'Resilience'	300mm	2/m ²	36
PM	Pennisetum "Nafray"	200mm	2/m ²	96
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	72
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	45
DR	Dianella revoluta	150mm	4/m ²	20

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 7 PLANT SCHEDULE (L-1007 to L-1008, L-1011A, L-1012)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	18
* WFL	Waterhousea floribunda	200L	As Shown	11
* AC	Angophora costata	200L	As Shown	2
* EE	Elaeocarpus eumundi	200L	As Shown	2
* CM	Corymbia maculata	200L	As Shown	2
* FR	Ficus rubiginosa	200L	As Shown	2
* MEX	Magnolia "Esmouth"	200L	As Shown	8
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	170
SSF	Syzygium 'Resilience'	300mm	2/m ²	84
GRG	Grevillea "Robyn Gordon"	200mm	2/m ²	580
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	488
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	338
HV	Hardenbergia violacea	150mm	4/m ²	200
PN	Pennisetum "Nafray"	150mm	4/m ²	556
DR	Dianella revoluta	150mm	4/m ²	456

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 1 PLANT SCHEDULE (L-1005 to L-1007)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	7
* WFL	Waterhousea floribunda	200L	As Shown	11
* EE	Elaeocarpus eumundi	200L	As Shown	60
* EMM	Eucalyptus moluccana	200L	As Shown	7
* TL	Tristanopsis lusciosa	200L	As Shown	6
* BA	Brachychiton acerifolius	200L	As Shown	4
* CM	Corymbia maculata	200L	As Shown	1
* MEX	Magnolia "Esmouth"	200L	As Shown	8
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	120
CLJ	Callistemon 'Little John'	150mm	3/m ²	178
SSF	Syzygium 'Resilience'	300mm	2/m ²	8
CC	Callistemon citrinus	300mm	2/m ²	300
GGG	Grevillea "Honey Gem"	300mm	1/m ²	60
GRG	Grevillea "Robyn Gordon"	200mm	2/m ²	150
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	337
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	237
CCG	Carpetobrotus glaucescens	150mm	4/m ²	298

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

WAREHOUSE 6 PLANT SCHEDULE (L-1001 to L-1002, L-1010)

CODE	BOTANICAL NAME	POT SIZE	DENSITY	QUANTITY
TREES				
* CUP	Cupaniopsis anacardioides	100L	As Shown	18
* WFL	Waterhousea floribunda	200L	As Shown	21
* AC	Angophora costata	200L	As Shown	3
* EE	Elaeocarpus eumundi	200L	As Shown	39
* EMM	Eucalyptus moluccana	200L	As Shown	9
* TL	Tristanopsis lusciosa	200L	As Shown	15
* BA	Brachychiton acerifolius	200L	As Shown	2
* CM	Corymbia maculata	200L	As Shown	4
* MEX	Magnolia "Esmouth"	200L	As Shown	3
SHRUBS				
DEX	Doryanthes excelsa	200mm	2/m ²	182
CLJ	Callistemon 'Little John'	150mm	3/m ²	711
SSF	Syzygium 'Resilience'	300mm	2/m ²	467
CC	Callistemon citrinus	300mm	2/m ²	90
GGG	Grevillea "Honey Gem"	200mm	1/m ²	637
GRG	Grevillea "Robyn Gordon"	200mm	2/m ²	30
WF	Westringia frutescens	200mm	2/m ²	80
GROUNDCOVERS & GRASSES				
LC	Lomandra latrans	150mm	4/m ²	142
LT	Lomandra longifolia 'Tanika'	150mm	4/m ²	1148
HV	Hardenbergia violacea	150mm	4/m ²	60
CCG	Carpetobrotus glaucescens	150mm	4/m ²	768

* TREES HAVE BEEN PROCURED UNDER A PRE-GROW CONTRACT.

CONTACT DAVID ON 043208047

NOTES:

1. ALL PLANTS HAVE BEEN SELECTED AT NURSERY BY THE LANDSCAPE ARCHITECT AND PREPARED FOR THIS PROJECT FOR A PRE-GROW CONTRACT.

CONTACT DAVID: 043208047



HABIT8
Landscape Architecture & Urbanism
Level 17, MLC Centre
Sydney, NSW 2000
www.habit8.com.au
0432 208 047



ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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NEVER scale off drawings, use figured dimensions or rely on dimensions for construction.

Drawings are made on the basis of the information provided and the accuracy of the information is not guaranteed.

CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 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PROJECT
ELEVATION LOGISTICS ESTATE
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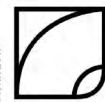
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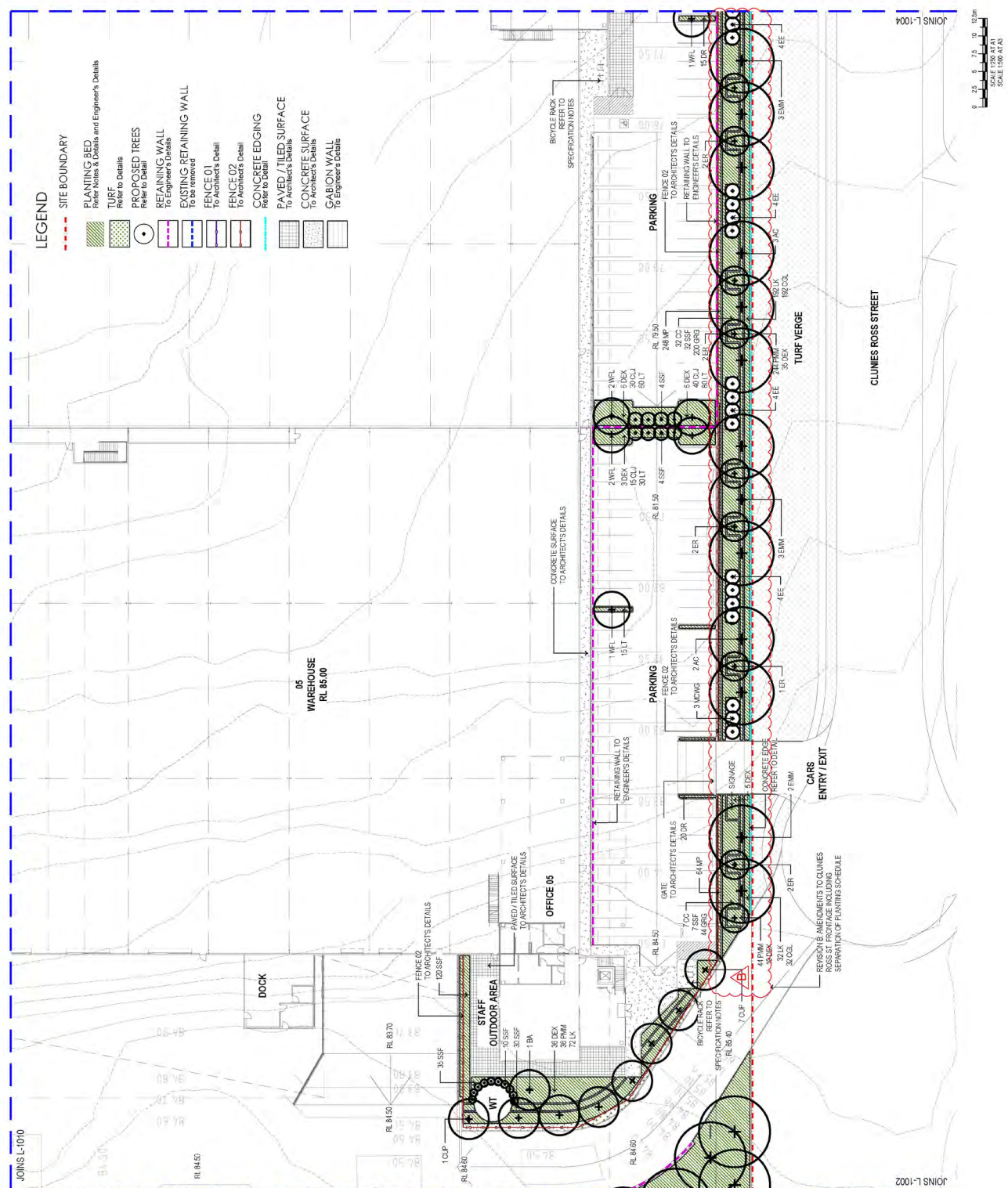
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ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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GENERAL LAYOUT PLAN 05

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1:500 @ A1 / 1:900 @ A3

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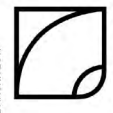
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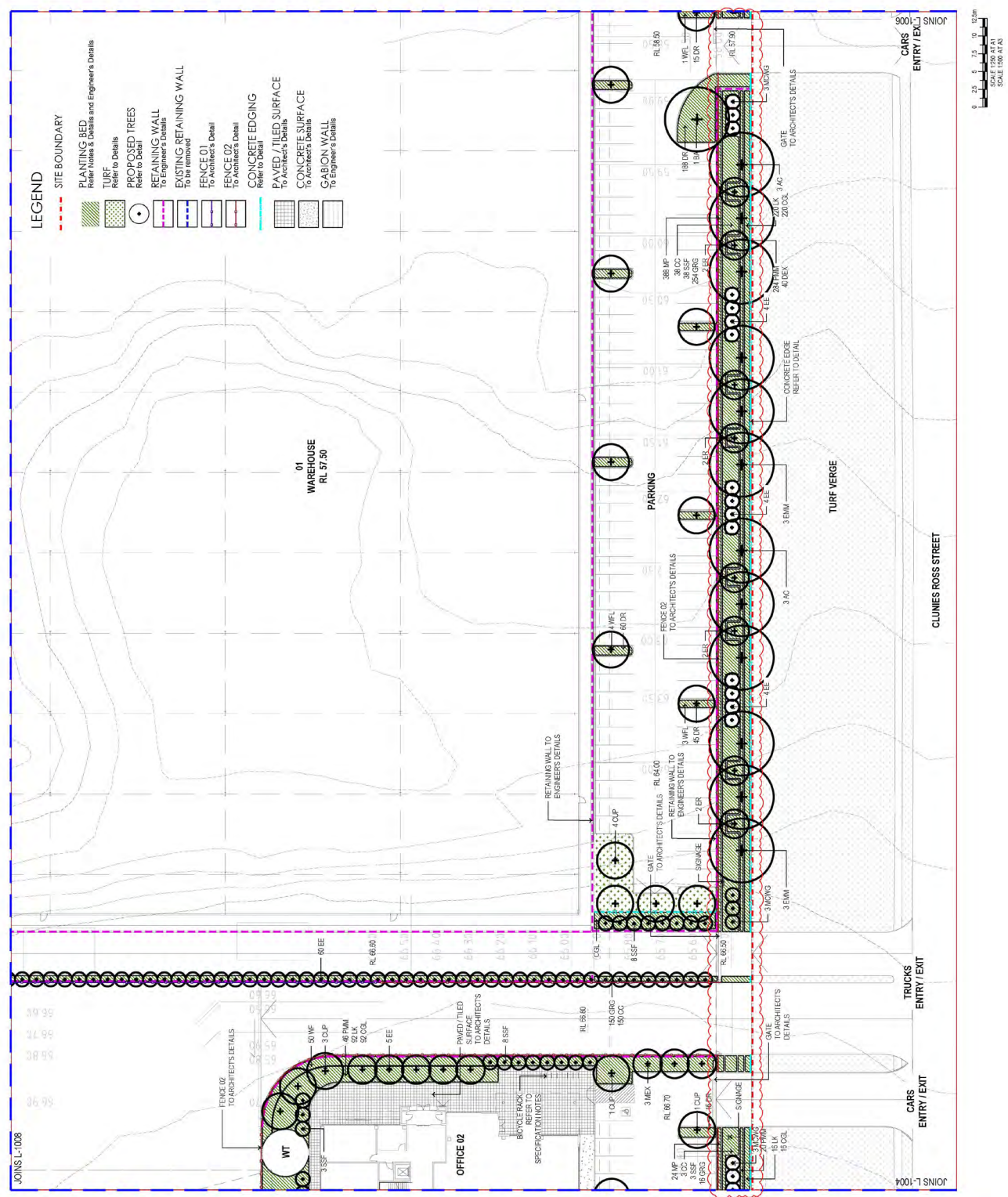
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REVISION
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ELEVATION LOGISTICS ESTATE
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ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.08.21	Tender Issue



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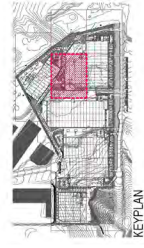
NEVER scale off drawings, use figured dimensions only. Drawings indicate scope of works and general set out. These are not to be used for construction.

