

**Construction  
Environmental  
Management Plan  
(CEMP)  
AMRF  
215 Badgerys Creek**

E-PLAN-03 (October 2021) | Approved by Andrew Andreou  
Uncontrolled copy once printed.

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# 1. Introduction

## 1.1 Project Information Table

Project information table				
Project name	AMRF			
Location	215 Badgerys Creek road Bringelly			
Client	State of NSW			
Duration of contract	68 Weeks			
Taylor contacts information				
Company name	Taylor Construction Group Pty Ltd			
ABN	25 067 428 344			
Address	Level 13, 157 Walker Street, North Sydney 2060			
Telephone and fax	Ph.: 02 8736 9000 Fax: 02 8736 9090			
Position	Contact name	Phone numbers		
Chief Executive Officer	George Bardas			
General Manager Construction	Tim Christie			
Senior Project Manager	Charlie Licciardello	[REDACTED]		
Senior Site Manager	Stephen Winfield	[REDACTED]		
The Head Of WHS&E	Andrew Andreou	[REDACTED]		
Safety Advisor				
Quality & Compliance Manager	Stephen Player			
Contract Manager	Joe Cavallaro	[REDACTED]		
Contract Administrator				
Project Engineer	Adem Abdioglu	[REDACTED]		
Site Engineer				
Foreman/ Leading Hand				
Cadet				
Document control	Name	Position	Signature	Date
Prepared by	Charlie Licciardello	Senior Project Manager		11/1/23
Prepared by	Stephen Winfield	Senior Site Manager		11/1/23





<b>Reviewed by:</b>	Andrew Andreou	Head of WHS&E	
<b>Reviewed by:</b>	Tim Christie	General Manager –	
<b>Revised by:</b>	<b>Revision #</b>	<b>Date</b>	<b>Changes made</b>
Adem Abdioglu	000	11/1/23	Initial review

## 1.2 Project Description

The Construction of the First Building, a high-tech Advanced Manufacturing Research Facility (AMRF) with shared use high tech equipment for research and development. The building will also function as a visitor centre with offices for shared use. This work also includes associated roads, drainage works, services/utilities, landscaping, and car park.

The works can be broken up into five packages of work:

- 1.) Site establishment: The installation of the chainwire site fencing, the installation of site accommodation (Lunchroom, office, portable toilet and all ancillary items) tree and ecology protection works.
- 2.) Bulk Earthworks (CC1): The earth works relating to the construction and delivery of the project
- 3.) Piling and Sub-structure (CC1a): Building foundation works
- 4.) Main Building works (CC2): Main structure, façade, fit out and roof works
- 5.) External/Civil works (CC3): Roadworks, Landscaping works, Authority connections

## 1.3 Purpose of the Project Environmental Management Plan

Taylor Construction Group Pty Ltd has a documented Quality, Health, Safety and Environmental (QSE) Management System. While the management systems are integrated, key documents such as the Construction Environmental Management Plan (CEMP), the Project Safety Plan (WHSP) and the Project Management Plan (PMP, overarching plan with Quality provisions) are developed as separate documents to give each area a strong individual focus. The 'hierarchy of system documents' diagram below provides an overview of where the CEMP fits in the management system hierarchy.

This document is a key component of the integrated QSE Management System and sets out the environmental management strategy to be adopted on site by Taylor Construction Group Pty Ltd as the principal contractor for works undertaken on this project. The purpose of this document is to provide guidance on the essential environmental requirements on a project level and reference to other important management system processes and procedures. A Project Environmental Management Plan must be prepared for each project managed by Taylor Construction Group.

The project-specific Environmental Management Plan is to be read in accordance with Taylor Construction Management Manual, Site Management Plan and Site Safety Plan.

This CEMP has been developed in accordance with SDDA conditions C1, C2, C3 & C4. These works include the entirety of works to the project inclusive of all Construction Certificates.

The purpose of the CEMP is to provide a structured approach to the management of environmental issues during construction of the project. The CEMP has been developed to:

- Identify the relevant statutory approvals that apply to the development
- Describe all activities to be undertaken on site during the project including a clear indication of the construction stages

- Outline all environmental management practices and procedures to be followed during construction in order to comply with licences, approvals and laws
- Detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts and
- Describe the relevant roles and responsibilities of all relevant employees involved in the construction

## 1.4 Conditions of Consent

SSDA Condition	Description	Reference	Relevant CC
B1.	Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:	Appendix 7	CC1, CC1a, CC2, CC3
	(a) be prepared by a suitably qualified and experienced person(s);		
	(b) be prepared in consultation with TfNSW, Council and Sydney Metro;		
	(c) be endorsed by TfNSW and Sydney Metro;		
	(d) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;		
	(e) detail specific measures to ensure the arrival of construction vehicles to the site does not cause queuing on the public road network;		
	(f) detail any work required within the future rail corridor identified in the MIC SEPP;		
	(g) detail heavy vehicle routes, work zones, access, construction vehicle numbers and parking arrangements;		
	(h) detail consultation measures and/or formal agreements with Sydney Metro to be undertaken throughout the construction period of the Sydney Metro Project;		
	(i) details of crane arrangements including their locations, and plans of any proposed hoarding and/or scaffolding in proximity to the Sydney Metro Project;		
	(j) include a Driver Code of Conduct to:		





	(i) minimise the impacts of construction on the local and regional road network;		
	(ii) minimise conflicts with other road users;		
	(iii) minimise road traffic noise; and		
	(iv) ensure truck drivers use specified routes;		
	(k) include a program to monitor the effectiveness of these measures;		
	(l) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.		
	(a) not commence construction until the Construction Traffic Management Plan required by condition B1 is approved by the Planning Secretary; and		
B2	(b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.	This document	CC1, CC1a, CC2, CC3
B10.	Prior to the commencement of any construction or other surface disturbance, the Applicant must design and detail the erosion and sediment control measures for the site to ensure the construction phase stormwater management target are achieved. These sediment and control measures must be detailed in an Erosion and Sediment Control Plan and must:	Appendix 5	CC1, CC1a, CC2, CC3
	(a) be prepared by a Chartered Professional Erosion and Sediment Control (CPESC) specialist;		
	(b) be prepared in accordance with Managing Urban Stormwater: Soils and Construction – Volume 1: Blue Book (Landcom, 2004) and with the WSUD design principles set out in the Technical Guidance for achieving Wianamatta South Creek Stormwater Management Targets (NSW Government, 2022);		
	(c) demonstrate the construction approach and timing so that the construction phase stormwater quality targets are met; and		
	(d) be included in the CEMP required by Condition C2		
B11.	The Applicant must ensure delivery and operation of all construction phase erosion and sediment controls on the site is supervised and certified by a CPESC. Monthly audits are to be completed by CPESC and kept on site for the duration of the	16	CC1, CC1a, CC2, CC3, Post-completion

	construction and for a further 12 months following completion of construction works.		
B24.	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	10.3.7	CC1, CC1a, CC2, CC3
B25.	During construction of the development, the Applicant must ensure that:	Appendix 5	CC1, CC1a, CC2, CC3
	(a) exposed surfaces and stockpiles are suppressed by regular watering or other alternative dust suppression method;		
	(b) all trucks entering or leaving the site with loads have their loads covered;		
	(c) trucks associated with the development do not track dirt onto the public road network;		
	(d) public roads used by these trucks are kept clean; and		
	(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces		
B28.	The Applicant must comply with the hours detailed in Table 1.	3.3	Pre-CC, CC1, CC1a, CC2, CC3
B29.	Works outside of the hours identified in condition B28 may be undertaken in the following circumstances:	3.3	Pre-CC, CC1, CC1a, CC2, CC3
	(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; or		
	(d) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.		
B31.	The Applicant must prepare a Construction Noise 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:	Refer to Appendix 8	CC1, CC1a, CC2, CC3





	(a) be prepared by a suitably qualified and experienced noise expert(s);		
	(b) be approved by the Planning Secretary prior to the commencement of construction the development;		
	(c) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time);		
	(d) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;		
	(e) include strategies that have been developed with the community for managing high noise generating works; and		
	(f) describe the community consultation undertaken to develop the strategies in condition B31(e).		
	(g) include a complaints management system that would be implemented for the duration of the development.		
B32.	The Applicant must:	This document	CC1, CC1a, CC2, CC3
	(a) not commence construction of any relevant stage of the development until the Construction Noise Management Plan required by condition B31 is approved by the Planning Secretary; and		
	(b) implement the most recent version of the Construction Noise Management Plan approved by the Planning Secretary for the duration of construction.		
B34.	If any item or object of Aboriginal heritage significance is identified on site:	10.3.13	CC1, CC1a, CC2, CC3
	(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.		
B35.	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.	10.3.13	CC1, CC1a, CC2, CC3



B36.	If any non-Aboriginal archaeological relics are uncovered during works, then all works must cease immediately in that area of the site. Unexpected finds must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW and Council's Heritage Officer.	10.3.13	CC1, CC1a, CC2, CC3
B37.	The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.	10.3.8	CC1, CC1a, CC2, CC3
B38.	The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (DECC,2007).		
B39.	Waste must be secured and maintained within designated waste storage areas at all times, must not leave the site onto neighbouring public or private properties and be contained within enclosures that cannot be accessed by birds or flying foxes.	10.3.4	CC1, CC1a, CC2, CC3
B40.	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA,2014).		
B41.	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.		
B42.	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.		
B43.	Prior to the commencement of construction, the Applicant must prepare an unexpected contamination finds procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated is disposed of in accordance with the POEO Act and its associated regulations. Details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.	10.3.10	CC1, CC1a, CC2, CC3



C2	The Applicant must prepare a Construction Environmental Management Plan (CEMP) for the development in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	This document	Pre-CC1, CC1a, CC2, CC3
C3	As part of the CEMP required under condition C2 of this consent, the Applicant must include the following:		
	(a) Construction Traffic Management Plan (see condition B1);	Appendix 7	CC1, CC1a, CC2, CC3
	(b) Erosion and Sediment Control Plan (see condition B10);	Appendix 5	CC1, CC1a, CC2, CC3
	(c) Construction Noise Management Plan (see condition B31);	Appendix 8	CC1, CC1a, CC2, CC3
	(d) Unexpected Finds Protocol (see condition B43); and	10.3.10	CC1, CC1a, CC2, CC3
	(e) Community Consultation and Complaints Handling.	10.3.2	CC1, CC1a, CC2, CC3
C4	The Applicant must: (a) not commence construction of the development until the CEMP is approved by the Planning Secretary; and	This document	CC1, CC1a, CC2, CC3
	(b) carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary and as revised and approved by the Planning Secretary from time to time	This document	CC1, CC1a, CC2, CC3
C7	The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3.	11.2	CC1, CC1a, CC2, CC3
C8	The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	13	Pre-CC, CC1, CC1a, CC2, CC3
C9	A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if		



	known) and what actions have been, or will be, undertaken to address the non-compliance.		
C10	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.		

## 1.5 Site and Staging

The below table provides an overview of the anticipated sequence of construction activities and timing associated with the development.

Component	Description
<b>Stage 1 - Site Establishment (Pre-CC1)</b>	
Habitat/Ecology protection and Salvage	<ul style="list-style-type: none"> <li>Tree Protection installed on site</li> <li>Native juvenile trees taken off site and stored in nursery</li> <li>Seed collection for reuse in landscaping</li> </ul>
Erect fencing	<ul style="list-style-type: none"> <li>Fences erected to secure the site</li> <li>Gates Installed to the site fencing</li> </ul>
Site accommodation	<ul style="list-style-type: none"> <li>Delivery and construction of site sheds, lunchrooms, toilets, generators, etc</li> </ul>
<b>Main Works - Bulk Earthworks (CC1)</b>	
Site Clearing	<ul style="list-style-type: none"> <li>Felling of trees</li> </ul>
Open drainage and basins	<ul style="list-style-type: none"> <li>Stripping of topsoil and stockpiling it for future reuse in landscaping</li> <li>Construction of sediment basins</li> <li>Diversion of water</li> </ul>
Bulk Earthworks	<ul style="list-style-type: none"> <li>Stipping top soil and stockpiling it for reuse</li> <li>Excavation of cuttings, including the processing, stockpiling or haulage of material</li> </ul>

	<ul style="list-style-type: none"> <li>Construction of retaining walls</li> <li>Stabilisation of batters</li> </ul>
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#### **Main Works - Sub-Structure and Piling (CC1a)**

Piling	<ul style="list-style-type: none"> <li>Construction of piles</li> </ul>
Foundations	<ul style="list-style-type: none"> <li>Construction of foundations/Pile caps required to facilitate SOG works</li> </ul>

Inground Services	<ul style="list-style-type: none"> <li>construction of inground services</li> </ul>
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#### **Main Works - Main Building Works (CC2)**

Main Structure	<ul style="list-style-type: none"> <li>Slab on ground and suspended slab works</li> </ul>
Timber/Composite structure	<ul style="list-style-type: none"> <li>Construction of structural steel and timber structure</li> </ul>
Façade	<ul style="list-style-type: none"> <li>Construction of façade panels internally and externally</li> </ul>
Roof works	<ul style="list-style-type: none"> <li>Construction of solar panels, walkways, skylights and green roof</li> </ul>
Fitout	<ul style="list-style-type: none"> <li>Construction of services within the building and finishes throughout</li> </ul>

#### **Main works - Exetrnal/Civil Works (CC3)**

Authority connections	<ul style="list-style-type: none"> <li>Construction of permanent water mains, storm water drainage, high voltage connections, communications, etc</li> </ul>
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Road works	<ul style="list-style-type: none"><li>• Construction of RMS and council roads</li><li>Construction of road furniture such as streetlighting, signage, line marking and safety barriers</li></ul>
Carparks	<ul style="list-style-type: none"><li>• Construction of carparks to the building - Including the pouring of kerbs and medians</li></ul>
Landscaping	<ul style="list-style-type: none"><li>• Construction of landscaping walkways</li><li>Construction of landscaping water feature</li><li>Construction of landscape hardworks</li><li>Planting works and landscape furniture</li></ul>



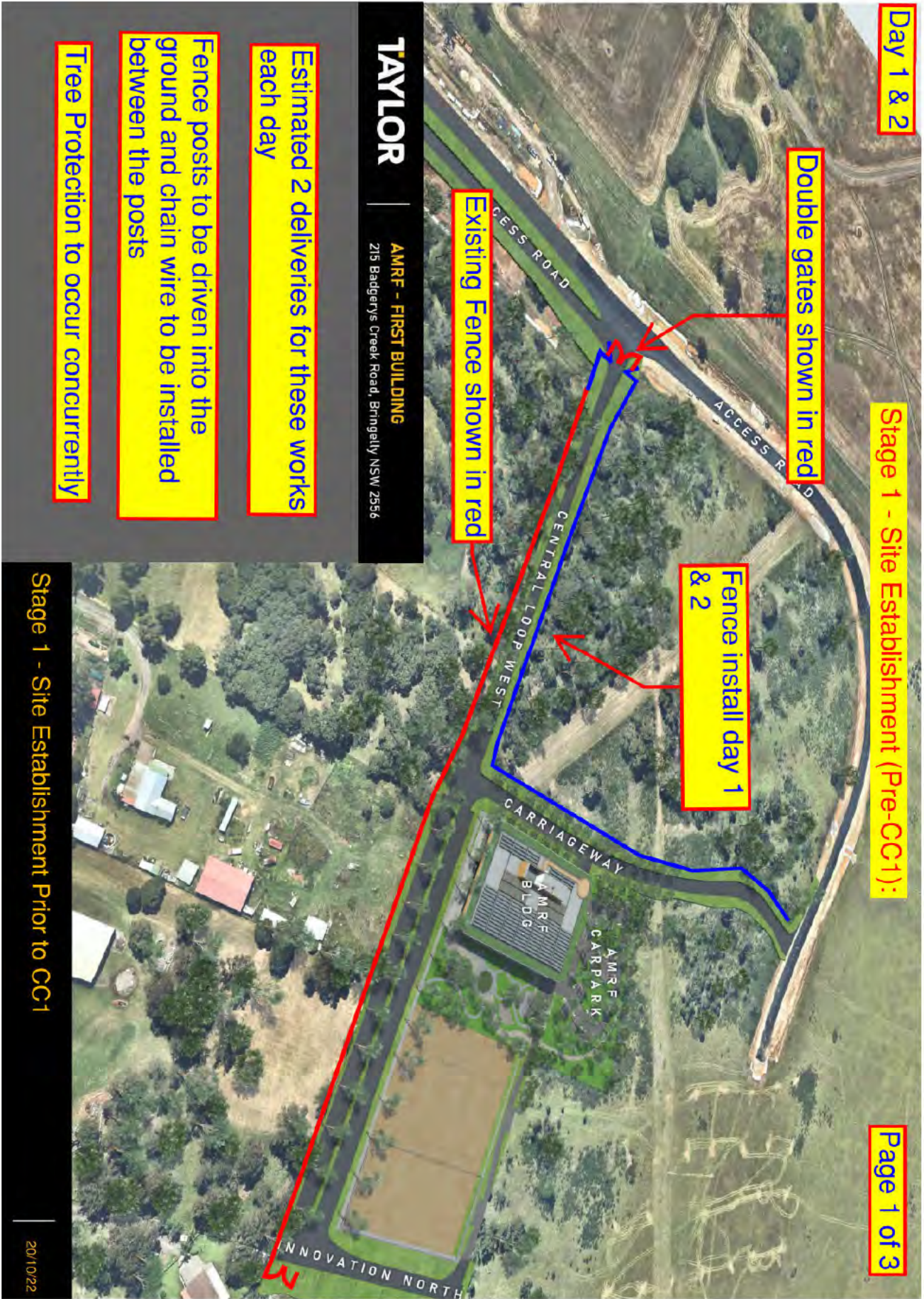


**Site Establishment (Pre-CC1):**

Day 1 & 2

Stage 1 - Site Establishment (Pre-CC1):

Page 1 of 3



Double gates shown in red

Fence install day 1 & 2

Existing Fence shown in red

**TAYLOR**

AMRF - FIRST BUILDING  
215 Badgenys Creek Road, Bringelly NSW 2556

Estimated 2 deliveries for these works each day

Fence posts to be driven into the ground and chain wire to be installed between the posts

Tree Protection to occur concurrently

Stage 1 - Site Establishment Prior to CC1

20/10/22



Day 3 & 4

Stage 1 - Site Establishment (Pre-CC1):

Page 2 of 3



# TAYLOR

AMRF - FIRST BUILDING  
215 Badgerys Creek Road, Brngally NSW 2556

Estimated 2 deliveries for these works each day

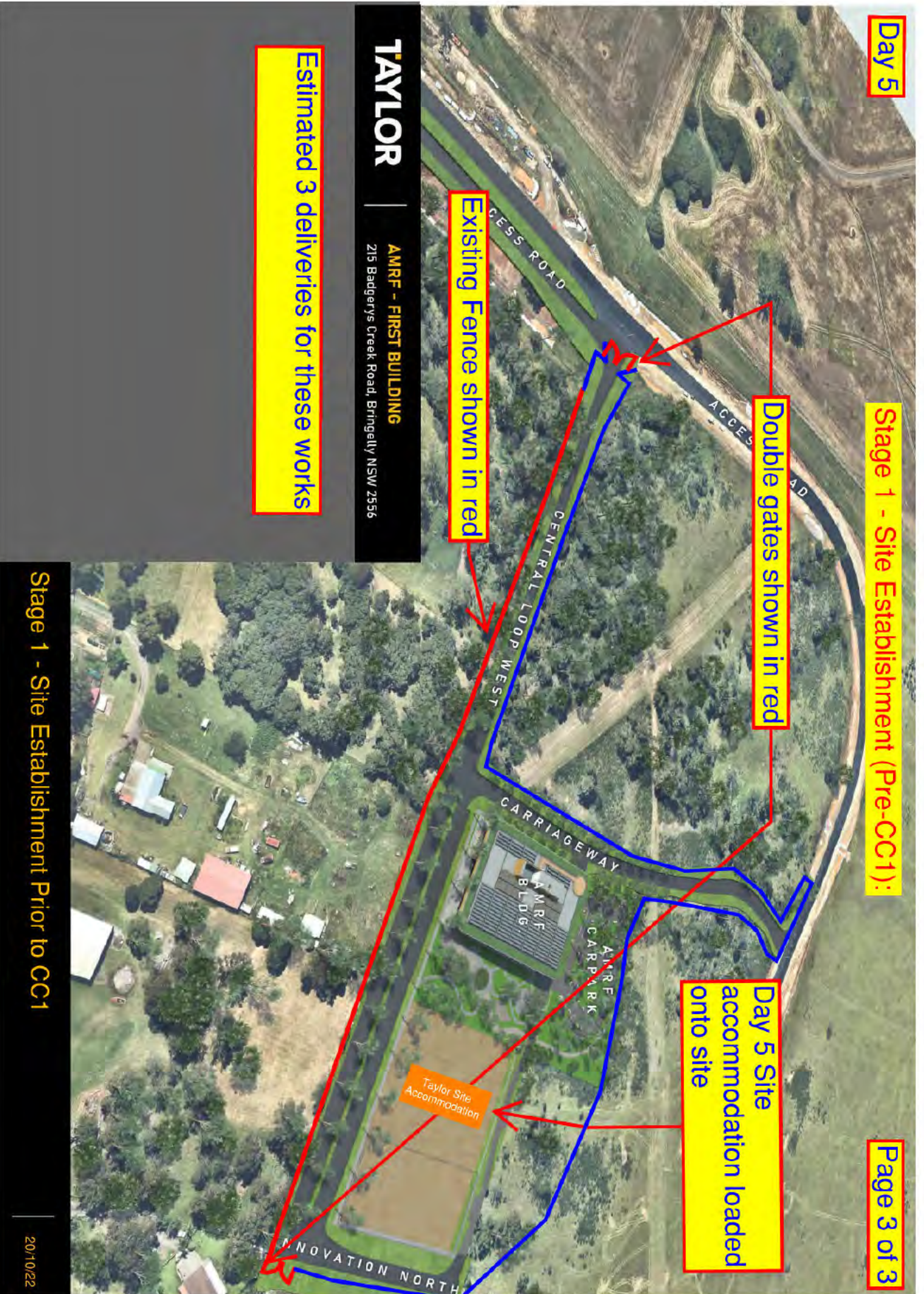
Fence posts to be driven into the ground and chain wire to be installed between the posts

Tree Protection to occur concurrently

Stage 1 - Site Establishment Prior to CC1

20/10/22





Day 5

Stage 1 - Site Establishment (Pre-CC1):

Page 3 of 3

Double gates shown in red

Existing Fence shown in red

Day 5 Site accommodation loaded onto site

Taylor Site Accommodation

**TAYLOR** | **AMRF - FIRST BUILDING**  
 215 Badgerys Creek Road, Bringelly NSW 2556

Estimated 3 deliveries for these works

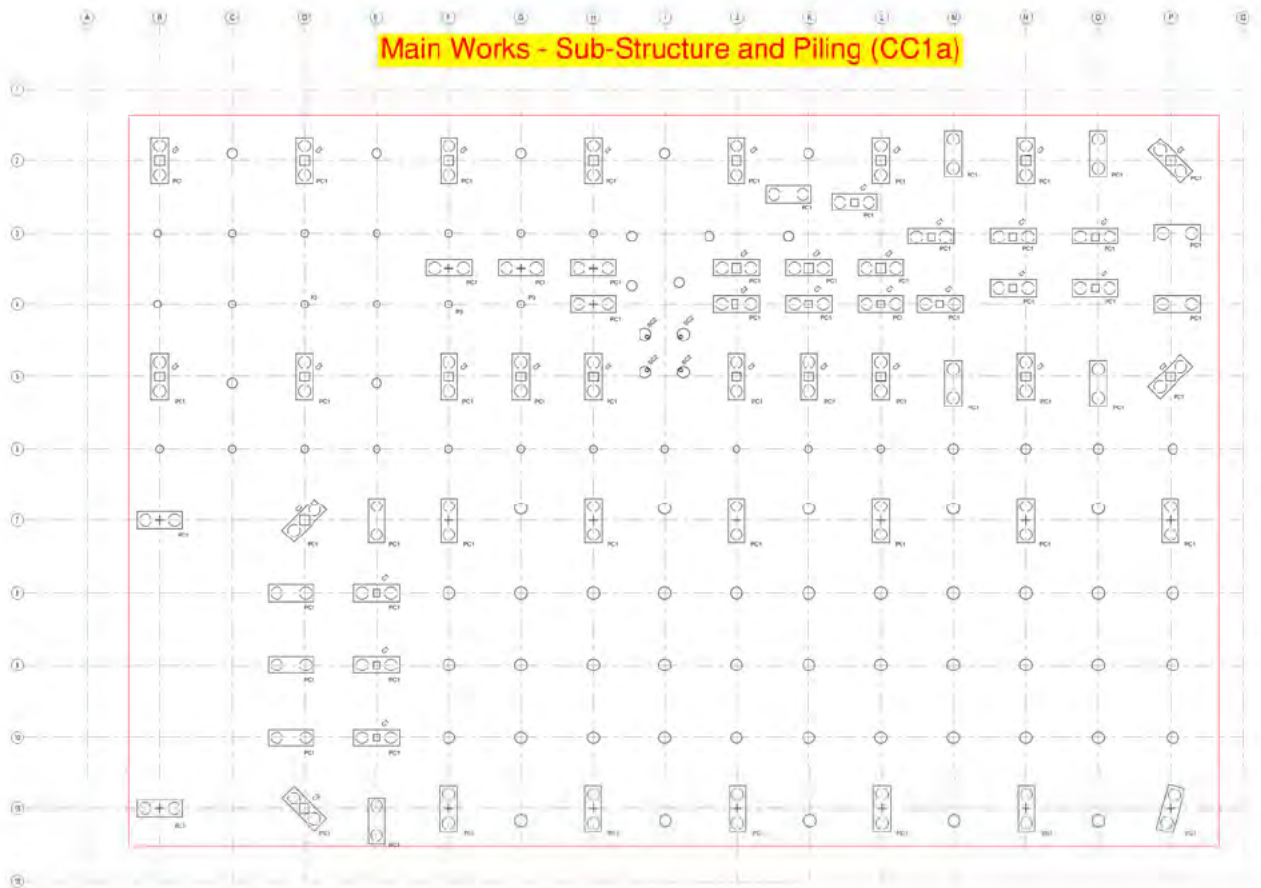
Stage 1 - Site Establishment Prior to CC1

20/10/22





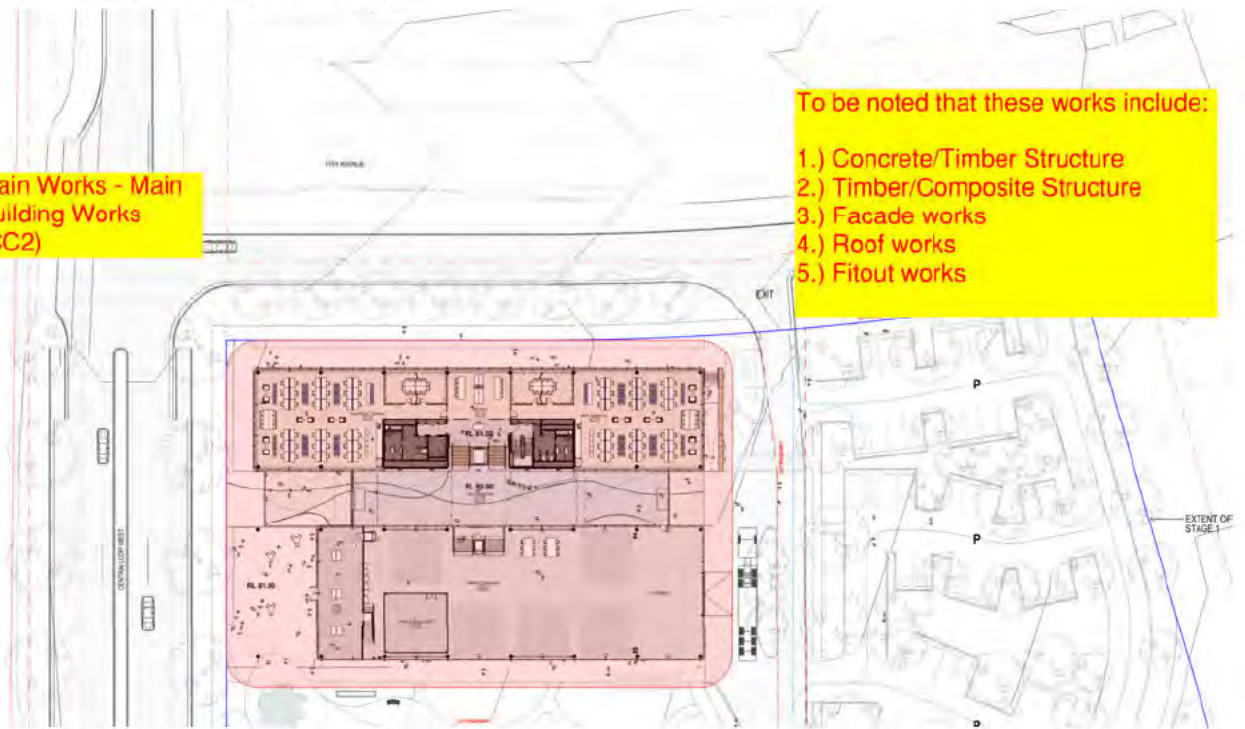




**Main Works - Sub-Structure and Piling (CC1a)**

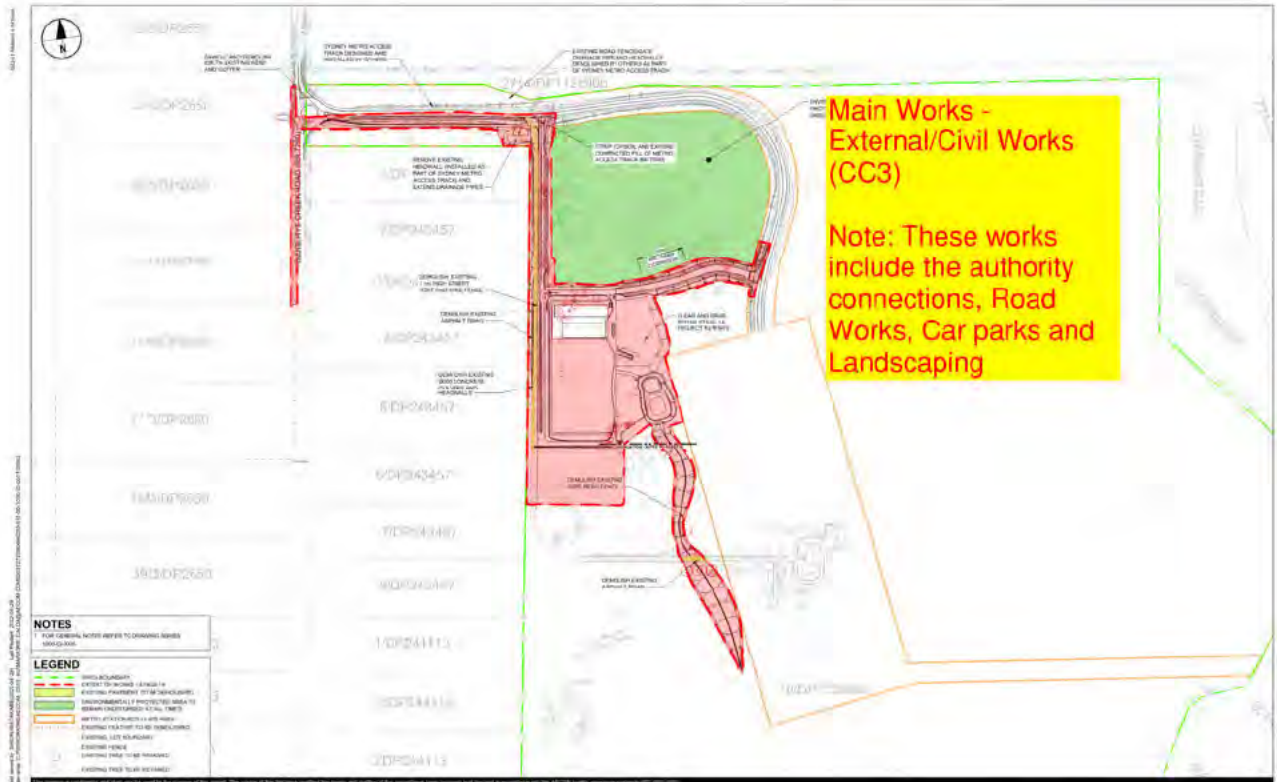
**Main Works - Main Building Works (CC2)**

Main Works - Main Building Works (CC2)



- To be noted that these works include:
- 1.) Concrete/Timber Structure
  - 2.) Timber/Composite Structure
  - 3.) Facade works
  - 4.) Roof works
  - 5.) Fitout works

**Main Works - External/Civil Works (CC3):**

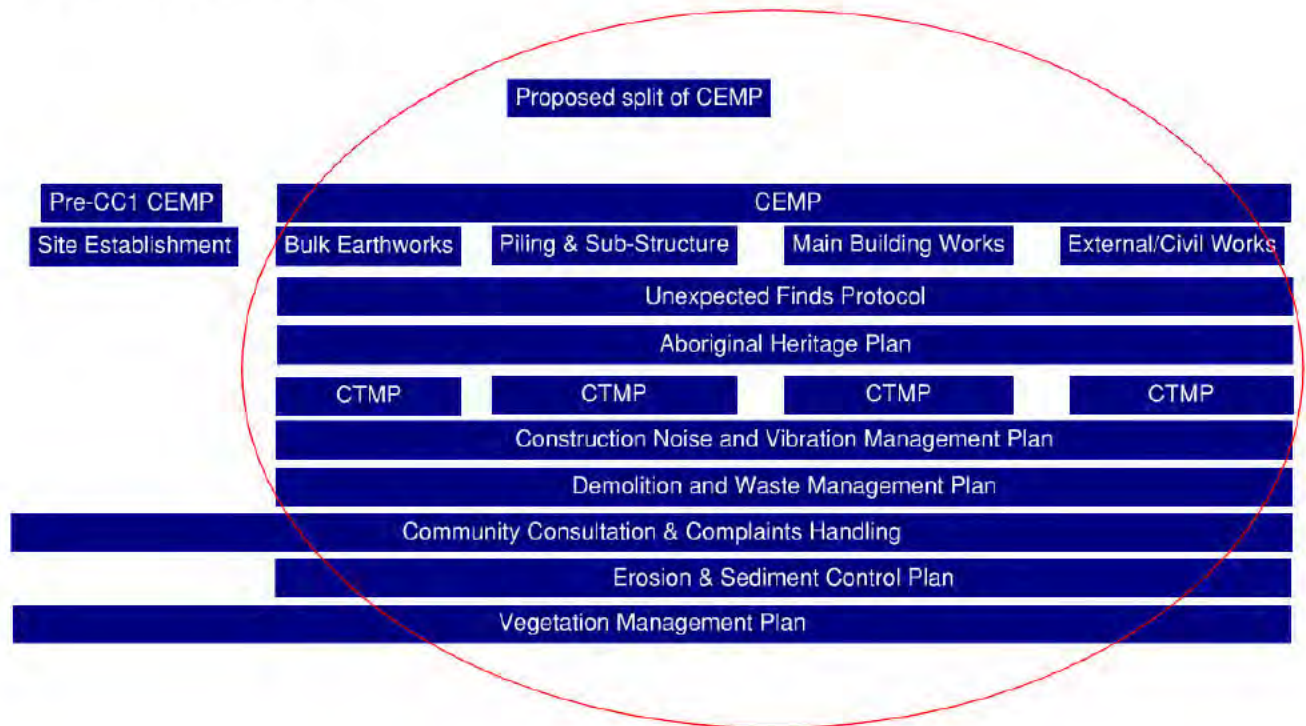


The below table illustrates the indicative timing of the works for each stage:

