

Construction Environmental Management Plan- Stage 1A Works

37 Grand Avenue Camellia

December 2019

A white rectangular sign with a black border. It features the Veolia logo on the left, followed by the text 'VEOLIA ENVIRONMENTAL SERVICES' in black, and 'TRANSFER TERMINAL' in white text on a black background at the bottom.

VEOLIA
ENVIRONMENTAL SERVICES
TRANSFER TERMINAL

The logo for SMV, consisting of the letters 'SMV' in a bold, sans-serif font, with 'KONECRANES' written in smaller letters below it.

SMV
KONECRANES

Done

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Quality Information



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0	Draft for Internal Review		13 th September 2016
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Abbreviations

ANZECC	Australia and New Zealand Environment and Conservation Council
BMS	Business Management System
Cr III	Trivalent Chrome
Cr (VI)	Hexavalent Chromium
DA	Development Application
DCP	Development Control Plan
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A	Environmental Planning and Assessment Act 1979 and Regulation 2000
EPL	Environment Protection Licence
HSEP	Health, Safety and Environment Plan
IMP	Incident Management Plan
JSEA	Job Safety and Environmental Analysis
LEP	Local Environmental Plan
OEH	Office of Environment and Heritage
PCC	Parramatta City Council
POEO	Protection of Environment Operations Act 1997 and Regulation
RMS	Roads and Maritime Services
Site	37 Grand Avenue Camellia
T	Tonnes
Veolia	Veolia Australia and New Zealand
WHS	Work Health and Safety Act and Regulation 2012

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1. Introduction

Veolia is proposing to develop a Material Recycling Facility (MRF), at 37 Grand Avenue, Camellia (the Site), capable of processing 200,000 tonnes per annum (tpa) of general solid waste (non-putrescible), from the commercial and industrial sector. The development will involve construction of a new enclosed building to house a multi-stage processing system, including a combination of processing equipment designed to separate incoming waste into recyclable material for transfer to secondary markets. An option with the potential to allow for a refuse derived fuel stream for energy recovery is also included. Material extracted for recycling will be sent out to sale in the commodities market and residual waste comprising of bulky or rejected material will be sent to a suitably licensed disposal facility.

The Department of Planning, Infrastructure and the Environment (DPIE) (formerly the Department of Planning and Environment) assessed the State Significant development (SSD 4964) and granted Development Consent for the 'State Significant' development on 6 July 2016 in accordance with section 89E of the Environmental Planning and Assessment Act 1979 (EP&A Act). Additionally under SSD 4964 the development has approval to be constructed on imported fill to ensure that finished floor levels are located 0.5m above the 100 year ARI. A geotechnical review of the Site ground conditions determined that it will be necessary to pre-load the site, for a period of 6-12 months prior to construction of the MRF.

Therefore the development of MRF comprises of two stages:

1. Stage 1 - Preloading of the Site
2. Stage 2 - Construction of the MRF

The Stage 1 – Preloading Construction Environment Management Plan (CEMP) was approved by DPIE on 23 May 2017, and these works have now been completed as consolidation of the site has been achieved. Following this, further advice on additional works was sought for the ongoing management of the preloading fill prior to the commencement of Stage 2. This updated CEMP - Stage 1A covers the additional Stage 1 works not originally anticipated to be undertaken under the approved Stage 1 CEMP.

The Stage 1A works will involve levelling, grading and placing a two coat seal over the fill material to stabilise the preload and improve water management on the site. The works are anticipated to take approximately 4 months to complete. The proposed water management system to be installed under the Stage 1A works have been designed to satisfy Consent Condition B6 of SSD 4964 and will be carried out in accordance with Consent Condition B7 of SSD 4964.

Stormwater works to be undertaken within the riparian zone have been approved by Parramatta City Council (PCC) under the PCC Development Consent (DA/54/2013) and have been addressed in the Contractor's Vegetation Soil and Erosion Plan for Riparian Works.

This Construction Environment Management Plan (CEMP) has been updated to reflect the additional works described above, and detail the management and control measures to be implemented in associated with the additional Stage 1 activities.

This CEMP will need to be updated and re-submitted to DPIE for approval prior to Stage 2 of the development.