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PROJECT
ELEVATION LOGISTICS ESTATE
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ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
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2242, 2243, 2244, 22

ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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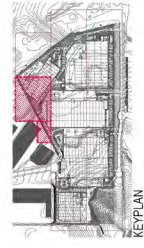
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PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 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ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.08.21	Tender Issue



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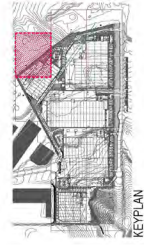
NEVER scale off drawings, use figured dimensions only. Drawings indicate scope of works and general set out. These are to be confirmed on site.

CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
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ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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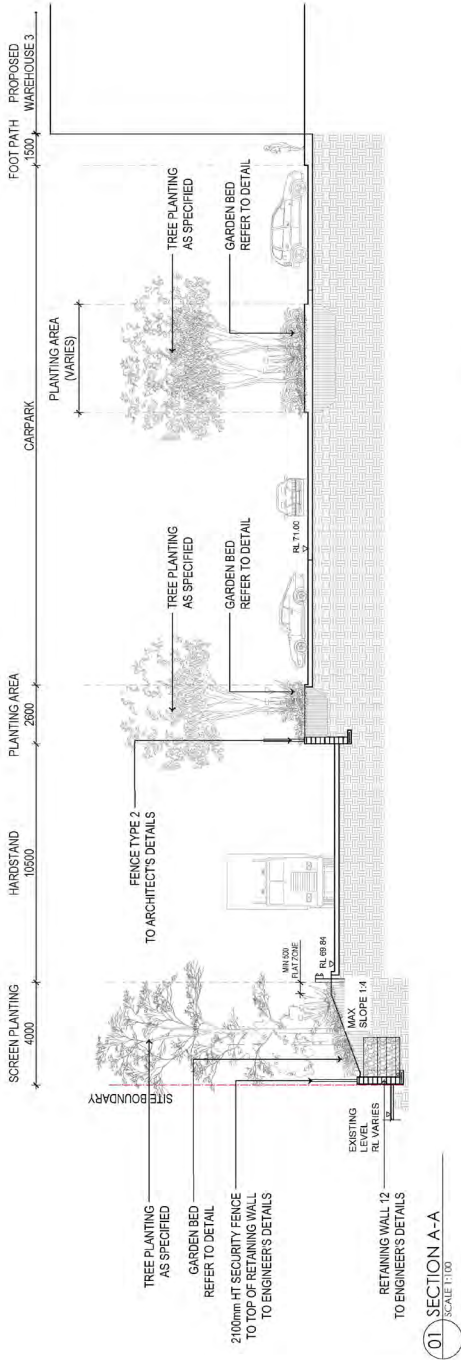
NEVER scale off drawings, use figured dimensions only. Drawings indicate scope of works and general section. These drawings are for information only.

CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 97, 98 & 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 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2242, 2243, 2244, 2245,

ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
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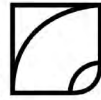
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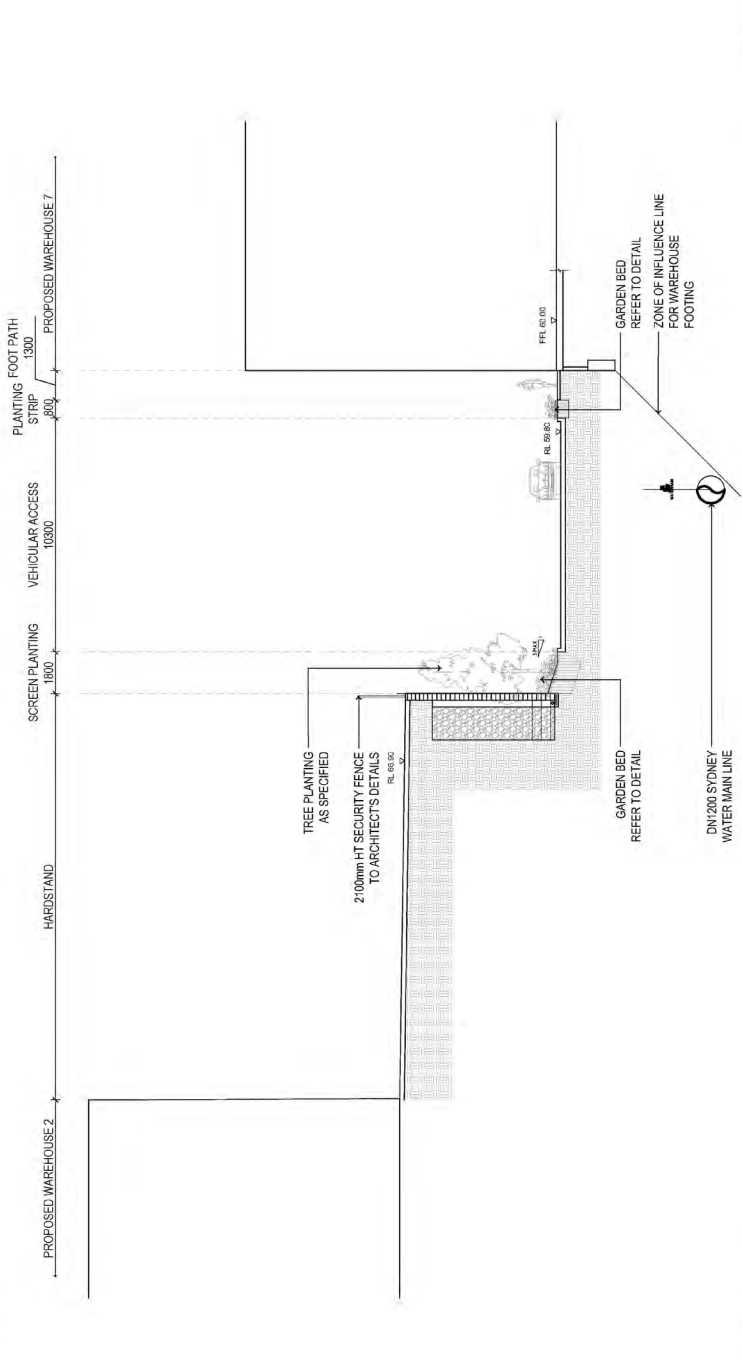
PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 80, 81 & 82 CLAYTON ROAD STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE SECTIONS 01

SCALE 1:100 @ A1 / 1:200 @ A3	CHECKED DV
DRAWN KM / DG	REVISION B
PROJECT NO H8-21030	DRAWING NO L-2001
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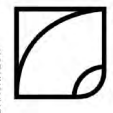
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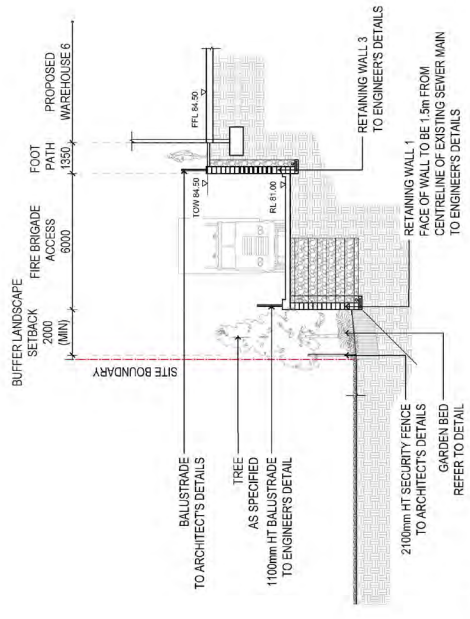
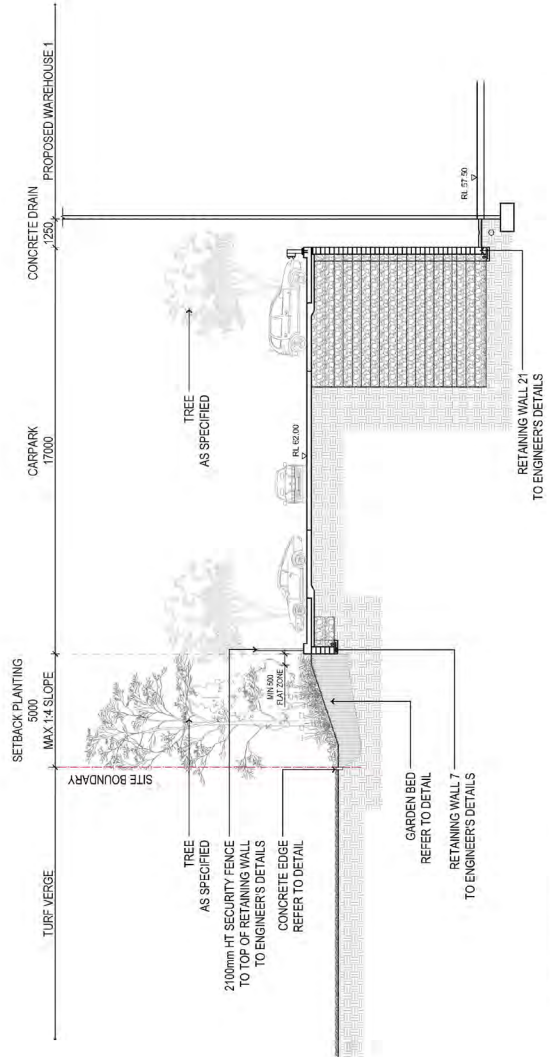
PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 80 & 81 HOLLANDS ROAD STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE SECTIONS C2

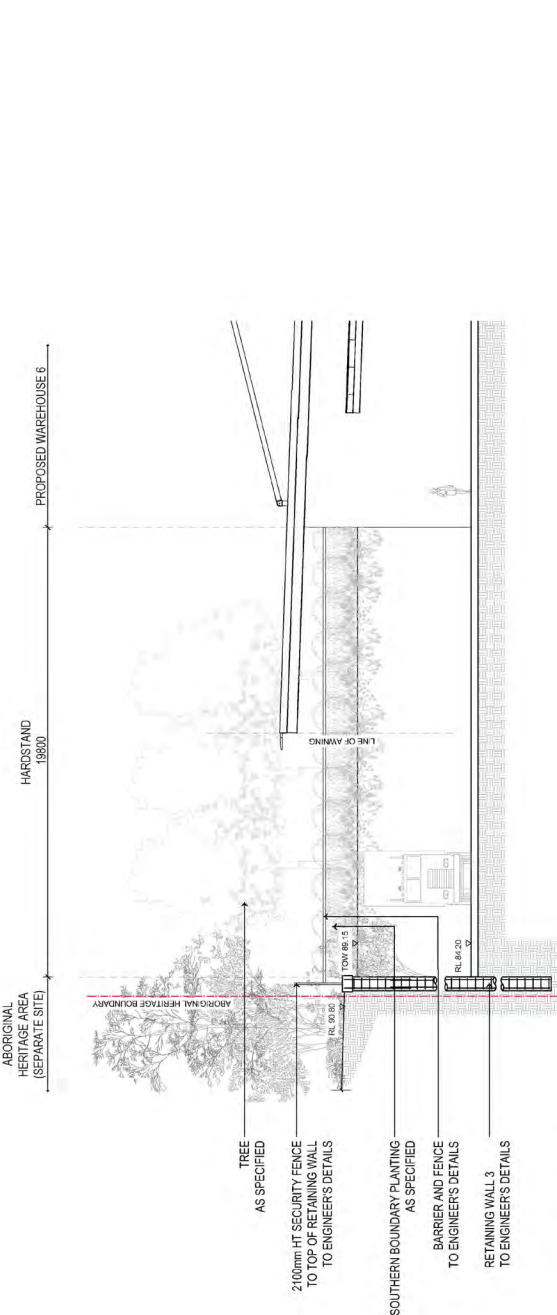
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PROJECT NO H8-21030	DRAWING NO L-2002	REVISION B
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PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 107, 61A, 10 CLINES ROAD STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE SECTIONS 03