Stage of Works	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024
Stage 1 - Site Establishment (Pre-CC1)						
Main Works - Bulk Earthworks (CC1)						
Main Works - Sub-Structure and Piling (CC1a)						
Main Works - Main Building Works (CC2)						
Main Works - External/Civil Works (CC3)						

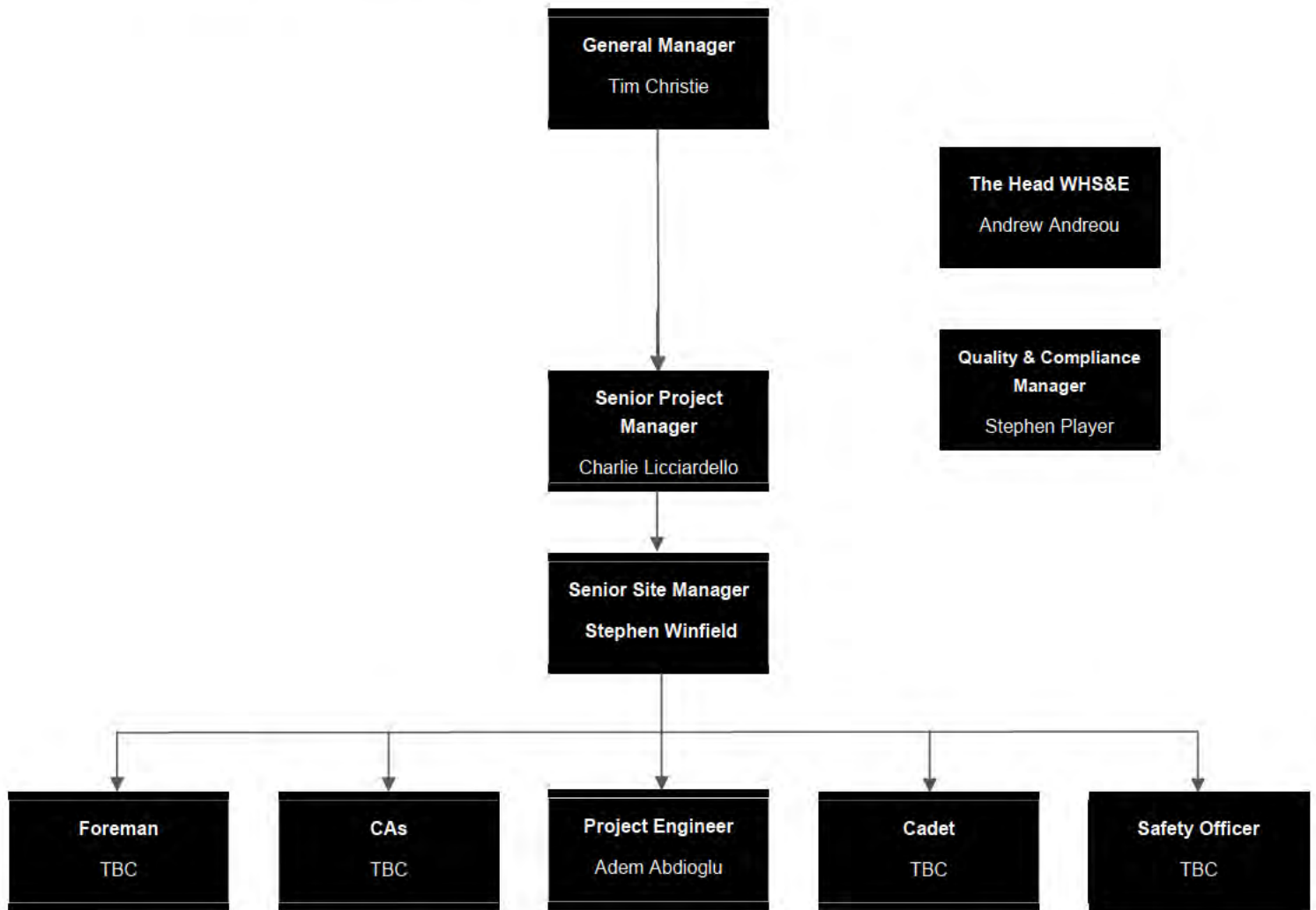


## 1.6 CEMP Framework





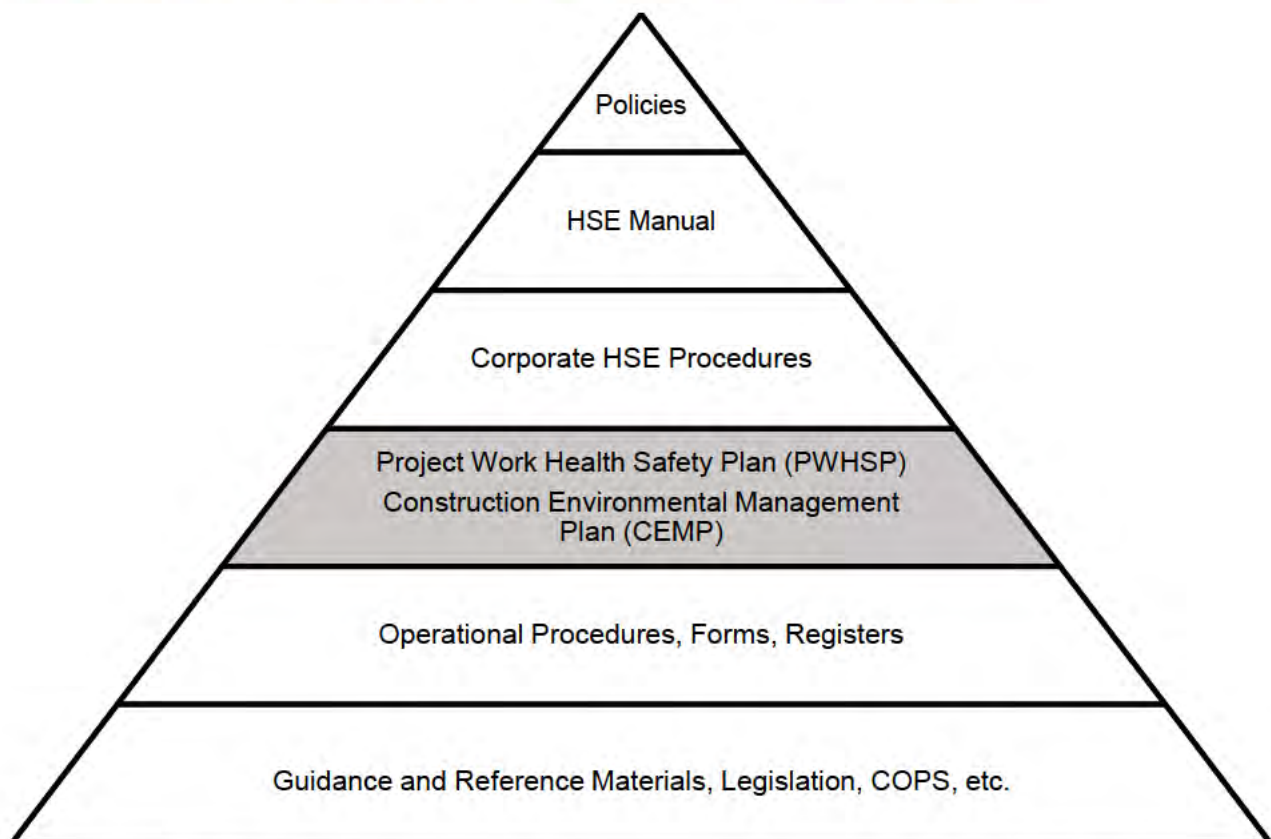
## 1.7 Project Organisational Structure







## 2. Hierarchy of HSE System Documents



QSE System documents can be found on SharePoint under the Taylor Management System (TMS), within the 'Quality' and 'HSE' folders.

### The management system structure:

- Corporate
- QSE manual
- Corporate policies
- Corporate (system) procedures
- Forms and templates
- Registers and matrices
- Objectives and targets
- Organisational charts
- Certificates/ accreditations
- Training material.

HammerTech is a cloud-based software platform will used to enable teams to manage their processes effectively and maintain uniformly across all projects. This includes the collating and storing of:

- Onboarding and inductions
- Safety plans / SWMS / risk assessment
- Permits
- Pre-start and toolbox talks
- Equipment and maintenance records / schedules





- Personnel training records / competencies / licences
- WHS&E inspections / audits
- Accident and incident
- Attendance (site diaries).

HammerTech can also be used to send out news bulletins and updates to individuals advising of alerts, meetings, industry news and updates to site rules and procedures.

## **Environmental Policy**

Taylor has an Environmental Policy outlining our commitment to protection of the environment. This policy can be found in Appendix 2 of this document. A copy of the Environmental Policy is to be posted on the walls or notice board at the project site.

## 3. Legal and Other Requirements

The processes for identifying and keeping up to date with legal and other requirements are outlined in the **Legal and Other Requirements Procedure SE-P-01**.

An **Environmental Legal and Other Requirements Register E-R-01** has been prepared and is periodically updated to ensure that it reflects current legal requirements. This register identifies the key relevant legislation and guidelines and should be attached to this plan in Appendix 6

### 3.1 Environmental Factors

Factor	Objectives	Requirements
<b>Noise Management*</b>		
<b>Noise/ vibration</b>	Protect the amenity of nearby residents from noise/ vibration impacts resulting from activities associated with the proposed or existing development by ensuring that noise/ vibration levels meet statutory requirements and acceptable standards.	<ul style="list-style-type: none"> <li>– Identification of sources of noise/ vibration and estimates of project-wide noise.</li> <li>– Ensure that noise and vibration levels meet acceptable standards and that an adequate level of service, safety and public amenity is maintained.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Water Management*</b>		
<b>Surface water quality</b>	Maintain or improve the quality of surface water to ensure that existing and potential uses, including ecosystem maintenance, are protected.	<ul style="list-style-type: none"> <li>– Details of site drainage, hydrocarbon use, disposal of plant site waste (including sewage), dewatering, and fate of water used/ pumped.</li> <li>– Incorporate measures and/ or operating procedures to ensure that storm water run-off from the site reflects patterns, volumes and quality that exist prior to development, as far as reasonably practicable.</li> <li>– Drainage lines are to be naturalised as much as possible and should enhance the ecological values and recreational opportunities.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Groundwater quality</b>	Maintain or improve the quality of groundwater to ensure that existing and potential uses, including ecosystem maintenance, are protected.	<ul style="list-style-type: none"> <li>– Describe water requirements for any on-site processing.</li> <li>– Incorporate measures and/ or operating procedures that will minimise the demand of the development on potable water supplies.</li> <li>– Ensure that no contaminated water, including those containing sediments, leaves the site.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Air management</b>		
<b>Air</b>	Ensure that potential air pollutants are contained and that activities do	<ul style="list-style-type: none"> <li>– Identify sources of air pollution.</li> </ul>





	not impact on the natural environment.	<ul style="list-style-type: none"> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Particulates/ dust</b>	Ensure that particulate/ dust emissions, both individually and cumulatively, meet appropriate criteria and do not cause an environmental or human health problem.	<ul style="list-style-type: none"> <li>– Identification of sources of particulates/ dust and estimates of project-wide emissions.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Odour</b>	Ensure that operations do not generate odour that causes environmental nuisance.	<ul style="list-style-type: none"> <li>– Identification of sources of odour and estimates of project-wide emissions.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>

### Waste Management

<b>Solid/ liquid waste</b>	Ensure that wastes are contained and isolated from land, ground and surface water surrounds and treatment or collection does not result in long-term impacts on the natural environment.	<ul style="list-style-type: none"> <li>– Identify sources of solid and liquid waste and estimate the proposed amount generated.</li> <li>– Assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA,2014).</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
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### Contaminated Land and Water

<b>Land</b>	Ensure that existing or proposed activities do not discharge to land.	<ul style="list-style-type: none"> <li>– Identify activities that have the potential to discharge to land.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Surface water</b>	Ensure that existing or proposed activities do not discharge to surface waters.	<ul style="list-style-type: none"> <li>– Identify activities that have the potential to discharge to surface waters.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Groundwater</b>	Ensure that existing or proposed activities do not discharge to groundwater.	<ul style="list-style-type: none"> <li>– Identify activities that have the potential to discharge to groundwater.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>

### Hazardous Materials Management

<b>Scheduled wastes</b>	Ensure scheduled wastes are specially treated for their destruction.	<ul style="list-style-type: none"> <li>– Identify scheduled wastes and describe treatment of their destruction.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Resource storage</b>	Ensure that chemicals and other potentially harmful resources used in the manufacturing process are stored and disposed of correctly.	<ul style="list-style-type: none"> <li>– Describe the use and management of chemicals and other potentially harmful resources.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>
<b>Compressed/ liquid gas</b>	Ensure the suitable storage of compressed/ liquid gas.	<ul style="list-style-type: none"> <li>– Describe the use and management of compressed/ liquid gas.</li> <li>– Propose measures to manage and/ or mitigate impacts.</li> </ul>



### 3.3 Development Consent Conditions

Consent working hours are:

Day	Start Time	Finish Time
Monday to Friday	7am	6pm
Saturday	8am	1pm
Sunday and Public Holidays	No Work	

It is to be noted that works outside of these hours may only be undertaken under the following circumstances:

- 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; or
- d.) Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

### 3.4 Environmental Protection License or Other Approvals

#### References:

- NSW Environmental Management System Guidelines 2015.
- Legal and Other Requirements Procedure SE-P-01.
- Environmental Legal and Other Requirements Register E-R-01.



## 4. Environmental Risk Identification and Assessment

Standard ISO 14001 requires that environmental aspects relating to the organisation's activities, products and services are identified and those aspects that can have a significant impact on the environment, determined. At Taylor, the environmental aspects relating to general construction activities have been identified through a risk assessment workshop attended by key project and site managers and an environmental consultant. The aspects, impacts, risk assessment outcomes and generic controls are documented in the **HSE Risk Register HSE-R-01**. Detailed requirements for risk assessments (environmental and OHS) are described in **Risk Assessment Procedure SE-OP-03**.

### 4.1 Environmental Risk Assessment

The methodology for risk assessments is based on the requirements described AS/NZS 4360 (Risk Assessment) and HB203 (Environmental Risk Assessment).

Taylor's procedure requires an initial Project Risk Assessment to be undertaken at the commencement of each project. The risk assessment is to be conducted in the form of a workshop and is to include the Project / Site Manager, HSE Manager, key members of the project team and, to the extent required, key subcontractors, and is to be recorded on form **HSE-R-01 HSE Risk Register**.

The HSE Risk Register is to be developed to address both legal and other requirements covered in this plan and is to be referenced to implement systems and work practices that will eliminate or minimise the likelihood of injury, illness or incident occurring.

When developing the project HSE Risk Register, members of the workshop will take into consideration available information which is relevant to the works and is contained in any published copies of the below documents:

- HSE acts.
- WHS regulation.
- Australian / National Standards.
- Codes of practice.
- Available internal and external industry bulletins/ alerts.
- Industry reports.

This will ensure members of the workshop identify and document any known or foreseeable hazards associated with that task.

The completed Environmental Risk Assessment can be found in Appendix 13 of the project HSE Plan (**WHS-PLAN-02**).

#### References:

- SE-P-03 Risk Assessment Procedure.



## 5. Objective and Targets

Objectives and targets are set at a corporate level. They are monitored and measured to ensure that Taylor continually improves our environmental performance. To ensure that we meet our corporate objectives and targets, key performance indicators (KPIs) are set at a project level and reported to management monthly.

Objectives	Targets
<b>Effective site environmental controls.</b>	<ul style="list-style-type: none"> <li>- Achieve alignment with Taylors and Client expectations in relation to best practice control measures.</li> <li>- Fulfil environmental obligations.</li> </ul>
<b>Increase amount of waste being recycled, reduce waste cost.</b>	<ul style="list-style-type: none"> <li>- Eighty-five per cent (85%) of waste to be recycled.</li> </ul>
<b>Environmental performance.</b>	<ul style="list-style-type: none"> <li>- Zero major environmental incidents and no breaches.</li> <li>- Zero infringement notices.</li> <li>- All environmental spills to be reported to Taylor Construction within 2 hours of occurrence.</li> <li>- Environmental inspection competed weekly and documented in <b>SE-F-02 HSE Inspection Checklist</b> (more often if required).</li> </ul>
<b>Reduce the amount of environmental impact our operations have on the environment.</b>	<ul style="list-style-type: none"> <li>- Environmental issues identified and controlled prior to causing negative impacts on the project or on the environment.</li> </ul>
<b>Effective implementation of the environmental system.</b>	<ul style="list-style-type: none"> <li>- Eighty per cent (80%) or better internal audit results.</li> <li>- Full compliance with planning approval requirements.</li> </ul>
<b>Community issues carefully handled.</b>	<ul style="list-style-type: none"> <li>- Zero valid complaints. All complaints reported to Taylor's representative.</li> </ul>



## 6. Roles and Responsibilities

All persons working for and on behalf of Taylor have responsibilities in relation to ensuring that environmental issues are appropriately managed. Generic WHS and environmental responsibilities are outlined in the **Roles, Responsibilities and Authorities Procedure QSE-P-06**.

### Subcontractors

The subcontractor shall be required to comply with all applicable work health, safety and environmental legislation, including any additional Taylor's requirements, whilst engaged on a Taylor-managed project. The subcontractor shall be responsible to communicate any relevant environmental information to their personnel (workers) who are engaged in carrying out the work or providing material to the job site, including any secondary subcontractors or sole traders engaged by them and approved by Taylor.

#### Subcontractor's minimal environmental requirements:

- Has the subcontractor identified in the SWMS environmental hazards and controls in relation to the work task (where required), i.e. refuelling plant and equipment on site, nuisance dust controls, nuisance noise, waste management (off-cuts), rubbish, concrete wash-out?
- Have hazardous substances or dangerous goods to be used on site by the subcontractor been identified?  
**Note:** the subcontractor will need to provide copies of relevant Safety Data Sheets (SDS) for all materials and/ or hazardous substances or dangerous goods to be used on site and note reference to training of employees in the SDS prior to first use and controls listed in the SWMS.

### Taylor Construction Personnel

For this project, the key roles and specific responsibilities of our managers, supervisors, and site personnel regarding environmental management on site are outlined below. Project-related management and staff are required to sign off that they have read and understood their responsibilities.

## 6.1 Directors

### Directors are responsible for:

- Defining Taylor Construction workplace WHS&E policies and setting their objectives.
- Acquiring and keeping up to date with knowledge of environmental matters relevant to the organisation.
- Gaining an understanding of the nature of the operation of the business or undertaking and general environmental issues associated with those operations.
- Providing leadership that promotes and maintains Taylor's determination to continually improve its performance in workplace health safety and the environment.
- Demonstrating genuine interest in workplace health and safety and the environment; supporting all project teams to encourage incident prevention.
- Ensuring that there is available for use and used by those engaged in the business or undertaking, appropriate resources and processes to eliminate or minimise risks to the environment and non-compliance with licences during the conduct of the business or undertaking.
- Ensuring that people engaged in the business or undertaking have appropriate processes for receiving and considering information regarding environmental incidents, hazards, and risks, and respond in a timely way to that information.
- Ensuring that those engaged in the business or undertaking have in place and implement processes for complying with any duty or obligation of the organisation under the Act, including complying with licence conditions and notices served.



## 6.2 Chief Executive Officer

### The Chief Executive Officer's responsibilities include:

- Informing the board of all events within, or which reasonably should be within, his/her knowledge or awareness, which may or do have a material impact on the organisation's activities or well-being.
- Monitoring and interpreting the external environment in order to continually position the organisation in its markets to best advantage.
- Maintaining awareness of political, governmental, business and industry components of the external environment, on a local, national, and international level.
- Reviewing environmental objectives and targets to ensure compliance with our environmental commitments and achieve continuous improvement in our environmental performance.
- Working proactively with our clients, regulators, and other community stakeholders to enable environmental issues to be addressed at an early stage of development.
- Monitoring the activities which are undertaken by employees and subcontractors are done so in a manner that is consistent with the principles of ecologically sustainable development.
- Overseeing the implementation of company procedures and policies that will prevent pollution and reduce adverse environmental impacts of our activities on the natural, built, and cultural environment.
- Setting realistic environmental objectives and targets at all relevant levels within the company and continually monitor performance.
- Promote the efficient use of natural resources and reduce waste through the use of the waste hierarchy – avoid, reduce, re-use, recycle and finally dispose.
- Identifying alternative, financially viable and sustainable courses of action to minimise environmental impacts.

## 6.3 General Manager

### The General Manager is responsible for:

- Demonstrating genuine interest in workplace health, safety, and environment; supporting all project and site managers to encourage incident prevention and compliance.
- Assessing and allocating appropriate resources and equipment within the company for the effective implementation of the workplace health, safety and environmental management systems and the management of WHS&E related hazard/ risks relevant to the construction projects.
- Being fully briefed of the WHS&E performance and compliance of all current Taylor projects.
- Assisting in the development and implementation of continuous improvement processes for workplace environmental management

### Specific roles:

- Ensure the implementation and overall effectiveness of the Taylor environmental, health and safety programs.
- Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken. Participate in WHS&E meetings and consultation regarding workplace health safety and environmental matters.
- Consider workplace health safety and environment matters with other senior members of the organisation as part of normal business practice and incorporate WHS&E into meeting agendas.
- Allow appropriate budget allocations for WHS&E management and improvement.
- Encourage and promote safety within the company by participating and openly consulting with employees in respect to their health and safety.
- Follow up with the WHS&E Manager and site teams on any compliance breaches or external authority notices issued to projects and or subcontractors.



- Report on critical incidents which then embed lessons learnt and system improvement will demonstrate the board's commitment to environmental responsibility.
- Participate in periodic compliance inspections / audits to review the effectiveness of management structures and risk controls for environmental performance are appropriate and remain effective.

<b>Name:</b>	Tim Christie
<b>Signed:</b>	TC
<b>Date:</b>	11/01/23






## 6.4 Project Manager

### The Project Manager is responsible for:

- Ensuring that environmental, health and safety obligations are carried out by everyone working in their operations.
- Communicating to employees, workers, and visitors that health and safety and concern for the environment are top priorities on Taylor projects and that everyone shares in the obligation to perform work in a safe, healthful, environmentally protective manner.
- Analysing work procedures to identify hazards; ensure measures are implemented to eliminate or control those hazards.
- Ensuring safe operating procedures are in place and are observed.
- Curtail or stop work being carried out under their authority if they reasonably believe that continuation of the work poses an imminent danger to health or safety. Upon directing that work be curtailed or stopped, if the situation cannot be corrected immediately, the Manager must notify the WHS&E Manager
- Ensuring that self-assessment inspections are performed regularly, that records are retained and that deficiencies identified in any inspection (self-assessment or HSE inspections) are addressed.
- Consulting with Taylor's Construction Manager and HSE Manager to ensure enough resources are allocated to the project to comply with legislative and Taylor's WHS&E requirements.
- Ensuring compliance with safety legislation, regulations, licensing conditions and authorities' requirements relevant to all construction work.
- Ensuring Taylor's site supervision is maintained throughout all hours of operation and those assigned with supervisory roles are competent and authorised to do so (e.g., PM, SM, or foreman).
- Ensuring incidents are investigated and appropriate action taken as required by Taylor's site safety plan requirements in consultation with the WHS&E Manager.
- Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in health and safety meetings and consultation regarding WHS&E matters.
- Ensure safety notices issued and/ or visits made to the project by industrial representatives and/ or SafeWork NSW are reported to both the Managing Director and WHS&E Manager.
- Selecting appropriate subcontractors, giving due regard to their ability to comply with legislative and Taylor's WHS&E requirements.
- Participating in at least one formal site HSE inspection per month on a project under their control.
- Reporting back to Taylor's senior managers on project HSE incidents, any external authority visits and/ or Notices issued by external authorities.
- Overseeing the development and implementation of a site evacuation and emergency procedures and overseeing at least one spontaneous evacuation drill every six months and assessing the results of that drill.
- Supporting the Site Manager in the management of employee, subcontractor, and supplier's performance in complying with Taylor's environmental plan and the site-specific rules for the project.
- Be familiar with the emergency plan, the emergency assembly area and emergency coordinators for their project and participate in emergency drills.

<b>Name:</b>	Charlie Licciardello
<b>Signed:</b>	
<b>Date:</b>	11/01/23



## 6.5 The Head Of WHS&E

### The Head Of WHS&E is responsible for:

- Overseeing the development and implementation of Taylor policies and procedures related to environmental health and safety and that provide additional support for environmental.
- Developing and maintaining electronic systems and technology solutions related to environmental health and safety.
- Disseminating information and providing guidance regarding compliance with federal, state, and local regulations and Taylor policies and procedures.
- Providing guidance, direction, and oversight to help ensure adherence to federal, state, and local regulations and Taylor policies and procedures instituted to protect the health and safety of employees, workers, visitors, and the environment.
- Overseeing the implementation of Taylor’s health, safety and environmental management systems throughout all Taylor activities.
- Ensuring that a systematic internal reporting system exists to guarantee that information about environmental hazards and unsafe practices is promptly conveyed to senior management and acted on.
- Maintaining good relationship with government regulatory authorities.
- Setting targets and allocating priorities within the framework of the QSE System.
- Safeguarding compliance and maintenance of the company’s third-party accreditations.
- Planning and delivering training in environmental management and/ or arranging for the appropriate internal or external trainers/ facilitators to conduct the training.
- Researching, developing, and implementing new procedures and forms, and updating the manual as required.
- Reviewing, analysing, and reporting on safety and environment project performance to Taylor’s managing director, sector managers and any party as arranged by the managing director.
- Ensuring compliance with environmental legislation, regulations, licensing conditions and authorities’ requirements.
- Ensuring Taylor’s workplace health safety and environment performance is reviewed on a regular basis (i.e., arranging for internal and external audits).
- Ensuring that periodic audits of the effectiveness of management structures and risk controls for environmental performance are conducted.
- Reviewing internal and external (independent) audit reports and, in consultation with the directors and the project manager, develop appropriate action plans if necessary.
- Identifying environmental hazards, assessing risks and in consultation with project teams select risk control measures for site-specific situations.
- When required, acting as the lead investigator in workplace incidents/ accidents, liaise with external authorities in managing them and report back to managing director and/ or sector managers on outcomes of investigations.
- Ensuring WHS&E policies and procedures are implemented on all projects and that a specific site environmental plan is prepared and implemented for all projects.

<b>Name:</b>	Andrew Andreou
<b>Signed:</b>	
<b>Date:</b>	



## 6.6 Project Safety Advisor

The Project Safety Advisor is responsible for:

- Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS&E matters.
- Ensuring workplace hazards and environmental, health and safety-related policies and procedures are communicated to employees, workers, and visitors.
- Assisting the WHS&E manager and project teams in implementing Taylor’s health, safety and environmental procedures, policies, and project systems in line with best practice and the relevant statutory legislation.
- Reporting any serious environmental incident or near miss and unexpected finds immediately to the WHS&E manager.
- Safeguarding compliance and maintenance of the company’s third-party accreditations.
- Assisting project teams and subcontractors in meeting their workplace health safety and environmental obligations.
- Ensuring compliance to this project environmental plan.
- Monitoring subcontractor’s compliance with the site environmental plan, and subcontractor compliance to their Safe Work Method Statements by conducting regular task observation/ audits.
- Undertaking regular workplace inspections to identify hazards and unsafe/ unhealthy workplace conditions and practices.
- Being familiar with the emergency plan, the emergency assembly area and emergency coordinators for the project and participate in emergency drills.
- Assisting the Site Manager / Foreman in the supervision of subcontractors.
- Ensuring WHS&E items identified by safety inspections and or audits are rectified within specified timelines in consultation with the Site manager, and subcontractors.
- Reporting incidents and/ or identified environmental hazards and appropriate risk control measures to line managers.
- Ensuring all workplace health and safety and environment documents are maintained and filed in accordance with Taylor’s filing requirements.
- Coordinating or conducting site toolbox talks and ensure subcontractors regularly consult with their employees on matters relating to environmental issues.
- Liaising with the Project / Site Manager to implement controls on hazards identified.
- Completing Safe Work Method Statement checklists for the site (task observation).
- Collating completed contractor required forms, authority to work permits and checklists.
- Acting site safety representative for the site (unless another person has been elected to perform this role as per the consultation statement S-F-04 WHS Consultation Statement).
- Other HSE and/ or CW’s issues or activities that may require their attention.

**If no safety advisor is allocated to the project, the roles and responsibilities mentioned above are to be allocated to alternative Taylor Construction persons engaged on the project who are competent or have been suitably trained to fulfil these duties.**

<b>Name:</b>	
<b>Signed:</b>	
<b>Date:</b>	




## 6.7 Site Manager

### The Site Managers are responsible for:

- Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS&E matters.
- Facilitating the process to ensure the project team and the WHS&E manager are consulted and participate in the development of the project specific WHS&E risk assessment. This is to be done prior to such activities commencing.
- Ensuring that prior to the works commencing a formal assessment of the emergency control equipment requirements has been completed and that these remain effective throughout the duration of the project. (e.g., first aid, nurse call, emergency warning alarms, fire extinguishers, spill kits, lighting, and signage)
- Ensuring workplace hazards and environmental, health and safety-related policies and procedures are communicated to employees, workers, and visitors.
- Ensuring individuals working in their operations have the proper safety equipment and personal protective equipment to perform their work safely.
- Leading or participating in formal site safety inspections weekly and record results using **SE-F-02 HSE Inspection Checklist**. Daily informal inspections should be noted in site diary.
- **Unexpected finds** – ensure all unexpected finds are treated, reported, and managed in accordance with Taylor's unexpected finds procedure.
- **Environmental controls** – ensure all environmental controls (sediment and erosion, noise, hours of operation, etc) as mentioned by permits or building approvals are adhered to and workers are advised of these requirements during the site induction process.
- **Emergency Response and Training Plan** – contribute to the development of the ERP, ensure that all employees, workers, and others know about the plan, and communicate the importance of participating in drills and otherwise following procedures set out in the plan.
- **Groundwater protection Program** – report any hazardous materials or other pollutants spilled to or discovered in soil or groundwater to EH&S for appropriate emergency or non-emergency clean up.
- **Hazardous material and waste management** – inform employees and workers that hazardous materials and hazardous waste, except as expressly authorized by regulations, licenses or permits, may not be disposed of via the sewer system, or other unsafe or environmentally damaging routes; and to stress the importance of proper hazardous material/waste management.
- **Training** – ensuring that everyone working in their operations is appropriately trained to identify and mitigate potential hazards. Ensure that work requiring training is performed only by persons who have received the proper training.
- **Hazardous spill response** – upon request, provide assistance in hazardous material spill clean-up, preparing written reports about reportable releases and notifying appropriate persons about reportable spills.
- **Noise monitoring and hearing conservation** – conduct noise surveys to determine exposure levels.
- **Environmental procedures / permits** – ensure activities requiring internal and or external permit or approvals do not commence until permit or approval has been formally granted the user has the responsibility for providing relevant information to obtain permits, meeting permit conditions, and any responsibility. Taylor site management shares in the responsibility to advise those performing the works of Taylors procedure and permit requirements.
- Ensuring WHS&E items identified by safety inspections and or audits are rectified within specified timelines in consultation with the Project Manager, Project Safety Advisor and subcontractors.
- Ensuring that all plant and equipment used on Taylor sites are environmentally safe, correctly maintained and that the operator is appropriately licensed or qualified to operate and or use that equipment.
- Utilising experience and judgement to shut down and/ or evacuate any part of the site if a major health and safety and environmental risk occurs.
- Reviewing, coordinating, and implementing emergency evacuation procedures and participating in drills at specified intervals (quarterly).



<b>Name:</b>	Stephen Winfield
<b>Signed:</b>	
<b>Date:</b>	11/01/23

## 6.8 Site Foreman

### The Site Forman is responsible for:

- Implementing, through consultation with the Project Manager, the site environmental plan and procedures in accordance with WHS&E legislation, regulations, codes of practice, Australian Standards and/ or other statutory requirements.
- Ensuring no work is undertaken on site until the relevant SWMS has been reviewed and signed off in accordance with form **SE-F-14 Safe Work Method Statement Review Form**.
- Monitoring subcontractor’s compliance with the site environmental plan and subcontractor’s compliance to their Safe Work Method Statements by conducting regular task observation /audits.
- Ensuring all workers and, if required, visitors, are site-inducted and aware of any environmental compliance obligations.
- Assisting with implementing and undertaking formal and proactive consultation measures between the project team and subcontractors.
- Ensuring items identified by environmental or system audits findings are rectified and closed out within specified timelines in consultation with the project manager, site manager, site safety advisor and subcontractors.
- Consulting with all persons on environmental issues, including changes to the workplace layouts and access egress points, and encourage the involvement of all personnel in achieving a safe and healthy site.
- First response in managing site-specific workplace environmental issues in the first instance, and discussing these with the project manager, site manager and/ or site safety advisor as required.
- Assisting the site manager with developing, planning, implementing, and reviewing site-specific emergency and evacuation procedures.
- Identifying any environmental hazards and assessing any risks on site and implementing risk control measures.
- Leading or participating in formal site safety inspections weekly using form **SE-F-02 HSE Inspection Checklist**. Note: informal inspections should be noted in site diary.
- In consultation with the Project Manager and Senior Site Manager, and utilising experience and judgement, shut down and/ or evacuate any part of the site if a major environmental risk or situation occurs.
- When requested by the Site Manager participate in any environmental incident and assist with the investigating, recording, and reporting,
- Be familiar with the emergency plan, the emergency assembly area and emergency coordinators for the project and participate in emergency drills.
- Monitoring the use of personal protective equipment (PPE) by site personnel.
- Where requested by the Site Manager, assist with monitoring of environmental issues (e.g., dust, noise, air quality)
- Assist the Site Manager with reviewing, coordinating, and implementing emergency evacuation procedures and participating in drills at specified intervals, minimum every six months.
- Ensuring that all plant and equipment used on Taylor sites are environmentally safe to use, appropriately maintained and that the operator is correctly licensed or qualified for operating that equipment.

<b>Name:</b>	
<b>Signed:</b>	



<b>Date:</b>	
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## 6.9 Contract Administrator / Site Engineer

The Contract Administrator and Site Engineer's responsibilities are to:

- Support the Project Manager and Site Manager in the management of employee, subcontractor, and suppliers' performance in complying with Taylor WHS&E and the site-specific rules for the project.
- Assist the project/ site manager to ensure the site environmental plans and associated documentation, including standard forms, procedures, and templates, remain current and up to date.
- Where required, assist the project and site manager with site inductions.
- Include in subcontract agreement the requirement for subcontractors to carry out their works in accordance with the company's or subcontractor's approved QSE plans.
- Forward to subcontractors a copy of HSE subcontractor requirement, **Contractor's HSE Requirements QSE-F-15.23** (letter template), ensuring this is completed and returned by subcontractor prior to commencing.
- Discuss with the subcontractors, at the tender interview stage, their obligation for managing HSE requirements by issuing to them relevant sections of the tender interview form and ensuring this is completed by subcontractor prior to commencing on site.
- Request and obtain from the subcontractor prior to their arrival to site copies of their Workers Compensation and Public Liability Certificates of Currency, environmental and or council licences and or required permits ensuring they are current and that copies are available on site.
- Ensure that all completed copies of form **Contractor's HSE Requirements QSE-F-15.23** (letter template) are returned and filed in the project files.
- Ensure that the latest copies of project plans and WHS&E risk assessments are uploaded onto project centre, or preferred data control system used, and engaged subcontractors have access to these.
- Ensure all external complaints/ incidents are recorded on **SE-F-21 Incident Report Form** and filed in the external complaints register or HammerTech.
- Assist the Project Manager and Site Manager in the general administration of WHS&E where requested.
- Be familiar with the emergency plan, the emergency assembly area and emergency coordinators for the project and participate in emergency drills.