1.1 Scope and Objectives of the CEMP

This CEMP and supplementary plans have been prepared to satisfy the requirements of the Conditions of Development Consent (refer Appendix A) while demonstrating that sound environmental management shall be followed. The CEMP details the control measures to be implemented to manage potential environmental risks during the works.

The objectives of this CEMP are to:

- Provide a working environmental management tool to follow during the Stage 1A works;

- Comply with relevant environmental legislation, including the Conditions of Consent relating to the Site;
- Provide a means of implementing the recommended mitigation measures for the key environmental issues, associated with Stage 1A works, identified in the Environment Impact Statement (EIS) ;
- Define roles and responsibilities of the project management team and contractors during the Stage 1A works;
- Provide a guide for the interaction with relevant government authorities and other relevant stakeholders, including the community during the Stage 1A works.

The CEMP should be read in conjunction with its supporting documents, which are presented as separate documents in the Appendices, including:

- Water Management Plan
- Drawings
- Flood Emergency Response Plan

This CEMP is a live document and outlines the management strategies and control measures which will be reviewed and updated, where necessary, to reflect changes introduced by the redevelopment project team, Site specific outcomes, non-conformances and recommendations arising out of inspections, meetings and audits.

1.2 Relevant Environmental Legislation

1.2.1 Environmental Planning and Assessment Act 1979

The Department of Planning and Environment has assessed the Development Application for the construction and operations of a material recycling facility and granted Development Consent on 6 July 2016 in accordance with section 89E of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

1.2.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) relates to the management of pollution and waste disposal in NSW administered by the EPA. Part 1 of Schedule 1 of the POEO Act defines premise based scheduled activities that require an Environment Protection Licence (EPL).

1.2.3 Waste Avoidance and Recourse Recovery Act 2001

The importance of responsible resource management, including maximisation of the utility of resources and associated minimisation of disposal to landfill, is highlighted in the *Waste and Resource Recovery Act 2001* (WARR Act). The WARR Act is the principal piece of legislation governing waste and resource management in NSW, and objectives of the Act include:

- Encouraging the most efficient use of resources;
- Reducing environmental harm;

- Ensuring that resources are managed against the waste hierarchy of avoidance, resource recovery, and then disposal;
- Diversion of waste from landfill;
- Ensuring industry takes part in reducing and dealing with waste,
- Achieving integrated, state-wide waste and resource management planning and service delivery.

1.2.4 Contaminated Land Management Act 1997

The general objective of the *Contaminated Land Management Act 1997* (CLM Act) is to establish a process for investigating and, where appropriate, remediating land that the EPA considers to be contaminated significantly enough to require regulation. Under the CLM Act, contamination of land is defined as:

the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment (CLM Act, s5).

Section 105 of the CLM Act provides for the preparation of guidelines by the EPA to guide the assessment of site contamination in NSW. A detailed Site assessment has been undertaken in accordance with the EPA contaminated land assessment guidelines. The assessment concluded that the Site would require remediation prior to operation as a materials recycling facility. This phase of works will also support the remediation action plan currently being implemented at the site.

1.2.5 Fisheries Management Act 1994

The *Fisheries Management Act 1994* provides for the conservation of the State's aquatic resources. The Act requires that potential impacts on threatened species and aquatic habitat be addressed during the environmental planning and assessment process.

To evaluate the potential location and impact of the Stage 1A works on the surrounding mangroves and any other flora and fauna species, an ecological assessment was completed as part of the planning assessment process. Based on this assessment, it is not anticipated that any significant impact will occur on threatened aquatic species or aquatic habitats.

1.2.6 Sydney Water Act 1994

An Act to establish a State owned corporation in relation to the supply of water, the provision of sewerage and stormwater drainage systems and the disposal of waste water in Sydney and other regions and certain other matters; to provide for the transfer of assets, rights and liabilities of the Water Board; to amend the *State Owned Corporations Act 1989*; to amend the *Government Pricing Tribunal Act 1992* in relation to the fixing of maximum prices for government monopoly services; to amend certain other Acts; to repeal the *Water Board Act 1987*; and for other purposes.