SCALE
1:100 @ A1 / 1:200 @ A3

DRAWN
KM / DG

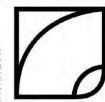
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PROJECT NO
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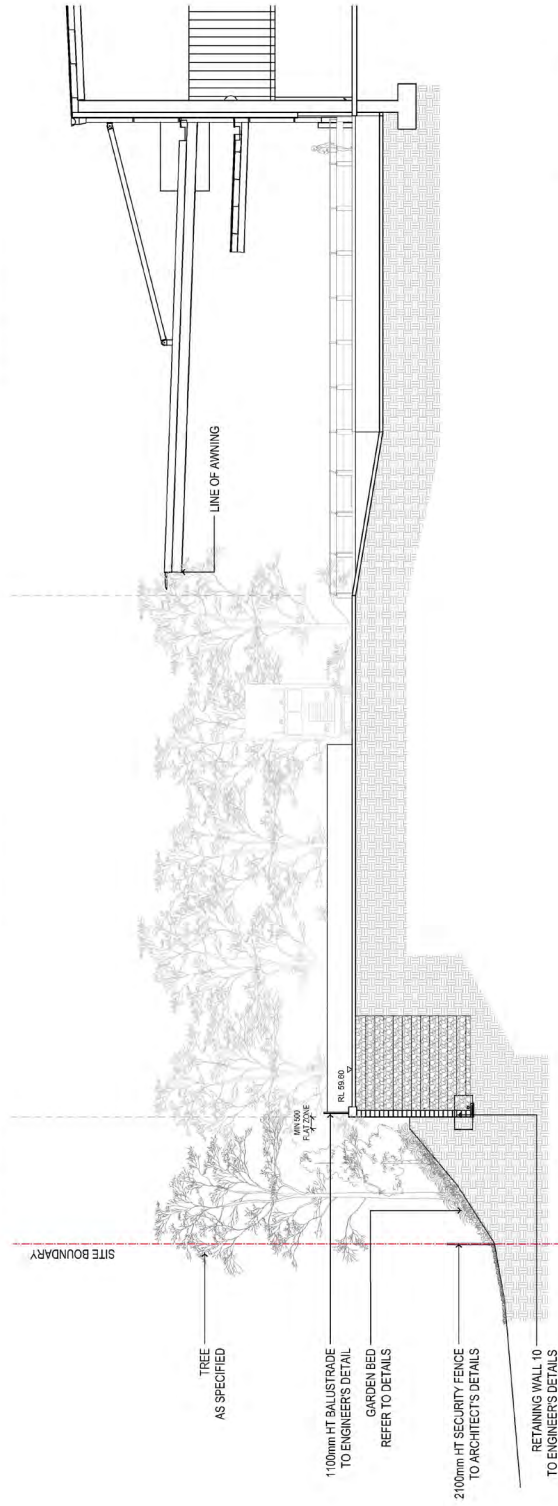
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REVISION
B

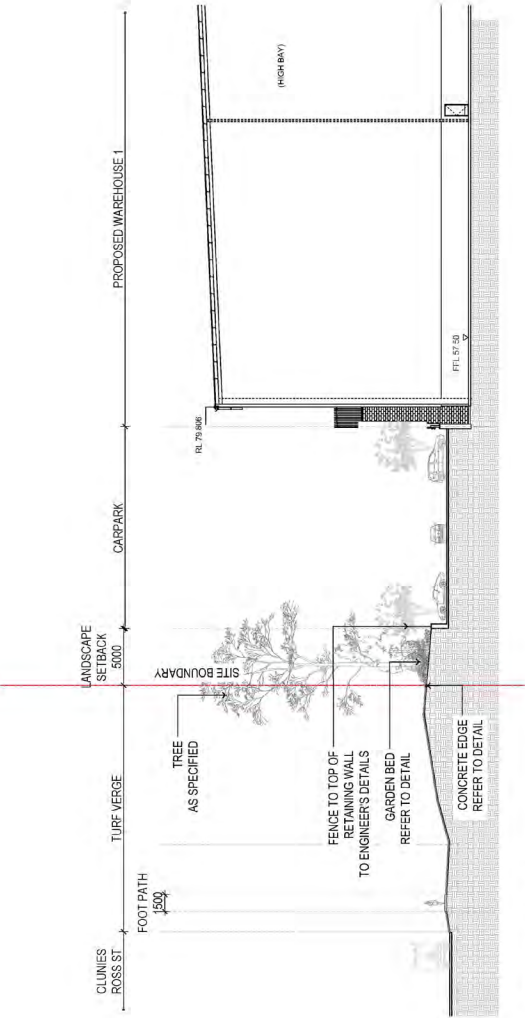
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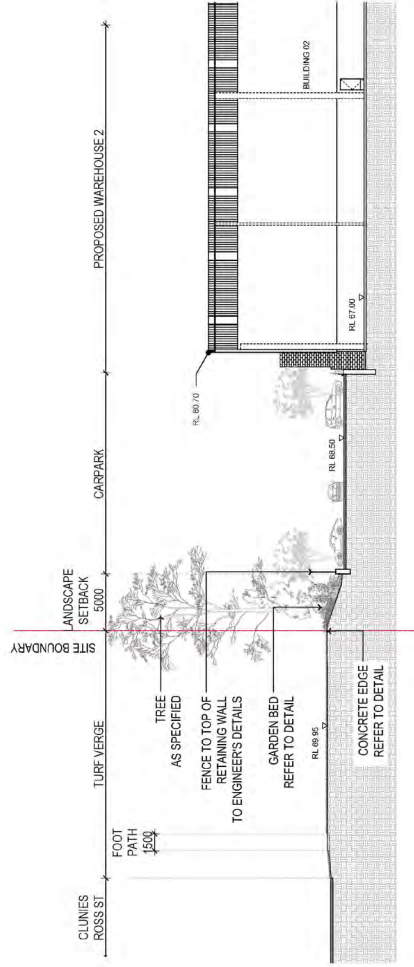
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ISSUE	DATE	PURPOSE
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01 SECTION G-G
SCALE 1:200



02 SECTION H-H
SCALE 1:200



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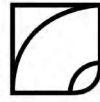
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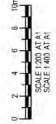
PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 107-109 A CLUNIES ROSS STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE SECTIONS G/H

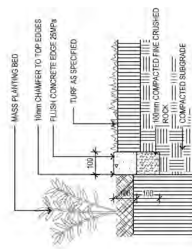
SCALE 1:200 @ A1 / 1:400 @ A3	CHECKED DV
DRAWN KM / DG	PROJECT NO H8-21030
	DRAWING NO L-2004
	REVISION B
	LANDSCAPE ARCHITECT:



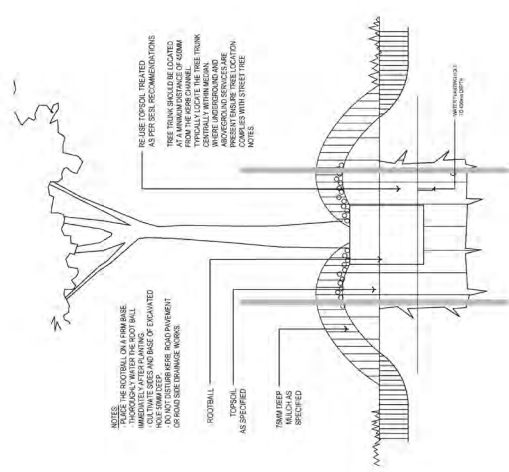
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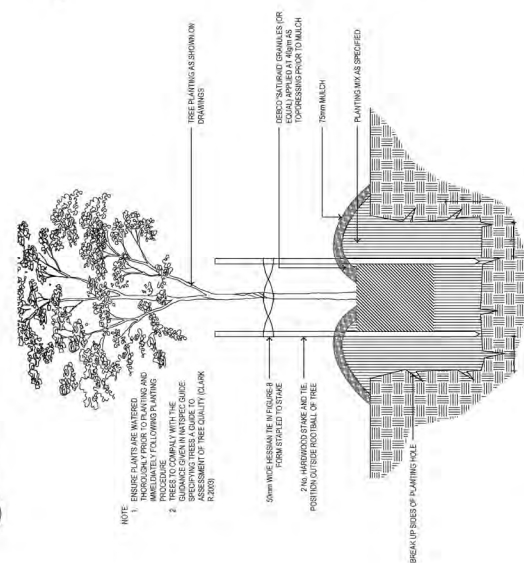
ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



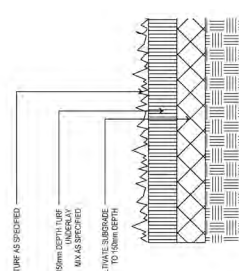
01 MASS PLANTING BED
SCALE 1:10



04 TREE PLANTING (100L+)
SCALE 1:15

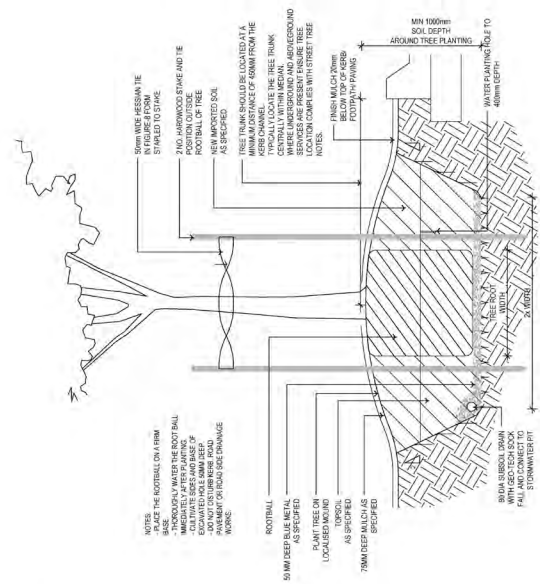


02 TREE PLANTING (75L)
SCALE 1:20



03 TYPICAL TURF DETAIL
SCALE 1:10

07 TREE PLANTING 200L
SCALE 1:15



05 TREE PLANTING IN GRASS
SCALE 1:10

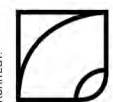


PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 107 & 108 VICTORIA ROAD SHEET 08 OF 10 JANES NSW

DRAWING TITLE
LANDSCAPE DETAILS 01

SCALE	AS SHOWN
DRAWN	CHECKED
KM/DG	DV
PROJECT NO.	DRAWING NO.
H8-21030	L-3001
REVISION	B

LANDSCAPE ARCHITECT:



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CLIENT

ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue



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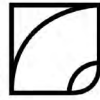
CLIENT



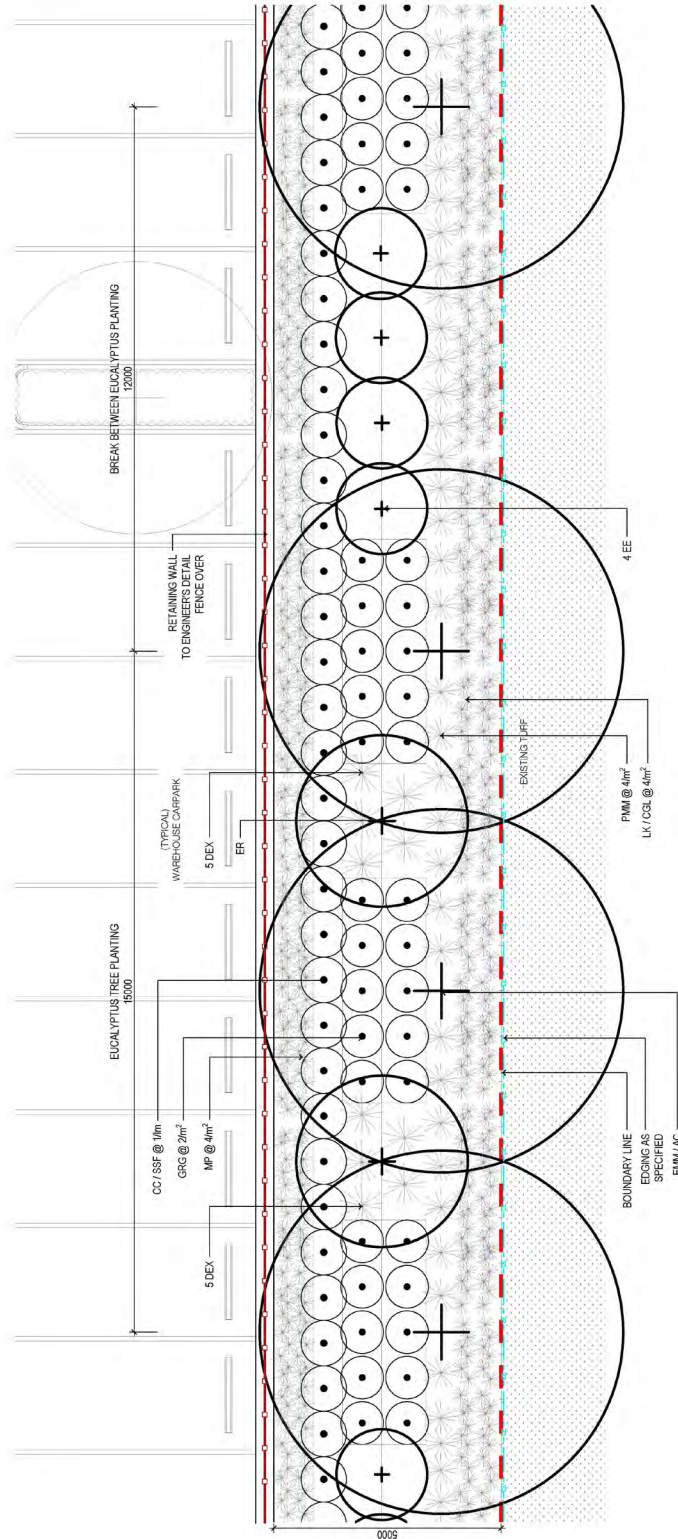
PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200

DRAWING TITLE
LANDSCAPE DETAILS 02

SCALE 1:50 @ A1 1:100 @ A3	DRAWN KM / DG	CHECKED DV
PROJECT NO H8-21030	DRAWING NO L-3002	REVISION B
LANDSCAPE ARCHITECT:		



HABIT8
Landscape Architecture & Urbanism
100/102 Pitt Street
Sydney NSW 2000
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t: 02 9257 2044
f: 02 9257 2045



SPECIFICATION NOTES (TYPICAL)

SERVICES

Before landscape work is commenced the Landscape Contractor is to establish the position of all service lines and ensure tree planting is carried out at least 3 metres away from these services. Service lids, vents and hydrants shall be left exposed and not covered by any landscape finishes (turfing, paving, garden beds etc.) Finish adjoining surfaces flush with pit lids.