<b>Name:</b>	Adem Abdioglu
<b>Signed:</b>	AA
<b>Date:</b>	11/01/23



## 6.10 Building Cadet

The Building Cadet's health, safety and environmental responsibilities are to:

- Provide general assistance to management on an assigned project.
- Provide administrative assistance in managing site safety, quality assurance and environmental management systems.
- Maintain project registers and records up to date.
- Where requested, assist with site contract administration and tendering.
- Manage project document control and provide design management assistance.
- Assist the Project / Site Manager to ensure the site QSE plans and associated documentation, including standard forms, procedures, and templates, remain current and up to date.
- Fulfil responsibilities as outlined in the 'Taylor Cadet Program Guidelines', including undertaking an approved course of study at an Australian University.
- Assist Project Manager and Site Manger in the general administration of HSE where requested.
- Monitor the use of personal protective equipment (PPE) by site personnel.
- Complete site diaries as per project administration requirements.

<b>Name:</b>	
<b>Signed:</b>	
<b>Date:</b>	



## 6.11 First Aid Officers

It is the job of the trained first aider to provide initial treatment to injured or ill employees, which is consistent with first aider's level of training and competency. Where the treatment required is beyond a first aider's level of competency, they should recommend that the employee seek immediate medical assistance.

The nominated site first aid officers shall possess the required level of competency (Senior First Aid Certificate or Occupational First Aid Certificate) and they shall be responsible for:

- Providing first aid assistance to persons ill or injured on site.
- Recording all such assistance provided.
- Liaising with the site manager and/ or site foreman to achieve first aid obligations.

### First Aid Officer Records

The nominated first aider shall be relied upon to exercise a common sense-approach in determining what type of injuries require a first aid report to be completed. First aid/ incident reports shall only be completed for injuries or illnesses for which first aid assistance was sorted **immediately** following an event. Employees, including subcontractor is, seeking to report an injury or incident for which first aid assistance was not initially sort **shall not** be provided with a copy of the report unless this has been authorised by the Site / Project Manager and/ or Taylor's WHS&E Manager.

#### Some typical injuries that may require reporting are:

- All injuries requiring off-site medical treatment.
- Impact injuries.
- Head injuries.
- Musculoskeletal injuries.
- Open wounds (cuts).
- Eye injuries.

The first aid officers shall also be responsible for the regular maintenance and replenishment of the first aid kits and equipment. At all times during normal operations there shall be a minimum of one (1) trained first aider on site for every 25 workers.

<b>Name:</b>	
<b>Signed:</b>	
<b>Date:</b>	

<b>Name:</b>	
<b>Signed:</b>	
<b>Date:</b>	





## 6.12 PCBU and Workers

### PCBU and Workers are responsible for:

- Attending Taylor’s site-specific induction prior to commencing work on site.
- Taking reasonable care for their individual health and safety and that of others on site, including members of the public.
- Familiarising themselves and adhering to Taylor Construction corporate policies.
- Performing only those works in which they possess the required competencies for or have been suitably trained to perform.
- Taking corrective actions to eliminate hazards within the workplace and /or reporting those hazards they cannot correct.
- Reporting all injuries to a first aid officer or supervisor.
- Cooperating with Taylor management in all requirements imposed in the interest of health, safety the environment and wellbeing.
- Never intentionally or recklessly interfering with, misusing, or removing any items and/ or equipment provided in the interest of health and safety.
- Complying with all site safety instructions and abiding by the procedures and work practices identified in the Workplace Health Safety Project Plans and/ or as directed or informed by the Site Manager / Foreman.
- Complying with all relevant workplace health and safety legislation, standards, and codes of practice.
- Reporting promptly to a Site Manager / Foreman any unsafe conditions, practices or defects discovered in any control measures, including personal protective equipment.
- Maintaining safe work practices when working with, or near, hazardous substances, so that their own health and safety, and the health and safety of those around them, is maintained.
- Using personal protective equipment (PPE) as required. The equipment should be kept clean and maintained in an appropriate manner.
- Practicing a high-standard personal hygiene in and around all amenity areas such as lunch, change and toilet facilities by washing thoroughly and removing all protective clothing before eating, drinking, and smoking.
- Do not perform any activity or act that endangers or impacts on the environment.

## 6.13 Other Personnel with Specific Environmental Responsibilities

Add any specific responsibilities here. If no specific position or responsibilities, DELETE this section and UPDATE the table of contents.

### References:

- Roles, Responsibilities and Authorities Procedure QSE-P-06.



## 7. Induction

Taylor employees, including those workers engaged by or working on behalf of the subcontractors, are required to be site-inducted prior to commencing work on the site. General environmental awareness and specific environmental requirements of this CEMP must be incorporated into the site-specific induction as required.

As a minimum, inductions must include the following environmental information:

- Community issues.
- Hours of operation.
- Noise and vibration.
- Dust management.
- Traffic access.
- Washing requirements for construction plant and equipment.
- Storage and handling of fuels, oils, and other chemicals.
- Waste management: recycling, disposal, litter.
- Soil and water issues: controls, tracking of mud off-site.

Where there are significant environmental issues identified for the project, these must be incorporated into the site-specific induction. These may include but shall not be limited to (where required):

- Environmentally sensitive areas of the site (specify details in this section).
- Contaminated or Acid Sulphate soils.
- Endangered flora and fauna.
- Environmental controls and management.
- Noise emissions.
- Plant emissions.
- Archaeology and heritage management.

### References:

- SE-F-11 Site Induction Form and Mandatory Safety Requirements.
- SE-F-11a Induction Register.

## 8. Training and Competency

All persons undertaking work on the project (employees and subcontractors) must be trained and competent to carry out their work. This includes undertaking tasks in an environmentally sound manner.

Subcontractors shall be responsible to ensure that Taylor's environmental risk management, as prescribed in [Section 10.3](#) of this plan, are adopted and controls, as contained in Taylor's **HSE-R-01 HSE Risk Register**, are implemented when developing their systems of work.

The subcontractor shall be responsible to consult and train workers under their management in agreed environmental system. Evidence of appropriate training shall be made available by the subcontractor to Taylor upon request by a Taylor nominated representative.

The Project / Site Manager, along with relevant members of the project team, must be made aware of the requirements of the Taylor environmental management system and shall be required to attend Environmental Awareness and Due Diligence training sessions when organised by the company.

### References:

- QSE-P-19 Training, Competency and Awareness Procedure.
- WHS-PLAN-02 Project Workplace Health and Safety Plan (PWHSP).

## 9. Communication

The requirements for internal and external communication are outlined in the QSE Management System Manual. The following provides essential information in relation to environmental communication on projects.

### 9.1 Internal Communications

Essential information relating to project environmental management will be communicated through toolbox talks and inductions.

Environmental alerts will be periodically prepared and sent to sites for posting on notice boards.

Key changes to environmental legislation will be sent by email to all project managers and site managers

### 9.2 External Communications – Community


Before construction works begin, WPCA will complete a letterbox drop off with information about the project. This letter will contain details of who to contact in the event of a complaint from the community. Management is then notified of the complaint through either email or phone call. Action must be taken to resolve the complaint within a timely manner by the project team.

Community complaints must be reported as environmental incidents and all correspondence relating to the complaint must be retained and filed on site, including information on how the complaint was resolved.

### 9.3 Regulator Site Visits and Written Communications

If an authorised officer (Council or DECCW representative) visits your site, you should contact the HSE Manager or Construction Manager for assistance and advice. While you can request that a higher level of management assists you, you cannot refuse to answer questions. An authorised officer must show their identification on





request (ensure you ask for it) and has the right to ask any person on site questions relating to environmental issues. When being enquired, always be polite, discuss only the facts and do not elaborate or provide opinions.

Any Penalty Infringement Notices or official warnings from regulators are to be treated as 'incidents' and reported in the Incident Report Form, investigated and corrective actions assigned and completed to address the root cause of the infringement.

Any communication from a regulator must be notified to the HSE manager. Records of all communications must be retained and appropriately filed.

## 10. Environmental Risks

### 10.1 Standard Operating Procedures

Several standard operating procedures have been developed as part of the HSE management system to provide detailed information on the management of site issues in relation to environmental and safety risks. The following procedures have been developed to date and are available on SharePoint:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure.
- E-OP-01 Erosion and Sedimentation Controls.
- E-OP-02 Waste and Resource Management.
- QSE-OP-02 Asbestos Management Procedure.
- SE-OP-04 Noise Management (OHS and Environmental).

### 10.2 Safe Work Method Statements (SWMS)

While SWMS are primarily used in WHS to manage high-risk activities, any relevant or foreseen environmental risk must also be considered in the preparation of the SWMS.

Taylor's site managers or their nominees are responsible for ensuring that subcontractors include environmental issues in their task-specific SWMS by using **SE-F-14**. If environmental issues are not appropriately addressed, the subcontractor should be advised of the requirements. It is recommended that subcontractors are assisted with identifying environmental issues, particularly during the early implementation of Taylor's environmental management system and CEMP.

#### References:

- SE-F-03 Taylor Construction Group Safe Work Method Statement.
- SE-F-14 Safe Work Method Statement Review Form.
- SE-F-14.1 Contractor's HSE Plan Review.

### 10.3 Environmental Risk Management and Control

This section provides an overview of environmental issues typically encountered on site based on the generic issues identified in the master Environmental Risk Assessment. When preparing this document, the project manager should add any additional environmental issues that may have been identified through the environmental impact assessment, development consent/ approval, etc.

#### 10.3.1 Project Design – Environmental Considerations

During the planning phase of the project, consideration should be given to the following:

- How will design minimise energy use and allow for and use the natural environment?

- How will materials, products and systems be selected or designed to minimise adverse impacts and/ or benefit the environment?

These questions should be considered prior to commencement of the project and may require the input from the client.

### 10.3.2 Soil and Water Management / Sedimentation and Erosion Control – Refer to appendix 5

In accordance with SSDA condition B10; Taylor and subcontractors shall plan and carry out works to avoid erosion and prevent sediment leaving the site to the surrounding land, watercourses, water bodies, wetlands and storm water drainage systems. This includes the installation of erosion and sedimentation controls prior to commencing clearing works. Where possible, works should be staged to reduce the areas cleared at the same time to minimize soil disturbance. Where required, prepare erosion and sediment control plans (ESCP), install the controls in accordance with the plan and maintain them regularly. For more detailed information, refer to the procedure and external guidelines listed below and in Appendix 5.

**Sediment and erosion control devices** – unnecessary disturbance of the site shall not occur, and all cuts are to be stabilised as soon as possible after the completion of site earthworks. Extra care will be taken to prevent sediment run-off into all neighbouring lots and storm water. Any collected silt will be disposed of in accordance with all other relevant codes and standards.

**Silt fences** – are to be installed to site boundaries as required. Geotextile fabric will be fixed to the temporary construction fencing where 'downhill' boundaries exist. The fabric will be turned down under the existing ground line and secured at regular intervals not exceeding 3m, in accordance with the following diagram:

**Vehicle access** – will be controlled to prevent sediment being tracked. This will be done by maintaining an all-weather access/ driveway composed of an approved coarse aggregate surface. Moreover, if the need arises, a shaker grid will be installed to the main access by Taylor during the construction works. Any sediment that is tracked onto the surrounding roads will be cleaned off in a timely manner.

**Storm water inlets** – all storm water inlets are to be covered with geotextile fabric in a roll or other format to ensure that no sediment enters the storm water system. This will be the responsibility of the site manager to enforce. The rolls will not only be placed directly at the inlets as shown below, but also at regular intervals in the gutters 'upstream' from the inlets, creating multiple barriers.

**Stockpiles** – if appropriate topsoil is to be stockpiled on site, then the following measures will be put in place:

- Stockpiles shall be stored at least 2 metres away from drainage lines, natural watercourse and established trees.
- Stockpiles will have temporary silt fences around it to create an enclosure and, if necessary, they will be covered with shade cloth or tarpaulin to retain the materials inside it. The location of stockpiles will be determined on site.


**Monitoring** – to maintain the various erosion and sediment control devices, regular inspections, repairs and cleaning will be carried out on the silt fences to the boundaries, stockpiles, waste enclosures and to the stockpile covers.

#### References:

- E-OP-01 Erosion and Sedimentation Controls Procedure.
- Managing urban stormwater: soils and construction, Volume 1, 4<sup>th</sup> edition, 2004.

### 10.3.3 Vegetation Management

Taylor and subcontractors shall plan the works to preserve existing trees, plants and other vegetation, that are to remain within or adjacent to the works. Areas of the site that contain vegetation that must be



preserved should be fenced-off, marked or otherwise isolated to ensure they are not inadvertently damaged. If there are any endangered species on site, specific management techniques may be required; these should be addressed in an Environmental Impact Assessment.

On completion of the works, all areas disturbed by construction activities shall be restored to the contract specifications. Where required and practical, efforts will be made to mulch and re-use vegetation on site or send it to a green waste recycling facility.

### **10.3.4 Waste Management and Resource Recovery**

Taylor and subcontractors shall adopt the hierarchy of waste (avoid, reduce, reuse, recycle/ reprocess), dispose to maximise resource recovery and minimise disposal wherever possible and practical. The importance of appropriate waste management practices is to be included in the site induction.

Sites are to be provided with suitable bins and skips for appropriate collection and separation of waste and recyclables, and these are to be collected with appropriately qualified and licensed (where required) waste contractors. The waste must be always secured and maintained within designated waste storage areas. This waste must not leave the site onto neighbouring public or private properties and be contained within enclosures that cannot be accessed by birds or flying foxes.

Prior to disposal, waste must be classified in accordance with the DECCW Waste Classification Guidelines (latest version 2014) prior to transporting waste off-site. Excerpts from the waste classification guidelines are contained within appendix B of the **Waste and Resource Management Procedure E-OP-02**. Waste receipts must be kept for legal requirements; details of waste separated and disposed of is to be documented in the **Waste and Recycling Register QSE-R-16**. The information from the register is to be used to complete the waste management section of the KPI Monthly Report Form and forwarded to the HSE manager for tracking of Taylor environmental targets. All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.

Taylor and subcontractors will assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA,2014).

Under no circumstances is waste that is generated outside of the site to be received at the site for storage, treatment, processing, reprocessing, or disposal.

#### **References:**

- E-OP-02 Waste and Resource Management Procedure.
- SE-F-23 KPI Monthly Report Form.
- QSE-R-16 Waste and Recycling Register.





### 10.3.5 Noise Management

In compliance with SSDA condition B31 and from an environmental viewpoint, noise can create a nuisance to neighbours and members of the public and is subject to legal requirements. Taylor and subcontractors shall make all practical efforts to comply with statutory requirements for noise management and minimise nuisance to neighbours. Protection of the Environment Operations Act 1997 (sections 139 and 140) and the Department of Environment and Climate Change NSW 'Interim Construction Noise Guideline' risk controls for noise must be incorporated in relevant SWMS, including nuisance to neighbours. Where required by development consent conditions, environmental noise monitoring will be undertaken as per the conditions. Further information on noise management from a WHS and environmental viewpoint is contained within the Noise Management Procedure refer to appendix 9.

#### References:

- SE-OP-04 Noise Management Procedure.

### 10.3.6 Water Quality Management

Taylor and subcontractors shall comply with the requirements of section 120 of the Protection of The Environment Operations Act 1997 (Prohibition of Pollution of Waters). The act prohibits all forms of water pollution unless specifically authorised through an environment protection license (EPL). On most projects undertaken by Taylor, an EPL will not be required.

There are substantial penalties for individuals and the company and controls must be in place to ensure that site activities do not cause water pollution.

Potentially hazardous activities, including washing out of concrete delivery vehicles and washing down of construction plant, are not permitted on site except in specially constructed bays that retain high PH water. Washing out of concrete delivery vehicles off-site is only permitted at locations approved for that purpose by the appropriate authority. Drains will be labelled to reduce likelihood of misuse.

Washing of paint brushes must be undertaken to avoid any paint wash-water entering drains or waterways. Wash-water must be removed from site and appropriately treated and/ or disposed of. The chemicals, acids or residue from any 'wet trades' such as brick cleaning must also be prevented from entering drains and waterways.

All liquids and materials that could cause water pollution must be stored in areas with secondary containment. Also refer to section on hazardous substances, chemicals, oils and other contaminants and the related procedure.

**Pumping of storm water** – if a sediment basin is required and storm water is required to be pumped out of the site, the pump intake is to be located no more than one metre (1m) below the surface of the collected water to reduce the amount of settled silt being pumped out for further treatment.


**Storm water treatment** – there are two treatment options for storm water collected on site, flocculation and/ or filtration. For each option, the applicable procedures in their entirety are to be followed.

#### References:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure.
- Storing and Handling Liquids - Environmental Protection (DECCW).

### 10.3.7 Air Quality Management

Taylor and subcontractors shall comply with all statutory requirements governing air quality management, i.e. Protection of The Environment Operations (POEO) Act 1997, section 124, and the POEO Clean Air Regulation 2010.



The Project / Site Manager will ensure that all construction facilities erected at the site are designed and operated to minimise the emission of smoke, dust, cement dust, plant and vehicle exhausts and other substances into the atmosphere.

Taylor and subcontractors shall employ construction methods that will keep the air pollution to a minimum and apply measures such as those listed below to ensure that airborne pollutants do not cause pollution and nuisance near the works:

- The spraying of disturbed soil and roads with water whilst under construction as required.
- The removal of mud from the wheels and bodies of plant and vehicles before it enters public roads or other sealed pavements. This could be rumble grids, dry brushing, wheel wash, etc., depending on the nature of the site.
- The removal of mud or dirt spilt by construction equipment onto public roads or other sealed pavements.
- The provision of coverings or stabilisation of topsoil stockpiles.
- Covering all loads leaving the site.
- Stabilisation of ground likely to be exposed for significant time periods (e.g., using sterile seed).
- Fitting power tools with dust collection devices where practical.
- Keeping all plant and equipment well maintained and not leaving them idling while not being used.
- Reporting excess air emissions from plant and arranging for a service to fix the problem.

On-site burning of any materials is not permitted on Taylor sites.

#### Dust Including Crystalline Silica Dust

Dust containing respirable crystalline silica particles is commonly called silica dust. Activities such as cutting, grinding, sanding, drilling, loading or demolishing products that contain silica can generate respirable particles of crystalline silica dust that are small enough to breathe into your lungs. Crystalline silica dust can be harmful when it is inhaled into your lungs over a long period of time at low to moderate levels, or short periods at high levels.

From the **1st of July 2020** in NSW dry cutting will be an offence and for those who choose to ignore the law and put their employees a risk, SafeWork inspectors will issue tough new fines for noncompliance.

All subcontractors working on a Taylor project that are using, drilling, cutting, sanding or grinding products that are known to contain silica will need to have a system in place that will allow their workers to either wet cut or drill, or will be required to use dust extraction systems on portable tools, or adopt other methods that eliminate or minimise the generation of silica dust.

### 10.3.8 Hazardous Substances, Chemicals, Oils and Other Contaminants

Prior to commencing work on site, an assessment of the quantities and locations of hazardous substances, chemicals, fuels, oils etc. likely to be held on site must be undertaken. The location of hazardous substances and other contaminants must be marked on a site map. The Site Manager will use the assessment when planning the works to minimise the potential for pollution. This includes providing appropriate storage, separation of incompatible materials and bunding, and ensuring that all activities that use or handle these substances are undertaken in an area that will not cause water pollution or land contamination in accordance with all relevant Australian Standards, and/or EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (DECC,2007).

Spill kits will be provided wherever substances that could potentially cause pollution are stored and handled. Relevant site personnel will be trained in spill response and will be familiar with the contents and function of the spill kit materials on site. All spills, no matter how small, must be cleaned up immediately and be Reported as an environmental incident.

Refuelling or maintenance of plant and equipment, or any other activity which may result in the spillage of a chemical, fuel or lubricant on the site, is not permitted without appropriate temporary controls measures.

The use and storage of any hazardous substances or other chemicals will be made strictly in accordance with the manufacturer's instructions and the relevant materials safety data sheets (MSDS). The quantities of these dangerous/hazardous goods stored and handled at the site must be below the threshold quantities

listed in the Department's Hazardous and Offensive Development Application Guidelines – Applying the SEPP 33 at all times.

#### References:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure.
- Storing and Handling Liquids - Environmental Protection (DECCW).

#### Spill Response

Major spillages must be notified immediately, and all efforts made to contain the spill and prevent escape into storm water drains and waterways, provided it is safe to do so. If the spill is beyond the capacity of the site personnel to contain and clean up, specialist services must be employed.

Minor spillages must be cleaned up immediately. If soil or ground is contaminated, the soil is to be removed and placed into a bag or designated waste drum and disposed of appropriately.

If the spill enters drains or waterways, the

may be required to be reported to the appropriate regulatory authority (local council) as soon as practicable, in accordance with the duty to report under the POEO Act. The decision to report must be discussed with the HSE Manager or a Director prior to making the report.

#### Spill response procedures for this project are:

- Provide site map showing location of all hazardous substances, chemicals, fuels, oils, spill kits, storm water drains and natural waterways (To be provided prior to commencement).
- Spill Response Procedure flow chart (Appendix 3) – This will be developed and submitted with the CC1 application.
- Call emergency services (fire, hazmat): call 000.
- Local council phone number [1300 362 170](tel:1300362170)
- MSDSS are located at: Hammertech

### 10.3.9 Pesticide Use and Storage

If pesticides are used at the site, they must be stored appropriately as per 'hazardous substances' section (11.3.8 above) and used in accordance with the manufacturer's requirements and the NSW Pesticides Management Act and Regulations. The act and regulations have strict record keeping requirements for the use of more than 20 litres of product.

Taylor Construction Group general policy on the use of pesticides is that they should only be applied by suitably qualified pest control contractors.


### 10.3.10 Unexpected finds/Contaminated Land

In compliance with SSDA condition B43 and prior to commencing project work, checks should be made on the potential for the site to be contaminated. This should generally be identified by the client and addressed in an Environmental Impact Assessment.

Should contamination be suspected once working on the site (e.g., unusual odours, visual indications of soil or water pollution, etc.) work should cease immediately and the Taylor's project/ site manager contacted. Where relevant, the client should be notified by Taylor's project manager and investigations undertaken into the nature of the contamination. Work should not recommence until the nature and extent of the contamination is established and can be safely managed without environmental risk.

Taylor and subcontractors shall comply with relevant statutory requirements of Contaminated Land Management Act and the POEO Act (NSW) in relation to disturbance or treatment of potentially contaminated ground. Any material identified as contaminated must be disposed of in accordance with the POEO Act and it's associated





regulations. Details of the final disposal location and the results of any associated testing must be submitted to the Planning Secretary prior to removal of the contaminated material from the site.

The company shall install any control measures needed to divert surface run-off away from contaminated ground and to treat any surface run-off contaminated by exposure to contaminated ground. Contaminated material removed from site must be recorded on the **Waste and Recycling Register QSE-R-16**.

#### References:

- Waste and Recycling Register QSE-R-16.

### 10.3.11 Acid Sulphate Soils (ASS)

Acid sulphate soils are naturally occurring soils generally found in estuarine areas. When exposed to air, they can oxidise and cause run-off of highly acid water. Acid sulphate soils require specialist management techniques.

The client should be aware of any potential for encountering acid sulphate soils and, if there is a potential, it should be addressed in the Environmental Impact Assessment undertaken for the project.

### 10.3.12 Community Complaints

Community letter drop offs will be complete by Public works/WPCA. The letter will outline details of works happening on site and contact details on who to consult in the event of a complaint. Any received complaints will be reported to Taylor to close out in a timely manner. Letter drop offs will also be complete by Taylor for any noisy works that may impact residents as per the noise management plan.

Community complaints should be treated as incidents. They must be reported to the HSE Manager, be thoroughly investigated and reported on SharePoint. Reference to these must also be documented and included in site diary entries. The project or site manager should try to resolve the issue with the community member in a conciliatory manner.


#### References:

- SE-F-21 Incident Report Form.
- SE-F-22 Incident Investigation Form (report on SharePoint – forms are back-up only).
- SE-F-23 KPI Monthly Report (as above).

### 10.3.13 Archaeology and Heritage Management

If any unexpected heritage item is discovered during maintenance and construction works, the following must be taken into consideration:

**Indigenous heritage** – all Aboriginal and Torres Strait Islander, regardless of significance, are protected under law. Should any deposit, artefact or material evidence (including skeletal remains) of Aboriginal and Torres Strait Islander origin be found, Taylor and subcontractors shall cease all construction works that might disturb or damage the deposit, artefact or material. A 10m wide buffer area is to be created around the object or item and this will then be cordoned off. The Project Manager will notify the client immediately, who will then consult the relevant government department (i.e., Heritage NSW, DECCW - National Parks and Wildlife Services). Examples of Aboriginal and Torres Strait Islander objects include stone tool artefacts, shell middens, axe grinding groves, pigment or engraved rock art, burials, and scarred trees. Works 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.



**Historic heritage** – historic (non-Aboriginal) heritage items may include archaeological ‘relics and other historical items such as works, structures, buildings or moving objects. Should any item which is suspected to be of historical heritage value be encountered, Taylor and subcontractors shall cease all construction works that might disturb or damage the item. The Project Manager will notify the client immediately, who will arrange for an officer from the relevant government heritage department to be consulted. A ‘relic’ is ‘any deposit, artefact, object or material evidence that relates to the settlement of the area, not being Aboriginal and Torres Strait Islander settlement; and is of State or local heritage significance’. It can include bottles, remnants of clothing, pottery, building materials and general refuse. This unexpected find must be evaluated, recorded, and if necessary, evaluated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW and Council’s Heritage officer.

**References:**

- Heritage Act 1977.
- National Park and Wildlife Act 1974.
- Unexpected Heritage Items Procedure – Roads and Maritime Services, 2015.

## 11. Incident and Emergency Management

### 11.1 Emergency Response

The Emergency Response Plan for this site has been developed based on a template provided in the **SE-P-07 Project Emergency Control Management Plan**. Additional information for the management and control of emergency situations can be found in the Project Safety Plan (**WHS-PLAN-02**) but a Spill Response Procedure Flow Chart is contained in appendix 3 of this plan. For additional information on response to a spill, refer to section [10.3.8](#).

Emergency response posters and flow charts are to be posted in the site and induction office, WHS notice boards, in crib rooms and other areas of the site as required.

**References:**

- SE-P-07 Project Emergency Control Management Plan.
- QSE-F-10.1 Pre-Start Site QSE Checklist.
- SE-F-31 Emergency Evacuation Rehearsal Register.
- SE-F-05 Site Layout Evacuation Plan.
- SE-F-06 On-Site Emergency Control Plan.

### 11.2 Incident Reporting and Investigation Reporting

Site environmental incidents must be reported to the Project / Site Manager as soon as practically possible. In addition, any major environmental incidents must also be reported to the HSE Manager in accordance with the **Incident Reporting and Investigation Procedure QSE-OP-05**. The priority is to ensure that the situation is controlled as soon as possible and to avoid further pollution or other adverse environmental consequences. Reporting of the incident should not delay any immediate responses to the incident.

Following an incident, PWA/WPCA will need to be notified immediately to communicate the details of the incident to the Planning Secretary. The notification must identify the development (including the development application number and the name of the development) and set out the location and nature of the incident.



**Incident Reports must be completed and forwarded to the HSE manager within 24 hours and must be kept for a minimum of five (5) years.**

Environmental incidents that cause, or threaten to cause, material environmental harm must be reported to the Appropriate Regulatory Authority (ARA, the local council in which the project is located) as soon as practicable following the incident. This would include any spillage or leak of substances that cause water or land pollution. Material environmental harm generally means that the harm is not trivial and/ or costs more than \$10,000 to clean up. The phone number of the ARA should be included in the Emergency Response Plan.

If the Site Manager believes that the incident may be reportable to the ARA, contact the WHS Manager for further advice prior to making an investigation report.

All environmental incidents that cause, or could potentially result, in an environmental harm are to be investigated, and corrective actions implemented following the investigation. Depending on the seriousness of the incident, key site personnel, the HSE Manager, witnesses, etc. should be consulted on the investigation and in determining appropriate corrective or preventive actions.

#### **References:**

QSE-OP-05 Incident Reporting and Investigation Procedure.

SE-F-21 Incident Report Form (report on SharePoint – forms are back-up only).

SE-F-22 Incident Investigation Form (as above).

## **12. Environmental Monitoring and Inspections**

### **12.1 Site Environmental Inspections**

Site environmental inspections are to be undertaken weekly using **SE-F-02 HSE Inspection Checklist** to ensure that environmental hazards are recognised and can be promptly rectified. Additional environmental issues may be added to the site HSE inspection form as required.

### **12.2 Physical Monitoring**

For many projects undertaken by Taylor, physical environmental monitoring is not typically required (e.g., dust, water quality, noise levels and air quality). Should the Environmental Impact Assessment specify that environmental monitoring is required, the project manager will arrange for appropriately qualified consultants to undertake that monitoring. All equipment used to measure environmental parameters will be calibrated in accordance with manufacturer's instructions.

### **12.3 Monitoring of Project Environmental Targets**

Objectives and targets for the project are specified under 'Objectives and Targets' section of the CEMP. Data relating to these targets will be documented daily using site diaries, reviewed by Project / Site Managers monthly and forwarded to the HSE Manager for reporting to senior management.

The KPI monthly report captures information on lag and lead indicators. The current indicators are:

Lag indicators:

- Number of environmental incidents.
- Number of penalty infringement notices (pins) or clean-up notices.
- Number of community complaints.

Lead indicators:

- Number of toolbox talks (combined with WHS and environmental issues);
- Number of environmental inspections undertaken.





- Waste and recycling volumes (initially to set benchmark, then track improvement)

Add any additional KPIs that may be set from Environmental Impact Assessments, conditions of consent and client requirements, etc.

## 13. Non-Conformity, Corrective and Preventive Actions

Taylor has a non-conformance and corrective action process in place to address all non-conformities across the business, regardless of the source. The process is defined in the **Reporting Non-Conformance, Corrective and Preventive Actions Procedure QSE-OP-29**. Typically, environmental non-conformances would result from audits, inspections and from observations by the site manager of poor environmental practices, including incorrect waste disposal/ recycling (liquid waste, poor storage of hazardous substances, oils, chemicals and damage to existing environmental controls such as sediment fencing, etc.). Non-conformances may be issued for serious breaches or repeated minor breaches.

Any non-compliance must be notified to WPCA/PWA within 2 business days of becoming aware of the non-compliance. WPCA/PWA will notify the Planning Secretary in writing via the Major Projects portal within 5 days of being notified by Taylor. The Non-compliance notification must identify the development and the application number for it, set-out the condition of consent that the non-compliance is associated with and the way it does not comply – Including reasoning for non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.

Note that a non-compliance which has been notified as an incident does not need to be notified as a non-conformance to the Planning Secretary.

### References:

- QSE-OP-29 Reporting Non-Conformance, Corrective and Preventive Actions Procedure.
- Notices (electronic) raising of non-conformances (internal).
- Notices (printable) for raising NCRS on subcontractors.

## 14. Purchasing / Procurement

Purchasing and procurement includes the purchase of goods and the supply of services of contractors. When purchasing goods, the following environmental considerations should be considered:

- Is there a less toxic, less harmful alternative (e.g., chemicals, paints, solvents, etc.)?
- How much do we need? Will anything be wasted? Precise ordering will minimise wastage of resources and money.
- Can the product be purchased locally to reduce transport impacts?
- Are there any opportunities to use 'green' products in construction to improve the efficiency of the building in terms of energy and water usage (design issue – may need client input)?
- S-F-18.1 Pre-Hire Purchasing Assessment Form

When engaging contractors, the following should be taken into consideration:

- Has the environmental capability been assessed and signed-off through contract administration?
- Has the contractor attended a pre-award interview and assessed Taylor Construction Group environmental requirements?
- Has **Subcontractor Tender Interview and Assessment Form QSE-F-15.6** been completed?

### References:

- QSE-OP-15 Subcontracting, Purchasing and Hiring Procedure
- QSE-F-15.6 Subcontractor Tender Interview and Assessment Form.

## 15. Contractor Management

Taylor, as the principal contractor, will ensure that contractors performing work on site are aware of the environmental requirements and enforce compliance to requirements.

Prior to commencing on site, contractors are to be inducted to the site as part of the HSE requirements. Inductions will include an environmental component to ensure all contractors are aware of the environmental risks on the project.

Contractors are required to submit Safe Work Method Statements (SWMS) prior to commencement of work as part of the WHS requirements. SWMS must also address the environmental risks for the tasks and will be reviewed and checked-off on **SE-F-14 Safe Work Method Statement Review Form** by the site manager to ensure that all environmental risks are appropriately identified, and controls documented.

Environmental inspections will be undertaken at least once monthly. This will include an inspection of the contractor's work area and checking that all environmental controls are in place. Serious breaches or repeated minor breaches will result in the issue of a Non-Conformance Report, and the issue must be resolved within designated time frames.

## 16. Environmental Audit

Audits of the Environmental Management System will be conducted regularly to ensure the system is appropriately in place and implemented. As part of the audit program, audits will also be undertaken on project sites for compliance to the requirements of the Project Environmental Management Plans. Audits should be undertaken by suitably experienced auditors.

Projects that have duration of more than six months will have at least one audit against the CEMP and, after the six months, will be audited at least once per year. This will generally be undertaken as an integrated audit in conjunction with the Project Safety Plan and Project Management Plan (Quality). Projects with high-risk activities or that performed poorly at the initial audit may be audited at a higher frequency. The HSE Manager is responsible for coordinating project audits.

Monthly audits will be required for erosion and sediment controls on the site. The works are to be supervised and certified by a CPESC. These audits are to be kept on site for the duration of the works and for 12 months following the completion of the construction works.

## 17. Traffic Management

### 16.50. Traffic and pedestrian management


#### General information

It is essential that suitable and effective traffic management and traffic control provisions are established to prevent injury or damage from the interface of plant, vehicles and people that are affected by the works, including site personnel and the travelling public.

Prior to commencing any work on site which involves the interface of mobile powered plant, vehicle, and pedestrian traffic, including deliveries and the removal of materials from site, and in accordance with SSDA condition B1 a suitable on-site Traffic Management Plan shall be developed by Taylor and implemented to reduce the likelihood of conflict between either or all the above.

For the management/ control of traffic and pedestrian flow to and from the project, the project/ site manager shall be responsible for engaging an accredited or RTA approved traffic management consultant to develop a Traffic and Pedestrian Management Plan for the project. This plan shall be submitted to the relevant





authorities/ local council for review and approval (if required by DA consent). The project/ site manager is to ensure that all persons assigned with the responsibility to manage and control traffic or pedestrians are licensed to do so.

- Implement Traffic Control Plan (yellow ticket) and Traffic Controller (blue ticket), now combined.
- Traffic Control - Prepare Work Zone Traffic Management Plan (formally red ticket)

**Public safety.** Taylor Construction recognizes the need to consider public welfare during the planning and construction phase of the project. The project/ site manager and foreman are to ensure, as far as practically possible, the safety of the public and their property always throughout the construction.

When considering public welfare, it must be remembered that this includes traffic and pedestrian movement, residents to neighbouring properties, patrons to local businesses, commuters, school children, the elderly and people with disabilities. To this end, the project and site managers must ensure the following:

- **Traffic Control Setup Check Sheet S-F-21** to be completed where traffic and pedestrian management is required to minimise the impact on the public.
- Requirements of **Traffic Management Procedure QSE-OP-39** are adopted and adhered to by those responsible when setting up and removing traffic management devices and equipment.
- Site activities that have the potential to impact or effect surrounding residents and members of the public are included into the project Risk Assessment and suitable controls are documented.
- Hazards and controls are communicated to those tendering for works as well as to those engaged on the project.
- Gates must be kept locked when not actually in use.
- Traffic controllers are allocated to direct the public when any works are performed in areas of public access.
- Material stocks and stockpiles must be protected with physical barriers or spotters and removed from any public walkway as soon as practical.
- The site and surrounding boundary streets and footpaths must be maintained in a clean manner.
- At the end of each workday, all surrounding boundary streets and walkways must be inspected to ensure they are left in a safe manner.
- Physical barriers shall be erected to separate the site work area from public access.
- Ensure that appropriate signage is displayed warning the public of any traffic and pedestrian access changes and restricted or high-risk areas (i.e. **no-go zones**).