As part of Approved Consent SSD 4964 Part B Condition B4, a Section 73 Compliance Certificate under the *Sydney Water Act 1994* must be obtained from Sydney Water prior to the commencement of construction. As the Stage 1A works doesn't require any connection or has impact on the systems, so the Section 73 Compliance Certificate is not required at this stage and will be obtained prior to Stage 2 of the development.

1.3 Environmental Assessment

An Environmental Impact Statement (EIS) prepared by CH2MHILL in February 2013 assessed the potential construction and operational impacts of the development, which includes the Stage 1A works.

1.4 Conditions of Consent

Table 1-1 outlines the conditions of the Development Consent No: SSD 4964

Table 1-1 Development Consent Requirements

Condition	Requirement	CEMP Reference
Schedule 2		
Part A Administrative Conditions		
Obligation to minimise harm to the Environment		
A1.	The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Development;	Noted
Terms of Consent		
A2.	The Applicant shall carry out the Development in accordance with the: <ul style="list-style-type: none"> a) EIS; b) RTS; c) Site layout plans and drawings ; and d) Management and Mitigation Measures. 	Noted
A3.	If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency	Noted
A4.	The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: <ul style="list-style-type: none"> a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this consent; and b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence. 	Noted
Limits of Consent		
A5.	This consent lapses 5 years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before the date on which the consent would otherwise lapse under Section 95 of the Act.	Noted
Statutory Requirements		
A6	The Applicant shall ensure that all licences, permits, and approvals/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals/consents.	Noted
Building Code of Australia		
A7	The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the <i>Building Code of Australia</i> .	Noted
Limits of Consent		

Condition	Requirement	CEMP Reference															
A8	<p>Waste limits</p> <p>The Applicant shall not receive or process on the site more than 200,000 tonnes of waste per calendar year.</p>	Not Triggered															
A9	<p>Waste type</p> <p>The Applicant shall not cause, permit or allow any materials or waste generated outside the site to be received at the site for storage, use, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by an EPL.</p>	Not Triggered															
A10	<p>Operation of Plant and Equipment</p> <p>The Applicant shall ensure that all plant and equipment used for the Development is:</p> <p>a) maintained in a proper and efficient condition; and</p> <p>b) operated in a proper and efficient manner.</p>	Noted															
A11	<p>Demolition</p> <p>The Applicant shall ensure that all demolition work is carried out in accordance with <i>Australian Standard AS 2601:2001: The Demolition of Structures</i>, or its latest version.</p>	Noted															
A12	<p>Staged Submissions of Plans or Programs</p> <p>With the approval of the Secretary, the Applicant may:</p> <p>a) submit any strategy, plan or program required by this consent on a progressive basis; and/or</p> <p>b) combine any strategy, plan or program required by this consent</p>	Noted															
A12	<p>Surrender of Consents</p> <p>In order for the development of land to proceed in a coordinated and orderly manner and to avoid potential conflicts with this consent, the Applicant shall and in the manner prescribed by clause 97 of the Regulation, surrender the development consents described in Table 1 prior to the issue of an Occupation Certificate for the Development</p> <p>Table 1-Consents to be surrendered</p> <table border="1"> <thead> <tr> <th>Determination date</th> <th>DA Number</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>3 December 1969</td> <td>1054/J</td> <td></td> </tr> <tr> <td>26 May 1970</td> <td>G114/70</td> <td></td> </tr> <tr> <td>23 July 1992</td> <td>DA 39288/L91</td> <td>Food waste recycling depot (grease trap plant)</td> </tr> <tr> <td>15 March 1996</td> <td>DA 96/00019/DJ</td> <td>Upgrade of existing waste water treatment plant and the construction of two (2) vertical tanks</td> </tr> </tbody> </table>	Determination date	DA Number	Details	3 December 1969	1054/J		26 May 1970	G114/70		23 July 1992	DA 39288/L91	Food waste recycling depot (grease trap plant)	15 March 1996	DA 96/00019/DJ	Upgrade of existing waste water treatment plant and the construction of two (2) vertical tanks	Noted
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Condition	Requirement			CEMP Reference
	12 July 1996	DA 95/00886/DJ A	Relocate the already approved metal clad workshop towards the street frontage	
	28 October 1997	DA 97/00532/DJ	To erect an awning to an existing wash bay and to extend an existing storage bay	
	9 July 2001	DA IT/01476/99	To extend and upgrade an existing liquid waste treatment facility	
	5 April 2005	DA/532/1997/A	Section 96 application to modify Council original approval and in increase the height of the storage bays	
	22 October 2007	DA/658/2007	Conversion of a vehicle workshop to a packaged waste store	
	4 December 2007	DA/848/2007	Alterations and additions including replacement of 3 liquid storage tanks, increase in the size of the bunded area, extension of soil bay awning and additional soil bays	
A14	<p>Meteorological Monitoring</p> <p>Within 14 days of the issue of a Construction Certificate for the Development, the Applicant shall ensure that there is a suitable meteorological station on the site that complies with the requirements in the latest version of the <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i>. <i>The Applicant shall operate the meteorological station for the life of the Development.</i></p>			Not Triggered
A15	<p>Protection of Public Infrastructure</p> <p>The Applicant shall:</p> <p>a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Development; and</p> <p>b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Development.</p>			Not Triggered
A16	<p>Site Audit Statement</p> <p>Prior to the issue of a Final Occupation Certificate for the Development, the Applicant shall obtain from a Site Auditor, a Site Audit Statement and a Site Audit Report which demonstrates that the site is suitable for its intended use(s).</p>			Not Triggered
Dispute Resolution				
A18	<p>In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the Development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of</p>			Noted