TURF UNDERLAY

Turf Underlay Mix - Supplier SoilCo, or equal
Top soil to be laid at 300mm depth for garden beds and 150mm for turf areas.

GARDEN MIX:

Premium Garden Mix - Supplier SoilCo, or equal (300mm depth)

MULCH (BASE OF STREET TREES)

APPLICATION: Place mulch to the required depth, (refer to drawings) clear of plant stems, and rake to an even surface finishing 25mm below adjoining levels. Ensure mulch is watered in and tamped down during installation.

MULCH TYPE:

Type 1 (Mass planting): Hort Bark by ANL
Pine bark: From mature trees, graded in size from 15mm to 30mm, free from wood slivers. Dark brown in colour and texture.

COMPOST

Shall be "GO Compost" as available from Solico or approved equal.

ROOT BARRIER (IF REQUIRED)

600mm deep root barrier installed to manufacturer's specification. To extend along path and back of kerb for 3m with side of trunk.

PLANT MATERIAL

All plants supplied are to conform with those species listed in the Plant Schedule on the drawings. Generally plants shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease or insect pests with large healthy root systems and no evidence of having been restricted or damaged. Trees shall have a leading shoot. Immediately reject dried out, damaged or unhealthy plant material before planting. All stock is to be container grown for a minimum of six (6) months prior to delivery to site.

FERTILISER

TURF: Shall be Shirleys No. 17 or approved equal thoroughly mixed into the topsoil prior to placing turf.
TREES IN GRASS AND SUPER ADVANCED TREES: Pellets shall be in the form intended to uniformly release plant food elements for a period of approximately nine months equal to Shirleys Kokei pellets, analysis 6.3:1.8:2.9. Kokei pellets shall be placed at the time of planting to the base of the plant, 50mm minimum from the root ball at a rate of two pellets per 300mm of top growth to a maximum of 8 pellets per tree.

STAKING AND TYING

Stakes shall be straight hardwood, free from knots and twists, pointed at one end and sized according to size of plants to be staked.

- a. 5-15 litre size plant 1x(1200x25x25mm)
- b. 35-75 litre size plant 2x(1500x38x38mm)
- c. 100-greater than 200litre 3x(1800x50x50mm)

Trees shall be 50mm wide hessian webbing or approved equivalent nailed or stapled to stake. Drive stakes a minimum one third of their length, avoiding damage to the root system, on the windward side of the plant.

TURF

Obtain turf from a specialist grower of cultivated turf. Turf shall be of even thickness, free from weeds and other foreign matter, lay in stretcher pattern with joints staggered and close butted, perpendicular to gradient of FSL. Water immediately after laying. Landscape contractor to determine & implement stabilisation strategies for turf located on batters greater than 1:4 and in swales/overland flow channels.

TURF TYPE: Greenlees Park Couch (Confirm suitability with Blacktown City Council and Cumberland Council).

LANDSCAPE MAINTENANCE PROGRAM (TYPICAL)

Maintenance shall mean the care and maintenance of the landscape works by accepted horticultural practice as rectifying any defects that become apparent in the landscape works under normal use. This shall include, but shall not be limited to, watering, mowing, fertilising, re-seeding, returfing, weeding, pest and disease control, staking and tying, replanting, cultivation, pruning, aerating, renovating, top dressing, maintaining the site in a neat and tidy condition as follows:

GENERAL

The landscape contractor shall maintain the landscape works for the term of the maintenance (or Plant establishment) period to the satisfaction of the council. The landscape contractor shall attend to the site on a weekly basis. The maintenance period shall commence at practical completion and continue for a period of fifty two (52) weeks.

WATERING

Grass, trees and garden areas shall be watered regularly so as to ensure continuous healthy growth.

RUBBISH REMOVAL

During the term of the maintenance period the landscape contractor shall remove rubbish that may occur and occur throughout the maintenance period. This work shall be carried out regularly so that at weekly intervals the area may be observed in a completely clean and tidy condition.

REPLACEMENTS

The landscape contractor shall replace all plants that are missing, unhealthy or dead at the Landscape Contractor's cost. Replacements shall be of the same size, quality and species as the plant that has failed unless otherwise directed by the Landscape Architect. Replacements shall be made on a continuing basis not exceeding two (2) weeks after the plant has died or is seen to be missing.

STAKES AND TIES

The landscape contractor shall replace or adjust plant stakes, and tree guards as necessary or as directed by the Landscape Architect. Remove stakes and ties at the end of the maintenance period if so directed.

PRUNING

General: Prune to reflect the natural growth flowering and regrowth habit of the individual species. Shrubs: Prune after flowering - Spring and Summer and on a spot basis as required.

Hedge trimming: Schedule trimming at times which will maintain the character and design of hedges. Allow up to three times per season.

Tip pruning: To encourage development of new shoots during the active growing season. Do not remove buds before the flowering season in those plants that have terminal flowers.

Radical pruning: To maintain a hedge or formal shape or when a particular problem, growth habit, damage, or disease requires branch removal.

Trees: Prune to eliminate diseased or damaged growth, avoid inter-branch contact and thin out crowns in a natural manner, maintain sight lines to signs and lights, or maintain visibility for personal security. Tree branch removal to AS 4373. Give notice and engage a suitably qualified 'arborist'.

MULCHED SURFACES

All mulched surfaces shall be maintained in a clean and tidy condition and be reinstated if necessary to ensure that a depth of 75mm is maintained. Ensure mulch is kept clear of plant stems at all times. Remove all mulching materials off lawn or paved areas and maintain a clean and tidy appearance when viewed on a weekly basis.

PEST AND DISEASE CONTROL

The landscape contractor shall spray against insect and fungus infestation with all spraying to be carried out in accordance with the manufacturer's directions. Report all instances of pests and diseases (immediately that they are detected) to the Landscape Architect.

GRASS AND TURF AREAS

The landscape contractor shall maintain all grass and turf areas by watering, weeding, re-seeding, rolling, mowing, trimming or other operations as necessary. Seed and turf species shall be the same as the original specified mixture. Grass and turf areas shall be sprayed with approved selective herbicide against broad leaved weeds as required by the Landscape Architect and in accordance with the manufacturer's directions.

Grass and turf areas shall be fertilised once a year in autumn with "Dynamic Lifter" for lawns at a rate of 20kg per 100m2. Fertiliser shall be watered in immediately after application. Irregularities in the grass and turf shall be watered in immediately after application.

Grass and turf areas shall be kept mown to maintain a healthy and vigorous sward. Mowing height: 30-50mm.

WEED ERADICATION

Eradicate weeds by environmentally acceptable methods using a non-residual glyphosate herbicide (eg. Roundup) in any of its registered formulations, at the recommended maximum rate. Regularly remove by hand, weed growth that may occur or recur throughout grassed, planted and mulched areas. Remove weed growth from an area 750mm diameter around the base of trees in grassed areas. Continue eradication throughout the course of the works and during the maintenance period.

SOIL SUBSIDENCE

Any soil subsidence or erosion which may occur after the soil filling and preparation operations shall be made good by the landscape contractor at no cost to the client.

MAINTENANCE PERIOD

The maintenance will be implemented for 6 months (26 weeks)

IRRIGATION NOTES

IRRIGATION OVERVIEW - Confirm with irrigation contractor at tender stage

EXTENT

All mass planting landscape areas and trees are to have full coverage by a fully automatic irrigation system. The design, materials and installation are to be in accordance with Sydney Water Codes and all relevant Australian Standards.

1. An automatic irrigation system is to be installed to all turf and garden bed areas.
2. The irrigation system shall be designed and installed by a licensed contractor to relevant Australian Standards and Sydney Water guidelines.
3. The irrigation system shall be connected into the rainwater tank system and pump

DIPLINE

Provide 13mm dripline to all garden bed areas with appropriate 13mm joiners. Dripline to be Toro drip or similar with 400mm centre drippers. Install line at 500mm spacings with the first line to be 150mm in from edge.
Install dripline after planting and prior to mulching to allow for an adequate mulch cover. Anchor at 1.5m maximum intervals with U-shaped stakes. Dripline pattern to suit planting.

CONTROL VALVES

24v solenoid actuated hydraulic valve with flow control. Control valves to be Toro ezflow series solenoids 25mm or approved equal. Provide a gate valve of the same size immediately upstream of each valve. House both valves in a high impact plastic valve box with a high impact plastic cover at finished ground level. Support the box with bricks on each side.

Controller to be Toro greenkeeper or approved equal with a rain switch.
Install a master valve/pressure regulating valve equal to Toro p220 with exreg pressure regulation valve. Filter to be installed equal to Toro y filter 75mm screen filter.

CONTROL WIRES

Connect the control valves and soil moisture sensor to the controller with double insulated underground cables laid alongside piping where possible. Lay interwired for their full length without joints except at the valves and branches off common wires. Provide waterproof connectors.

Provide a backflow prevention device to Sydney water standards AS 3500.

ISSUE	DATE	PURPOSE
A	23.08.21	Tender Issue
B	10.09.21	Tender Issue

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CLIENT



PROJECT
ELEVATION LOGISTICS ESTATE
LOTS 167 & 168 INCLUDES ROSS STREET, GREYSTANES NSW

DRAWING TITLE
LANDSCAPE SPECIFICATION
MAINTENANCE NOTES

SCALE
N/S

DRAWN
MM/DG

CHECKED
DV

PROJECT NO
H8-21030

DRAWING NO
L-3003

REVISION
B

LANDSCAPE ARCHITECT:



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APPENDIX B: MAINTENANCE AUDIT FORM

This form is to be completed by the Asset Manager responsible for landscape assets. Two copies of this completed form are required. One is to be issued to maintenance staff for action. The second is to be filed for records. Extra pages can be attached to the electronic record if needed

Date Of Inspection: _____

Inspected By: _____

LOCATION	LANDSCAPE TYPE / AREA	ISSUE	REMEDATION WORKS REQUIRED	COST ESTIMATE	DATE TO BE COMPLETED	VARIATION / DEFECT?

Signed: _____

Date: _____



APPENDIX 8 – DAM WORKS CONSTRUCTION METHODOLOGY

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

AWJ CIVIL PTY LTD

**WORK METHOD STATEMENT FOR
DAM BREAK WORKS**

ALIRO GROUP PTY LTD

PROJECT:	ELEVATIONS GREYSTANES
SITE LOCATION:	44 Clunies Ross Street Greystanes
JOB NUMBER:	831
DATE:	22/11/21
REVISION:	01

This work method statement outlines the procedure and controls for Early Earthworks of the Industrial Estate at 44 Clunies Ross Street, Pemulwuy NSW. The development consists of 7 isolated warehouse buildings over the 19 Hectare development site. Part of the works requires AWJ to fill the northern warehouse 7 pad into the existing Regional Detention Basin to the north of the site. As this filling works will reduce the capacity of the dam, additional storage must be provided in the northern section of the dam shown below.

Figure 1: Overview of works

- C013251.06-CB10
- C013251.06-CB15
- C013251.06-CB20
- C013251.06-CB30
- C013251.06-CB35
- C013251.06-CB45

To perform these works AWJ will utilise a range of different machines to perform specific earthworks tasks. These machines are:

Excavators

Operating Weight – 14t – 36t

The Excavator shown above is typical of all our AWJ's excavators that will work around in the dam area. The larger 36t excavator will be used to bulk excavate and load the dump trucks to take the cut material to the fill zone. The smaller 14t-20t excavators to trim the batter to final levels. There will be no need for the excavator to work beneath the power lines, all work under the power lines will be done with the dozer, grader or pozzitrack. GPS control will be used on both machines to ensure correct levels are reached.

40T Articulated Dump Truck - Typical

Operating Weight (Empty) – 34.5t
Load Capacity – 40t

Articulated dump trucks have been used on the project in cut to fill earthworks operations. They will be used to transport material from the cut zone in the North to the fill zone in the south shown in blue on image 1 above. Dump truck will not be loaded within the power line easement area.