Further Details of the Traffic management plan can be found in appendix 7

#### References:

**Traffic Management Procedure QSE-OP-39**

**Traffic Control Setup Check Sheet S-F-21**

**Stantec - Traffic Management Plan**



## 18. Review of This Plan

This Environmental Management Plan must be reviewed by the project manager in consultation with the project team and HSE manager whenever any major change occurs on the site that may have an impact on the environment, or at least twice (every six months) during construction.

## **Appendix 1 – Global Mark Accreditation**





global-mark®

# Certificate of Approval

This certificate confirms that the company below complies with the following standard:

Company Name	Taylor Construction Group		
Company Other Name			
Client ID	101009	Scheme	Environmental Management Systems Scheme
Certification Standard	AS/NZS ISO 14001-2016: Environmental management systems - Requirements with guidance for use		
Scope of Certification	Design, construction, project management and property development services		
Type of Certification	Management System		

The control set source for controls applied in the Statement of Applicability (referenced above) does not imply these controls are certified by Global-Mark.

#### CERTIFICATE DATES:

Original / Initial	19/11/2009	Last Certificate update	13/05/2021
Certification / Re Certification	4/05/2021	Expiry	7/05/2024
Last Certification Decision	13/05/2021		

#### APPROVED COMPANY/SITE ADDRESS(ES):

Level 13, 157 Walker Street North Sydney NSW 2060 Australia

The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to those activities covered by JAS-ANZ accreditation. Refer to [www.jas-anz.org/register](http://www.jas-anz.org/register) for verification.

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions.

This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN.108-087-654



Certification Manager

Unique Certificate Code: E1SD2CE263BF3E6CCA2586CF0001C4EF

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## **Appendix 2 – Environmental Policy**

# Environmental Policy

Taylor regards appropriate management of environmental issues as integral to our business. We are committed to the protection of the environment and ecologically sustainable practices in all aspects of our operations.

We will comply with all relevant legislation governing the protection of the environment. Our environmental management systems will address all aspects of the International Standard, ISO 14001:2016: "Environmental Management Systems – Requirements with guidance for use".

## In managing our business, we make a commitment to:

- Work pro-actively with our clients, regulators, and other community stakeholders to enable environmental issues to be addressed at an early stage of development.
- Take local community views into consideration and ensure that we inform, listen to and respond to reasonable concerns relating to our projects.
- Undertake our activities in a manner that is consistent with the principles of ecologically sustainable development.
- Prevent pollution and reduce adverse environmental impacts of our activities on the natural, built and cultural environment.
- Promote the efficient use of natural resources and reduce waste through the use of the waste hierarchy – avoid, reduce, re-use, recycle and finally dispose.
- Set realistic environmental objectives and targets at all relevant levels within the company and continually monitor performance.
- Promote environmental awareness among all employees and subcontractors to achieve our environmental objectives.
- Continually improve our environmental performance through periodic review and evaluation of our policy and management systems to ensure they remain suitable, adequate and effective.
- Encourage a sense of personal responsibility for environmental issues amongst employees and subcontractors through effective communication, training and positive organisational culture.

This policy will be reviewed in December 2022.



George Bardas  
Chief Executive Officer





## **Appendix 3 – Taylor’s Construction Spill Reponse Procedure Flow Chart**



## Taylor's Construction Spill Reponse Procedure Flow Chart



# **Appendix 4 – Site Environmental Emergency Reponse Plans**





## Site Environmental Emergency Reponse Plans

Potential emergency	What to do?	Relevant authorities and persons
<b>Injury caused by:</b> <ul style="list-style-type: none"> <li>- Fire</li> <li>- Explosion</li> <li>- Machinery accidents</li> <li>- Minor injuries</li> </ul>	<ul style="list-style-type: none"> <li>- For serious injuries, call an ambulance. You should also have the contact details of the nearest doctor, medical centre and hospital.</li> <li>- Immediately inform the site first aid officer.</li> <li>- Follow the procedures as detailed in the Site Safety Plan.</li> <li>- For major injuries, contact the site manager or project manager.</li> </ul>	<ul style="list-style-type: none"> <li>- Emergency services</li> <li>- Nearest doctor</li> <li>- Medical centre</li> <li>- Site Manager</li> <li>- Project Manager</li> </ul>
<b>Fire</b> <b>Fire at the diesel tank</b> <b>Fire at any of the machineries</b> <b>Fire caused by vandalism</b>	<ul style="list-style-type: none"> <li>- Evacuate all personnel to a safe area immediately.</li> <li>- Call the fire brigade (emergency services).</li> <li>- If the fire is likely to damage neighbouring property, inform the adjacent residents.</li> <li>- Follow the procedures as detailed in the Site Safety Plan.</li> <li>- For major fire emergencies, contact the site manager or project manager.</li> <li>- Inform terminal security.</li> </ul> <p><b>Note:</b> fire extinguishers are located throughout the site as detailed in the Emergency Evacuation Map.</p>	<ul style="list-style-type: none"> <li>- Emergency services</li> <li>- Site Manager</li> <li>- Project Manager</li> <li>- Adjacent residents</li> </ul>
<b>Spills management and contaminated soils.</b> <b>Major spills:</b> <ul style="list-style-type: none"> <li>- Spill or release of diesel fuel or oil</li> <li>- Spill or release of other hazardous chemicals or material.</li> </ul>	<p>For major spills (defined as a spill that is likely to have direct environmental consequences):</p> <ul style="list-style-type: none"> <li>- Immediately call the Fire Brigade and notify the project manager.</li> <li>- Identify the source of the spill.</li> <li>- Refer to the Material Safety Data Sheet (MSDS) and evaluate the hazards of the material.</li> </ul>	<ul style="list-style-type: none"> <li>- Emergency services (fire brigade)</li> <li>- HSE Manager</li> <li>- Site Manager and Project Manager</li> <li>- EPA</li> </ul>
<b>Minor site spills</b> <b>Acid sulphate soils</b>	<ul style="list-style-type: none"> <li>- If the material is dangerous, evacuate the site immediately and notify all neighbours.</li> <li>- If it is safe to do so, halt the source of the spill immediately.</li> <li>- Contain the spill and control its flow.</li> <li>- Block storm water drains downstream of the spill.</li> <li>- EPA and local council must be notified about any spills that are likely to threaten the environment.</li> <li>- Minor spills (defined as spills which can be contained and rectified correctly without the need of external services), shall be contained and rectified with the site spill kit and disposed of correctly. Superintendent to be notified via incident report.</li> </ul>	<ul style="list-style-type: none"> <li>- Emergency services (fire brigade)</li> <li>- HSE Manager</li> <li>- Site Manager and Project Manager</li> <li>- EPA</li> </ul>



Potential emergency	What to do?	Relevant authorities and persons
	<ul style="list-style-type: none"><li>– Reported to the Site Manager.</li><li>– Where acid sulphate soils are discovered, the spoil shall not be removed from site; subsequent notification and testing will follow.</li></ul>	
<b>Heavy rainstorm and flood beyond the capacity of the sediment and erosion controls on-site or failure of the sedimentation control measures.</b>	<ul style="list-style-type: none"><li>– Contain/ minimise the flow.</li><li>– Contact council immediately.</li><li>– Investigate reasons for failure and prepare an incident report.</li><li>– Contact the Project Manager.</li></ul>	<ul style="list-style-type: none"><li>– Council</li><li>– Site manager</li><li>– Project manager</li></ul>
<b>Discovery of items of conservation value (e.g., flora and fauna, heritage).</b>	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	<ul style="list-style-type: none"><li>– Site Manager</li><li>– Project Manager</li></ul>
<b>Discovery of contaminated material on site (e.g., underground fuel storage tanks).</b>	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	<ul style="list-style-type: none"><li>– Site Manager</li><li>– Project Manager</li></ul>



# Appendix 5 – Sediment Control Plan



11 JAN 23  
Our Ref: 22030

**Chris Roberts**  
Senior Civil & Structural Engineer  
Urban & Place, NSW/ACT

Dear Mr Roberts

**Re: Review of Erosion and Sediment Control Plans**

I have reviewed the following plans against the requirements of Condition B10 of SSD 25452459;

- i. EROSION AND SEDIMENT NOTES: 606462285-SHT-00-1000-C1-0041
- ii. EROSION AND SEDIMENT CONTROL PLAN – PHASE 1: 606462285-SHT-00-1000-C1-0031
- iii. EROSION AND CONTROL SEDIMENT DETAILS : 606462285-SHT-00-1000-C1-0901

ErSed collaborated with AECOM in the preparation of the erosion and sediment control strategy, providing feedback and mark-ups for AECOM to include in the plans and confirm that they:

- Provide suitable presentation of controls required at the site during the indicated stage of constructions and have been prepared in accordance with indicated best practice and guidance:
  - Managing Urban Stormwater Soils and Construction Vol.1 (“the Blue Book”) Landcom 2004
  - WSUD design principles set out in the Technical Guidance for achieving Wianamatta South Creek Stormwater Management Targets (NSW Government, 2022), Chapter 3 ESC Principals.

And

- Demonstrate the construction approach and timing so that the construction phase stormwater quality targets are met.

In accordance with SSDA condition B11, monthly audits of these plans and their implementation are to be completed by CPESC and kept on site for the duration of the construction and for a further 12 months following completion of construction works.

Please contact me if you require further information.

Sincerely



Carl Vincent  
Principal  
ErSed Environmental Pty Ltd  
Certified Professional in Erosion and Sediment Control (CPESC #2385)



### SEDIMENT BASIN OPERATION & DEWATERING

1. NO WATER TO BE RELEASED FROM BASIN UNTIL SEDIMENT CONCENTRATES ARE LESS THAN 50mg/L FOR BASINS OTHER THAN TYPE B
2. MINIMUM STORAGE IN BASINS, AS NOTED IN THE BASIN SCHEDULE, ARE TO BE MAINTAINED/RETURNED WITHIN 5 DAYS OF CESSATION OF RAINFALL.
3. GYPSUM IS TO BE STORED ON SITE OR TO BE AVAILABLE TO DOSE BASIN AT 35kg/100m<sup>3</sup> - MINIMUM 112kg TO BE AVAILABLE.
4. DEWATERING ACTIVITIES ARE TO BE DIRECTLY SUPERVISED FOR THEIR ENTIRE DURATION.
5. SITE RECORDS ARE TO BE MAINTAINED FOR SAMPLING, TESTING AND DISCHARGES.

### FLOCCULATION

1. TYPE C AND D SEDIMENT BASINS ARE TO BE TREATED WITH AN APPROPRIATE FLOCCULANT AS AGREED AND APPROVED BY THE ON-SITE CPESC.
2. FLOCCULANT USE AND RATES FOR TYPE B BASINS WILL BE CONFIRMED BY CPESC FOLLOWING JAR TESTING.
3. TYPE C AND D BASINS SHOULD THEN BE DRAINED FOLLOWING A PERIOD OF AT LEAST 3 DAYS, PROVIDING WATER ANALYSIS TESTS SHOW SUSPENDED SEDIMENT CONCENTRATIONS ARE BELOW 50mg/L AND PER THE BELOW TABLE:

WQ	CRITERIA
TSS	<50 PPM
pH	pH 6.5-8.5
NO VISIBLE	OIL OR GREASE

4. REFER TO APPENDIX E, SECTION E4.1 OF MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION VOL 1 (THE BLUE BOOK) FOR PROPER PROCEDURE OF GYPSUM APPLICATION.

### SITE ACCESS MANAGEMENT

1. SITE CONSTRUCTION ACCESS IS TO BE VIA A NORTHERN ACCESS ROAD.
2. STABILISED SITE ACCESS CONTROLS ARE TO BE ESTABLISHED AT THE EXITS TO SITE AS PER THE PROVIDED DETAILS AND PLANS.
3. DAMAGE TO EXISTING ROAD INFRASTRUCTURE AS A RESULT OF CONSTRUCTION ACTIVITIES ARE TO BE RECTIFIED BY THE CONTRACTOR AT THE COMPLETION OF WORKS.
4. ALL CONSTRUCTION MACHINERY AND MATERIALS ARE TO BE LOADED AND UNLOADED WITHIN THE SITE BOUNDARY.

### CLEARING & GRUBBING

1. ALL SILT FENCES AND FILTER BARRIERS ARE TO BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY LAND CLEARING ACTIVITIES.
2. TYPE B BASINS, AS NOMINATED ON PLANS, ARE TO BE CONSTRUCTED AND STABILISED PRIOR TO ANY SITE DISTURBANCE OR CLEARING.
3. CLEARING OF THE SITE IS TO BE STAGED, TO MINIMISE DURATION OF DISTURBED EARTH BEING EXPOSED.
4. CLEARING AND GENERAL EARTHWORKS ARE TO BE AVOIDED DURING PERIODS OF EXPECTED RAINFALL OR FOLLOWING HEAVY PERIODS OF RAINFALL THAT HAS RESULTED IN SATURATED SOIL.
5. STRIPPING OF TOPSOIL TO OCCUR ONLY AFTER PRIMARY DEDICATED SEDIMENT CONTROLS HAVE BEEN PUT IN PLACE.

### CLEAN WATER DIVERSION

1. ALL UPSTREAM DIVERSION SWALES ARE TO BE ESTABLISHED AND STABILISED AS PER THE PROVIDED SOIL & WATER MANAGEMENT PLAN AND THIS ESCP AT THE START OF WORKS, FOLLOWING SITE ESTABLISHMENT, TO DIRECT CLEAN UPSTREAM WATER FROM UNDISTURBED AREAS AROUND THE SITE.

### STOCKPILE MANAGEMENT

1. ALL TOPSOIL IS TO BE STOCKPILED ON SITE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.
2. DETAILS OF NOMINATED STOCKPILE AREAS AND CONTROL MEASURES ARE PROVIDED ON THESE ESCP PLANS AND DETAILS.
3. STOCKPILES NOT WORKED WITHIN A PERIOD OF 10 DAYS WILL BE STABILISED PER THE REQUIREMENTS OF THE BLUE BOOK TABLE 7.1
4. STOCKPILES TO BE MIN 10m FROM DRAINAGE LINES AND NOT UNDER DRIP LINE OF TREES THAT ARE TO BE RETAINED

### REFUELLING

1. VEHICLE REFUELING AREAS ARE TO BE LOCATED OUTSIDE THE PATH OF EXPECTED OR POTENTIAL OVERLAND FLOWS OF RAIN WATER.
2. VEHICLE MAINTENANCE AND REUELING AREAS ARE TO BE FITTED WITH DRIP PANS OR SIMILAR TO CONTROL POLLUTION RUNOFF.

### EMERGENCY PROCEDURES FOR SPILLS

1. A CEMP IS TO BE PREPARED BY THE CONTRACTOR THAT PROVIDES SUFFICIENT DETAIL ON THE PROPOSED METHOD OF STORAGE AND HANDLING OF ALL CHEMICAL, PETROLS, LUBRICANTS AND OILS. THE CEMP IS TO INCLUDE DETAILS ON EMERGENCY SPILL PROCEDURES, RESPONSIBLE PERSONNEL, AND EMERGENCY CONTACTS.

### SITE STABILISATION AND REVEGETATION

1. REVEGETATION AND STABILISATION WILL BE CONSIDERED UNSATISFACTORY UNLESS A MINIMUM 70% GROUND COVER, AT LEAST 100mm HIGH IS ACHIEVED OVER ALL DISTURBED AREAS. REFER TO TABLE 7.1 OF THE BLUE BOOK FOR TIMING FOR STABILISATION REQUIREMENTS.
2. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE TRACK ROLLED, SEEDED OR MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED
3. A STRIP OF TURF IS TO BE PLACED IMMEDIATELY BEHIND THE KERB AND GUTTER ON ALL NEW ROADS AND AT ADDITIONAL LOCATIONS AS DETERMINED BY THE PRINCIPAL AUTHORISED PERSON.
4. THE AREA OF ALL STORMWATER AND SEWER LINES NOT IN STREETS IS TO BE MULCHED AND SEEDED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14-DAYS AFTER BACKFILL.
5. AREAS OVER ELECTRICITY POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE SEEDED AND MULCHED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14-DAYS AFTER BACKFILL
6. STABILISATION OF ALL CUT AND FILL SLOPES SHALL BE COMMENCED WITHIN 14-DAYS OF COMPLETION OF FORMATION.
7. ANY SEEDED AREAS WHICH FAIL TO GERMINATE OR WHERE GERMINATION IS SPARSE AFTER 21 DAYS FROM INITIAL SEEDING MUST BE RESEDED.
8. NO MORE THAN 150m OF TRENCHING SHALL BE OPEN AT ANY ONE TIME.
9. ALL FILL AREAS ARE TO BE LEFT WITH A WINDROW AT LEAST 200mm HIGH AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS, AND ALL EARTHWORKS AREAS SHALL BE ROLLED EACH EVENING TO "SEAL" THE EARTHWORKS.

### RAINFALL INSPECTION FREQUENCY AND RECORDING

1. DAILY RAINFALL LOGS ARE TO BE RECORDED AND MAINTAINED ON SITE.
2. SITE INSPECTIONS FOR ALL ESC MEASURES ARE TO BE CONDUCTED WITHIN 24 HOURS PRIOR TO ALL EXPECTED RAINFALL AND WITHIN 12 HOURS OF ALL RAINFALL EVENTS THAT HAVE GENERATED RUNOFF.
3. VISUAL INSPECTION FOR RAINFALL IMPACT OF ALL ESC MEASURES IS TO BE DONE DAILY DURING RAINFALL EVENTS.
4. IDENTIFIED FAILURES OF ESC MEASURES ARE TO BE INVESTIGATED FOR CAUSE AND NEW MEASURES IMPLEMENTED TO SUIT.

### INSTALLATION, MONITORING AND MAINTENANCE OF ESC MEASURES

1. SEDIMENT CONTROLS ARE TO BE INSTALLED PRIOR TO LAND CLEARING OR EARTHWORKS.
2. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED AT ALL TIMES SO THAT THOSE MEASURES ARE FULLY FUNCTIONAL AND OPERATIONAL DURING THE CURRENCY OF WORKS. ALL SUCH CONTROLS MUST ALSO BE FULLY FUNCTIONAL AND OPERATIONAL SHOULD WORK OPERATIONS CEASE TEMPORARILY (e.g. WEEKENDS, RDO, etc.)
3. ALL FINAL EROSION PREVENTION MEASURES, INCLUDING ESTABLISHMENT OF GRASSING, ARE TO BE COMPLETED PRIOR TO THE SITE FINAL INSPECTION.
4. INSPECTIONS BY SITE SUPERINTENDENT OR SITE ENVIRONMENTAL REPRESENTATIVE IS REQUIRED FOR BOTH PRE- AND POST- RAINFALL EVENTS.
5. DUST SUPPRESSION MEASURES ARE TO BE ENFORCED DURING THE EXCAVATION OF THE SITE AND ARE TO BE MAINTAINED DURING THE CONSTRUCTION AS DEEMED APPROPRIATE BY PRINCIPAL AUTHORISED PERSON.

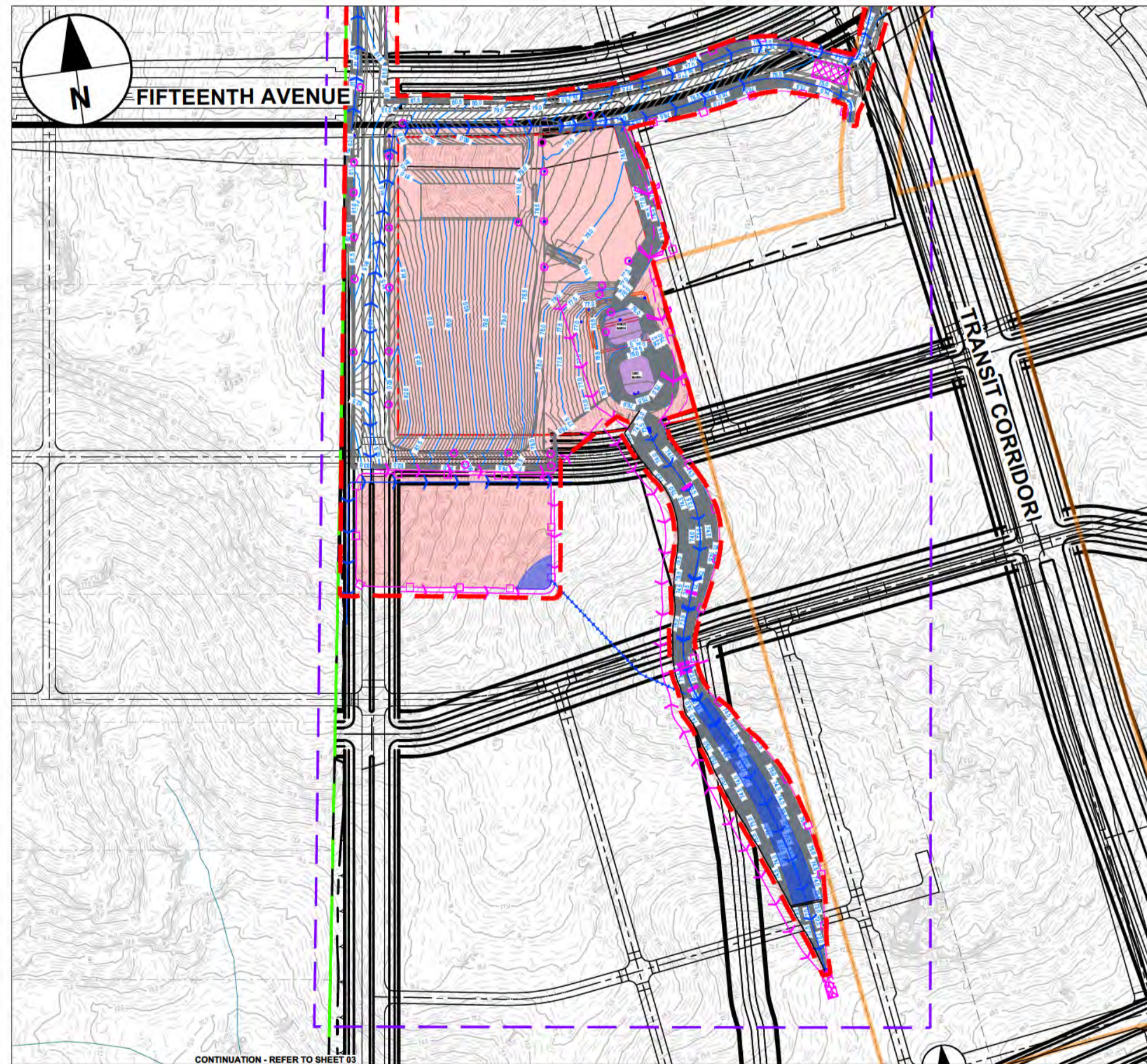
### ESC MODIFICATION TRIGGERS

1. ESTABLISHMENT OF FIRE BREAKS SHALL BE CARRIED OUT IN CONSULTATION WITH A FIRE CONTROL OFFICER.

### STAGING

1. TYPE B SEDIMENT BASINS, AS NOMINATED ON PLAN, ARE TO BE CONSTRUCTED FIRST AND INSPECTED BY CPESC AS BEING PROPERLY STABILISED AND FULLY OPERATIONAL BEFORE ANY FURTHER GROUND DISTURBANCE TAKES PLACE.
2. INSTALL EROSION AND SEDIMENT CONTROLS INCL. CATTLE GRID TO NORTH. ESTABLISH SITE CARPARK AND ACCOM.
3. INSTALL SWALE TO THE SOUTH WEST OF THE PROJECT (OSD AND BIO RETENTION INSTALLED AT THIS STAGE) DIG OUT IN GROUND SERVICES TO THE SITE ACCOMMODATION
4. EXCAVATE NEW CARPARK/EXISTING SWAMP TO THE EAST OF THE BUILDING. MAINTAIN STOCKPILE TO THE SOUTH OF SITE
5. EXCAVATE BUILDING FOOT PRINT AND LANDSCAPE AREAS AND PREPARE MOBILE CRANE PLATFORMS. MAKE GOOD TO STOCKPILE TO THE SOUTH OF SITE. POTENTIAL TO MOVE EARTH TO THE LOCATION OF THE CARPARK
6. INSTALL PILING PLATFORM (TO THE UNDERSIDE OF THE SOG) TO THE SITE FOOTPRINT AND ROADBASE/GRAVEL (OR SIMILAR MATERIAL TO BE REUSED FOR ROADWORKS OR LEFT IN PLACE PENDING INGROUND SERVICES DESIGN) TO THE NEW CARPARK TO ALLOW TO REDIRECT TRAFFIC FROM EASTERN ROAD TO NORTHERN ROAD
7. OPPORTUNITY TO CAPTURE WORKS TO THE ROAD ON THE NORTH OF SITE PENDING DESIGN/RESOURCING.

### STAGE 1



PLAN

SCALE 1:2500

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.

Last saved by: ROBERTSC2(2023.01.11) Last Picked: 2023.01.11  
Filename: C:\P\WORKING\AECOM\_DS10\_AU\CHRIS.ROBERTS@AECOM.COM\031272369646285-SHT-00-1000-CI-0041.DWG



CONSULTANT

AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT

AEROTROPOLIS  
CORE PRECINCT  
BRINGELLY

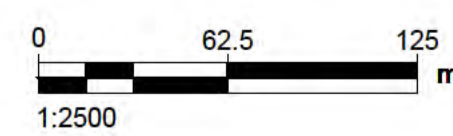
CLIENT



Western Parkland City  
Authority

KEY PLAN

SCALE BAR



SAFETY IN DESIGN INFORMATION

ARE THERE ANY ADDITIONAL HAZARDS / RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING?

- NO  
 YES

PROJECT MANAGEMENT INITIALS

DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	AHD	SURVEY	GDA94/MGA57

ISSUE/REVISION

IR	DATE	DESCRIPTION
4	11.01.2023	FOR CONSTRUCTION
3	10.01.2023	DRAFT
2	30.11.2022	DRAFT
1	28.11.2022	DRAFT

PROJECT NUMBER

60646285

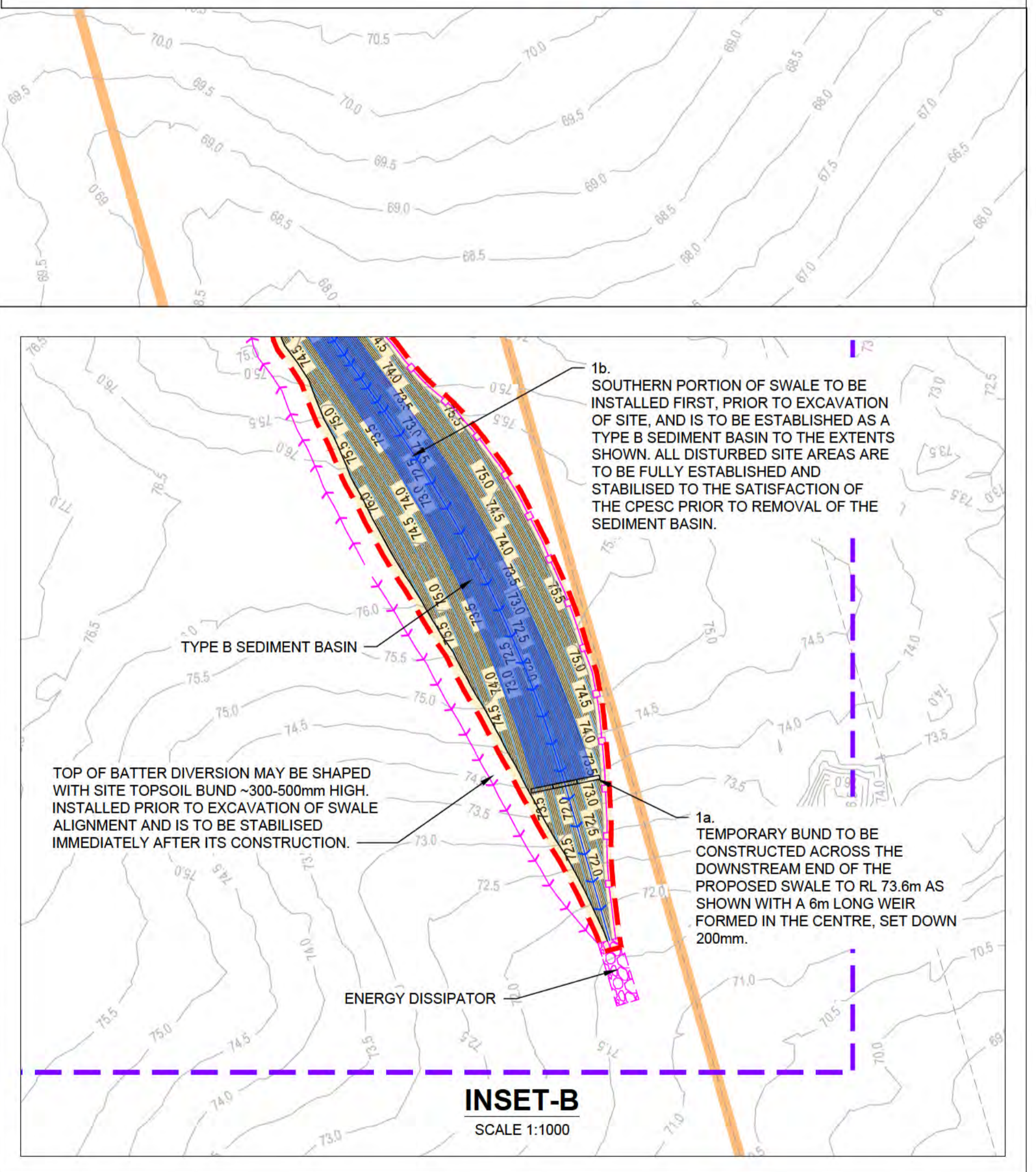
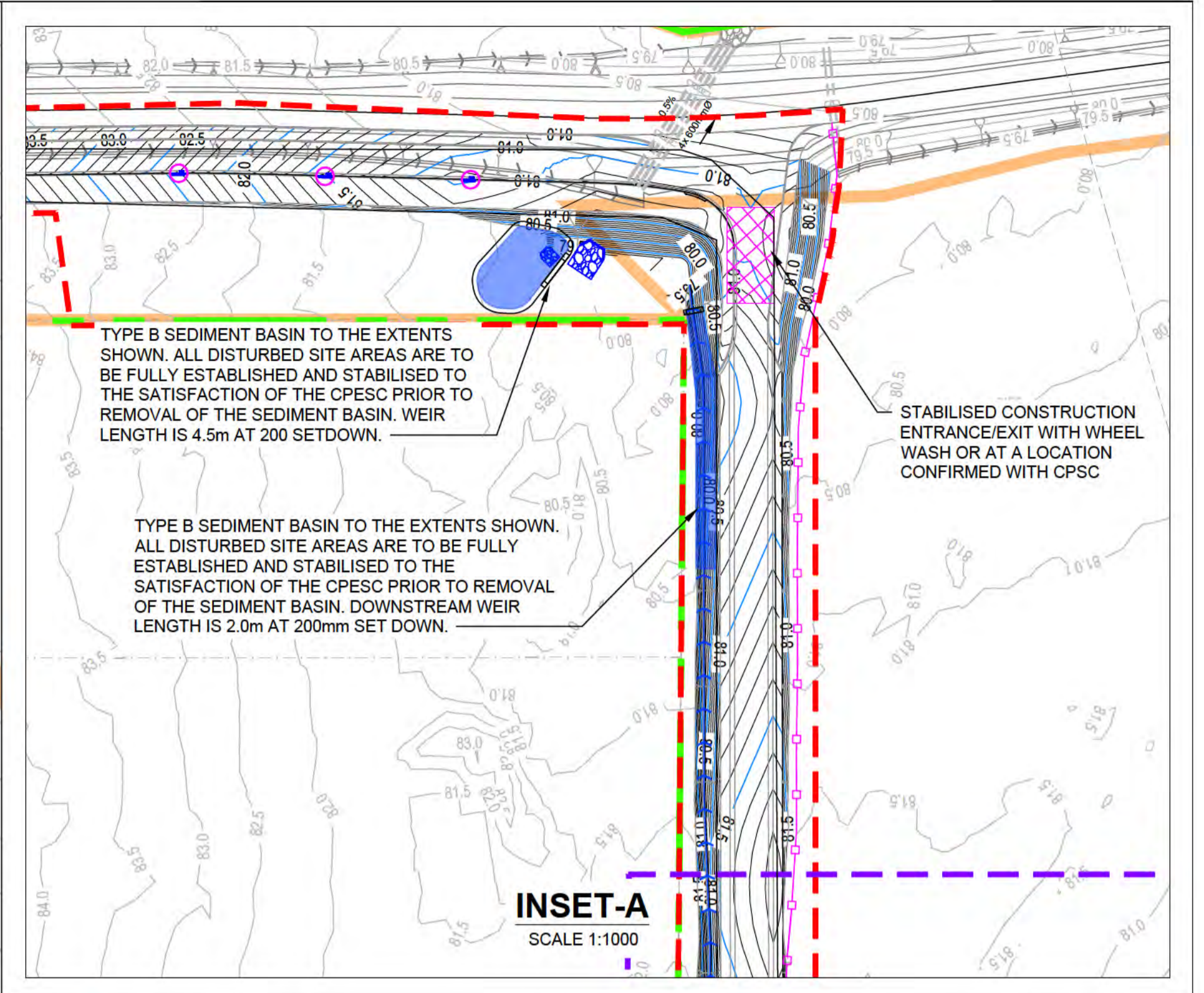
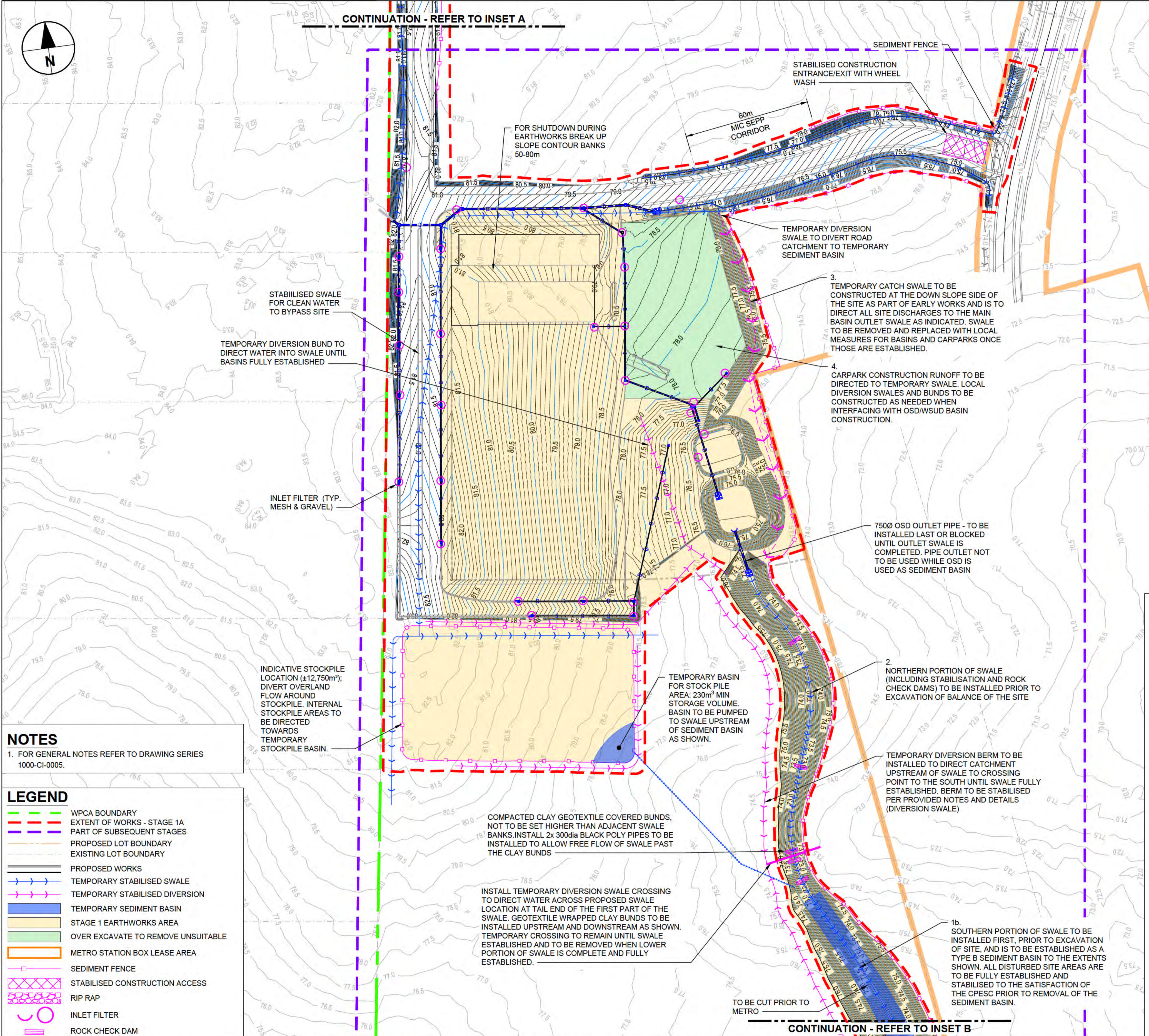
SHEET TITLE

EROSION AND SEDIMENT  
NOTES

SHEET NUMBER

60646285-SHT-00-1000-CI-0041





**NOTES**

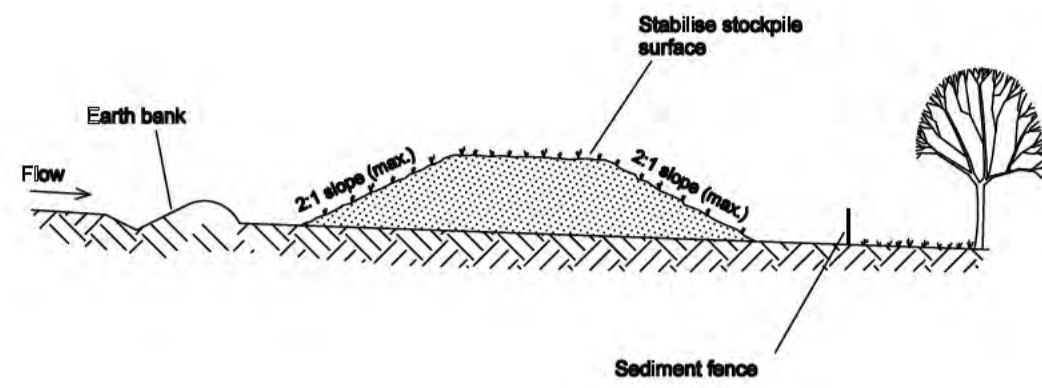
1. FOR GENERAL NOTES REFER TO DRAWING SERIES 1000-CI-0005.