Condition	Requirement	CEMP Reference
	any such dispute shall be final and binding on the parties.	
A18	<p>Developer Contributions</p> <p>Prior to the issue of a Construction Certificate for the development, unless otherwise agreed with Council, the Applicant shall pay development contributions to Parramatta Council calculated in accordance with <i>Section 94A Development Contributions Plan (Amendment No. 4) Parramatta City Council 20 May 2015</i>.</p>	Noted
<p>Part B Environmental performance</p> <p>Waste Management</p>		
B1	<p>Waste Monitoring Program</p> <p>From the commencement of operation, the Applicant shall implement a Waste Monitoring Program for the Development. The program must:</p> <p>a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operation;</p> <p>b) include suitable provision to monitor the:</p> <p>(i) quantity, type and source of waste received on site; and</p> <p>(ii) quantity, type and quality of the outputs produced on site.</p> <p>c) ensure that:</p> <p>(i) all waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the site; and</p> <p>(ii) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.</p>	Not Triggered
B2	<p>Waste storage and processing</p> <p>All processed and unprocessed waste must be stored within the building on the site.</p>	Not Triggered
B3	<p>Pests, vermin and noxious weed management</p> <p>The Applicant shall:</p> <p>a) implement suitable measures to manage pests, vermin and declared noxious weeds on the site; and</p> <p>b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area.</p>	Section 4.7
<p>Soil and Water</p>		
B4	<p>Compliance Certificate</p> <p>A Section 73 Compliance Certificate under the <i>Sydney Water Act 1994</i> must be obtained from Sydney Water prior to the commencement of construction.</p>	Section 1.2.8
B5	<p>Pollution of Waters</p> <p>The Development shall comply with Section 120 of the POEO Act, which prohibits the</p>	Noted