D7 Dozer - Typical

The D7 (or similar) bull dozer will be used to cut the dam to level under the power lines and with their easement. The max height of the dozer is 3.5m, The dozer will have GPS and can be used to final trim to level also. The dozer will push the material outside of the easement so it can then be loaded by the excavator and dump truck and transported to the fill area.

Tracked Loader – Posi Track



Operating Weight – 6t

The tracked loader will be used to install topsoil and landscaping works to finish the basin area off. It will also be used to move material cut from within the HV Easement, to the outside of the easement for loading in a safe area.

Padfoot and Smooth Drum Rollers



A roller with a will be used to compact and seal the final surface of the cut area of the dam wall.

Grader



Operating Weight 15.2T

The grader will be used to strip grass and trim the cut area to final level and help spread topsoil on the flat areas. The grader will work on automated GPS and ATS systems that will ensure design levels are reached.

3. SETTING UP WORKS ZONES

Setting up the works area will be the first step of the construction works. The set-up works will occur in the following order:

1. Set up perimeter fence/bunting as per image 2 below
2. Install water barriers in front of power poles as per image 2 below
3. Construct crossing over creek. Install geofabric protection, then a large concrete pipe (min 525 diameter) to water from creek to continue flowing. Backfill around and above pipe with 40/70 crushed rock/recycled concrete for ease of removal.

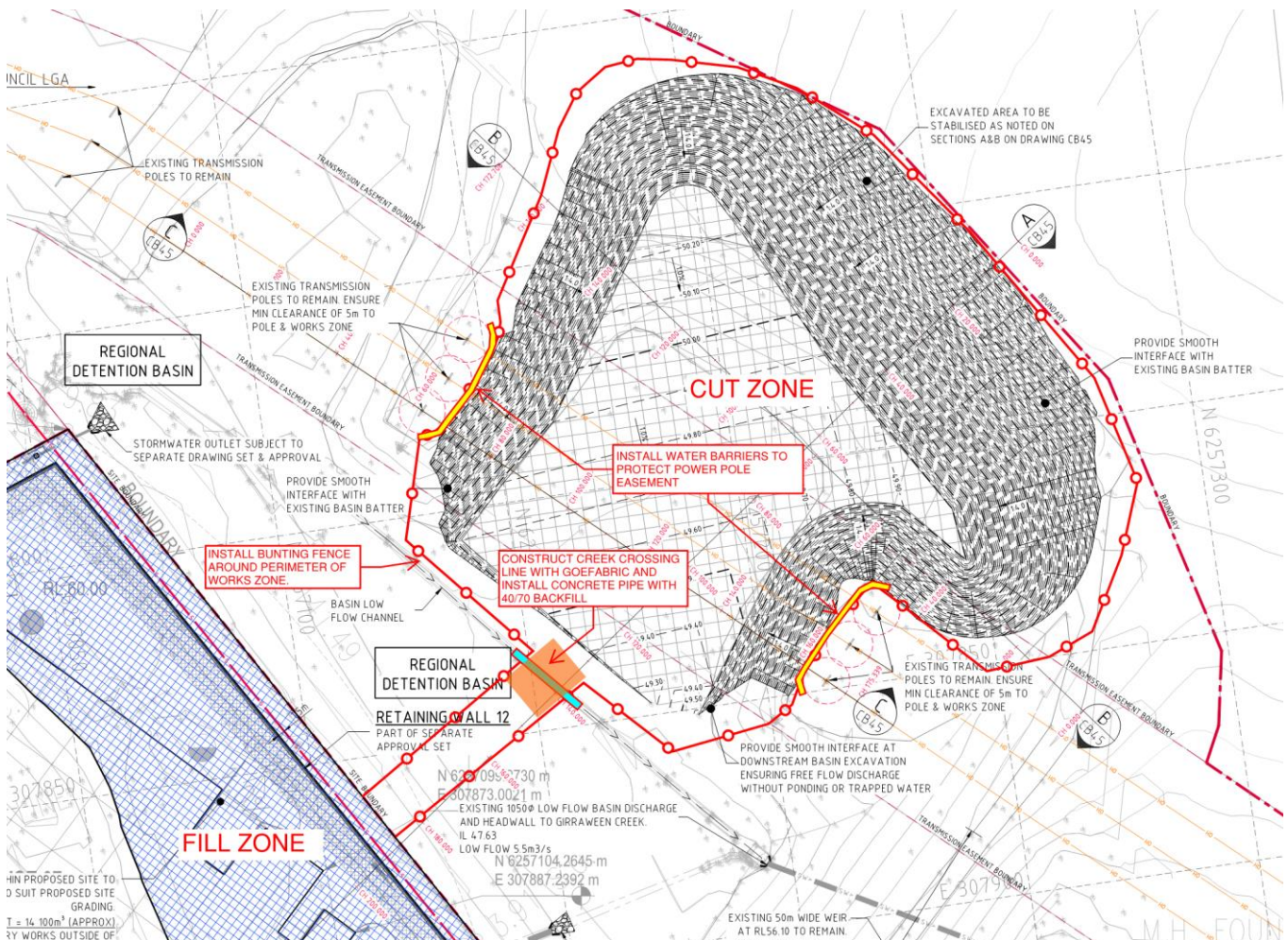


Figure 2 – Works area set up

4. EXCAVATION AND FILL WORKS PROCEDURE

Once the site is set up works can then commence. Works will occur in the following steps:

1. Toolbox this methodology to all workers before they start in that area. Ensure all workers are aware of overhead HV and need to maintain all machinery within the perimeter fence/bunting set up by AWJ.
2. Strip topsoil off the top of the cut area using the grader and pozzitrack.
3. Due to the overhead HV Power Lines the excavation works will be split into different sections, see figure 4 below. In the easement zone excavation will be done in the shallow areas (0mm-1000mm deep) with the dozer and grader and in the deeper areas (1,000mm - plus) using a 14t-36t excavator. These works will be done with an accredited spotter when working within the easement in accordance with Table 2 from the Work Cover Code of practice for working around power lines.

TABLE 2

Approach Distances for work performed by Accredited Persons, with a Safety Observer

Nominal phase to phase a.c. voltage (volts)	Approach distance (m)
Insulated low voltage cables up to 1000, including LV ABC	0.5
Un-insulated low voltage conductors up to 1000	1.0
Above 1000 up to and including 33,000	1.2
Above 33,000 up to and including 66,000	1.4
Above 66,000 up to and including 132,000	1.8
Above 132,000 up to and including 220,000	2.4
330,000	3.7
500,000	4.6
Nominal pole to earth d.c. voltage (volts)	Approach distance (m)
Up to +/- 1,500	1.0