**LEGEND**

- WPCA BOUNDARY
- EXTENT OF WORKS - STAGE 1A PART OF SUBSEQUENT STAGES
- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED WORKS
- TEMPORARY STABILISED SWALE
- TEMPORARY STABILISED DIVERSION
- TEMPORARY SEDIMENT BASIN
- STAGE 1 EARTHWORKS AREA
- OVER EXCAVATE TO REMOVE UNSUITABLE
- METRO STATION BOX LEASE AREA
- SEDIMENT FENCE
- STABILISED CONSTRUCTION ACCESS
- RIP RAP
- INLET FILTER
- ROCK CHECK DAM

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.

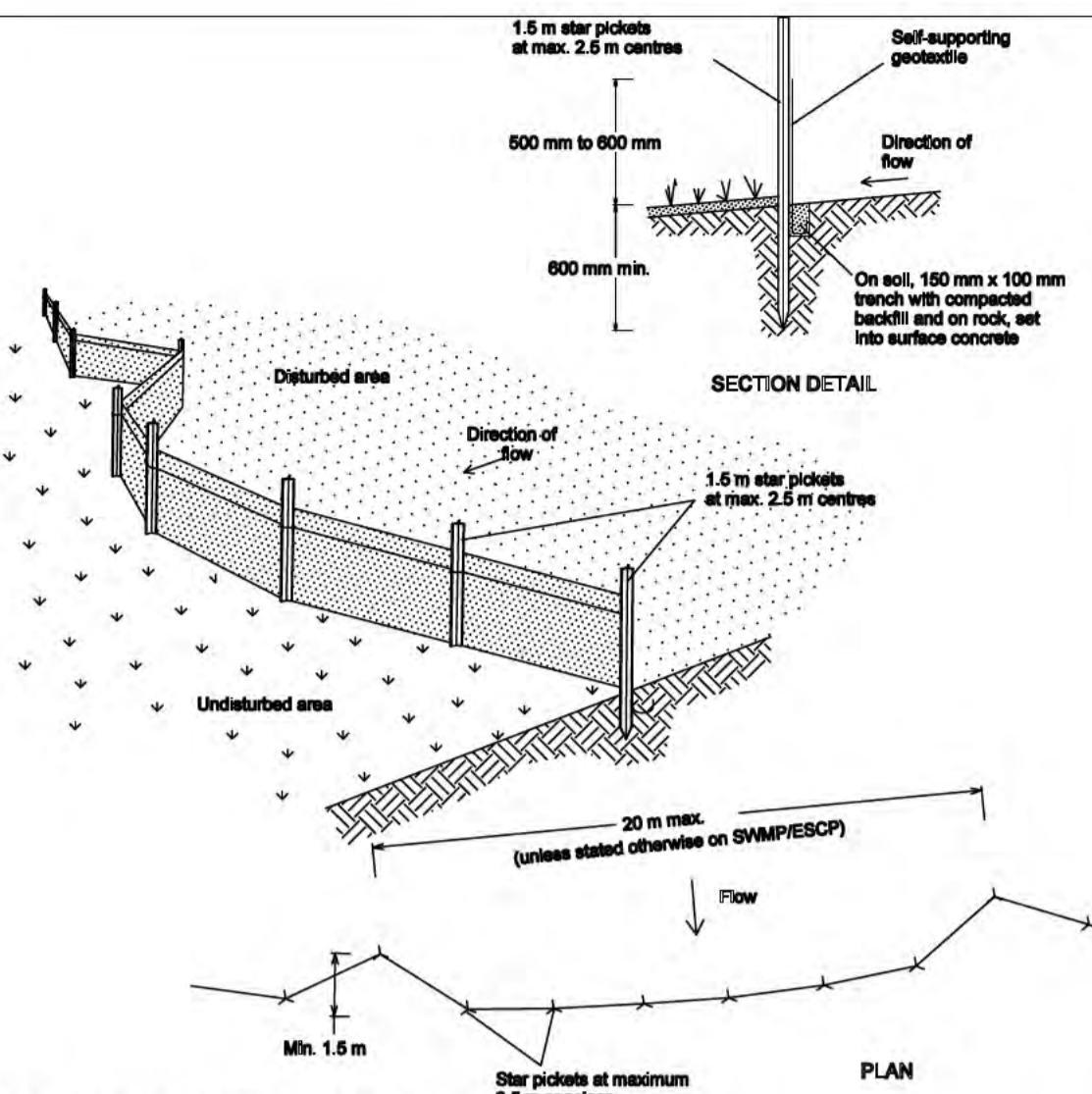




**CONSTRUCTION NOTES**

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks on the upslope side to divert water around stockpiles and sediment fences 1 to 2 metres downslope.

**STOCKPILE PROTECTION**

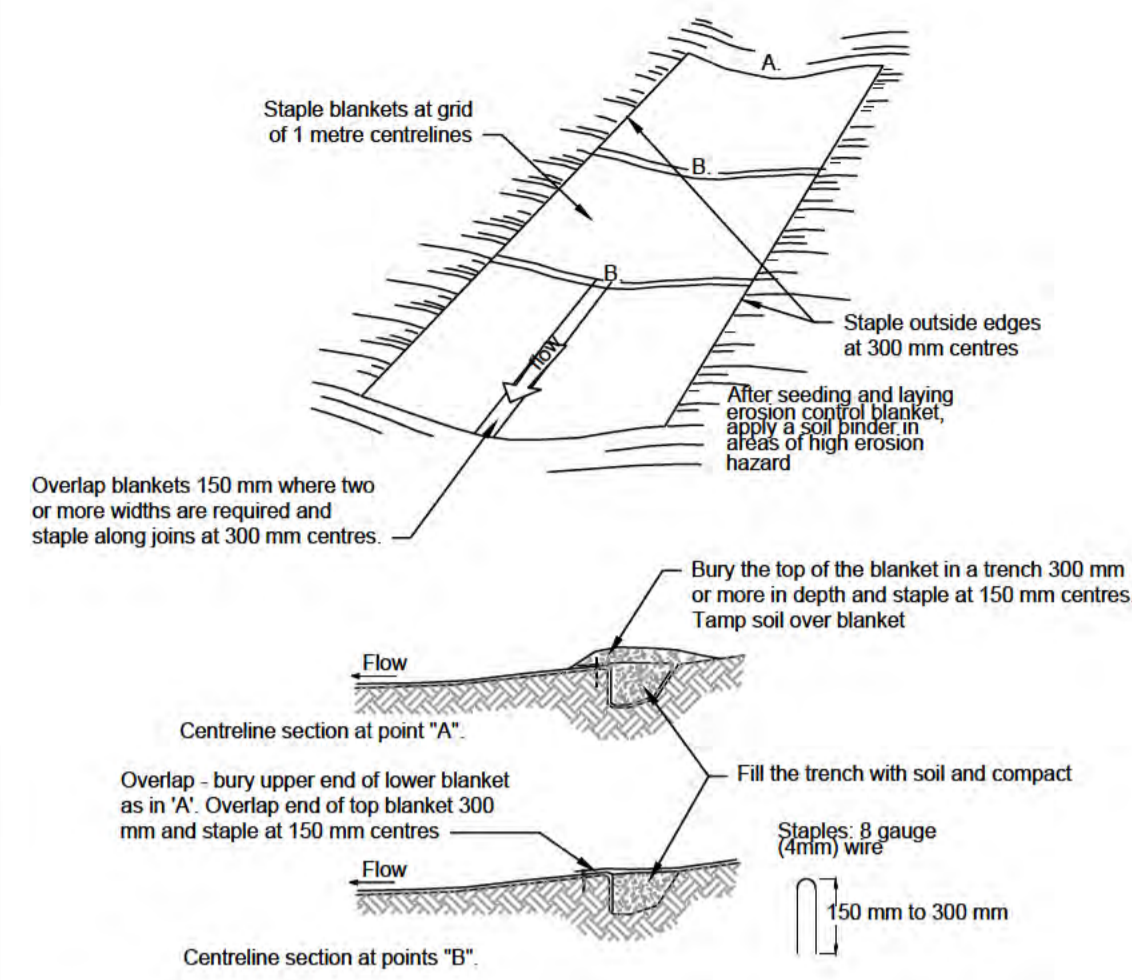


**CONSTRUCTION NOTES**

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section, the catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. fix the geotextile with wire ties or as recommended by the manufacturer. only use geotextile specifically produced for sediment fencing. the use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

**SEDIMENT FENCE**

SD 6-8

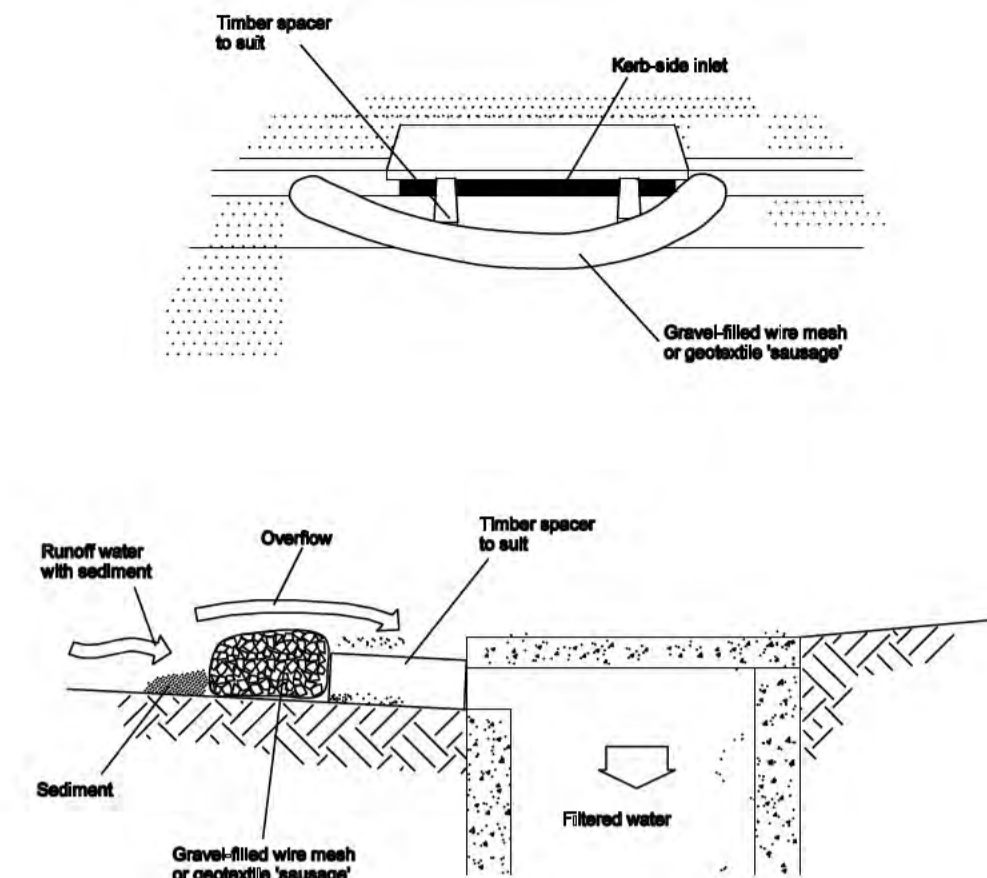


**CONSTRUCTION NOTES**

1. Remove any rocks, clods, sticks or grass from the surface before laying matting
2. Ensure that topsoil is at least 75 mm deep.
3. Complete fertilising and seeding before laying the matting.
4. Ensure fabric will be continuously in contact with the soil by grading the surface carefully first.
5. Lay the fabric in "shingle-fashion", with the end of each upstream roll overlapping those downstream. Ensure each roll is anchored properly at its upslope end (Standard Drawing 5-7b).
6. Ensure that the full width of flow in the channel is covered by the matting up to the design storm event, usually in the 10-year ARI time of concentration storm event.
7. Divert water from the structure until vegetation is stabilised properly.

**RECP : CONCENTRATED FLOW**

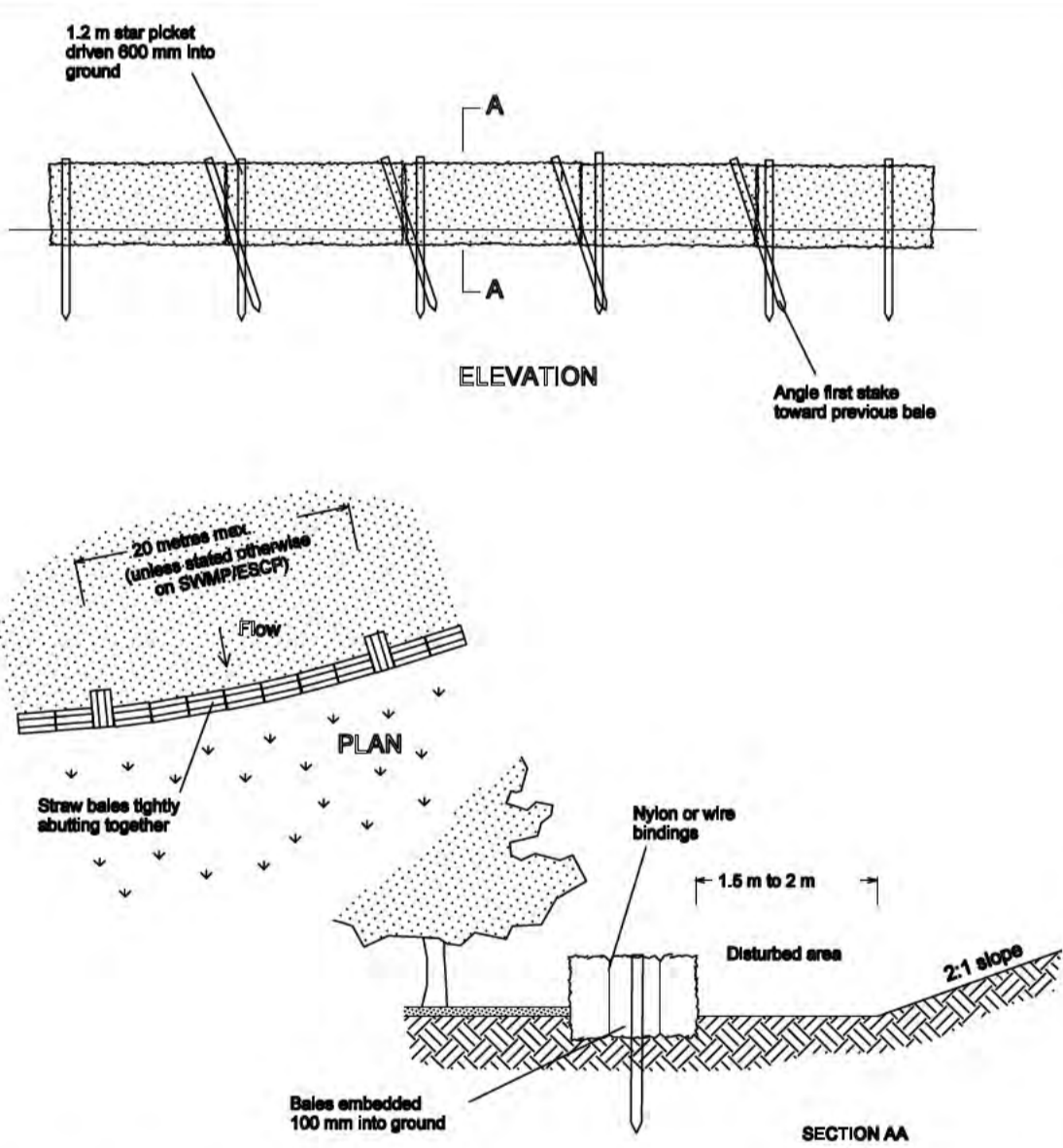
SD 5-7



**Construction Notes**

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

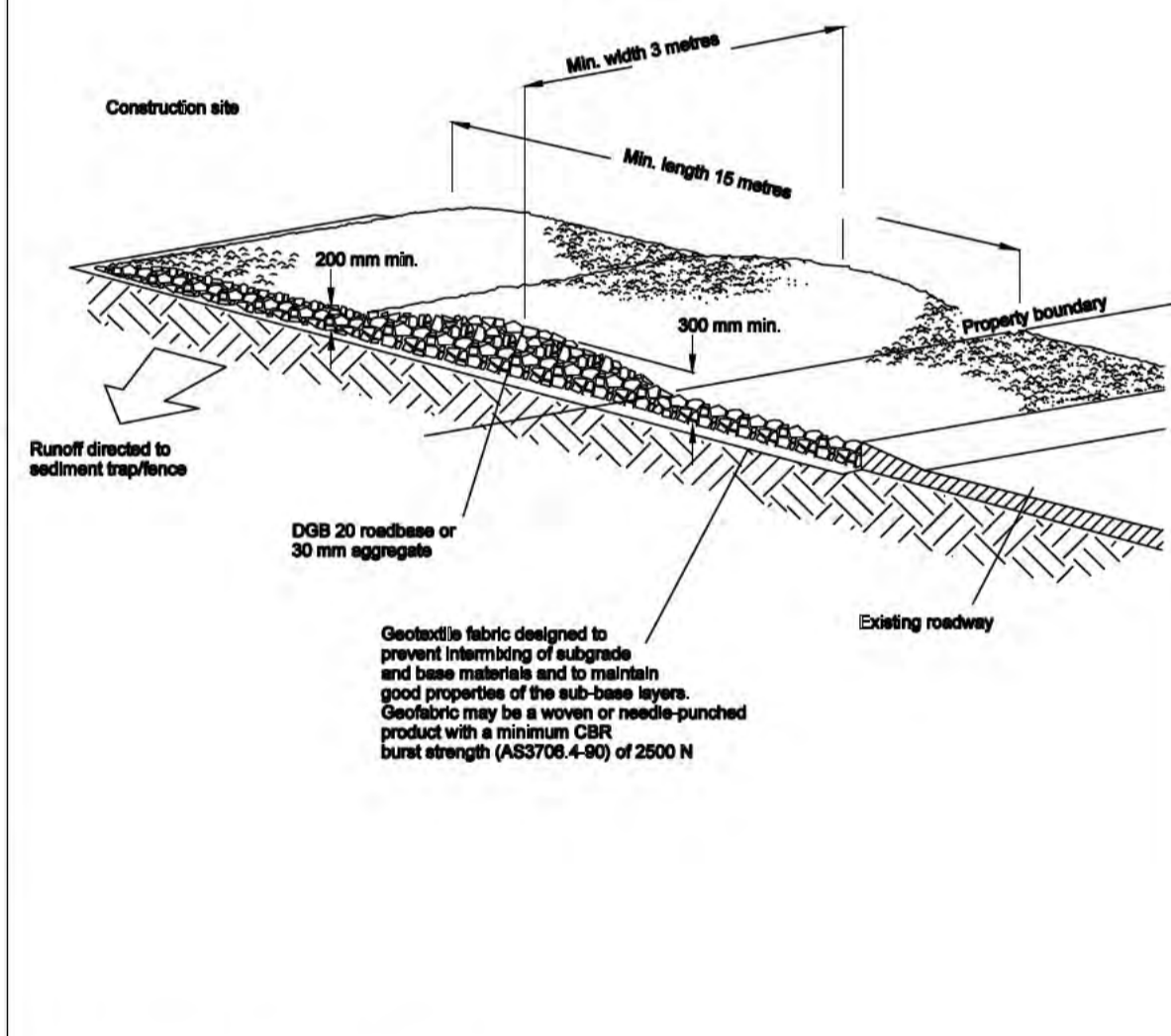
**MESH AND GRAVEL INLET FILTER**



**CONSTRUCTION NOTES**

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

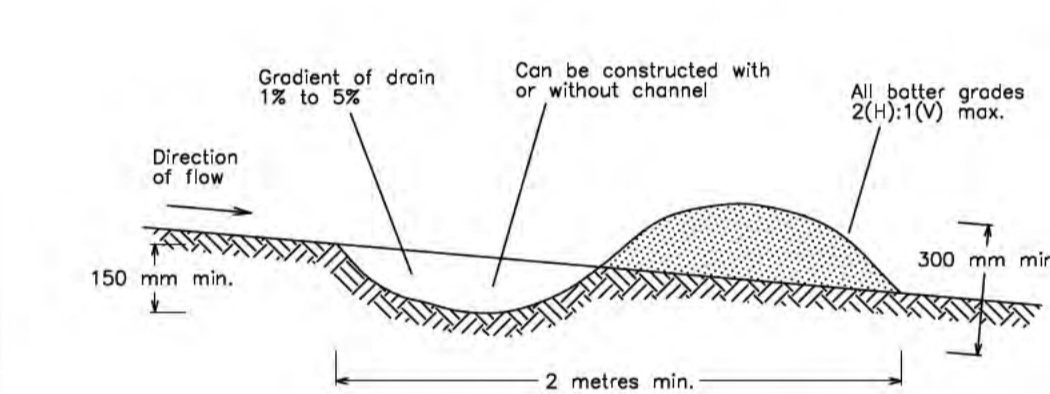
**STRAW BALE FILTER**



**CONSTRUCTION NOTES**

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200 mm thick pad over the geotextile using road base or 30 mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
5. Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence

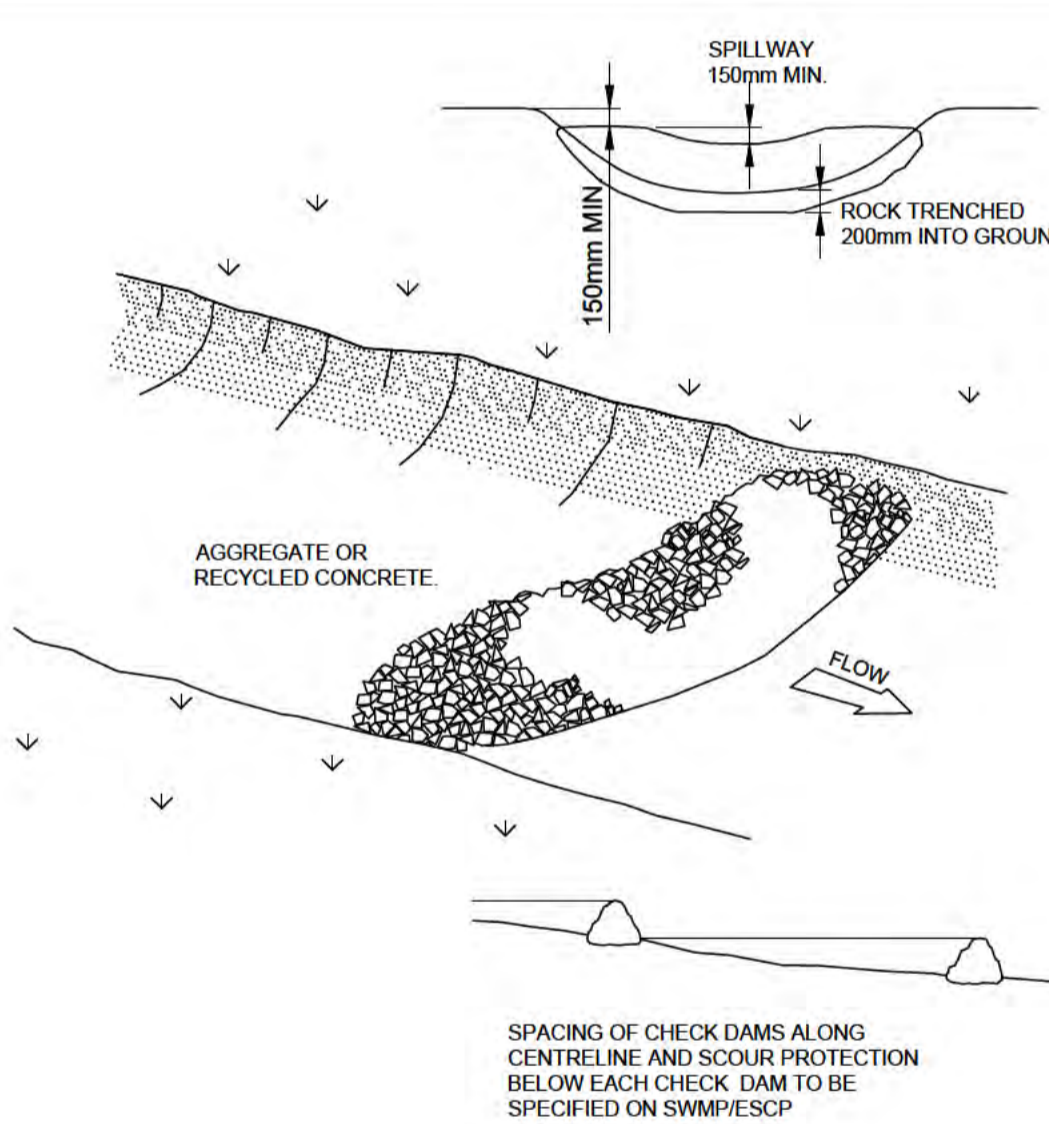
**STABILISED SITE ACCESS**



**CONSTRUCTION NOTES**

1. Build with gradients between 1 percent and 5 percent.
2. Avoid removing trees and shrubs if possible - work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V shaped.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction.

**DIVERSION SWALE**



**CONSTRUCTION NOTES**

1. CHECK DAMS CAN BE BUILT WITH VARIOUS MATERIALS, INCLUDING ROCKS, LOGS, SANDBAGS AND STRAW BALES. THE MAINTENANCE PROGRAM SHOULD ENSURE THEIR INTEGRITY IS RETAINED, ESPECIALLY WHERE CONSTRUCTED WITH STRAW BALES. IN THE CASE OF BALES, THIS MIGHT REQUIRE THEIR REPLACEMENT EACH TWO TO FOUR MONTHS.
2. TRENCH THE CHECK DAM 200 MM INTO THE GROUND ACROSS ITS WHOLE WIDTH. WHERE ROCK IS USED, FILL THE TRENCHES TO AT LEAST 100 MM ABOVE THE GROUND SURFACE TO REDUCE THE RISK OF UNDERCUTTING.
3. NORMALLY, THEIR MAXIMUM HEIGHT SHOULD NOT EXCEED 600 MM ABOVE THE GULLY FLOOR. THE CENTRE SHOULD ACT AS A SPILLWAY, BEING AT LEAST 150MM LOWER THAN THE OUTER EDGES.
4. SPACE THE DAMS SO THE TOE OF THE UPSTREAM DAM IS LEVEL WITH THE SPILLWAY OF THE NEXT DOWNSTREAM DAM.

**ROCK CHECK DAM**

SD 5-4

**EROSION AND SEDIMENTATION CONTROL NOTES**

1. UPON COMPLETION OF FINAL EARTHWORKS OR AFTER WRITTEN DIRECTION PRINCIPAL AUTHORISED PERSON, IMMEDIATE SILT CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14-DAYS.
2. ALL PERIMETER AND SILTATION CONTROL MEASURES ARE TO BE THE FIRST STEP IN CLEARING OR EARTHWORKS.
3. THE AREA OVER ALL STORMWATER AND SEWER LINES NOT IN STREETS IS TO BE MULCHED AND SEEDED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14-DAYS AFTER BACKFILL.
4. NO MORE THAN 150-METRES OF TRENCH IS TO BE OPEN AT ANY ONE TIME.
5. AREAS OVER ELECTRICITY POWER, TELEPHONE AND GAS SUPPLY TRENCHES ARE TO BE SEEDED AND MULCHED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14-DAYS AFTER BACKFILL.
6. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE TRACK ROLLED, SEEDED OR MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
7. ALL FILLS ARE TO BE LEFT WITH A WINDROW AT LEAST 200 MM HIGH AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS, AND ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO "SEAL" THE EARTHWORKS.
8. ALL FINAL EROSION PREVENTION MEASURES, INCLUDING ESTABLISHMENT OF GRASSING, ARE TO BE COMPLETED PRIOR TO THE SITE FINAL INSPECTION.
9. STABILISATION OF ALL CUT AND FILL SLOPES SHALL BE COMMENCED WITHIN 14-DAYS OF COMPLETION OF FORMATION.
10. A STRIP OF TURF IS TO BE PLACED IMMEDIATELY BEHIND THE KERB AND GUTTER ON ALL NEW ROADS AND AT ADDITIONAL LOCATIONS AS DETERMINED BY PRINCIPAL AUTHORISED PERSON.
11. ALL TOPSOIL IS TO BE STOCKPILED ON SITE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES AND
12. ESTABLISHMENT OF FIRE BREAKS SHALL BE CARRIED OUT IN CONSULTATION WITH A FIRE CONTROL OFFICER.

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT

AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**AEROTROPOLIS  
CORE PRECINCT  
BRINGELLY**



KEY PLAN

SCALE BAR

**SAFETY IN DESIGN INFORMATION**

ARE THERE ANY ADDITIONAL HAZARDS / RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING?  
 NO  
 YES

**PROJECT MANAGEMENT INITIALS**

JD	CR	GAR
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	AHD	SURVEY	GDA94/MGA56
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**ISSUE/REVISION**

IR	DATE	DESCRIPTION
7	30.11.2022	FOR CONSTRUCTION
6	28.11.2022	DRAFT
5	21.11.2022	DRAFT
4	02.09.2022	ISSUED FOR APPROVAL
3	29.04.22	ISSUED FOR TENDER
2	22.04.22	DRAFT TENDER COORDINATION

**PROJECT NUMBER**

60646285

**SHEET TITLE**

EROSION AND CONTROL  
SEDIMENT DETAILS

**SHEET NUMBER**

60646285-SHT-00-1000-CI-0901





**Appendix 6 – Environmental Legal and Other Requirements Register – This is addressed in section 3 (above) of the CEMP.**

# **Appendix 7 - Traffic Management Plan**





# AMRF – FIRST BUILDING

## CONSTRUCTION TRAFFIC MANAGEMENT PLAN

PREPARED FOR TAYLOR CONSTRUCTION GROUP PTY LTD  
30 NOVEMBER 2022 | 300304232

<b>Revision</b>	<b>Description</b>	<b>Author</b>	<b>Quality Check</b>	<b>Approver</b>	<b>Date</b>
A	Final	Connor Hoang	Ashish Modessa	Rhys Hazell	18/11/2022
B	Final – Addressing Stakeholder Comments	Connor Hoang	Ashish Modessa	Rhys Hazell	29/11/2022
C	Final – Addressing Stakeholder Comments	Connor Hoang	Ashish Modessa	Rhys Hazell	30/11/2022



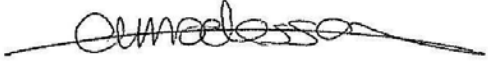
The conclusions in the Report titled AMRF - First Building are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Taylor Construction Group Pty Ltd (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

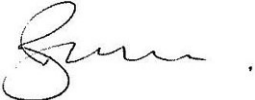
This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by:   
Signature

Connor Hoang  
Printed Name

Reviewed by:   
Signature

Ashish Modessa  
Printed Name

Approved by:   
Signature

Rhys Hazell  
Printed Name



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## 1 Introduction

# 1 Introduction

## 1.1 Background

Taylor Construction Group Pty Ltd engaged Stantec to prepare a Construction Traffic Management Plan (CTMP) for the construction of the 'First Building' associated with the Advance Manufacturing Research Facility (AMRF) to be located at 215 Badgerys Creek Road, Bringelly.

The site is planned to operate as a high-tech facility and includes a visitor centre, equipment for research, commercial office space and open public areas. It will be located within the new Bradfield City Centre and incorporated as part of Western Sydney Aerotropolis near the future Aerotropolis Metro Station.

The general overall principles of traffic management during construction activity include:

- provide an appropriate and convenient environment for pedestrians/ workers
- minimise the impact on pedestrian and cyclist movements
- minimise the loss of any on-street parking
- maintain access to/ from adjacent lots
- restrict construction vehicle movements to designated routes to/ from the site
- manage and control construction vehicle activity near the site
- carry out construction activity in accordance with approved hours of works.

This report has been prepared by transportation consultants who hold the SafeWork NSW Traffic Control Work Training Card. Details of the accredited consultants are provided below:

- Ashish Modessa – Authorisation No. 0052374421.
- Rhys Hazell – Authorisation No. TCT0045321.

It has also been prepared to address Condition B1 of Consent Conditions SSD-25452459 and will be finalised based on any comments received from Transport for NSW, Liverpool City Council and/ or Sydney Metro.