Condition	Requirement	CEMP Reference
	pollution of waters, except as expressly provided in an EPL.	
B6.	<p>Water Management Plan</p> <p>Prior to the commencement of construction of the Development, the Applicant shall prepare a Water Management Plan to the satisfaction of the Secretary. The plan must:</p> <p>a) be prepared by a suitably qualified and experienced person(s) in consultation with Council;</p> <p>b) include the details of:</p> <ul style="list-style-type: none"> (i) the Water Management System (see Condition B8); (ii) erosion and sediment control measures (see Condition B9); and (iii) bunding (see Condition B11). 	Water Management Plan
B7.	The Applicant shall carry out the Development in accordance with the Water Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Noted
B8.	<p>Water Management System</p> <p>The Applicant shall operate a Water Management System for the site. The system must:</p> <p>a) be designed by a suitably qualified and experienced person(s) in consultation with Council;</p> <p>b) include:</p> <ul style="list-style-type: none"> (i) a berm at the front of the site, which is designed to prevent catchment flows up to the 1 in 20 year Average Recurrence Interval event from entering the site; (ii) drainage for surface water toward the Parramatta River where possible; (iii) one way devices to prevent the ingress of river water to the water management system; and (iv) clean surface water diversion around operational areas of the site 	Not Triggered
B9	<p>Erosion and Sediment Control</p> <p>The Applicant shall implement erosion and sediment control measures on-site in accordance with <i>Managing Urban Stormwater: Soils and Construction Vol 1</i>. (Landcom, 2004).</p>	Water Management Plan
B10	<p>Acid Sulphate Soils</p> <p>The Applicant shall implement acid sulfate soils management measures in accordance with the guidance in the NSW Acid Sulfate Soil Management Advisory Committee's <i>Acid Sulfate Soil Manual</i>.</p>	Not Triggered
B11	<p>Bunding</p> <p>The Applicant shall store all chemicals, fuels and oils used on-site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's <i>Storing and Handling Liquids: Environmental Protection – Participant's Manual 2007</i>.</p>	Not Triggered

Condition	Requirement	CEMP Reference
B12	<p>Flood management</p> <p>The Applicant shall ensure that:</p> <p>a) the finished floor level of any new building is a minimum of 0.5 metres above the 1 in 100 year Average Recurrence Interval flood level; and</p> <p>b) any part of a new structure is designed and constructed to be structurally sound during a flood event equivalent to the Probable Maximum Flood.</p>	Not Triggered
B13	<p>Prior to the commencement of construction of the Development, the Applicant shall prepare a flood emergency response plan to the satisfaction of the Secretary. The plan must:</p> <p>a) be prepared by a suitably qualified and experienced person(s) in consultation with Council;</p> <p>b) address the provisions of the <i>Floodplain Risk Management Guideline (25 October 2007, Office of Environment and Heritage)</i>;</p> <p>c) include the details of the flood emergency responses for both construction and operation phases of the development;</p> <p>d) include details of:</p> <p>(i) site planning and design features;</p> <p>(ii) predicted flood levels;</p> <p>(iii) flood warning time and flood notification;</p> <p>(iv) evacuation and refuge protocols; and</p> <p>(v) awareness training for employees and contractors.</p>	Not Triggered
B14	<p>The Applicant shall carry out the Development in accordance with the flood emergency response plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.</p>	Noted
B15	<p>The Applicant shall:</p> <p>a) ensure that only VENM, or ENM, or other material approved in writing by the EPA is used as fill on the site;</p> <p>b) keep accurate records of the volume and type of fill to be used; and</p> <p>c) make these records available to the Department upon request.</p>	Section 2.3.1
Air Quality		
B16	<p>Odour</p> <p>The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act)</p>	Not triggered
B17	<p>Air emissions mitigation</p> <p>The Applicant shall:</p> <p>a) carry out the Development so that air and odour emissions are minimised during all meteorological conditions; and</p>	Section 4.1

Condition	Requirement	CEMP Reference										
	b) implement best management practice, including all reasonable and feasible air and odour emission mitigation measures to minimise emissions from the Development.											
B18	<p>Construction emission mitigation</p> <p>During construction, the Applicant shall ensure that:</p> <p>a) all vehicles on site do not exceed a speed limit of 30 kilometres per hour;</p> <p>b) all loaded construction vehicles entering or leaving the site have their loads covered; and</p> <p>c) all loaded construction vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.</p>	Section 4.2										
B19	<p>Odour Audit</p> <p>The Applicant shall carry out an Odour Audit of the Development no later than 6 months after operation of the Development. The audit must:</p> <p>a) be carried out by a suitably qualified, experienced and independent person(s), whose appointment has been endorsed by the Secretary;</p> <p>b) audit the Development in full operation;</p> <p>c) include a summary of odour complaints and any actions that were carried out to address the complaints;</p> <p>d) validate the Development against odour impact predictions in the EIS;</p> <p>e) review design and management practices in the Development against industry best practice for odour management; and</p> <p>f) include an action plan that identifies and prioritises any odour mitigation measures that may be necessary to reduce odour emissions.</p>	Not Triggered										
B20	Within six months of commissioning the Odour Audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with the Applicant's response to any recommendations contained in the audit report.	Not Triggered										
B21	The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of the Odour Audit report.	Not Triggered										
Noise and Vibration												
B22	<p>Construction and operation hours</p> <p>The Applicant shall comply with the construction and operation hours in Table 2 unless otherwise specified in the EPL and agreed in writing by the Secretary.</p> <p>Table-2 Construction Hours</p> <table border="1"> <thead> <tr> <th>Activity</th> <th>Day</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Construction</td> <td>Monday-Friday</td> <td>7am to 6pm</td> </tr> <tr> <td>Saturday</td> <td>8am-1 pm</td> </tr> <tr> <td>Sunday & Public</td> <td>Nil</td> </tr> </tbody> </table>	Activity	Day	Hours	Construction	Monday-Friday	7am to 6pm	Saturday	8am-1 pm	Sunday & Public	Nil	Section 2.4
Activity	Day	Hours										
Construction	Monday-Friday	7am to 6pm										
	Saturday	8am-1 pm										
	Sunday & Public	Nil										