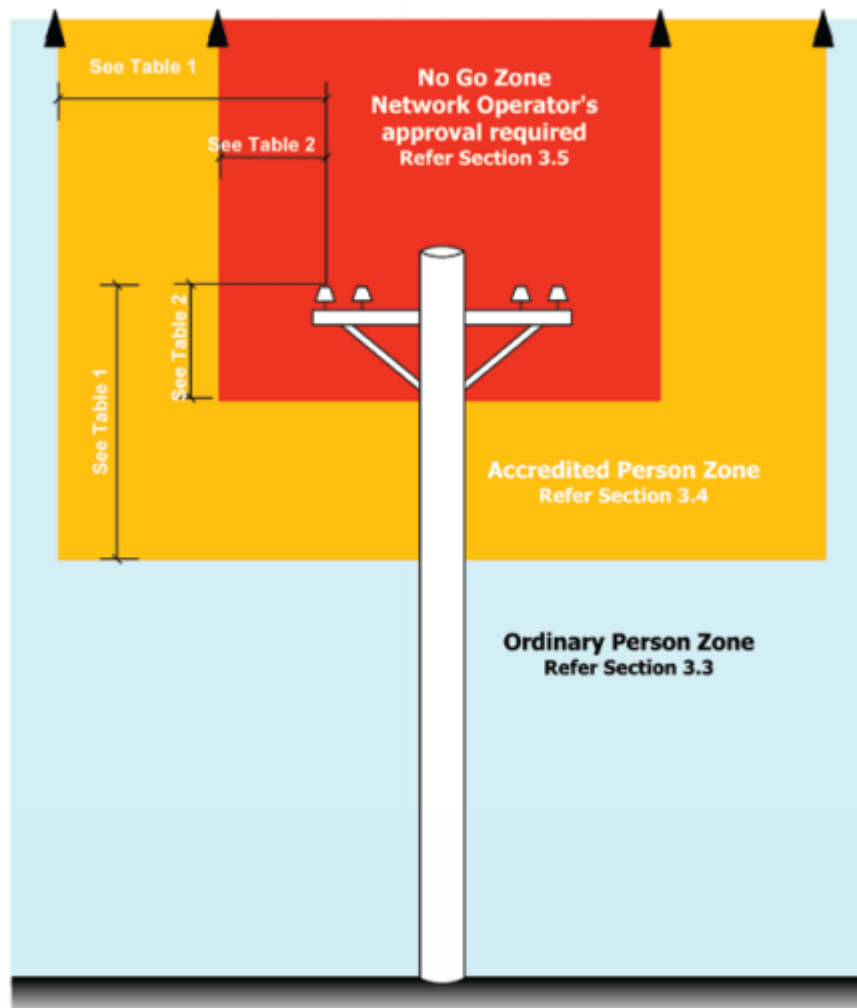


Figure 3 – Approach distances and work zones near overhead power lines

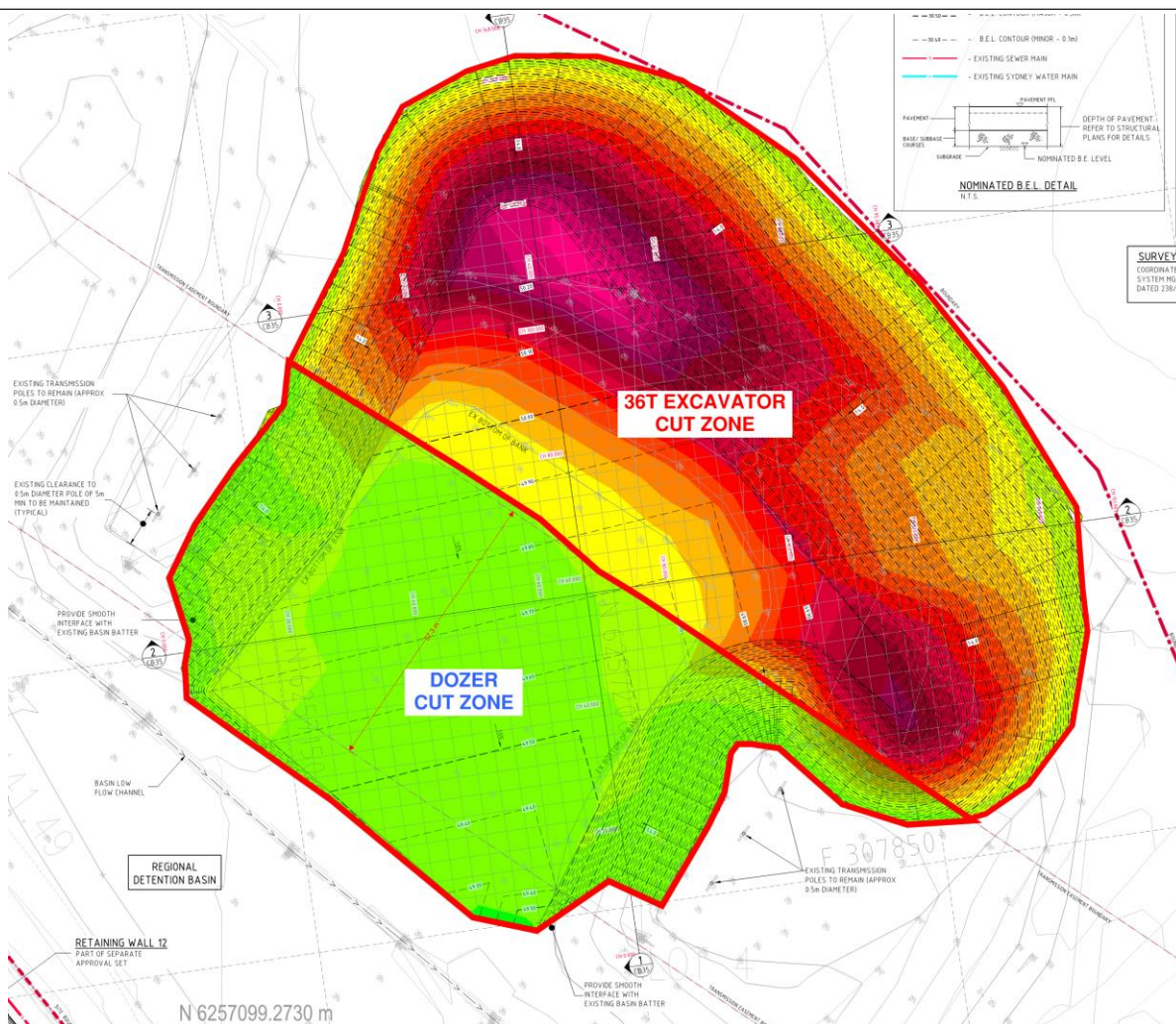


Figure 4 – Machine work zones and Over Head HV Cables

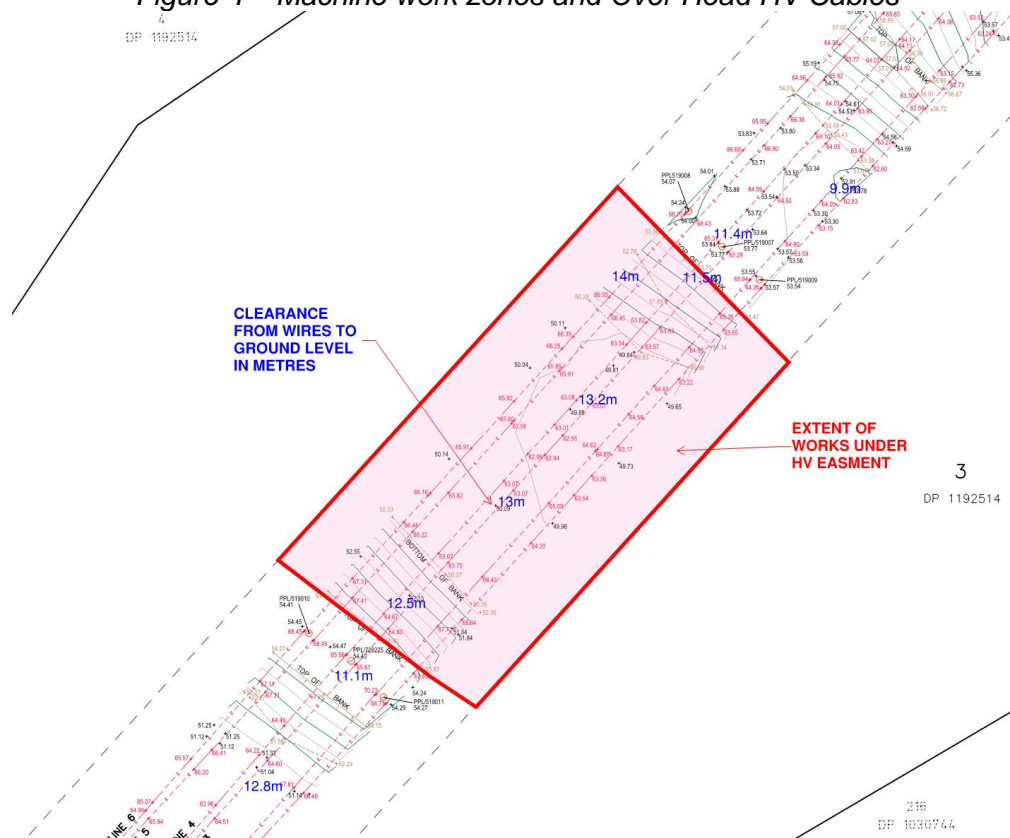


Figure 5 – Survey of cables with clearance to ground in blue

4. As the dozer is the tallest machine working beneath the power lines at 3.5m high, the minimum clearance between the dozer and the power lines at the lowest point in the area at the western edge of works is 11.5m to the ground and 8m clear of the top of the dozer when working there.
5. No loading of dump trucks is to occur within the easement. The material must be moved outside the easement with either the wheel loader or the pozzitrack to be then loaded into dump trucks to be taken to the fill area.
6. The 36t excavators will be excavating the deep zones to the north that are well outside the power line easement and the dump trucks will be taking the cut material to the fill zone for placement.
7. The crossing over the culvert will then be removed and made good to match previous levels.
8. Once complete the removed topsoil will be re-spread using the grader and the pozzitrack/grader and the area will be spray grassed.

5. EMERGENCY PROCEDURES AND PHONE NUMBERS WHS (OHS-02)

1. PURPOSE:

This procedure is based on the Code of Practice for First Aid in the Workplace and aims to outline the first aid structure to ensure that emergency treatment and life support is provided for persons suffering injury or illness at work.

2. MINOR INJURY:

Workers should report to the **SITE OFFICE** and report to the **First Aid Officer** who will render first aid treatment and refer the injured person to his/her own doctor if required.

3. SERIOUS INJURY:

In the event of a more serious injury:

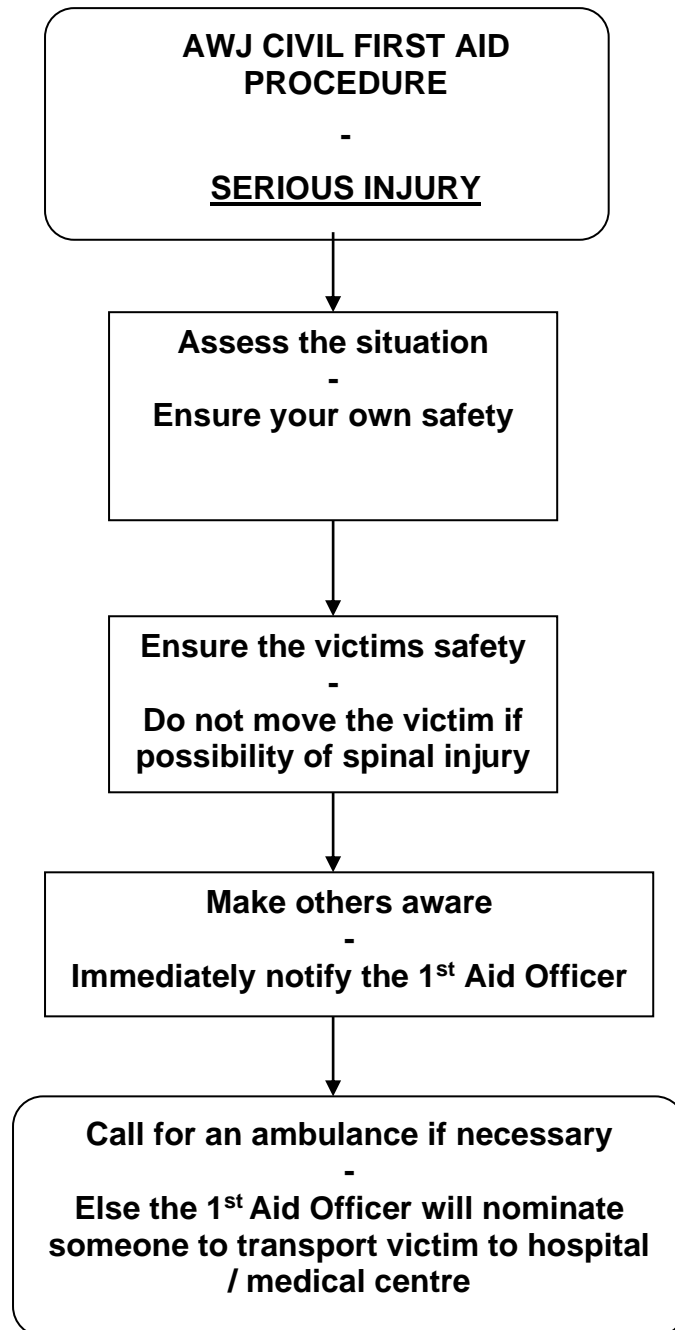
- Assess the situation - Ensure your own safety.
- Assess the situation - Ensure injured persons safety (do not move the victim if possibility of spinal injury).
- Immediately notify the onsite **First Aid Officer** who will administer first aid.
- If necessary, immediate arrangements are to be made for an ambulance.

If an ambulance is not necessary, then transport to the nearest hospital or medical centre is to be provided by a suitable person nominated by the **First Aid Officer**.

4. NOTIFICATION:

- **AWJ Site Manager, Luke Edwards 0439 942 616** is to be notified of all injuries and incidents on site.

- **Steven Crocket** at the AWJ Civil head office must be notified of any injury as soon as possible so the relevant injury reports are completed – (02) 9757 2999
- All Safe Work Australia medical certificates must be handed into Steven Crocket at the AWJ Civil head office as soon as possible – (02) 9757 2999



EMERGENCY CONTACT NUMBERS	
CONTACTS:	NO'S:
AWJ Office	(02) 9757 2999
Site Manager: Luke Edwards	0439 942 616
Project Manager: Danny Germanos	0405 404 734
QSE Manager: Steven Crocket	0428 631 302
Site First Aid Officer: Luke Edwards	0439 942 616
Ambulance:	000
Fire Brigade:	000
Police:	000
Police Assistance (non-emergency)	13 14 44
Nearest Hospital: St Vincent's Hospital Sydney 18 Blacktown Rd, Blacktown, NSW, 2148	(02) 9881 8000
Nearest Medical Centre: Suite 1, Butu-Wargun Drive, Pemulwuy Marketplace, Pemulwuy, NSW, 2145	(02) 9631 0090
Other:	
Sydney Water Emergency Line	13 20 90
HAZMAT:	000
Poisons Information Service:	13 11 26
Safe Work Australia:	13 10 50
EPA Pollution Line:	13 15 55
Dial-before-you-dig:	1100
Endeavour Energy:	13 10 03
Country Energy:	132 080
AGL:	13 19 09
Telstra:	13 22 03
Optus:	13 13 44



APPENDIX 9 – BORAL ABSIN WORKS CONSTRUCTION METHODOLOGY

CEMP Master Issue 6 Authorised by: Tim Culmone	19 th Jan 2021 Managing Director	Job Issue No: 3 Authorised by: Danny Germanos	Date: 23 rd June 2021 Project Manager
Project: Aliro – Elevation Greystanes			

AWJ CIVIL PTY LTD

**WORK METHOD STATEMENT FOR
BORAL BASIN RECLAMATION
WORKS**

ALIRO GROUP PTY LTD

PROJECT:	ELEVATIONS GREYSTANES
SITE LOCATION:	44 Clunies Ross Street Greystanes
JOB NUMBER:	831
DATE:	10/12/21
REVISION:	01

1. INTRODUCTION

This work method statement outlines the procedure and controls for Early Earthworks of the Industrial Estate at 44 Clunies Ross Street, Pemulwuy NSW. The development consists of 7 isolated warehouse buildings over the 19 Hectare development site. Part of the works requires AWJ to reclaim a portion of the Boral Basin to the North West of the site for the completion of Pad 7.

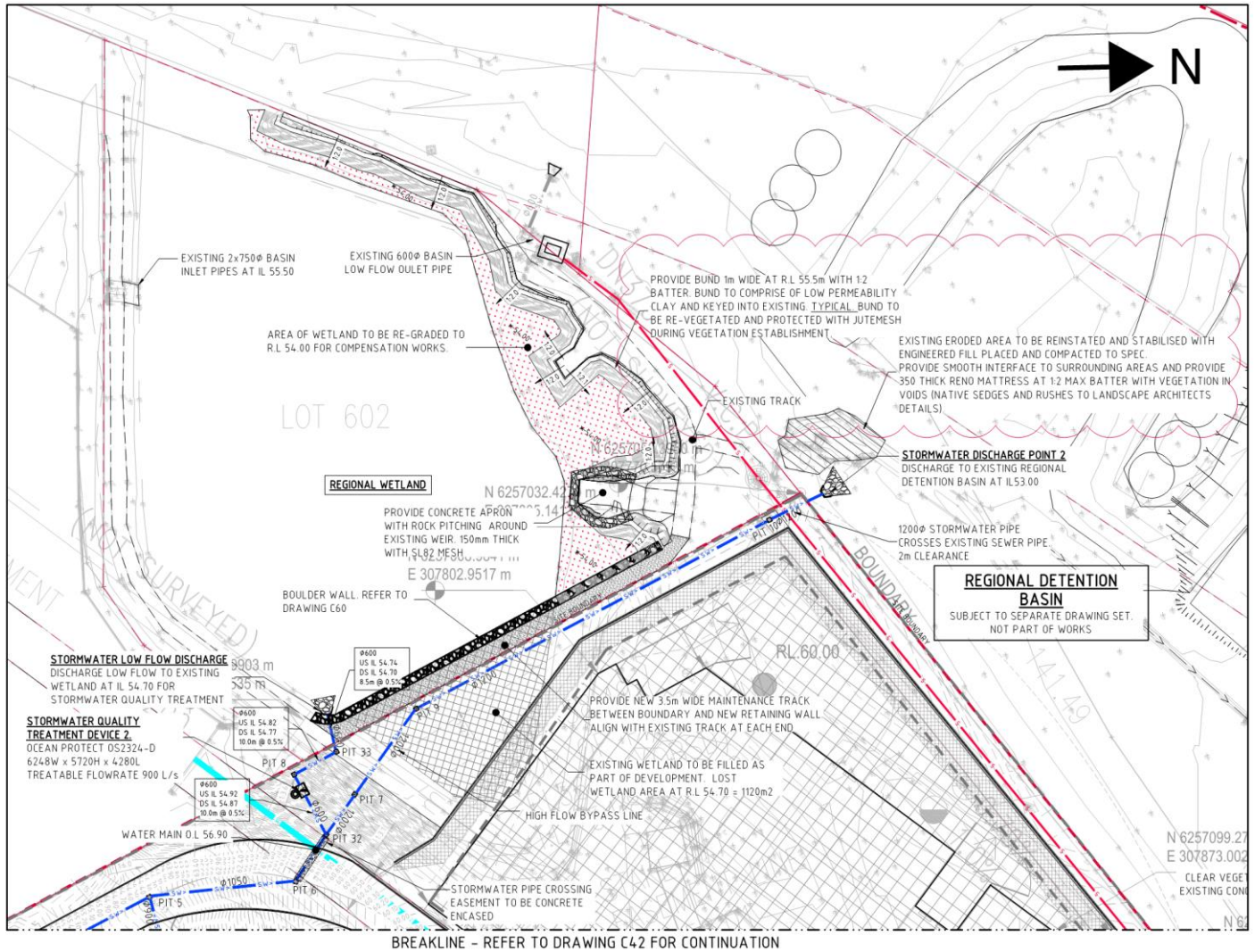


Figure 1: Overview of works

This methodology is to be read in conjunction with AWJ's High Risk SWMS, PSM Earthworks Specification and Costin Roe construction plans:

- C013251.06-C51-C
- PSM4010-005S Rev 1

2. MACHINES TO BE USED

To perform these works AWJ will utilise a range of different machines to perform specific earthworks tasks. These machines are:

Excavators



Operating Weight – 14t – 36t

The Excavator shown above is typical of all our AWJ's excavators that will work in and around the basin area. The larger 36t excavator will be used to bulk excavate the slop at the base of the basin. The smaller 14t-20t excavators to trim the batter to final levels. GPS control will be used on both machines to ensure correct levels are reached.

40T Articulated Dump Truck - Typical



Operating Weight (Empty) – 34.5t
Load Capacity – 40t

Articulated dump trucks have been used on the project in cut to fill earthworks operations. They will be used to transport material to and from the basin area. It will transport away the wet material from the base of the dewatered basin and bring clean dry fill to the compactor to be placed.

825 Compactor



An 825 Compactor will be used to push and compact the fill brought over by the dump trucks. The compactor is non-vibratory, meaning it compacts using its self-weight alone. This machine will be used to achieve the compaction requirements of the earthwork's specifications of the project. This machine will push the fill material out in layers to bring the area in the basin to be reclaimed up to the final level.

3. SETTING UP WORKS ZONES

Setting up the works area will be the first step of the construction works. The set-up works will occur in the following order:

1. Toolbox this methodology to all workers before they start in that area. Ensure all workers are aware of dangers when working around water.
2. Remove existing fencing between site and basin area.
3. Install initial sediment and erosion controls.
4. Remove all tree's in location of works. See figure 3 for trees to be removed. This will help to gain access to basin edge and perform works.
5. Install silt curtain within the basin.

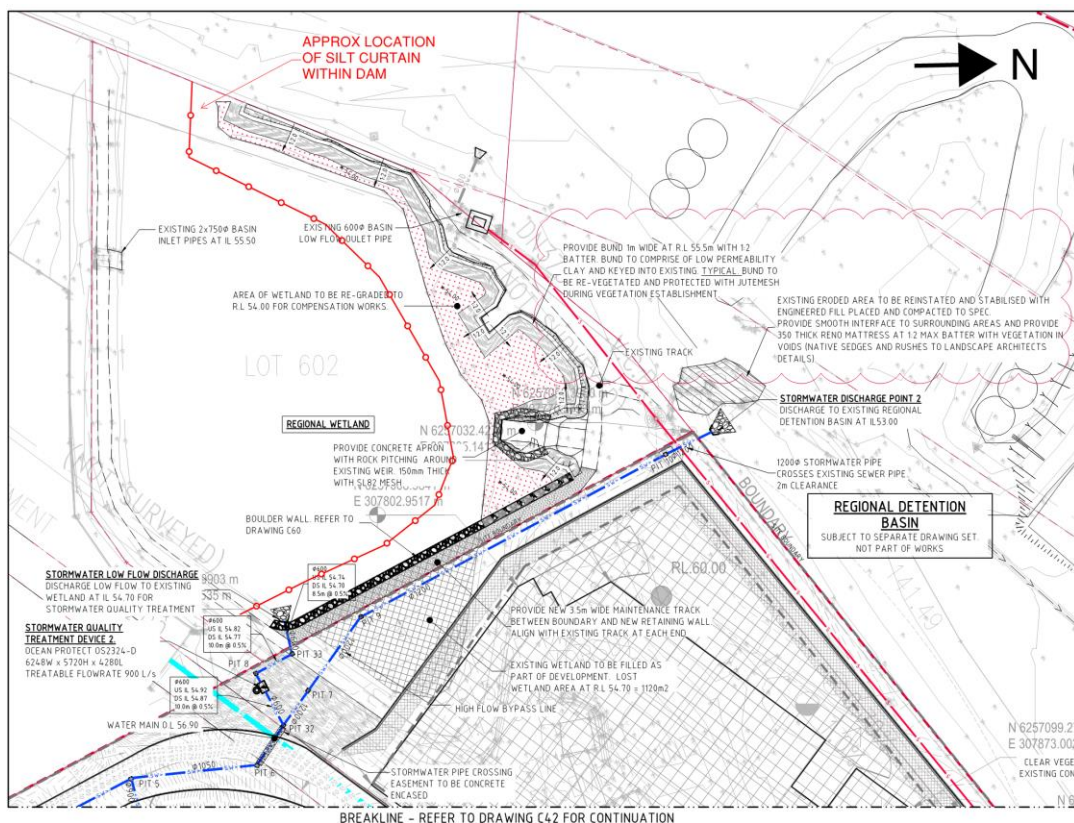


Figure 2 – Works area set up



Figure 3 – Aerial photo of basin works

4. RECLEMATION WORKS PROCEDURE

Once the site is set up works can then commence. Works will occur in the following steps:

1. Toolbox this methodology to all workers before they start in that area. Ensure all workers are aware of dangers when working around water.
2. Lower the water level in the basin by setting up pumps in both the eastern and western halves of the basin. Lower the water level to expose the edges of the basin highlighted in red in figure 2 for regrading. The existing bund in the centre of the basin is to be utilised to help separate the works and control the ingress of water during the works.
3. Lower the water level in the eastern portion of the basin to a lower level as to allow for the reclamation works to begin. Some water should be left in the bottom of the eastern basin as not to allow it to go dry. A bypass pump on a float switch is to be set up in the western half of the basin as not to allow the eastern portion to fill up. The same pump set up is to be installed in the eastern portion of the basin for the same reason.
4. De-sludge and muck out the base of the dam on the eastern end back to sound foundation for proof roll approval from PSM to begin fill works.
5. At the same time regrade the northern edges of the basin highlighted in red in figure 2 to the new design levels.
6. Once proof roll approval granted from PSM, filling works is to commence using the 825 compactor. The fill is to be brought up in layers under Level 1 supervision in accordance with PSM specification PSM4010-005S Rev 1.
7. Install concrete apron around existing spillway.
8. Install headwall to the south of the basin.
9. Install boulder retaining wall on the newly reclaimed edge as per Costin Roe drawings and future contractor design.
10. Remove pumps and silt curtain and allow basin to work again.

5. EMERGENCY PROCEDURES AND PHONE NUMBERS WHS (OHS-02)**1. PURPOSE:**

This procedure is based on the Code of Practice for First Aid in the Workplace and aims to outline the first aid structure to ensure that emergency treatment and life support is provided for persons suffering injury or illness at work.

2. MINOR INJURY:

Workers should report to the **SITE OFFICE** and report to the **First Aid Officer** who will render first aid treatment and refer the injured person to his/her own doctor if required.

3. SERIOUS INJURY:

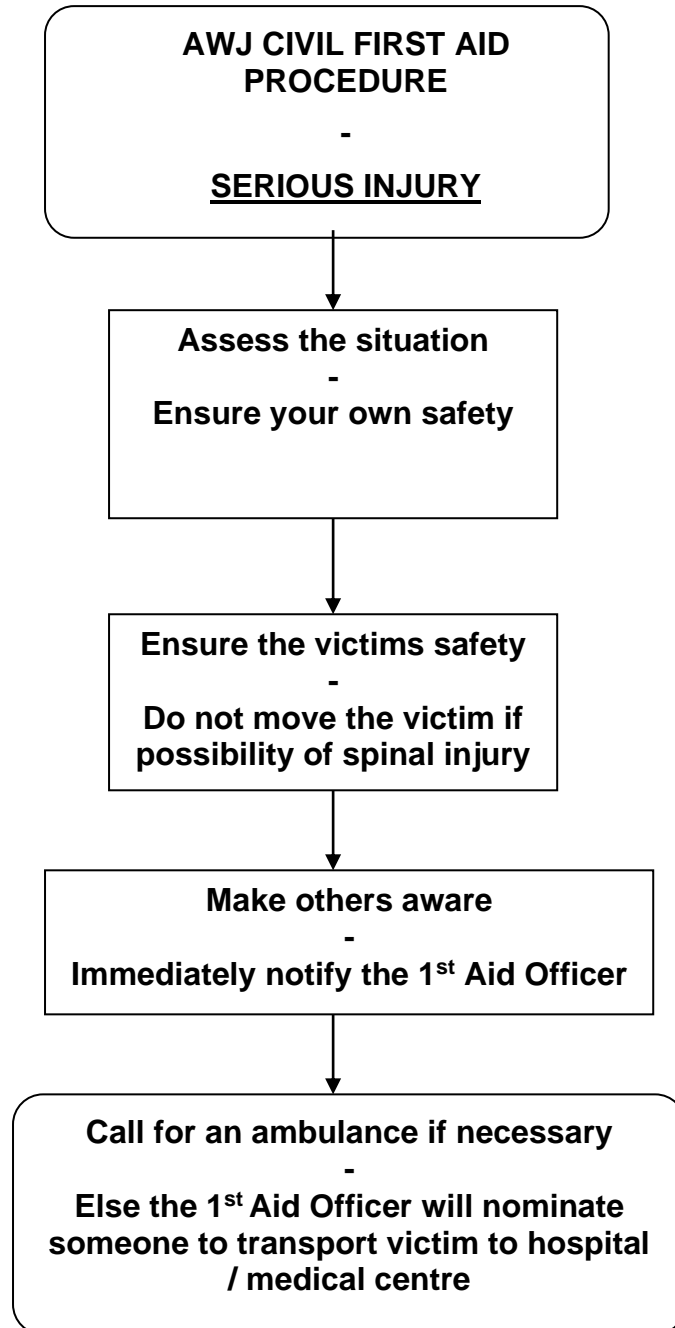
In the event of a more serious injury:

- Assess the situation - Ensure your own safety.
- Assess the situation - Ensure injured persons safety (do not move the victim if possibility of spinal injury).
- Immediately notify the onsite **First Aid Officer** who will administer first aid.
- If necessary, immediate arrangements are to be made for an ambulance.

If an ambulance is not necessary, then transport to the nearest hospital or medical centre is to be provided by a suitable person nominated by the **First Aid Officer**.

4. NOTIFICATION:

- **AWJ Site Manager, Luke Edwards 0439 942 616** is to be notified of all injuries and incidents on site.
- **Steven Crocket** at the AWJ Civil head office must be notified of any injury as soon as possible so the relevant injury reports are completed – (02) 9757 2999
- All Safe Work Australia medical certificates must be handed into Steven Crocket at the AWJ Civil head office as soon as possible – (02) 9757 2999



EMERGENCY CONTACT NUMBERS	
CONTACTS:	NO'S:
AWJ Office	(02) 9757 2999
Site Manager: Luke Edwards	0439 942 616
Project Manager: Danny Germanos	0405 404 734
QSE Manager: Steven Crocket	0428 631 302
Site First Aid Officer: Luke Edwards	0439 942 616
Ambulance:	000
Fire Brigade:	000
Police:	000
Police Assistance (non-emergency)	13 14 44
Nearest Hospital: St Vincent's Hospital Sydney 18 Blacktown Rd, Blacktown, NSW, 2148	(02) 9881 8000
Nearest Medical Centre: Suite 1, Butu-Wargun Drive, Pemulwuy Marketplace, Pemulwuy, NSW, 2145	(02) 9631 0090
Other:	
Sydney Water Emergency Line	13 20 90
HAZMAT:	000
Poisons Information Service:	13 11 26
Safe Work Australia:	13 10 50
EPA Pollution Line:	13 15 55
Dial-before-you-dig:	1100
Endeavour Energy:	13 10 03
Country Energy:	132 080
AGL:	13 19 09
Telstra:	13 22 03
Optus:	13 13 44

APPENDIX 1

UNEXPECTED FINDS PROTOCOLS

UNEXPECTED FINDS PROCEDURE – FLORA AND FAUNA

1. SCOPE

This procedure covers the method of operation to be adopted onsite when an unexpected find has been identified at the Elevations Greystanes project

2. POLICY

All personnel starting work at this project will be inducted into the procedure during the site-specific induction process prior to starting work onsite.