## 1.2 References

In preparing this report, reference has been made to the following:

- Traffic Control at Work Sites Technical Manual, TfNSW, February 2022
- Australian Standard AS1742.3:2019 'Manual of Uniform Traffic Control Devices – Traffic control for works on roads
- Austroads Guide to Temporary Traffic Management series (2021)
- other documents referenced in this report.



## 1 Introduction

### 1.3 Planning Secretary's Environmental Assessment Requirements

This report has been prepared in response to the Consent Condition B1 for Secretary's Environmental Assessment Requirements (SEARs) issued for the SSD and dated 6 September 2021 (SSD-25452459) as reproduced Table 1.

**Table 1: Consent Condition B1 – Construction Traffic Management Plan**

Comment	Section
Prior to the commencement of construction of the development, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:	Section 1.1
<ul style="list-style-type: none"><li>• be prepared by a suitably qualified and experienced person(s)</li></ul>	
<ul style="list-style-type: none"><li>• be prepared in consultation with TfNSW, Council and Sydney Metro</li></ul>	Appendix B
<ul style="list-style-type: none"><li>• be endorsed by TfNSW and Sydney Metro</li></ul>	Appendix B
<ul style="list-style-type: none"><li>• detail the measures that are to be implemented to ensure road safety and network efficiency during construction</li></ul>	Section 3.4, Section 4.2, Section 4.3
<ul style="list-style-type: none"><li>• detail specific measures to ensure the arrival of construction vehicles to the site does not cause queuing on the public road network</li></ul>	Section 3.4, Section 3.6, Section 4.6
<ul style="list-style-type: none"><li>• detail any work required within the future rail corridor identified in the MIC SEPP</li></ul>	Section 3.5
<ul style="list-style-type: none"><li>• detail heavy vehicle routes, work zones, access, construction vehicle numbers and parking arrangements</li></ul>	Section 3.3 to Section 3.7, Section 4.6
<ul style="list-style-type: none"><li>• detail consultation measures and/or formal agreements with Sydney Metro to be undertaken throughout the construction period of the Sydney Metro Project</li></ul>	Section 4.8, Appendix B
<ul style="list-style-type: none"><li>• details of crane arrangements including their locations, and plans of any proposed hoarding and/or scaffolding in proximity to the Sydney Metro Project</li></ul>	Section 3.5
<ul style="list-style-type: none"><li>• include a Driver Code of Conduct to:<ul style="list-style-type: none"><li>- minimise the impacts of construction on the local and regional road network</li><li>- minimise conflicts with other road users</li><li>- minimise road traffic noise; and</li><li>- ensure truck drivers use specified routes</li></ul></li></ul>	Section 4.11.1
<ul style="list-style-type: none"><li>• include a program to monitor the effectiveness of these measures</li></ul>	Section 5.1
<ul style="list-style-type: none"><li>• if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes. B2.</li></ul>	Section 4.12

### 1.4 Construction Program Overview

The construction program will consist of five stages defined as follows:

1. Pre-construction/ site establishment.
2. CC1 – bulk earthworks.
3. CC1a – piling and substructure.
4. CC2 – main building works including main structure works (structural steel and timber structure), façade works, fit-out, and roof works.



## 1 Introduction

5. CC3 – external civil works including all road and landscaping works, and authority connections.

The indicative timing of each stage is summarised in Table 2.

**Table 2: Indicative construction program**

Stage	Start Date	End Date
Pre-construction (Site establishment)	November 2022	November 2022
CC1 (Bulk earthworks)	November 2022	February 2023
CC1a (Piling and substructure)	February 2023	March 2023
CC2 (Main building works)	March 2023	February 2024
CC3 (External civil works)	May 2023	February 2024

This Construction Traffic Management Plan has been prepared to cover all construction traffic matters as it relates to all stages of construction.





## 2 Existing Conditions

# 2 Existing Conditions

## 2.1 Overview

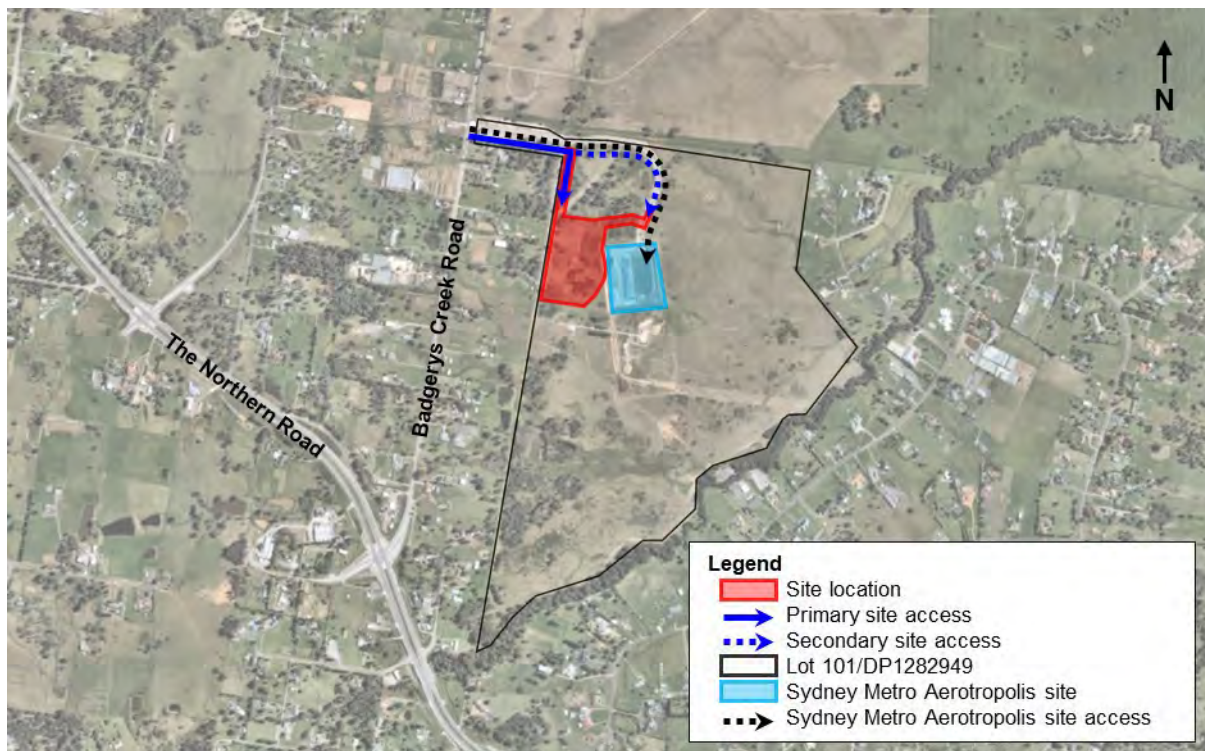
The site is at 215 Badgerys Creek Road, Bringelly and lies within Lot 101/ DP1282949 in Liverpool Local Government Area. The AMRF site covers an approximate area of 3.6 hectares and is about 4.5 kilometres south of the Western Sydney Airport site and 44 kilometres west of Sydney CBD. It is accessed via a newly constructed access road, set within an 80-metre-wide access handle/ road reserve that connects with Badgerys Creek Road via a recently constructed roundabout. The access road is about 1.3 kilometres north of The Northern Road.

The site is currently undeveloped consisting of open paddocks with areas of native vegetation. Surrounding land uses consist of large lot residential properties. Residential properties are further east of the site.

The site is located adjacent to the Sydney Metro Aerotropolis Station site which is accessed via the eastern end of the access road.

The site location and surrounding environs together with the site access arrangements are shown in Figure 1.

**Figure 1: Site location and surrounding environs**



Base image source: Nearmap



## 2 Existing Conditions

### 2.2 Surrounding Road Network

The key roads surrounding the site include The Northern Road and Badgerys Creek Road, plus the new site access road.

#### The Northern Road

The Northern Road is a State Road with a posted speed limit of 80 kilometres per hour. It has undergone significant works and realignment over recent years to now be positioned further west to facilitate the emerging Western Sydney Airport. Works in the area are largely complete, with new intersections constructed to facilitate access to the Western Sydney Airport precinct.

The Northern Road now provides dual carriageways with two lanes in each direction and breakdown lanes. Turning bays and additional capacity is provided at all signalised intersections with turning lane configurations dependent on road hierarchy. Traffic volumes are currently low with ample spare capacity on account of construction traffic and future operations of development in the surrounding area, including Western Sydney Airport and AMRF. It is aligned in a north-south direction and links Campbelltown to the south with the M4 Western Motorway and Penrith to the north. The Northern Road is shown in Figure 2.

**Figure 2: The Northern Road**



#### Badgerys Creek Road

Badgerys Creek Road is a Regional Road with a posted speed limit of 60 kilometres per hour near the site. It is aligned in a north-south direction and links Elizabeth Drive in Badgerys Creek at the northern end and The Northern Road in Bringelly to the south. It has undergone recent significant works and realignment to now be further east at the northern end. It provides one traffic lane in each direction at the southern end expanding at the north to provide a divided carriageway with two lanes in each direction. Badgerys Creek Road, south of Elizabeth Drive is shown in Figure 3 to Figure 5.





## 2 Existing Conditions

**Figure 3: Badgerys Creek Road (northern end)**



**Figure 4: Badgerys Creek Road (looking south near the site)**



**Figure 5: Badgerys Creek Road (approaching The Northern Road)**



## 2 Existing Conditions

### Site Access Road

A recently constructed roadway to facilitate access to the Sydney Metro Aerotropolis Station site will be shared with Taylor for ingress/ egress to the AMRF site. Sydney Metro access would be provided at the eastern end of the access road as shown in Figure 1. The access road intersects with Badgerys Creek Road at its western end via a recently constructed roundabout. It is currently zoned as 20 kilometres per hour with controlled access during work hours. CPB Contractors Ghella (CPBG) Joint Venture are the principal contractor for the Station Boxes and Tunnelling (SBT) package with the road licensed by Sydney Metro for the duration of the SBT works. However, Sydney Metro may require use of the road beyond completion of the SBT works. Ongoing consultation and coordination would be required to manage and mitigate any impacts of the site construction works on Sydney Metro operations.





## 3 Overview of Construction Activities

### 3.1 Project Overview

The project involves construction of the 'First Building' for an Advance Manufacturing Research Facility (AMRF) to be located at 215 Badgerys Creek Road, Bringelly. The site will operate as a high-tech facility including equipment for research, a visitor centre, office space and open space/ areas. Road upgrade works and authority connections are also necessary along the southern side of the existing access road between Badgerys Creek Road and the site.

Construction of the 'First Building' is anticipated to commence in October 2022, with works expected to be completed by the end of 2023. Construction for the remainder of the AMRF will be ongoing, with the facility expected to be fully operational by 2026.

As discussed in Section 1.4, the proposed works for the 'First Building' will be completed across the stages as summarised below:

1. Pre-construction/ site establishment
2. CC1 – bulk earthworks (subject of this CTMP)
3. CC1a – piling and substructure
4. CC2 – main building works including main structure works (structural steel and timber structure), façade works, fit-out, and roof works
5. CC3 – external civil works including all road and landscaping works, at-grade car parking works, and authority connections.

### 3.2 Works Hours

In accordance with Condition B28 of Consent Conditions SSD-25452459, construction works will be carried out during the following approved hours:

- Monday to Friday 7:00am and 6:00pm
- Saturday 8:00am and 1:00pm
- Sunday/ public holiday no work.

Taylor will be responsible for instructing and controlling all subcontractors regarding the hours of work. Any work outside the approved construction hours would be subject to specific prior approval from Council.

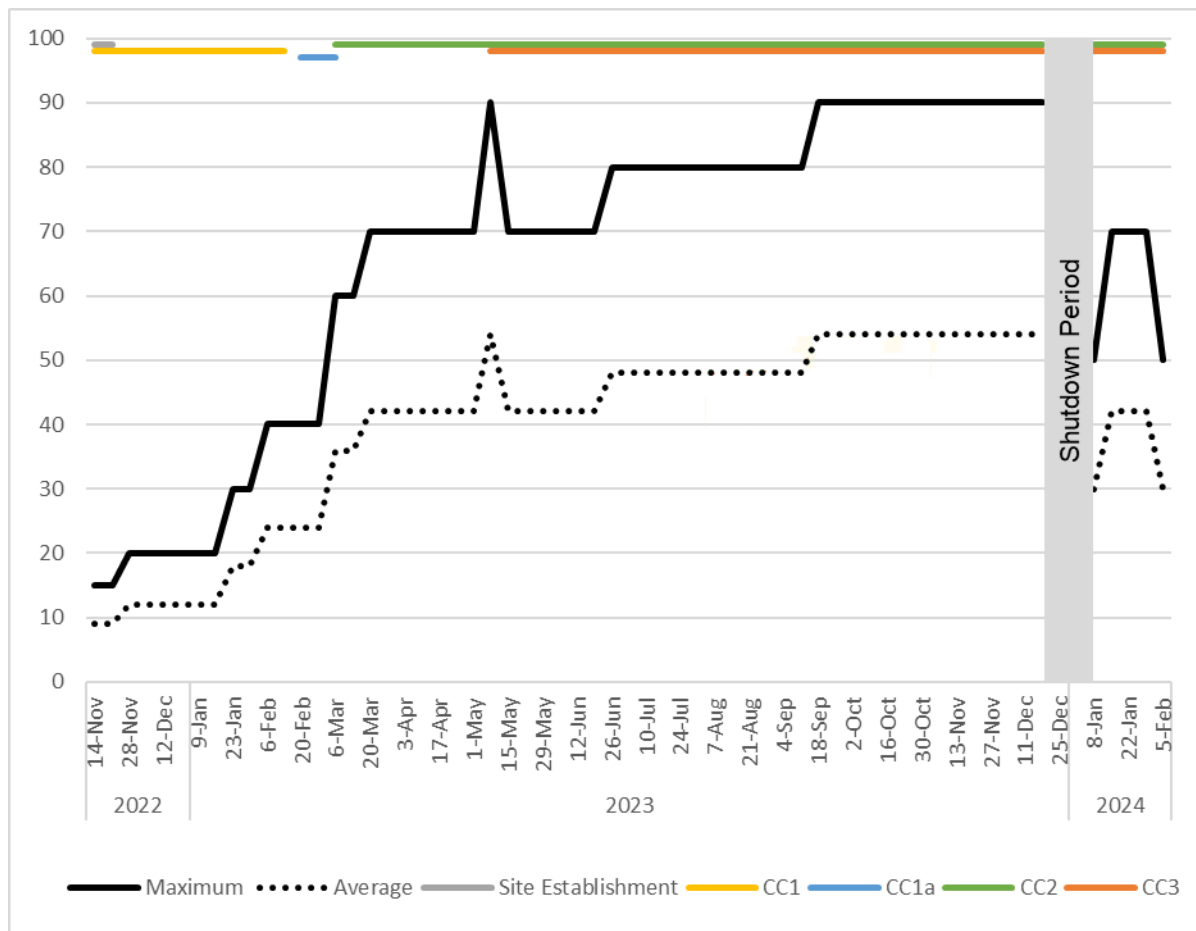
### 3.3 Construction Worker Parking

The construction works are anticipated to require an average of about 40 workers on-site at any given time, with up to 90 on-site during peak activities across all stages. The period where both CC2 and CC3 works are operational is expected to see most activity. The indicative workforce forecasts are shown in Figure 6.



### 3 Overview of Construction Activities

Figure 6: Indicative workforce



On-site construction worker parking and accommodation (offices and other amenities) will be located south of the proposed AMRF building and of sufficient size to accommodate all associated demand. This will avoid the need for any workers to park on the surrounding roads.

### 3.4 Construction Site Access and Traffic Control

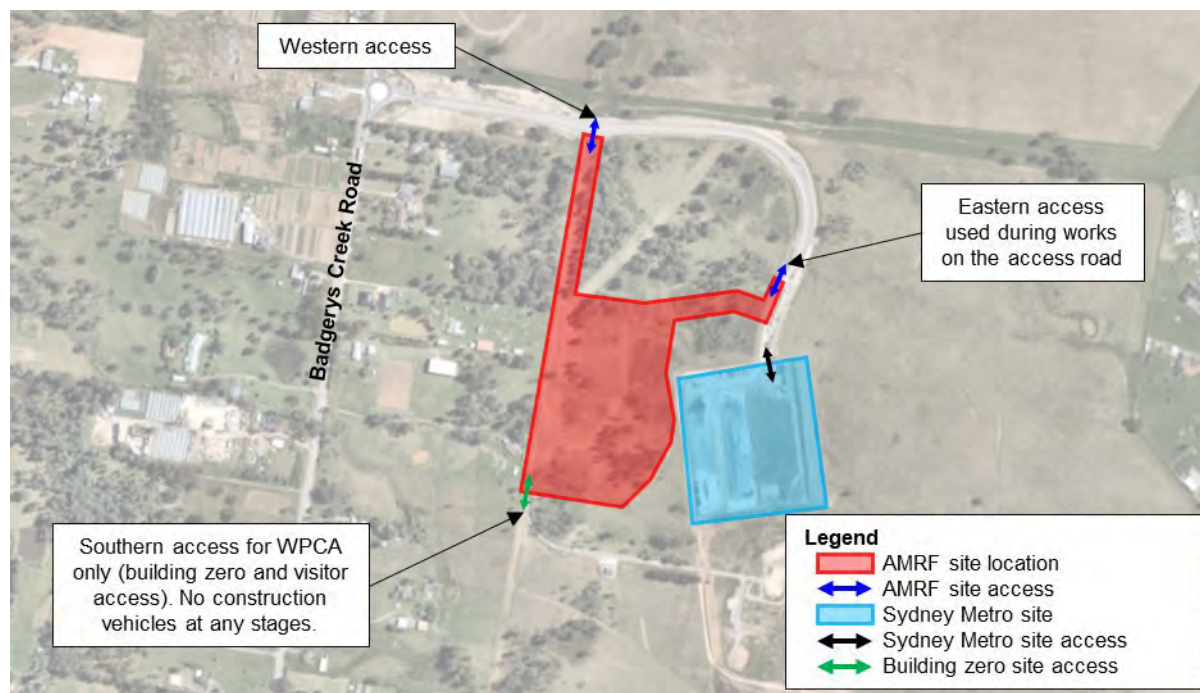
Construction site access to the AMRF site will be provided via an access road that connects with Badgerys Creek Road at the recently constructed roundabout. The site will include two main accesses located on the eastern and western site boundaries. The western gate will function as the primary access with the eastern gate to be used when road works are completed on the internal access road (section of road further east and south of the western access). At times when the eastern access is operational, the western gate would be closed.

A third access point will also be located on the southern boundary however this will be used by Western Parkland City Authority (WPCA) only (for building zero vehicles and visitor access) and not to be used by construction vehicles or workers throughout any works stages associated with this SSDA approval. Signage would be attached to the gate to indicate access arrangements and restrictions. The proposed construction site access arrangements are shown in Figure 7.



### 3 Overview of Construction Activities

Figure 7: Construction site access



Base image source: Nearmap

Authorised site personnel will be positioned at the site gate to manage all vehicle access in/ out of the AMRF site. At times when the western gate is closed, site personnel will relocate to the eastern gate to aid vehicle ingress and egress. It is not expected that site personnel will need to temporarily stop any traffic on the access road to facilitate construction vehicle access. If required, vehicles will only be temporarily stopped internal to the site and to avoid any such queuing on the access road. Construction vehicles will access the site under normal road rules, giving way to through traffic. These measures will ensure road safety and network efficiency during construction.

The internal haulage routes through the AMRF site during construction will ensure network efficiency and road safety, with all vehicles to enter and exit via the western or eastern gates depending on construction stages. The haulage routes minimise the need for any construction vehicles to reverse within the site and along the adjacent access road.

### 3.5 Loading and Unloading Activities

No on-street works zones are required to facilitate the construction works with all construction vehicles to be loaded and unloaded from within the AMRF site. Tower cranes will not be required during any stages of the construction works.

No work will take place within the Sydney Metro Aerotropolis Station site or within the future rail corridor identified in the MIC SEPP. Fencing and cattle grids will be installed during site establishment in proximity to the Sydney Metro boundary, however these works will have a minor impact on Sydney Metro operations.





### 3 Overview of Construction Activities

## 3.6 Construction Vehicle Volumes

The construction site will facilitate access by a variety of construction vehicles for the delivery of construction materials. The largest construction vehicles accessing the site are expected to be 19-metre heavy rigid vehicles.

Across all stages of construction, the site is anticipated to generate an average of 15 heavy vehicles per day with an estimated maximum of 60 heavy vehicles. Peak activity will be during CC2 and CC3, with the indicative heavy vehicle volumes summarised in Figure 8.

Assuming all workers will travel to site by car, it is also estimated that an average of 40 light vehicles and maximum 90 light vehicles would access the site per day (again during CC2 and CC3 works).

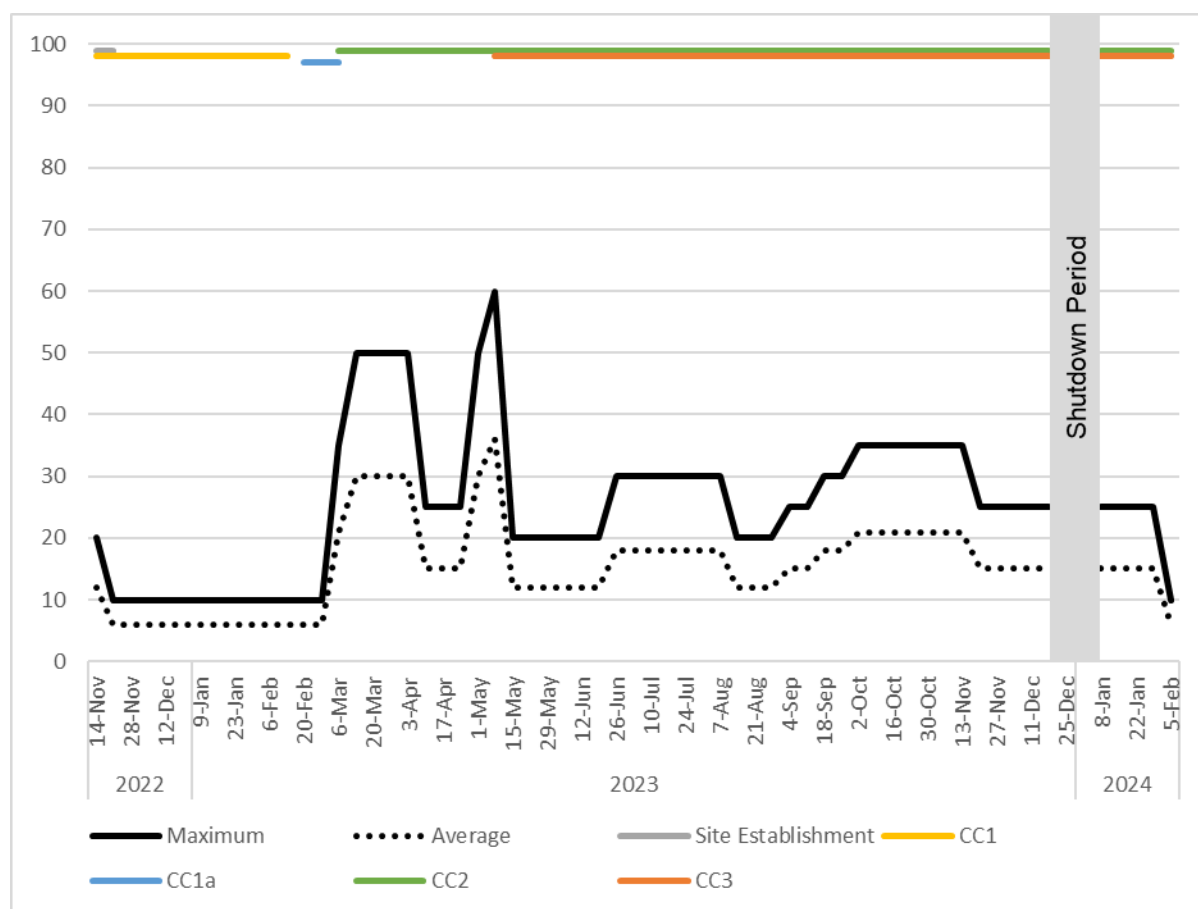
It is noted that these volumes are indicative and subject to minor daily variations. Heavy vehicles between 12.5 heavy rigid vehicles and 19 metre semi-trailers will be minimised during the construction site peak hours (7:00am to 10:00am and 3:00pm to 7:00pm) to avoid potential conflicts with heavy vehicles from the surrounding Western Sydney Airport, Sydney Metro – Western Sydney Airport, and M12 projects. During the road network peak periods, the site would generate up to a maximum of three trucks per hour, or one to two trucks every 30 minutes during construction (given heavy vehicle movements would be distributed across the working day). These volumes would be so minor that their impact would not be recognised as part of any traffic modelling assessment. As such, the volumes are not expected to materially impact the operation or degrade the level of service of the Badgerys Creek Road/ site access road intersection.

There is sufficient area on-site for truck marshalling and avoids the need for any truck queuing on public roads near the site.



### 3 Overview of Construction Activities

Figure 8: Indicative heavy vehicle volumes (number of vehicles)



### 3.7 Haulage Routes

Generally, construction vehicles will have origins and destinations from a wide variety of locations throughout Sydney. However, all construction vehicles will be restricted to the State and Regional Road network where practicable. It is recommended that vehicles avoid Elizabeth Drive due to high demand on the road from surrounding construction activities including Western Sydney Airport, M12 Motorway and Sydney Metro – Western Sydney Airport. The construction vehicle routes are detailed below and shown in Figure 9. If required, approval for use of public roads from the National Vehicle Regulator (NVHR) will be sought prior to construction works commencing.

#### Approach and Departure Routes

- North/ West – M4 Motorway or Great Western Highway, The Northern Road, Badgerys Creek Road.
- North/ East – M7 Motorway, Camden Valley Way, Bringelly Road, The Northern Road, Badgerys Creek Road.
- South – Hume Motorway, Camden Valley Way, Bringelly Road, The Northern Road, Badgerys Creek Road.







# 4 Construction Traffic Management

## 4.1 Traffic Guidance Scheme

Detailed information for traffic control at work sites is contained in the Traffic Control at Work Sites manual (TfNSW, 2022). The control of traffic at work sites must be undertaken with reference to SafeWork NSW requirements and any other Workplace Health and Safety manuals.

A Traffic Guidance Scheme has been prepared and included in Appendix A. It includes the following considerations:

- Construction vehicle activity, including the loading/ unloading of trucks is to be conducted wholly within the AMRF site.
- An accredited traffic controller is to be positioned at the site gate to manage all site access and is not permitted to temporarily stop through traffic on the access road.
- All through traffic and any pedestrians/ cyclists will maintain priority.
- Clear definition of the work site will be provided by way of erection of fencing around the site perimeter.
- All signage will be clean, clearly visible and not obscured.

## 4.2 Pedestrian and Cyclist Management

No formal footpaths or cycleways are provided on Badgerys Creek Road or the access road. Given the surrounding land uses, it is expected that pedestrian and cyclist activity would be low in the area surrounding the site.

A fence will be installed around the perimeter of the site to maintain separation between the construction works and surrounding lots, and to ensure road safety.

## 4.3 Traffic Control

As discussed, authorised site personnel will be positioned at the site gate to manage entering and exiting vehicles. Site personnel will not temporarily stop any through traffic on the access road, with vehicles to enter and exit under normal road rules, giving way to through traffic.

As discussed, at times when the eastern access gate is operational during road works on the internal access road (road section immediately east and south of the western access), the western gate will be closed. As such, site personnel from the western access will be relocated to the eastern gate located adjacent to the Sydney Metro Aerotropolis access to assist with vehicle ingress/ egress given some sightline concerns. This will ensure safe movement by both Taylor and Sydney Metro construction vehicles.





## 4 Construction Traffic Management

### 4.4 Public Transport

Currently, no bus services operate along Badgerys Creek Road adjacent to the site. The anticipated additional vehicles generated by the site and using bus corridors such as The Northern Road is not expected to impact the operation of bus services along these corridors.

### 4.5 Traffic Impacts

As discussed in Section 3.6, the anticipated increases in vehicles generated by construction activity at key intersections surrounding the site would have a minor impact on the operation of the surrounding road network. These volumes would be so minor that their impact would not be recognised as part of any traffic modelling assessment. They would not be expected to impact the operation of the surrounding road network and would not reduce the level of service of the Badgerys Creek Road/ site access road intersection.

It is not envisaged that there would be any adverse impacts on Badgerys Creek Road, including closures or traffic stoppages. In the event that this is required, a road occupancy approval would be sought.

### 4.6 Parking Impacts

Sufficient worker parking will be provided on-site and south of the AMRF building. There will also be adequate on-site truck queuing and marshalling areas for the anticipated demand. Any parking or queuing associated with AMRF will not be permitted on Badgerys Creek Road. As such, the construction works are not expected to have any notable impacts on roads surrounding the site.

### 4.7 Emergency Vehicle Access

Access to the site and adjacent buildings by emergency vehicles would not be affected by the works. Emergency protocols on the site would include a requirement for suitably accredited site personnel to assist with emergency access from the street.

Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

Liaison would be maintained with the police and emergency services agencies throughout the construction period and a 24-hour contact would be made available for 'out-of-hours' emergencies and access.

### 4.8 Cumulative Construction Activities

The key construction projects occurring concurrently in the area include:

- Western Sydney Airport
- Sydney Metro West
- M12 Motorway.

Peak construction works associated with Western Sydney Airport are expected to occur in 2023 and will therefore coincide with the AMRF construction works. During these peak construction periods, 820 light vehicles and 84 heavy vehicles are expected during the morning peak period, with 861 light



## 4 Construction Traffic Management

and 236 heavy vehicles during the afternoon peak period<sup>1</sup>. These construction vehicles will access the Western Sydney Airport site via numerous construction access roads surrounding the Western Sydney Airport site that provide [direct] access to either Badgerys Creek Road, Elizabeth Drive or The Northern Road and would therefore ensure a relatively even distribution across the precinct.

The M12 Motorway construction peak is anticipated to occur in 2024 and therefore not coinciding with the AMRF peak construction period. The main construction compounds would be located north of Elizabeth Drive, with most construction vehicles expected to be restricted to the M7 Motorway, Elizabeth Drive, Luddenham Road and The Northern Road (north of Elizabeth Drive), hence mostly limited to the road network north of the site.

The AMRF site is located near the future Aerotropolis Core Metro Station. Table 4-2 in the *Technical Paper 1 Sydney Metro West – Western Sydney Airport*, dated October 2020 indicates that the future Metro Station would generate 112 light vehicle and 26 heavy vehicles during the morning and afternoon peak periods.

In addition, Garde (on behalf of Endeavour Energy) will be undertaking works surrounding the site largely concentrated on Adams Road, Luddenham Road and Elizabeth Drive.

Taylor will maintain ongoing consultation with key agencies including Council, TfNSW and Sydney Metro (as the site is located near the future Aerotropolis Metro Station) throughout construction to ensure any such cumulative impacts are appropriately managed. Haulage routes have been developed to avoid Elizabeth Drive given high activity from other projects.

Given the traffic volumes generated by construction activities are minor in comparison to other significant construction sites in the surrounding area, the additional traffic will have a nominal additional impact on the surrounding road network (and the other construction sites).

### 4.9 Traffic Movements in Adjoining Council Areas

No adverse effects are expected from the movement of construction vehicles through adjacent council areas.

### 4.10 Site Inspections and Record Keeping

The construction work would be monitored to ensure that it proceeds as set out in the Construction Management Plan prepared for the site and this CTMP. A daily inspection before the start of the construction activity should take place to ensure that conditions accord with those stipulated in the plans and there are no potential hazards. Any possible adverse impacts would be recorded and dealt with if they arise.

### 4.11 Site Induction

All staff associated with the construction works (including sub-contractors) will be required to undergo site induction.

The induction would include permitted access routes to and from the construction site for construction vehicles, on-site parking arrangements, as well as standard environmental, workplace health and

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<sup>1</sup> Western Sydney Airport Traffic and Access Construction Environmental Management Plan, July 2022





## 4 Construction Traffic Management

safety, driver protocols and emergency procedures. The approved work hours must be included as part of this induction.

### 4.11.1 DRIVER CODE OF CONDUCT

This Driver Code of Conduct aims to minimise the impacts of construction traffic on transport networks and adjoining properties. The purpose of this Code is to clearly define and detail acceptable behaviour for all construction vehicle drivers operating in connection with the construction works, including subcontractor drivers.

Responsibilities of Drivers:

- Drivers are to follow all rules and regulations as required by law, including:
  - Hold a current and appropriate licence for the vehicle they are operating.
  - Comply with all speed limits, including road works speed limits.
  - Obey posted (road) load limits.
  - Obey construction traffic signs and devices.
  - Ensure vehicles are not overloaded.
  - Wear appropriate PPE when entering the work site.
- Drivers are to practice safe driving and behaviour which includes, but is not limited to:
  - Driving in a manner that is appropriate with road and weather conditions.
  - Not operating any machines whilst fatigued or under the influence of drugs and/ or alcohol.
- Drivers must behave in a professional manner at all times.
- Drivers must adhere to routes nominated by Taylor Construction for the project.
- Drivers should only park or wait within the site as directed by Taylor Construction. Drivers should not queue at the site gate or on any public road.
- Drivers are to engage the park brake and leave the vehicle in gear when parked. Never leave the vehicle with the engine running.
- Vehicles must not transfer dirt or debris onto public roads. If any materials are deposited on the roads, the Taylor Construction Supervisor must be contacted immediately.
- Drivers will follow all procedures (and the direction of those who implement them) related to vehicle call-up/ site access.
- If approached by individuals with enquiries about the project, drivers are not to engage with the individual beyond providing them projects' public communication team.
- As a courtesy to individuals who may be impacted by driver behaviour, drivers will:
  - Not use compression braking where noise is likely to adversely impact on residents.
  - Ensure that there is no littering.
  - Remain calm and courteous when in contact with other members of the public.



## 4 Construction Traffic Management

- Maintain trucks in good working order and a clean and tidy condition.
- Not block residential driveways or any other access points.

### 4.12 Public Notifications

Taylor/ Western Parkland City Authority is to notify nearby residents and the community via letterbox drops of any potential disruptions to the surrounding road network as a result of the construction works.





## 5 Monitoring, Review and Contingencies

### 5.1 Monitoring Program

The CTMP will be updated accordingly, subject to regular reviews by the on-site coordinator. As a minimum the CTMP should be reviewed monthly, with all reviews being recorded. Key considerations regarding review of the CTMP include:

- Tracking forecast daily heavy vehicle movement and workforce data outlined in the CTMP against observed numbers. Heavy vehicle movements will be recorded in a vehicle log (including registration details, business information, and time of entry/ exit) so to assess the effectiveness of this monitoring program.
- Identify any issues relating to short fall in parking and/ or issues relating to site access.
- Observe and note any impacts to surrounding developments including Sydney Metro Aerotropolis operations, if any.
- Ensure TGS's are updated (if required) by appropriately qualified personnel to ensure they remain accurate and consistent with the site layout.
- Completion of a Dilapidation Report to assess the condition of the recently constructed access road, noting whether a reduction in the quality of the road has occurred due to construction vehicles.

It is the responsibility of the appointed contractor to develop a plan to monitor the effectiveness of this CTMP.

### 5.2 Contingency Plan

It is assumed that a contingency plan would be prepared by the appointed contractor. An indicative contingency plan has been provided in Table 3.

**Table 3: Indicative contingency plan**

Observation	Response
<b>Construction Volumes</b>	
Construction volumes in accordance with forecast volumes and schedule.	No response required.
Construction volumes exceed forecast volumes, however within permissible range.	Review and investigate operations, and implement measures to reduce construction volumes where practical, including: <ul style="list-style-type: none"> <li>• Temporarily halting deliveries until conditions improve.</li> <li>• Review CTMP, updating as necessary.</li> </ul>
Construction volumes exceed forecast volumes and are outside permissible range.	Review and investigate operations, and implement measures to reduce construction volumes where practical, including: <ul style="list-style-type: none"> <li>• Temporarily halting deliveries until conditions improve.</li> <li>• Stop all movements in/ out of the site.</li> <li>• Review CTMP, updating as necessary.</li> </ul>
<b>Construction Haulage Routes</b>	
Construction traffic adheres to approved haulage routes.	No response required.



## 5 Monitoring, Review and Contingencies

Observation	Response
Construction traffic mostly adheres to approved haulage routes.	Review and investigate operations, and implement measures to correct haulage routes where practical, including: <ul style="list-style-type: none"> <li>Remind drivers of nominated truck routes.</li> <li>Provide additional training including review of Driver Conduct Code.</li> </ul>
Construction traffic does not adhere to approved haulage routes.	Review and investigate operations, and implement measures to correct haulage routes where practical, including: <ul style="list-style-type: none"> <li>Temporarily halting deliveries until conditions improve.</li> <li>Stop all movements in/ out of the site until conditions improve.</li> <li>Review CTMP, updating as necessary.</li> <li>Provide additional training including review of Driver Conduct Code.</li> </ul>
<b>Queuing</b>	
No queuing observed.	No response required.
Queuing observed within the site boundaries.	Review and investigate operations, and implement measures to reduce queuing where practical, including: <ul style="list-style-type: none"> <li>Review and confirm drivers are adhering to the delivery schedule.</li> <li>Provide additional training including review of Driver Conduct Code.</li> </ul>
Queuing identified on public roads.	Review and investigate operations, and implement measures to reduce queuing where practical, including: <ul style="list-style-type: none"> <li>Temporarily halting deliveries until conditions improve.</li> <li>Direct all trucks to move within the site and queue along the access road.</li> <li>Review CTMP, updating as necessary.</li> <li>Provide additional training including review of Driver Conduct Code.</li> </ul>
<b>Traffic Guidance Scheme</b>	
No observable issues.	No response required.
Inconsistencies with TGS to onsite operations.	Site manager to amend TGS on-site, keeping a record of all changes.
Traffic incidents (or near miss) occurring regardless of whether the TGS is implemented correctly.	Stop all work and investigate issue immediately. Amend TGS appropriately to ensure that the safety of workers and civilians is guaranteed.
<b>Dust and Spoil</b>	
No observable dust on roadway and in air.	No response required.
Minor quantities of dust on roadway and in air.	Review and investigate operations, and implement measures to reduce dust production where practical, including: <ul style="list-style-type: none"> <li>Use of additional water sprays.</li> <li>Temporarily halting site operations until conditions improve.</li> <li>Investigate and modify dust generating sources.</li> </ul>
Large quantities of dust on roadway and in air.	Review and investigate operations and implement measures to reduce dust production where practical. If construction activities were responsible for excessive dust production, then submit an incident report to the relevant government body. Implement measures to avoid the incident occurring in the future.





# 6 Consultation

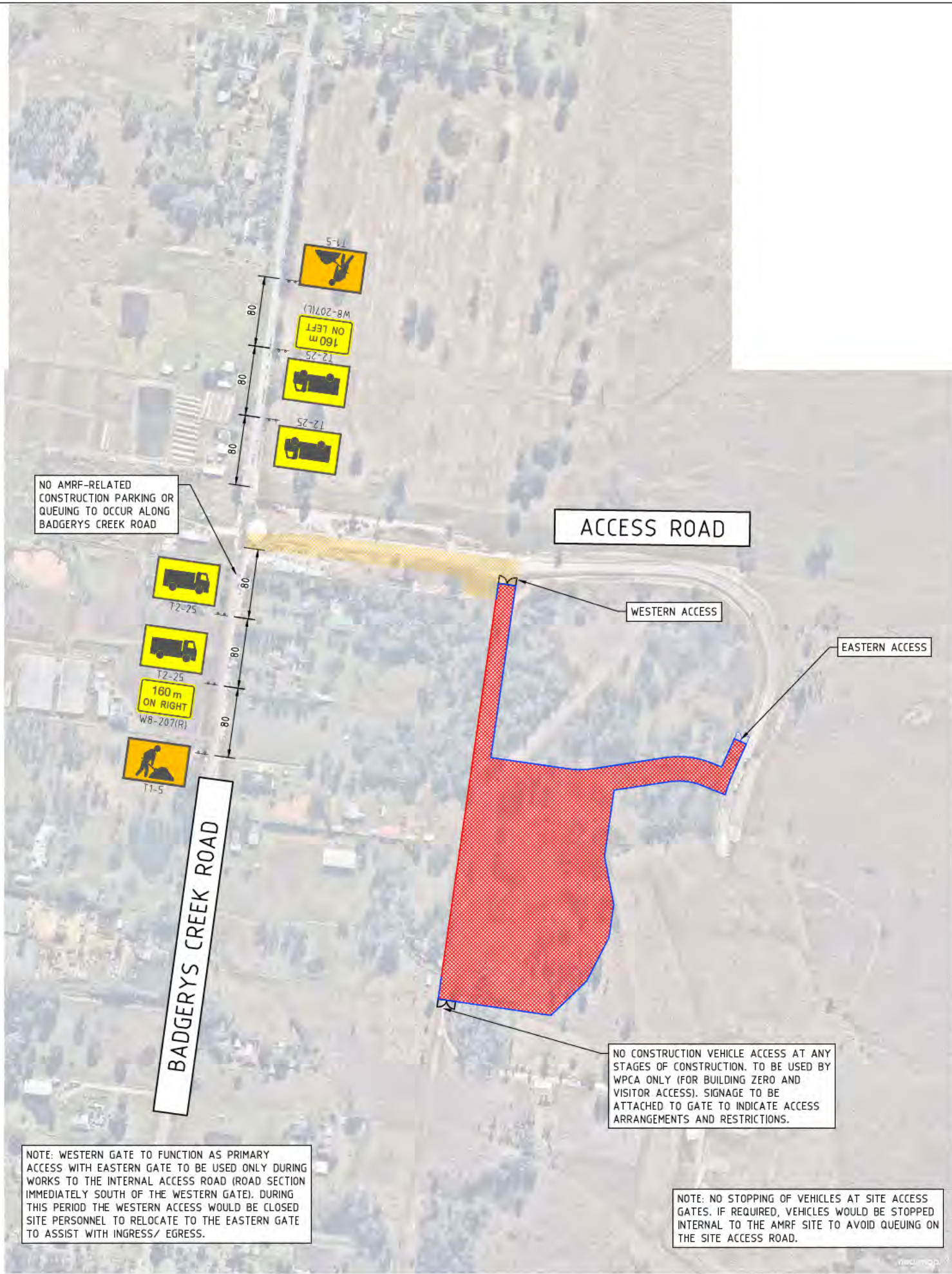
This CTMP has been prepared in consultation with the local community (including letter box drop) and relevant stakeholders, namely Liverpool City Council, Sydney Metro and TfNSW. Commentary received from Council is included in Appendix B, with separate comments received from Sydney Metro on the draft CTMP incorporated as part of this final CTMP.



## Appendix A Traffic Guidance Scheme







NO AMRF-RELATED CONSTRUCTION PARKING OR QUEUING TO OCCUR ALONG BADGERYS CREEK ROAD

ACCESS ROAD

WESTERN ACCESS

EASTERN ACCESS

BADGERYS CREEK ROAD

NO CONSTRUCTION VEHICLE ACCESS AT ANY STAGES OF CONSTRUCTION. TO BE USED BY WPCA ONLY (FOR BUILDING ZERO AND VISITOR ACCESS). SIGNAGE TO BE ATTACHED TO GATE TO INDICATE ACCESS ARRANGEMENTS AND RESTRICTIONS.

NOTE: WESTERN GATE TO FUNCTION AS PRIMARY ACCESS WITH EASTERN GATE TO BE USED ONLY DURING WORKS TO THE INTERNAL ACCESS ROAD (ROAD SECTION IMMEDIATELY SOUTH OF THE WESTERN GATE). DURING THIS PERIOD THE WESTERN ACCESS WOULD BE CLOSED SITE PERSONNEL TO RELOCATE TO THE EASTERN GATE TO ASSIST WITH INGRESS/ EGRESS.

NOTE: NO STOPPING OF VEHICLES AT SITE ACCESS GATES. IF REQUIRED, VEHICLES WOULD BE STOPPED INTERNAL TO THE AMRF SITE TO AVOID QUEUING ON THE SITE ACCESS ROAD.



**NOTES:**

1. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
2. LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
3. ALL SIGNS TO BE MINIMUM SIZE A.
4. ALL SIGNS TO BE CLASS 1 RETROREFLECTIVE.
5. ALL TRAFFIC GUIDANCE SCHEMES ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE TfNSW "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER 6 (TfNSW 2020) AND AUSTRALIAN STANDARDS AS1742.3:2019 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
6. THIS TRAFFIC GUIDANCE SCHEME MUST BE SET UP BY A PERSON HOLDING AN "IMPLEMENT TRAFFIC MANAGEMENT PLANS" TICKET AND THE TfNSW TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
7. THE ACCREDITED PERSONNEL SHALL IMPLEMENT THE APPROVED TGS BEFORE ANY PHYSICAL WORK COMMENCES AND ENSURE A COPY OF THE TGS IS KEPT ON-SITE. THE ACCREDITED PERSONNEL SHALL ALSO DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TGS HAS BEEN IMPLEMENTED CORRECTLY AND THAT IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY VARIATIONS MADE TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALLED BY THE ACCREDITED PERSONNEL.
8. IT IS THE RESPONSIBILITY OF AN ACCREDITED PERSON WITH A 'PREPARE WORK ZONE TRAFFIC MANAGEMENT PLAN' TICKET TO ENSURE THE FOLLOWING:
  - THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
  - VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES.
  - AT ALL TIMES AN UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE.
9. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
10. IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS.
11. TRAFFIC CONTROLLERS ARE NOT REQUIRED AT THE ACCESS FULL TIME, SHOULD CONDITIONS BE MODIFIED AND TRAFFIC CONTROLLERS REQUIRED, THEY ARE TO BE SUITABLY ACCREDITED TO AUSTRALIAN STANDARDS AND TfNSW ACCREDITATION AS REQUIRED. WHEN REQUIRED T1-34 AND T1-10 SIGNS ARE TO BE SET UP IN ACCORDANCE TO AUSTRALIAN STANDARDS AND TfNSW REQUIREMENTS.
12. ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBSCURED.
13. ALL SIGNS TO BE COVERED OR REMOVED WHEN WORKERS ARE NOT ON SITE.
14. ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2019.
15. ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 4.3.2 OF AS1742.3:2019. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS.

**LEGEND**

- AMRF WORK SITE
- ACCESS ROAD WORK SITE
- PROPOSED FENCING
- EXISTING FENCING
- SIGN POST
- CONSTRUCTION ACCESS GATE
- POTENTIAL CONSTRUCTION ACCESS GATE

**CERTIFICATION**

THE UNDERSIGNED HAS COMPLETED AND OBTAINED:  
 - PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN AND IS SUITABLY EXPERIENCED TO DESIGN, SELECT AND MODIFY TRAFFIC CONTROL PLANS

CERTIFICATE NO. 0052374421  
 PREPARE A WORK ZONE TMP CARD  
 ASHISH MODESSA

AERIAL IMAGERY FROM NEARMAP  
 DATED 15.06.2022



**PRELIMINARY PLAN**  
 FOR DISCUSSION PURPOSES ONLY  
 SUBJECT TO CHANGE WITHOUT  
 NOTIFICATION

**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
 THE LOCATIONS OF UNDERGROUND SERVICES ARE  
 APPROXIMATE ONLY AND THEIR EXACT POSITION  
 SHOULD BE PROVEN ON SITE. NO GUARANTEE IS  
 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED  
 W.XIE  
  
 APPROVED BY  
 A.MODESSA

DESIGN CHECK  
 A.MODESSA  
  
 DATE ISSUED  
 29 NOVEMBER 2022

SCALE  
 A3 0 25 50 100 1:5000

CAD FILE NO.  
 300304232-02-P3.DWG

**AMRF - FIRST BUILDING**  
 215 BADGERYS CREEK ROAD, BRINGELLY NSW 2556  
  
**TRAFFIC GUIDANCE SCHEME**  
 DRAWING NO. 300304232-01-01 SHEET 01 OF 01 ISSUE P2

\\AUDIT\PROFES\1\SHARE\PROJECTS\300304232\TECHNICAL\DRAWINGS\300304232-02-P3.DWG PLOTTED BY HRIANG, CONWOR ON 29/11/2022 AT 08:43



## Appendix B Consultation



Adem Abdioglu  
Taylor Construction Group  
Email: [REDACTED]

**Re: 215 Badgerys Creek Road, Bringelly – Construction Traffic Management Plan**

I refer to the submitted Construction Traffic Management Plan (CTMP) for the approved development at 215 Badgerys Creek Road, Bringelly NSW 2556.

Council notes that the plan has been submitted to comply with Condition (B1) of development consent (SSD-25452459).

Council has reviewed the CTMP, and the following comments are to be incorporated to finalise the plan.

1. The CTMP must be in accordance with the latest Traffic Control at Work Sites Manual and other standards. [Addressed in Section 1.2 & Section 4.1](#)
2. Approval from National Heavy Vehicle Regulator (NHVR) is required for vehicles prohibited on the public roads without consent from the regulator. Please visit [www.nhvr.gov.au](http://www.nhvr.gov.au). [Addressed in Section 3.7](#)
3. Number of heavy vehicles longer than 12.5m and less than 20m accessing the site should be minimised during peak hours between 7-10am, and 3-7pm. [Addressed in Section 3.6](#)
4. Road occupancy approval would be required for any closures or traffic stoppages within Badgerys Creek Road. [Addressed in Section 4.5](#)

An updated CTMP incorporating the above comments is to be implemented during construction.

Should you require further clarification, please contact Council's Traffic Engineer, Riham Gergis on [REDACTED] or via email on [REDACTED]

Yours sincerely



Charles Wiafe  
**Manager Transport Management**

## Adem Abdioglu

---

**From:** Mitch Canty [REDACTED]  
**Sent:** Monday, 21 November 2022 2:47 PM  
**To:** Adem Abdioglu  
**Cc:** Charlie Licciardello; Colin Jeffrey; Tim Bain(Contact); Robert Ke  
**Subject:** FW: AMRF - Updated CTMP

**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi Adem,

Please see email confirmation for acceptance of the updated CTMP.

Thanks,

Mitch

---

**From:** Khan, Abdullah [REDACTED]  
**Sent:** Monday, 21 November 2022 2:28 PM  
**To:** Mitch Canty [REDACTED]  
**Cc:** Ward, Denis [REDACTED]; Robert Ke [REDACTED]  
**Subject:** RE: AMRF - Updated CTMP

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Hi Mitch,

No issues from SBT on responses provided to our comments on page 31.

Regards,

Abdullah

---

**From:** Mitch Canty [REDACTED]  
**Sent:** Friday, 18 November 2022 1:26 PM  
**To:** Khan, Abdullah [REDACTED]  
**Cc:** Ward, Denis [REDACTED]; Robert Ke [REDACTED]  
**Subject:** FW: AMRF - Updated CTMP

**CAUTION:** This email originated from outside of the Organisation.

Hi Abdullah,

Please see updated CTMP for Taylors following our discussion last week. The responses to our comments are on the final page of the document. Can you do a review and let me know if you're happy with the changes that have been made.

Thanks,

Mitch



**From:** Adem Abdioglu [REDACTED]  
**Sent:** Friday, 18 November 2022 11:43 AM  
**To:** Mitch Canty [REDACTED]  
**Cc:** Charlie Licciardello [REDACTED]; Colin Jeffrey [REDACTED]; Tim Bain [REDACTED]  
**Subject:** AMRF - Updated CTMP

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Mitch,

Please find attached updated CTMP for the AMRF project.

If you have any questions or issues, please feel free to reach out.

Thanks,  
Adem

Kind Regards,

**Adem Abdioglu**  
Project Engineer

**TAYLOR**

Level 13, 157 Walker Street North Sydney NSW 2060  
P +61 2 8736 9000 M [REDACTED] W [taylorau.com.au](http://taylorau.com.au)



We acknowledge the traditional Aboriginal and Torres Strait Islander custodians of this land. We pay our respects to Elders past, present and emerging.

The Property Industry's  
**HARD HAT DAY**  
[hardhatday.com.au](http://hardhatday.com.au)

We're fundraising to build homes for homeless youth!

Taylor BBQs **Friday 28 October 2022** [Donate Now](#)

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AMRF - First Building CTMP

No	Page	Comment	By	Response
1	6	Suggest noting SM Aerotropolis site at the end of the Aerotropolis Access Road	CPBG	Section 2.1 - Sentence included acknowledging SM site location.
2	6	Figure 1 - Suggest Legend to show SM Aerotropolis site	CPBG	Section 2.1 - Figure 1 updated to include SM Aerotropolis site.
3	6	Suggest including Aerotropolis Access Road. It is currently signposted at 20km/h with controlled access during working hours. CPBG is the principal contractor with the road licenced by Sydney Metro for the duration of SBT works.	CPBG	Section 2.2 - Site Access Road description included.
4	9	When is the expected peak activity period and duration?	SM	Section 3.3 & Section 3.6 - See added Figure 6 and Figure 8 which depict site peak periods and discussion of those peak periods.
5	9	Is the intention to stop and inspect vehicles at the intersection point as shown in figure 4? There are several directions of vehicles to stop and it appears to be only one controller? Can some more detail be given on the logistic operations at this location	SM	Section 3.4 - Site personnel would not temporarily stop any traffic on the access road to facilitate construction vehicle access. If required, vehicles will only be temporarily stopped internal to the site and to avoid any such queuing on the access road.
6	10	Table 1 - CPBG will generate traffic volumes allowed in the EIS and detailed in our CTMP. Impact on Level of Service of BCR/ Access Road roundabout is unknown as a result of these additional volumes. CPBG/SM would like to confirm that additional construction traffic impacts as a result of these works will not impact its operations noting P&P had concerns about LOS of BCR/ Access Road that is included in CTMP for SBT.	CPBG	Section 3.6 - This Table has been removed. The anticipated construction volumes would be so minor (even during peak construction periods) that their impact would not be recognised as part of any traffic modelling assessment. As such, the volumes are not expected to materially impact the operation or degrade the level of service of the Badgerys Creek Road/ site access road intersection.
7	10	Table 1 - This table shows volumes, should each number be doubled to show movements? Hours of operation for off-peak period and peak periods?	SM	Section 3.6 - Table has been removed and replaced with Figure 8 which indicates heavy vehicle volumes. These are number of vehicles. These volumes would be doubled to determine total daily movements. Heavy vehicle movements would be distributed throughout the day and therefore minimised during peak hours. Peak periods are expected to be between 7:00am to 10:00am and 3:00pm to 7:00pm.
8	12	Section 4.3 - Intention of TC at this location, relates to comment on page 9	SM	Section 4.3 - Authorised site personnel would be positioned at the western/ eastern gate (depending on the which gate is operational). They would not stop vehicles entering/ exiting the site rather assist with general access and ensure safe movements in/ out of the site.
9	13	Section 4.5 refer comment on page 10 in relation to impacts on BCR/ Access road roundabout, what is considered a minor impact?	CPBG/ SM	Section 4.5 - A minor impact is considered to be one that does not reduce the level of service of the intersection. Given construction volumes are so low they could not be expected to materially impact the Badgerys Creek Road/ site access road intersection nor degrade the level of service of the intersection.
10	17	Traffic Guidance Scheme Drawing- Please provide Need more details re. operations of this gate. Noting this is a potential access gate, and will need to consider Line of Sight issues with SBT traffic if this is to be used as an egress gate during SBT works. It is the current understanding this gate will not be used until late 2023	CPBG/ SM	Section 3.4 and Section 4.3 - The eastern gate would be used during road works on the internal access road (road section immediately south of the western gate. When this gate is operational the western gate would be closed. During this period authorised site personnel would be relocated to the eastern gate to manage ingress/ egress given line of sight concerns. They would ensure safe movement by both Taylor and Sydney Metro construction vehicles.
11	17	Traffic Guidance Scheme Drawing- Please confirm the requirement for this gate as this leads to CPBG's Aerotropolis site	CPBG/ SM	Section 3.4 - The southern gate would be used for building zero vehicles and visitor access and would not be used by construction vehicles.



## Adem Abdioglu

---

**From:** Development Applications <Developments.CJP@transport.nsw.gov.au>  
**Sent:** Friday, 23 December 2022 1:16 PM  
**To:** Adem Abdioglu  
**Cc:** Charlie Licciardello; Zeliha Cansiz; Samiah Assaad; Brandon Morson  
**Subject:** CTMP - AMRF - SSD-25452459  
**Attachments:** rpt\_221130\_4232\_amrf\_bringelly\_ctmp\_final.pdf

Transport for NSW (TfNSW), Greater Sydney Division has reviewed the CTMP and endorse the proposed temporary construction arrangements, subject to the following conditions:

- Any Traffic Guidance Schemes (TGS) prepared are to comply with AS1742.3 and Transport for NSW's "Traffic Control at Worksites" manual and be signed by a person with TfNSW certification to prepare a TGS.
- Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures and/or Speed Zone Authorisations as part of the ROL that may impact the state road network or is within 100m of traffic signals.
- Access to be maintained for residents, businesses and emergency vehicles at all times.
- No marshalling or queuing of construction vehicles is to occur on public roads. Arriving vehicles that are not able to use parking bay/work zone must continue to a holding point until space becomes available.
- When heavy vehicles are entering or leaving the site a traffic controller is to be provided to manage any conflicts between pedestrians and heavy vehicles.
- Transport for New South Wales reserve the right to alter the CTMP Conditions at any time to maintain safe and efficient traffic and pedestrian movements in this area.
- Should TfNSW Network and Asset Management, Network Operations, CJP Operations, Network and Safety or other TfNSW business area determine that that more information is to be provided for review and acceptance, including other TCS locations, this information must be submitted prior to the CTMP being implemented, or otherwise agreed upon.
- Any traffic control devices, including signage and line marking, should be installed by the proponent and must conform with Australian Standards 1742

Endorsement of the CTMP is not an approval to the type of traffic management or delineation devices used, nor is it an approval to any traffic guidance schemes depicted within the CTMP. It is assumed that the proponent has used type approved devices and has developed its traffic guidance schemes in accordance with the relevant Australian Standards and Guidelines.

The proponent is to ensure local residents, businesses, schools and other stakeholders in the affected area as well as emergency service organisations are notified of the changes associated with the CTMP, prior to its implementation.

Please ensure this CTMP is shared and adhered to by all contractors. If the CTMP changes, please forward a copy to [Developments.CJP@transport.nsw.gov.au](mailto:Developments.CJP@transport.nsw.gov.au) or further review and endorsement.

Operational Change | Customer Journey Planning | Greater Sydney

25 Garden Street Eveleigh NSW 2015

Transport for NSW

**Brandon Morson**  
Project Manager  
Customer Journey Planning  
Greater Sydney  
**Transport for NSW**

M [REDACTED] E [REDACTED]

transport.nsw.gov.au



I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

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# Appendix 8 - Noise Management Plan



Taylor Construction

NOVEMBER 2022

CONFIDENTIAL

# AMRF - First Building Construction Noise and Vibration Management Plan

wsp





# Question today Imagine tomorrow Create for the future




## AMRF - First Building Construction Noise and Vibration Management Plan

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REV	DATE	DETAILS
3	1/12/2022	Update Main Works CNVMP

	NAME	DATE	SIGNATURE
Prepared by:	David Kim	1/12/2022	
Reviewed by:	Rebecca Warren	1/12/2022	
Approved by:	Rebecca Warren	1/12/2022	

WSP acknowledges that every project we work on takes place on First Peoples lands.  
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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# Glossary and Abbreviations

Term	Meaning
AS	Australian Standard
Assessment period	The period in a day over which assessments are made
AVaTG	<i>Assessing Vibration: a Technical Guideline</i>
Background noise	Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L <sub>90</sub> noise level (see below).
BS	British Standard
CEMP	Construction Environmental Management Plan
CNVIA	Construction Noise and Vibration Impact Assessment
CNVMP	Construction Noise and Vibration Management Plan
dB	Decibel
dBA	Decibel (A-weighted)
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
EPA	Environment Protection Authority
ICNG	<i>Interim Construction Noise Guideline</i> (Department of Environment and Climate Change, 2000).
L <sub>max</sub>	Maximum noise level: maximum rms noise level.
NML	Noise Management Level
NPfI	<i>NSW Noise Policy for Industry</i>
RBL	Rating Background Level
SSD	State Significant Development
TfNSW	Transport for NSW

# 1 Introduction

---

## 1.1 Background

WSP Australia Pty Ltd (WSP) has been engaged by Taylor Construction to provide a Construction Noise and Vibration Management Plan (CNVMP) for the construction of an advanced manufacturing and research facility (the Project) located at 215 Badgerys Creek Road, Bringelly. The development is known as AMRF – First Building and is referred to as ‘the Project’ in this document.

The SSDA Consent Conditions for the Project are detailed in Schedule 2 of the State Significant Development Application (SSD) approval SSD-25452459 dated 9 September 2022.

This CNVMP addresses the Conditions of Consent stipulated in Section 2.2 relating to the demolition, building and fitout construction activities.

This CNVMP forms part of the Construction Environmental Management Plan (CEMP) for the Project and has been prepared with reference to:

- The relevant SSDA Consent Conditions for the Project
- Mitigation measures recommended in the Construction Noise and Vibration Impact Assessment (CNVIA) prepared for the SSDA (ref: PS122689-ACO-RPT-Construction NVIA\_rev3.1 dated 15 February 2022)
- Noise Management Procedure (SE-OP-04)
- Relevant environmental legislation and regulatory requirements.

In accordance with Consent Condition B32, the CNVMP shall be submitted for approval to the Planning Secretary prior to construction.

This report has been prepared by qualified acoustic engineers and members of the Australian Acoustical Society and the Australia Association of Acoustic Consultants as required under Condition B31(a) of the Conditions of Consent.

---

## 1.2 Project Description

The Project is located at 215 Badgerys Creek Road, Bringelly (lot 101 DP 1282948) and will consist of the following areas:

- Laboratories,
- Open plan workspace,
- Outdoor plaza,
- Community park, and
- On grade car park.

The works area for the proposed construction activities is shown in Figure 1.1. It is proposed that works would commence in November 2022 and take approximately 70 weeks to complete.

The Project would be constructed in stages with the stages occurring at different times depending on the construction activity as presented in Table 1.1.



Table 1.1 Construction activities and staging

<b>CONSTRUCTION STAGE</b>	<b>DURATION</b>
Scenario 1 – Demolition / excavation	3 months
Scenario 2 – Excavation and foundation works	3 months
Scenario 3 – Erection of structure	7 months
Scenario 4 – Fitout and landscaping	2 months

## 1.3 SSDA Construction Noise and Vibration Impact Assessment

As part of the SSDA, a CNVIA was prepared by WSP Australia Pty Ltd in February 2022. The assessment undertaken in the CNVIA would also be applicable to this document and included the following:

- Identified sensitive receivers surrounding the Project
- Described the existing noise environment for nearby sensitive receivers
- Determined noise and vibration criteria applicable to the Project
- Predicted noise and vibration impacts associated with the construction of the Project
- Highlighted any exceedances above the defined criteria
- Recommended noise and vibration mitigation measures to be considered when managing impacts associated with the construction (where reasonable and feasible)

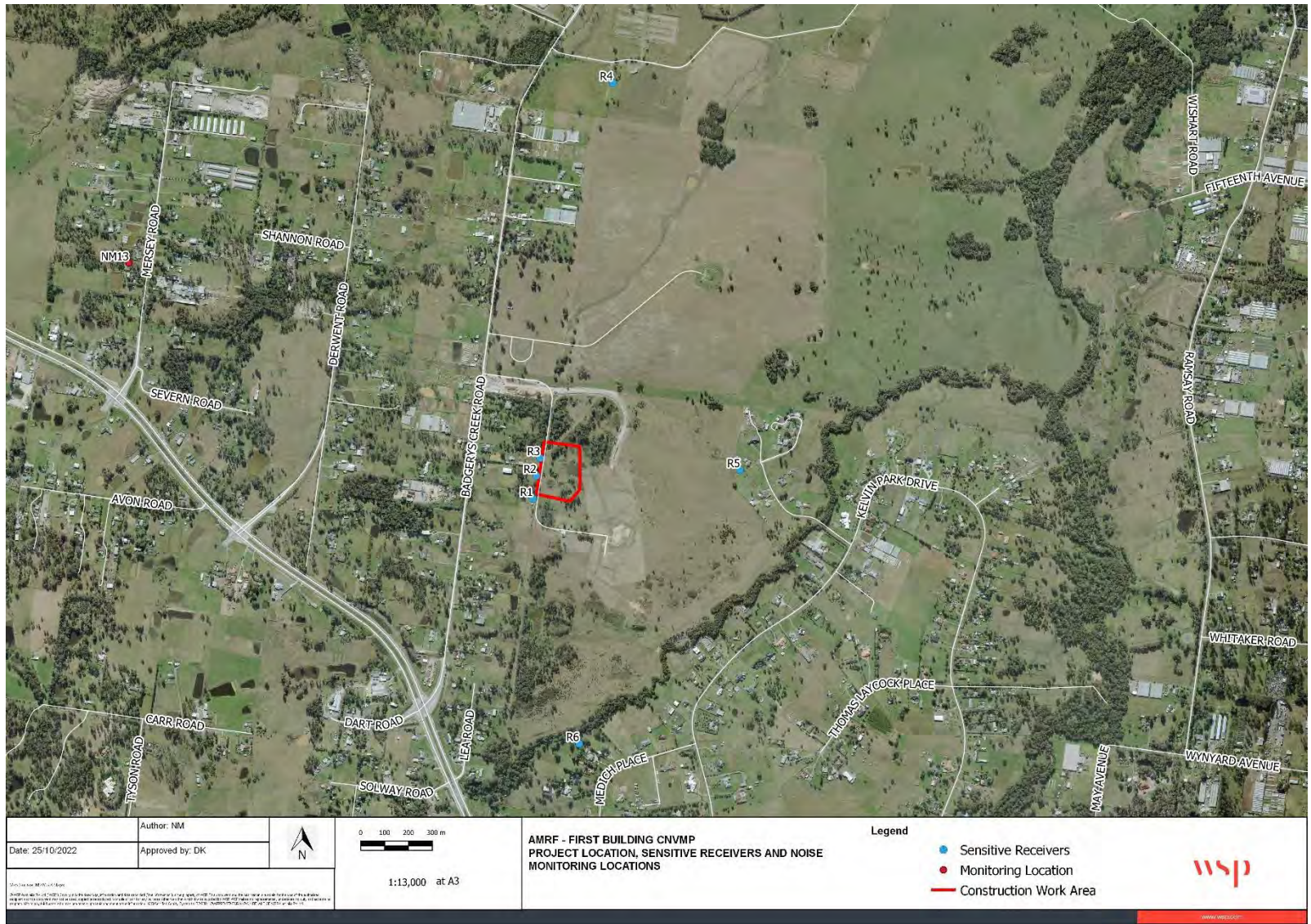


Figure 1.1 Project site and surroundings

# 2 Approval Requirements

---

## 2.1 Noise and Vibration Guidelines

The following guidelines and standards relevant to the management of noise and vibration are referenced in this report, consistent with the First Building CNVIA:

- NSW EPA *Noise Policy for Industry* 2017 (NPfI)
  - NSW DECC *Interim Construction Noise Guideline* 2009 (ICNG)
  - NSW EPA *Road Noise Policy* 2011 (RNP)
  - NSW DEC *Assessing Vibration: a technical guideline* 2005 (AVTG)
  - Australian Standard AS 2436: *Guide to noise and vibration control of construction, demolition and maintenance sites* 2010 (AS 2436)
  - British Standard BS 7385-2: *Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration* 1993 (BS 7385-2)
  - German Standard DIN 4150-3: *Structural Vibration in Buildings: Effects on Structures* 2016 (DIN 4150-3)
- 

## 2.2 Conditions of Consent

The Project's Conditions of Consent are as follows:

### Hours of Work

B28. The Applicant must comply with the following construction hours:

- 7.00 am to 6.00 pm, Monday to Friday
- 8.00 am and 1.00 pm on Saturdays
- No works Sunday or Public Holidays.

B29. Works outside of the hours identified in condition B28 may 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.

### Construction Noise Limits

B30. The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (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 management and mitigation measures in Appendix 2 of the Conditions of Consent.

### Construction Noise Management Plan

B31. The Applicant must prepare a Construction Noise 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



- a be prepared by a suitably qualified and experienced noise expert(s)
- b be approved by the Planning Secretary prior to the commencement of construction the development
- c describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time)
- d describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers
- e include strategies that have been developed with the community for managing high noise generating works
- f describe the community consultation undertaken to develop the strategies in condition B31(e).
- g include a complaints management system that would be implemented for the duration of the development.

B32. The Applicant must:

- not commence construction of any relevant stage of the development until the Construction Noise Management Plan required by condition B31 is approved by the Planning Secretary
- implement the most recent version of the Construction Noise Management Plan approved by the Planning Secretary for the duration of construction.

### **Management Plan Requirements**

C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:

- a detailed baseline data
- b details of:
  - i the relevant statutory requirements (including any relevant approval, licence or lease conditions)
  - ii any relevant limits or performance measures and criteria
  - 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
- c a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;
- d a program to monitor and report on the:
  - i impacts and environmental performance of the development; and
  - ii effectiveness of the management measures set out pursuant to paragraph (c) above
- e 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;
- f a program to investigate and implement ways to improve the environmental performance of the development over time;
- g a protocol for managing and reporting any:
  - 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

- h a protocol for periodic review of the plan.

Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans

## 2.3 Project Approval Compliance

The CNVMP has been written to address the Conditions of Consent, as detailed in Table 2.1.

Table 2.1 Condition of Consent compliance matrix

SSDA CONSENT CONDITION	DESCRIPTION	WHERE ADDRESSED
B28	Standard construction hours	Section 5.3
B29	Outside standard construction hours	Section 5.3
B30	Construction noise limits	Section 4.1
B31	The Applicant must prepare a Construction Noise 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	This document
B31 (a)	be prepared by a suitably qualified and experienced noise expert(s);	This document
B31 (b)	be approved by the Planning Secretary prior to the commencement of construction the development;	Section 6
B31 (c)	describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time);	Section 6
B31 (d)	describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	Section 6
B31 (e)	include strategies that have been developed with the community for managing high noise generating works; and	Section 6
B31 (f)	describe the community consultation undertaken to develop the strategies in condition B31(e)	Section 7.3
B31 (g)	include a complaints management system that would be implemented for the duration of the development.	Section 7.4; refer to WPCA letter to community
B32	CNMP application requirements	Section 6
C1	Management plan requirements	This document

# 3 Existing Environment

## 3.1 Sensitive Receivers

The land use surrounding the Project is predominantly low density residential and greenfield sites. It is noted that the nearby properties are located within the future Aerotropolis Core Precinct and near the now under-construction Sydney Metro Aerotropolis Core Station. Further development is likely to occur in the future however it has been assumed that the nearby residential dwellings will be occupied for the purpose of this document.

The most affected receivers are the residential dwellings on Badgerys Creek Road directly adjacent and to the west of the Project site.

The CNVIA identified the most affected representative noise sensitive receivers as listed in Table 3.1. These locations are presented in Figure 1.1. No vibration-sensitive heritage items or areas containing vibration-sensitive equipment have been identified in the vicinity of the Project area.