3. TYPES OF UNEXPECTED FLORA AND FAUNA ITEMS AND THEIR LEGAL PROTECTION

An 'unexpected flora and fauna items' means any unanticipated discovery of native protected species and geological features. These discoveries can be categorized as either;

- Flora
- Fauna
- Geological Features or Significant Landforms

4. OBJECTS OF CONSERVATION

The National Park and Wildlife Act 1974 objects of this Act are as follows:

The conservation of nature, including, but not limited to, the conservation of:

- a. *habitat, ecosystems and ecosystem processes, and*
- b. *biological diversity at the community, species and genetic levels, and*
- c. *landforms of significance, including geological features and processes, and*
- d. *landscapes and natural features of significance including wilderness and wild rivers,*

5. RESPONSIBILITIES

Role	Responsibility
Project Manager	Ensure the process for unexpected finds is included as part of all site inductions. Ensure that this protocol is implemented, and all personnel are aware of their responsibilities.
Construction Supervisor	Ensure this protocol is understood and implemented on site. Stops works immediately adjacent to any unexpected findings until they have been assessed in accordance with this protocol. Report any unexpected finds to the Project Manager
NSW Department of Planning, Industry and Environment	On call to provide professional assistance should there be an unexpected find. Contact: 131 555
Ecologist	A suitably qualified Ecologist to provide professional advice on the unexpected find.
All personnel	Be familiar with this protocol and report any unexpected finds to their construction supervisor or project manager.

6. UNEXPECTED ITEMS PROCEDURE

Step	Action
1	Stop work, protect item and inform the site supervisor
1.1	Stop all work in the immediate area of the item and notify the Project Manager
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical.
1.3	Inform all site personnel about the no-go zone.
1.4	Notify client of find
1.5	Inspect, flora, fauna or geological formation and photograph.
2	Contact and engage a suitably qualified Ecologist to provide advice
2.1	Discuss the location and extent of the discovery and arrange a site inspection, if required. If requested, provide photographs.

3	Preliminary assessment and recording of the find
3.1	<p>In a minority of cases, it may be determined from the photographs that no site inspection is required</p> <p>Any such advice should be provided in writing (e.g. via email) and confirmed by the Project Manager</p>
3.2	Arrange site access for Ecologist to inspect the item as soon as practicable.
3.3	Existing protective fencing established in Step 1 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.
3.4	Consultant may provide advice after the site inspection and preliminary assessment; any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Project Manager

4	Prepare management requirements for site
4.1	<p>An Environmental Management plan is developed outlining management actions to ensure damage to the site is minimized and work can recommence.</p> <p>This plan will be developed by the Ecologist in consultation with Current EMP Procedures.</p>
5	Notify the Office of Environment and Heritage, if required.
5.1	<p>If notification is required, contact:</p> <ul style="list-style-type: none"> • OEH Environment Line Ph: 131 555 • Email: info@environment.nsw.gov.au
5.2	Forward the signed notification letter to OEH and the Secretary.
5.3	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Project Manager
6	Resume work
6.1	The management plan is implemented and the project construction environmental management plan (CEMP) is updated to reflect any additional controls and requirements
6.2	Seek written clearance to resume project work from the Ecologist and if required the Environment and Planning Manager. Clearance would only be given once above procedures and/or recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project approvals/determinations.

7. CONTACT DETAILS

Position	Name	Phone Number
Project Manager	Danny Germanos	0405 404 734
Project Engineer	Craig Gamble	0403 045 458
OEH: Environment Line	<ul style="list-style-type: none">• OEH Environment Line Ph: 131 555• Email: info@environment.nsw.gov.au	



UNEXPECTED FINDS PROCEDURE – CONTAMINATION

1. SCOPE

This procedure covers the method of operation to be adopted on-site when an unexpected find has been identified regarding contamination at the Aliro – Elevation Greystanes project.

2. POLICY

All personnel starting work at this project will be inducted into the procedure during the site-specific induction process before starting work on site.

3. TYPES OF UNEXPECTED CONTAMINATION

An 'unexpected contamination' means any unanticipated discovery of outside of the RAP provided pre-remediation works. These discoveries can include but are not limited to;

- Asbestos
- Hydrocarbons
- Acid Sulphate Soils
- Heavy Metals

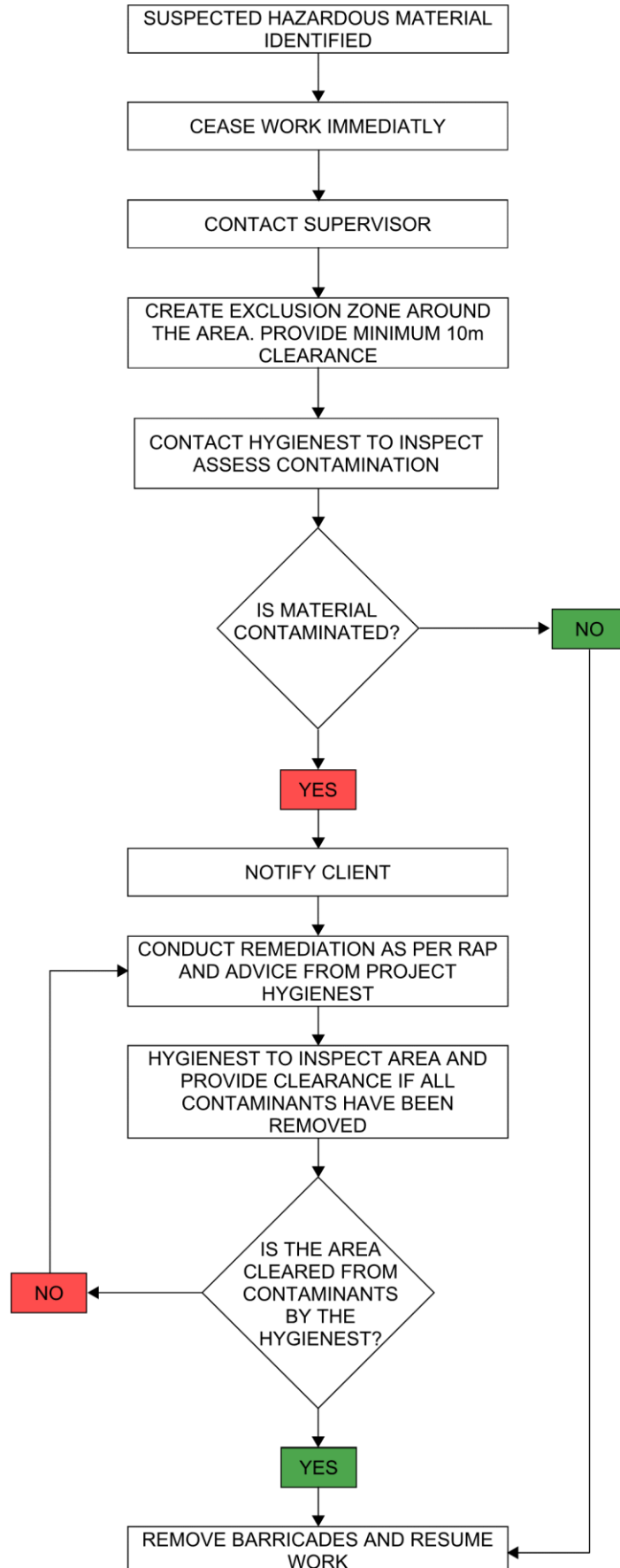
4. OBJECTIVES

- The objectives of this guideline are to ensure that:
- Site personnel and visitors are not placed at risk to their health, safety, or welfare
- Incidence of an Unexpected find are managed and dealt with quickly and efficiently
- Good communication is maintained throughout the site to enable proper management of active work areas

5. RESPONSIBILITIES

Role	Responsibility
Project Manager	Ensure the process for unexpected finds is included as part of all site inductions. Ensure that this protocol is implemented, and all personnel is aware of their responsibilities.
Construction Supervisor	Ensure this protocol is understood and implemented on-site. Stops works immediately adjacent to any unexpected findings until they have been assessed in accordance with this protocol. Report any unexpected finds to the Project Manager Ensure remediation is done in accordance with the project hygienist recommendations.
Project Hygienist	Confirm the material is hazardous or contaminated. Provide advice on specific remediation action based on the type of contamination Confirm remediation has occurred in accordance with the recommended remediation process. Give clearance to the area once remediation has been completed
All Personnel	Be familiar with the type, location, and remediation being conducted onsite. Understand what areas of the site are, exclusion zones Be familiar with the unexpected finds protocol and report finds to the construction supervisor or project manager.

6. UNEXPECTED PROCEDURE - FLOW CHART





7. CONTACT DETAILS

Position	Name	Phone Number
Project Manager	Danny Germanos	0405 404 734
Project Engineer	Craig Gamble	0403 045 458
Site Supervisor	Luke Edwards	0439 942 616
QSE Manager	Steven Crockett	0428 631 302
Hygienist JBS&G	Chris Kauffman	0425 229 447

UNEXPECTED FINDS PROCEDURE – HERITAGE FINDS

1. SCOPE

This procedure covers the method of operation to be adopted onsite when an unexpected find has been identified at the Elevations Greystanes project

2. POLICY

All personnel starting work at this project will be inducted into the procedure during the site-specific induction process prior to starting work onsite.

3. TYPES OF UNEXPECTED INDIGENOUS HERITAGE FINDS AND THEIR LEGAL PROTECTION

The roles of project, field and environmental staff are critical to the early identification and protection of unexpected heritage items. Subsequent confirmation of heritage discoveries must then be identified and assessed by technical specialists (usually an archaeologist). An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which AWJ Civil does not have approval to disturb or does not have a safeguard in place (apart from this procedure) to manage the disturbance. These discoveries are categorised as either:

- (a) Aboriginal objects
- (b) Historic (non-Aboriginal) heritage items
- (c) Human skeletal remains.

4. RESPONSIBILITIES

Role	Responsibility
Project Manager	Ensure the process for unexpected finds is included as part of all site inductions. Ensure that this protocol is implemented, and all personnel are aware of their responsibilities.
Construction Supervisor	Ensure this protocol is understood and implemented on site. Stops works immediately adjacent to any unexpected findings until they have been assessed in accordance with this protocol. Report any unexpected finds to the Project Manager
NSW Department of Planning, Industry and Environment	On call to provide professional assistance should there be an unexpected find. Contact: 131 555
Archaeologist	A suitably qualified Archaeologist to provide professional advice on the unexpected find.
All personnel	Be familiar with this protocol and report any unexpected finds to their construction supervisor or project manager.

5. UNEXPECTED ITEMS PROCEDURE

If any item or object of Aboriginal heritage significance is identified on site:

Step	Action
1	Stop work, protect item and inform the site supervisor
1.1	Stop all work in the immediate area of the item and notify the Project Manager
1.2	Establish a 10m 'no-go zone' around the item. Use high visibility fencing, where practical.
1.3	Inform all site personnel about the no-go zone.
1.4	Notify Heritage NSW and client of the find immediately
2	Notify the Office of Environment and Heritage, if required.
2.1	Office of Environment and Heritage contact: <ul style="list-style-type: none"> • OEH Environment Line Ph: 131 555 • Email: info@environment.nsw.gov.au
2.2	Forward the signed notification letter to OEH and the Secretary.
2.3	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Project Manager
3	Resume work
3.1	Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the <i>National Parks and Wildlife Act 1974</i> .
3.2	Seek written clearance to resume project work from the OEH. Clearance would only be given once above procedures and/or recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project approvals/determinations.

6. CONTACT DETAILS

Position	Name	Phone Number
Project Manager	Danny Germanos	0405 404 734
Project Engineer	Craig Gamble	0403 045 458
OEH: Environment Line	<ul style="list-style-type: none">• OEH Environment Line Ph: 131 555• Email: info@environment.nsw.gov.au	