Table 3.1 Identified nearest noise sensitive receivers

RECEIVER ID	ADDRESS	RECEIVER TYPE	APPROXIMATE DISTANCE FROM PROJECT SITE (m) <sup>1</sup>
R1	145 Badgerys Creek Road, Bringelly	Residential	60
R2	155 Badgerys Creek Road, Bringelly	Residential	40
R3	175 Badgerys Creek Road, Bringelly	Residential	60
R4	475 Badgerys Creek Road, Bringelly	Residential <sup>2</sup>	1,500
R5	25 The Retreat, Bringelly	Residential	660
R6	11 Medich Place, Bringelly	Residential	1,200

(1) Noted distance are approximate and for illustrative purposes only. Noise modelling undertaken based on actual distances from noise source to receiver.

(2) The sensitive receiver located at 475 Badgerys Creek Road contains both residential and industrial premises. For a conservative assessment the receiver at 475 Badgerys Creek Road has been assessed as a residential receiver.

## 3.2 Existing Noise Environment

The CNVIA adopted background noise levels from the *Sydney Metro – Western Sydney Airport Environmental Impact Statement* (M2A Joint Venture, 21 October 2021) to characterise the existing noise environment at residential receivers. Long term noise monitoring undertaken at 80 Mersey Road, Bringelly was determined to be suitably representative of the existing noise environment at the Project affected receiver locations.

The adopted background noise levels (rating background levels) are summarised in Table 3.2.



Table 3.2 Summary of background noise levels

LOCATION	RATING BACKGROUND LEVEL, (RBL) <sup>2</sup> dBA			AMBIENT NOISE LEVEL, $L_{eq, 15min}$ <sup>3</sup> dBA		
	DAY	EVENING	NIGHT	DAY	EVENING	NIGHT
80 Mersey Road, Bringelly	38	35	34	58	52	51

- (1) All values expressed as dBA and rounded to nearest 1 dBA
- (2) RBL – Rating Background Level – based on the lowest 10<sup>th</sup> percentile of the  $L_{90}$  descriptor
- (3)  $L_{eq}$  – Equivalent continuous (energy average) A-weighted sound pressure level
- (4) Daytime (7am – 6pm), Evening (6pm – 10pm), Night (10pm – 7 am) as defined in the NPfI

Source: Sydney Metro – Western Sydney Airport EIS; Location NM13

# 4 Assessment Criteria

## 4.1 Construction Noise

The SSDA Consent Conditions (B30 and B31) requires construction noise to be assessed and managed in accordance with the ICNG. The ICNG outlines the development of Noise Management Levels (NMLs) based on existing Rating Background Levels (RBLs) during standard construction hours and outside of standard hours. No construction works are proposed outside of standard hours.

In accordance with the SSDA Consent Conditions and the ICNG the application of the NMLs at residences is presented in Table 4.1.

Table 4.1 Application of the ICNG noise management levels for residential receivers

TIME OF DAY	NML, dBA $L_{eq, 15min}$	HOW TO APPLY
<p>Recommended standard hours:</p> <p>Monday to Friday 7.00 am to 6.00 pm</p> <p>Saturday 8.00 am to 1.00 pm</p> <p>No work on Sundays or public holidays</p>	<p>Noise affected</p> <p>RBL + 10 dB</p>	<p>The noise affected level represents the point above which there may be some community reaction to noise.</p> <p>Where the predicted or measured <math>L_{Aeq(15min)}</math> is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level.</p> <p>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.</p>
	<p>Highly noise affected</p> <p>75 dBA</p>	<p>The highly noise affected level represents the point above which there may be strong community reaction to noise.</p> <p>Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account 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.</p>
<p>Outside recommended standard hours</p>	<p>Noise affected</p> <p>RBL + 5 dB</p>	<p>A strong justification would typically be required for works outside the recommended standard hours.</p> <p>The proponent should apply all feasible and reasonable work practices to meet the noise affected level.</p> <p>Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should consult with the community.</p>

Table 4.2 presents the NMLs for representative residential receivers, as established in the CNVIA.

Table 4.2 Noise management levels at residential receivers

LOCATION	TIME	RBL, dBA	NOISE MANAGEMENT LEVEL dBA $L_{eq, 15min}$	HIGHLY NOISE AFFECTED LEVEL dBA $L_{eq, 15min}$
All residences	Standard hours <sup>1</sup>	38	48	75

(1) Standard hours are defined as Monday to Friday (7.00am – 6.00pm), Saturday (8.00am – 1.00pm)

Feasible and reasonable noise mitigation and management measures, as defined in the ICNG, are to be implemented where NMLs are exceeded either during or outside of recommended standards hours for construction works.

## 4.2 Construction Traffic Noise

The ICNG does not provide criteria for assessing the construction traffic on public roads. Instead the ICNG stipulates that construction traffic is assessed under the *Environmental Criteria for Road Traffic Noise* (EPA 1999), which has been superseded by the NSW EPA *Road Noise Policy* (RNP 2011).

The RNP provides guidance on the assessment of noise impacts from road traffic noise on sensitive receivers.

Construction traffic would access the site via Badgerys Creek Road. Based on the road categories provided in Table 2 of the RNP, Badgerys Creek Road is classified as a sub-arterial road given that it connects The Northern Road (an arterial road) and Elizabeth Drive (a sub-arterial road). Therefore, the sub-arterial road criteria would apply for additional traffic from construction works.

Table 4.3 presents a summary of the applicable criteria for residential receivers.

Table 4.3 Road traffic noise criteria for residential receivers on existing roads affected by additional traffic from land use developments

ROAD TYPE	ROAD TRAFFIC NOISE CRITERIA	
	DAY (7.00 AM TO 10.00 PM)	NIGHT (10.00 PM TO 7.00 AM)
Sub-arterial road	60 dBA $L_{eq, 15hr}$	55 dBA $L_{eq, 9hr}$

The RNP application states that *'for existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level as a result of the development should be limited to 2 dBA above that of the noise level without the development. This limit applies wherever the noise level without the development is within 2 dBA of, or exceeds, the relevant day or night noise assessment criterion.'*

Therefore, if the road traffic noise levels increase by more than 2 dBA as a result of the proposed construction traffic, and the criteria in Table 4.3 are exceeded, investigation of mitigation options would be required.

## 4.3 Construction Vibration

Vibration associated with construction activities can result in impacts on human comfort or the damage of physical structures such as dwellings. These two impacts have different criteria, with the effects of vibration on human comfort having a lower threshold.

Importantly, cosmetic damage is regarded as minor in nature; it is readily repairable and does not affect a building's structural integrity. If there is no significant risk of cosmetic damage, then structural damage is not considered a risk.



The SSDA Consent Conditions do not provide specific requirements to address construction vibration. Nevertheless, guidance has been taken from the *Assessing Vibration: A Technical Guideline (AVaTG)* (DECC 2006) as referred to in the ICNG.

### 4.3.1 Cosmetic Building Damage and Structural Integrity

There are no vibration limits for cosmetic building damage and structural integrity in AVaTG. Therefore, the limits set out in *British Standard BS 7358-2: Evaluation and measurement for vibration in buildings guide to damage levels from ground-borne vibration* have been adopted.

A summary of the limits is provided in Table 4.4. These peak vibration limits are set so that the risk of cosmetic damage is minimal. They have been set at the lowest level above which damage has been credibly demonstrated. The limits also assume that the equipment causing the vibration is only used intermittently.

Table 4.4 BS 7385-2 Guideline vibration limits for cosmetic damage

GROUP	TYPE OF STRUCTURE	PEAK COMPONENT PARTICLE VELOCITY, mm/s <sup>1</sup>		
		4 – 15 Hz	15 – 40Hz	40 Hz AND ABOVE
1	Reinforced or framed structures Industrial or heavy commercial buildings	50		
2	Un-reinforced or light framed structures Residential or light commercial buildings	15 – 20 <sup>2</sup>	20 – 50	50

- (1) Values referred to are the base of the building, on the side of the building facing the source of vibration (where feasible)  
 (2) At frequencies below 4 Hz, a maximum displacement of 0.6mm (zero to peak) should not be exceeded

### 4.3.2 Human Comfort (Amenity)

Table 4.5 presents the limits (vibration dose values) above which there is considered to be a risk that the amenity and comfort of people occupying buildings would be affected by intermittent vibration from construction works. These limits are sourced from the AVaTG.

Table 4.5 Human comfort (amenity) guideline vibration limits (continuous vibrations)

LOCATION	ASSESSMENT PERIOD	VIBRATION DOSE VALUE, m/s <sup>1.75</sup>		WEIGHTED RMS VALUES FOR CONTINUOUS VIBRATION ACCELERATION (m/s <sup>2</sup> ) 1-80Hz			
		Preferred values	Maximum values	Preferred Z-axis values	Preferred X&Y -axes values	Maximum Z-axis values	Maximum X&Y -axes values
Residences	Daytime	0.20	0.40	0.010	0.0071	0.020	0.014
	Night time	0.13	0.26	0.007	0.005	0.014	0.010

# 5 Construction Noise and Vibration Assessment

## 5.1 Construction Activities

An overview of the indicative construction activities and proposed equipment is provided in Table 5.1. The noise levels have been adopted from the TfNSW CNVG.

Table 5.1 Indicative construction staging and equipment

CONSTRUCTION STAGE	EQUIPMENT	Equipment SWL - dBA	SCENARIO SWL - dBA
Scenario 1 – Demolition / excavation	Excavators	110	120
	Dozers	116	
	Trucks	103	
	Chainsaws	114	
	Bobcats	112	
	Cranes	98	
Scenario 2 – Excavation and foundation works	Bore piling rigs	112	122
	Excavators (rock breaker / saw)	118	
	Dozers	116	
	Trucks	103	
	Graders	113	
	Cranes	98	
Scenario 3 – Erection of structure	Hand tools (angle grinders, etc. for formwork)	116	121
	Concrete pumps	102	
	Excavators	110	
	Dozers	116	
	Trucks	103	
	Vibratory compactor	109	
	Concrete truck / agitator	109	
	Generator	103	
	Jackhammer	113	
Scenario 4 – Fitout and landscaping	Excavators	110	121
	Dozers	116	
	Trucks	103	

CONSTRUCTION STAGE	EQUIPMENT	Equipment SWL - dBA	SCENARIO SWL - dBA
	Concrete truck / agitator	109	
	Paving machine	114	
	Cranes	98	
	Hand tools	116	

## 5.2 Noise Modelling Methodology

Potential noise levels at sensitive receivers have been modelled using the ISO9613 noise prediction algorithm in SoundPLAN v8.2. This method is commonly used and accepted by regulatory agencies in NSW.

A 3D model of the works areas was developed as part of the CNVIA, considering noise sources, receivers and the effect of distance, ground topography and atmospheric attenuation.

Noise modelling parameters used in this report are summarised in Table 5.2.

Table 5.2 Noise modelling parameters

PARAMETER	INPUT DATA
Terrain	Sourced from ELVIS (1 m contour intervals)
SoundPLAN module	ISO9613 industrial module
Meteorological condition	Neutral meteorological conditions
Source heights	Construction plant and equipment heights modelled at 2m above ground
Receiver heights	1.5m from the ground
Ground absorption	A ground absorption coefficient of 0.6 has been adopted to represent the largely rural nature of the environment.

## 5.3 Construction Hours

The construction hours for the Project are defined in SSDA Consent Condition B28 and has been summarised below.

- 7.00 am to 6.00 pm, Monday to Friday
- 8.00 am and 1.00 pm on Saturdays
- No works Sunday or Public Holidays.

In accordance with SSDA Consent Condition B29, works outside standard hours may 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 requires 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.



## 5.4 Predicted Noise Levels

The construction noise levels were predicted at each receiver identified in Section 3.1. As a worst case scenario, the predicted noise levels are based on the assumption that all the plant and equipment listed in Table 5.1 are operating concurrently and at the closest possible distance to each receiver.

The predicted noise levels are presented in Table 5.3. Exceedances of the daytime NML are indicated in **bold font**, with highly affected noise levels presented in **bold red font**.

Table 5.3 Predicted construction noise levels

RECEIVER ID <sup>2</sup>	RECEIVER TYPE	CONSTRUCTION NOISE MANAGEMENT LEVEL, dBA Leq, 15 min <sup>1</sup>		PREDICTED NOISE LEVELS dBA Leq, 15 min			
		NOISE AFFECTED (RBL+10 dB)	HIGHLY NOISE AFFECTED	CONSTRUCTION SCENARIO			
				1	2	3	4
R01	Residential	48	75	73	<b>75</b>	<b>74</b>	<b>74</b>
R02	Residential	48	75	<b>80</b>	<b>82</b>	<b>81</b>	<b>81</b>
R03	Residential	48	75	<b>79</b>	<b>81</b>	<b>80</b>	<b>80</b>
R04	Residential	48	75	37	39	38	38
R05	Residential	48	75	47	<b>49</b>	48	48
R06	Residential	48	75	41	43	42	42

- (1) Standard hours NMLs
- (2) Receiver locations as shown in Figure 1.1

## 5.5 Discussion

Based on Table 5.3, the predicted construction noise levels are predicted to generally comply with the standard hours NMLs at receivers R04 to R06. A minor exceedance of 1 dBA is predicted at receiver R05 during excavation and foundation works. At receivers R01, R02 and R03 located directly adjacent to the site, the standard hours NML is predicted to be exceed by up to 34 dBA. In addition, R02 and R03 are identified as being highly noise affected during all construction scenarios. Noise levels at other receivers are predicted to generally comply at other receivers for remaining construction scenarios, excepting a marginal exceedance of 1 dBA at R05 predicted during construction scenario 2.

The noise levels presented in this assessment are conservative, with all noise sources assumed to operate simultaneously at the nearest point to the receiver. In reality, noise levels would not be likely to be sustained for greater than a few days per construction stage as equipment would not be required to operate at that intensity for significant periods. Furthermore, noise impacts are likely to be lower as plant items may not be operating simultaneously at all times and therefore predicted noise levels would be reduced for sensitive receivers.

Construction noise levels are predicted to reach a maximum during the excavation and foundation works (3 month duration). During this stage, earthworks and piling activities utilising dozers, excavators and piling rigs are likely to be the highest noise generating activities.

Additionally, it anticipated that shielding from intervening buildings would further attenuate noise at receivers as the main building structure is erected.

As a result of the predicted exceedance, noise mitigation and management measures have been outlined in Section 6 to reduce the potential noise impacts at the nearest affected receivers.

## 5.6 Cumulative Construction Noise Impacts

Cumulative impacts have been considered from concurrent construction activities in the vicinity of the Project. Projects with the potential for cumulative impacts were identified from a review of publicly available information with reference to the NSW Major Projects Website (NSW Government, searched October 2022).

Construction works at the Aerotropolis Station, part of the Sydney Metro Western Sydney Airport project, are expected to occur at the same time as the construction staging of the Project. In particular, it is expected that the construction of the Project would likely occur during the Earthworks stage of the Aerotropolis Station (ref: *Sydney Metro – Western Sydney Airport – Chapter 8 - Project Description – Construction (2020)*) (Sydney Metro WSA Report).

The indicative timeline for overlapping construction activities for both projects is presented in Table 5.4.

Table 5.4 Construction timeline of nearby construction sites

PROJECT	CONSTRUCTION ACTIVITIES	2022				2023			
Aerotropolis Station Construction	Earthworks	X	X	X	X	X	X	X	
	Station construction and fitout							X	X
First Building Construction	Demolition / excavation				X				
	Excavation and foundation works				X	X			
	Erection of structure					X	X	X	
	Fitout and landscaping							X	X

Due to the potential for concurrent construction activities and the proximity of both works areas to the nearest sensitive receivers, the potential for cumulative construction noise impacts has been considered.

Table 5.5 assesses the potential cumulative noise impacts at the nearest sensitive receivers to the Project. This assessment considers the predicted noise levels from the Project and the predicted noise levels from Earthworks and Station Construction Stages at the equivalent identified receiver.

Table 5.5 Cumulative noise assessment of concurrent construction activities

ID	SYDNEY METRO UNIQUE ID	ADDRESS	PREDICTED CONSTRUCTION NOISE LEVELS - dBA $L_{eq, 15min}$						COMMENT
			AEROTROPOLIS		THE PROJECT				
			EARTH WORKS	STATION CONSTRUCTION	1	2	3	4	
R1	1003 <sup>1</sup>	145 Badgerys Creek Road, Bringelly	75	70	73	75	74	74	Where both construction sites are concurrently undertaking works, it is anticipated that the construction noise levels may increase by up to 3 dBA.
R2	1003	155 Badgerys Creek Road, Bringelly	75	70	80	82	81	81	Where both construction sites are concurrently undertaking works, it is anticipated that the construction noise levels may increase by up to 1 dBA.
R3	994	175 Badgerys Creek Road, Bringelly	77	72	79	81	80	80	Where both construction sites are concurrently undertaking works, it is anticipated that the construction noise levels may increase by up to 2 dBA.
R4	1013 <sup>1</sup>	475 Badgerys Creek Road, Bringelly	68	60	37	39	38	38	The construction noise from the Aerotropolis works is significantly louder than the construction noise from the Project. It is expected that construction noise from the Project would not be discernible at the receiver when Aerotropolis works are being undertaken.
R5	1943	25 The Retreat, Bringelly	74	69	47	49	48	48	The construction noise from the Aerotropolis works is significantly louder than the construction noise emissions from the Project. It is expected that construction noise from the Project would not be discernible at the receiver when Aerotropolis works are being undertaken.
R6	212	11 Medich Place, Bringelly	72	67	41	43	42	42	The construction noise from the Aerotropolis works is significantly louder than the construction noise emissions from the Project. It is expected that construction noise from the Project would not be discernible at the receiver when Aerotropolis works are being undertaken.

- (1) The Sydney Metro Western Sydney Airport Assessment have not provided predicted noise levels for this receiver, therefore the predicted noise level at an adjacent receiver has been adopted instead.



The results of Table 5.5 indicate that cumulative noise impacts may occur at some nearby affected receivers (R1 to R3) when works occur concurrently with Aerotropolis Station works. At receivers R4 to R6, works would likely be masked by works from the Aerotropolis works and would not result in cumulative noise impacts.

## 5.7 Construction Traffic Noise

The ICNG stipulates that construction traffic is assessed under the Environmental Criteria for Road Traffic Noise (EPA 1999), which has been superseded by the RNP. As discussed in Section 4.2, the RNP states that any increase in road traffic noise as a result of a traffic generating development should be limited to no more than 2 dBA over the existing traffic noise levels.

The traffic assessment prepared by SCT Consulting for the Project (ref: *Bradfield City Centre First Building* dated 12 November 2021), details the proposed vehicles movement associated with the construction of the Project. It is predicted that a maximum of 30 light vehicle movements would occur during the AM and PM peak hour via the access road off Badgerys Creek Road. Heavy vehicle movements would typically occur outside peak periods, however for a worst case scenario it is assumed that a single heavy vehicle movement occurs during the AM and PM peak hour.

The existing traffic flows for the Project site have been reviewed based on the *Sydney Metro – Western Sydney Airport – Technical Paper 1: Transport* dated October 2020.

Table 5.6 Summary of traffic flow increase in peak periods

LOCATION	TRAFFIC FLOW, VEHICLES/HOUR		TRAFFIC INCREASE		NSW RNP MAX INCREASE, dB	COMPLIES
	BASE YEAR <sup>1</sup>	INCREASED TRAFFIC FLOW <sup>2</sup>	TRAFFIC %	NOISE LEVEL, dB		
<b>AM peak</b>						
Badgerys Creek Road (between Elizabeth Drive and the Project)	580	13	2.2%	0.1	≤ 2	Yes
Badgerys Creek Road (between the Northern Road and the Project)	530	18	3.3%	0.1		Yes
<b>PM peak</b>						
Badgerys Creek Road (between Elizabeth Drive and the Project)	590	18	2.9%	0.1	≤ 2	Yes
Badgerys Creek Road (between the Northern Road and the Project)	550	13	2.3%	0.1		Yes

(1) Existing traffic flows based on the *Sydney Metro – Western Sydney Airport – Technical Paper 1: Transport* dated October 2020

(2) Based on 30 light vehicle movements and 1 heavy vehicle movement

Based on the existing traffic flows on Badgerys Creek Road, the increases in traffic from Project construction movements are predicted to be minimal, with changes to existing traffic levels of less than 2 dB. Thus, the Project is expected to comply with the NSW RNP.

It is recommended that the construction contractor review the construction traffic movements when the methodology is developed to ensure that the provisions of the RNP are satisfied.

## 5.8 Construction Vibration

Certain construction activities would require the use of vibration intensive equipment that may affect the nearest sensitive receivers. The most vibration intensive plant nominated as part of the work is the use of vibratory rollers and piling rigs.

Table 5.7 presents the indicative minimum working distances for the nominated construction plant to minimise the risk of structural damage and human comfort for sensitive receivers.

The minimum working distances are based on the typical distance from works permitted to meet the limits set out in Section 4.3. The distances are indicative only and results may vary depending on the activity, equipment, local ground, and receiver conditions.

Table 5.7 Recommended minimum working distances for vibration intensive plant

PLANT ITEM	RATING / DESCRIPTION	MINIMUM WORKING DISTANCE	
		COSMETIC DAMAGE	HUMAN COMFORT
Large hydraulic hammer	1600 kg – 10 to 34t excavator	22 m	73 m
Handheld pneumatic hammer	10 kg	1 m (nominal)	Avoid contact with structure
Vibratory roller, smooth drum	> 18t	25 m	100 m
Pile boring	≤ 800mm	2 m (nominal)	4 m

All privately owned sensitive receiver locations are located outside the minimum working distances for cosmetic damage and human comfort. As a result, it is anticipated that the construction vibration levels will satisfy the cosmetic damage and human comfort criteria stipulated in Section 4.3.

To minimise the potential for vibration impact on these receivers, mitigation and management measures are discussed in Section 6 and Section 7.2.

### 5.8.1 Construction Vibration Impacts on the Planned Sydney Metro Tunnel

The CNVIA identified the Sydney Metro alignment is located adjacent to the Project construction works area. The recommended minimum working distances for cosmetic damage as detailed in Table 5.7 are representative of residential or light commercial type buildings which are typically unreinforced or light framed structures. The planned Sydney Metro tunnel is likely to be a reinforced structure and resistant to higher vibration levels. The Sydney Metro alignment is also located at least 55m away from the Project construction works area well beyond the recommended minimum working distances for unreinforced or light framed structures. Furthermore, as explained in Section 7.5.5 of the *British Standard BS 7358-2: Evaluation and measurement for vibration in buildings guide to damage levels from ground-borne vibration*, structures below ground are known to sustain higher levels of vibration and are very resistant to damage unless in very poor condition. Thus, vibration impacts on the planned Sydney Metro tunnels are expected to be negligible.

# 6 Construction Noise and Vibration Management Measures

Noise and vibration from the project will be managed in accordance with the SSDA Consent Conditions, the contractor’s noise management procedure (SE-OP-04) and the ICNG.

In accordance with SSDA Consent Condition B32 construction must not commence development until the Construction Noise Management Plan required by condition B31 is approved by the Planning Secretary. Once approved it is the contractor’s responsibility to implement the approved CNVMP.

## 6.1 Consent Condition’s Management and Mitigation Measures

Appendix 2 of the SSDA Consent Condition’s provides noise and vibration mitigation measures that need to be incorporated when managing noise from the Project. These mitigation measures are reproduced in Table 6.1.

Table 6.1 Applicant’s Management and Mitigation Measures (Noise and Vibration) – Appendix 2 of the SSDA Consent Conditions

ISSUE	MITIGATION MEASURES
Noise and vibration	<ul style="list-style-type: none"> <li>— Preparation of a Construction Noise and Vibration Management Plan</li> <li>— Minimising coinciding use of noisy plant items</li> <li>— Shutting down intermittently used equipment when not in use</li> <li>— Regular compliance checks on the noise emissions of all plant and machinery</li> <li>— Non-tonal reversing alarms used on all items of plant and heavy vehicles</li> <li>— Noisy equipment oriented away from sensitive receivers where practicable</li> <li>— Pre-construction and ongoing consultation with adjoining sensitive receivers</li> <li>— Apply minimum working distances to manage vibration impacts, with attended vibration monitoring where works occur within the minimum distances</li> </ul>

## 6.2 Noise Management Procedure (SE-OP-04)

The noise and vibration mitigation measures to be implemented as part of the contractor’s Noise Management Procedure (SE-OP-04) are detailed in Table 6.2.

Table 6.2 Noise Management Procedure Mitigation Measures (SE-OP-04)

Environmental noise and vibration (nuisance)		
Essential Action	Responsibility	Timing
Where possible, position and orientate noisy plant and equipment away from sensitive receivers.	Project/ site manager	At site set-up and when introducing new plant
Ensure all construction activities are undertaken during approved working hours. Approved hours may vary with different councils and development consents.	Project/ site manager	At all times



Prevent vehicles and plant queuing and idling outside the site prior to the morning start time.	Project/ site manager	Each morning
Prevent vehicles and plant idling when not in use.	Project/ site manager	At all times
Notify residents and other sensitive receivers of construction activities likely to affect amenity due to noise or vibration.	Project/ site manager	When noisy activities may affect amenity
If a noise or vibration-related complaint is received, report and investigate in accordance with the incident reporting and investigation procedure. Feedback on resolution of the complaint should be provided to the complainant where requested.	Project/ site manager	When complaint received

## 6.3 Additional Mitigation Measures

In addition to the mitigation measures detailed above, the following noise mitigation measures should also be considered where reasonable and feasible.

- Avoiding any unnecessary noise when carrying out manual operations and when operating plant
- Keeping truck drivers informed of designated routes, parking locations and acceptable delivery hours for the site (standard hours only)
- Compounds, refuelling areas and work areas designed to promote one-way traffic so that vehicle reversing movements are minimised
- Minimising talking loudly; no swearing or unnecessary shouting, or loud stereos/radios onsite; no dropping of materials from heights where practicable, no throwing of metal items and slamming of doors
- Maximising offset distances between noisy plant and adjacent sensitive receivers and determining safe working distances
- Using the most suitable equipment necessary for the construction work at any one time
- Regularly inspecting and maintaining plant to avoid increased noise levels from rattling hatches, loose fittings etc
- Use of quieter and less vibration emitting construction methods where feasible and reasonable. Where noise intensive equipment with special audible characteristics or vibration generating activities must be used, a one hour construction respite period would be observed for every three hours of consecutive use
- Should plant and equipment to be used differ from that included in the noise predications, the findings of this noise assessment should be revisited prior to commencement of construction
- Brief the work team in order to create awareness of the locality of sensitive receivers and the importance of minimising noise emissions as part of the site induction

The following vibration mitigation measures should also be considered where reasonable and feasible:

- Choosing alternative, lower-impact equipment or methods wherever possible
- Use alternative to impact piling – bored piling, grip jacking, or the use of a hammer cushion when driving steel piles that minimise the vibration generated
- Organise demolition, earthmoving and ground-impacting operations so as not to occur in the same time period
- Place as much distance as possible between the plant / equipment and the receivers

- Select demolition methods not involving impact where possible (e.g. hydraulic rock splitters rather than rock breakers)

The most applicable standard management measures are outlined as follows:

- Construction hours and scheduling:
  - Works should generally be carried out during standard construction hours (i.e. 7.00 am to 6.00 pm Monday to Friday; 8.00 am to 1.00 pm Saturdays).
- Notification:
  - Potential affected receivers would be notified as detailed in Section 7.3.

Table 6.3 provides indicative benefits of typical engineering control mitigation measures for construction activities, based on guidance in AS 2436 and experience on similar construction proposals.

Table 6.3 Indicative noise reduction from construction controls

<b>ENGINEERING CONTROLS</b>	<b>POSSIBLE NOISE REDUCTION, dB</b>
Portable temporary screens	5-10
Screen or enclosure for stationary equipment	10-15
Maximising the offset distance between noisy plant items and sensitive receivers.	3-6
Avoiding using noisy plant simultaneously and/or close together, adjacent to sensitive receivers.	2-5
Orienting equipment away from sensitive receivers.	3-5
Carrying out loading and unloading away from sensitive receivers.	3-5
Using noise source controls, such as the use of residential class mufflers, to reduce noise from all plant and equipment including bulldozers, cranes, graders, excavators and trucks	5-10
Selecting site access points and roads as far as possible away from sensitive receivers	3-6

# 7 Monitoring and Inspection

As part of addressing Consent Condition C1 (d), monitoring and routine inspections of the worksite will include checks for noise and vibration impacts in line with the procedures and frequencies outlined in Section 7.1 and Section 7.2.

## 7.1 Noise Monitoring

Noise monitoring will be undertaken by an experienced environmental officer or qualified acoustic consultant as per Table 7.1.

Table 7.1 Noise monitoring requirements

WHEN MONITORING IS REQUIRED	PURPOSE	NOISE MONITORING LOCATION
Where compliance testing is required at the commencement of each construction stage	The purpose of monitoring is to confirm that construction noise from the Project is consistent with the predictions in this CNVMP, and mitigation and management of construction noise is appropriate for receivers affected by the works.	Monitoring should be undertaken at the property boundary of the worst affected receivers.
Where high noise generating works (e.g. rock hammering, sawing, etc.) are undertaken in close proximity to sensitive receivers	The purpose of monitoring is to quantify the construction noise levels from high noise generating works and apply reasonable and feasible noise mitigation and management measures accordingly (e.g. alternative equipment, respite periods, etc.).	Monitoring should be undertaken at the property boundary of the worst affected receivers.
Where required for resolution of complaints	The purpose of monitoring is to address community's concerns as well as confirm that construction noise from the Project is consistent with the predictions in the noise assessment, and mitigation and management of construction noise is appropriate for receivers affected by the works.	Monitoring should be undertaken at the property boundary of the complainant and at representative locations.

Details of site activity and equipment / plant usage will be noted during noise monitoring.

Monitoring is to be conducted at the worst affected residential representative receivers in line with AS 1055 and the ICNG. Monitoring data will be recorded on noise monitoring forms, detailing the equipment used, parameters recorded, and measurement interval, calibration and other standard monitoring information required by AS 1055.

Acoustic instrumentation employed in the noise monitoring surveys will comply with the requirements of AS1259.2-1990 *Acoustics – Sound Level Meters, Part 2* and carry appropriate calibration certificates.

Where noise levels are found to exceed values recommended in the ICNG, the source of excessive noise generation will be identified, and any additional feasible and reasonable measures available will be implemented to either reduce noise levels or reduce the impacts at the receiver.



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## 7.2 Vibration Monitoring

Vibration monitoring for human comfort and structural damage shall be conducted by a suitably qualified and experienced person once construction works have commenced on site.

Vibration monitoring for human comfort will be undertaken as follows:

- where testing is required at the nearest residential receiver at the commencement of vibratory work; and
- where required for resolution of complaints, exceedances, or for the purpose of refining construction methods or techniques to minimise vibration.

To avoid structural impacts as a result of vibration or direct contact with structures, attended vibration monitoring or vibration trials would be undertaken where minimum working distances of vibratory plant are required to be challenged, and will be used to confirm vibration levels and establish a baseline for any potential impacts.

Unattended vibration monitoring would be undertaken where minimum working distances have been required to be challenged. This monitoring would be in place at the most vibration affected receiver and would be in place for the duration of works occurring within minimum working distances.

Vibration resulting from construction and received at any structure outside of the Project would be managed in accordance with:

- For structural damage vibration - *British Standard BS 7385 Part 2-1993 Evaluation and measurement for vibration in buildings* for standard structures and for structurally unsound heritage items *German Standard DIN 4150: Part 3 – 2016 Structural Vibration in Buildings: Effects on Structures*
- For human exposure to vibration the acceptable vibration - *Assessing Vibration: A Technical Guideline* which includes *British Standard BS 6472:1992 Guide to Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz)*.

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## 7.3 Community Consultation

As required by Conditions of Consent B31 (f), community consultation mechanisms to manage noise impacts are to be implemented as part of the CEMP. With consideration to the predicted noise levels, the following measures are to be implemented:

- a letterbox drop is to be conducted outlining construction methods, duration and timing of events – as a guide, any potentially affected receivers located at a minimum within 600 metres of the proposed construction works. Notification to be provided a minimum 7 days prior to commencement of works. The notification should include the following:
  - Estimated hours of construction and details of how further information can be obtained (i.e. contact telephone number/email, website, newsletters etc.) including the 24 hour construction response line number.
  - Construction-specific impacts including information on traffic changes, access changes, detours, services disruptions, public transport changes, high noise generating work activities and work required outside the nominated working hours
- A contact number is to be provided to the public through both the letterbox drop and via a sign erected on the site boundary, so that information can be received, or complaints made in relation to noise. A log of complaints would be maintained and actioned. To be completed in accordance with the Complaints Management System set out in Section 7.4.
- As discussed in Section 5.5, exceedances of the standard hours NMLs are currently predicted for some construction scenarios and receivers. It is however noted that a conservative approach has been taken for the assessment with all

noise sources assumed to operate simultaneously and the predicted noise levels are not likely to be sustained for more than a few days per construction stage. It is also noted that construction works are to be undertaken during standard hours only. At this stage the noise management strategies presented in Section 6, the proposed noise monitoring and the letterbox drops are considered sufficient in addressing Conditions of Consent B31 (e) and (f). Further community consultation is to be undertaken upon receipt of complaints as described in Section 7.4 and further noise management strategies such as respite periods may be developed with the community upon noise levels being confirmed from the proposed noise monitoring.

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## 7.4 Complaints Management System

As required by Conditions of Consent B31 (g), a complaints management system is to be developed as part of the CEMP to facilitate prompt and comprehensive response to community concerns that relate to noise throughout the duration of the development.

A site contact is to be designated to manage complaints response protocols, with signage provided identifying the contact and a dedicated 24 hour construction response line number is to be provided at the site access entry point.

Upon receipt of any complaint, details should be reported on a register, including:

- Date, time and method (phone, email) the complaint was reported
- Personal details, if provided by the complainant
- Nature of the complaint
- Actions taken or investigations completed; details if no action taken.
  - A verbal response to phone enquiries on what action is proposed to be undertaken is to be provided to the complainant within two hours during all times construction is being undertaken and within 24 hours during non-construction times (unless the complainant agrees otherwise)
  - A verbal response to written complaints (email/letter) should be provided within 48 hours of receipt of the communication.
  - A detailed written response is to be provided to the complainant within seven calendar days for verbal and/or written complaints.
- Follow up with the complainant.
- A daily summary of all complaints received in the previous 24 hours will be provided to the Environmental Management Representative.

Preliminary investigations will commence as soon as practical of the complaint receipt to determine the likely cause(s) of the complaint with regard to the nature of activities taking place.

A preliminary investigation will be completed to identify whether noise levels may have been greater than predicted and the reason for any excessive noise. Specific mitigation measures to be implemented to reduce any excessive noise impact will be considered. This may result in one of the following:

- Where deemed necessary, a stop-work procedure will be implemented to identify and address issue prior to recommencing works
- Noise monitoring may also be undertaken if required to assist in investigating the complaint
- Equipment replacement or respite period implementation.

21/10/2021

## 215 Badgerys Creek Road – AMRF - Construction Works

Dear Neighbour,

This is a courtesy notice is to advise you that we will be commencing noisy works on the new AMRF Building at 215 Badgerys Creek Road.

These works will commence from Tuesday the 25<sup>th</sup> of November 2022 and will be carried out between 7.00am and 6.00pm Monday to Friday (other than public holidays) and between 8.00am and 1.00pm on Saturdays.

If you have any issues or would like to get in contact with us regarding consultation with our works, you can contact us below.

Yours faithfully,

**Charlie Licciardello**

Senior Project Manager

(02) 8736 9000

[ComplaintsAMRF@Taylorau.com.au](mailto:ComplaintsAMRF@Taylorau.com.au)





# Thank you

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**TAYLOR**