Condition	Requirement	CEMP Reference									
	<table border="1"> <tr> <td></td> <td>Holidays</td> <td></td> </tr> <tr> <td>Operation (Waste processing)</td> <td>Any day</td> <td>6am to 10pm</td> </tr> <tr> <td>Operation (Delivery & dispatch)</td> <td>Any day</td> <td>Any time</td> </tr> </table>		Holidays		Operation (Waste processing)	Any day	6am to 10pm	Operation (Delivery & dispatch)	Any day	Any time	
	Holidays										
Operation (Waste processing)	Any day	6am to 10pm									
Operation (Delivery & dispatch)	Any day	Any time									
B23	<p>Despite Condition B22, any activity may occur at any time if that activity is required to be performed by police or other authorities for safety reasons; and/or if there is an on-site emergency that poses an immediate danger to personnel or equipment; and/or the operation or personnel or equipment is endangered. In such circumstances, prior notification shall be provided to the EPA and any affected residents as soon as possible, or within a reasonable period in the case of emergency.</p>	Noted									
B24	<p>Noise mitigation</p> <p>The Applicant shall:</p> <ul style="list-style-type: none"> a) implement best practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development; b) minimise the noise impacts of the Development during adverse meteorological conditions; c) install a steel fence on the northern and north-eastern side of the truck path; d) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and e) regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent. 	Section 4.3									
B25	<p>Noise criteria</p> <p>The Applicant shall ensure that the operational noise generated from the Development does not exceed the criteria in Table 3:</p> <p>Table 3: Sleep Disturbance Criteria</p> <table border="1"> <tr> <td>Receiver/Location</td> <td>Sleep Disturbance Criteria(LA1, 1min)</td> </tr> <tr> <td>M1 John Street and M2 Milton Street</td> <td>56</td> </tr> </table>	Receiver/Location	Sleep Disturbance Criteria(LA1, 1min)	M1 John Street and M2 Milton Street	56	Not Triggered					
Receiver/Location	Sleep Disturbance Criteria(LA1, 1min)										
M1 John Street and M2 Milton Street	56										
B26	<p>Vibration criteria</p> <p>The Applicant shall ensure that vibration resulting from the Development does not exceed the continuous or impulsive vibration criteria in EPA's <i>Assessing Vibration: A Technical Guideline</i> (February 2006) at residential receivers.</p>	Refer to section 4.3									
Traffic and Access											
B27	<p>Operating Conditions</p> <p>The Applicant shall ensure that:</p>	Not triggered									

Condition	Requirement	CEMP Reference
	<ul style="list-style-type: none"> a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are constructed and maintained in accordance with the latest versions of <i>Australian Standard AS 2890.1</i> and <i>AS 2890.2</i>; b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with <i>AUSTROADS Guide to Road Design</i>; c) the Development does not result in any vehicles queuing on the public road network; d) all vehicles are wholly contained on site before being required to stop; e) all loading and unloading of materials is carried out on site; f) turning areas in the car park are kept clear of any obstacles, including parked cars, at all times; g) all trucks entering or leaving the site with loads have their loads covered; h) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads; and i) all vehicles enter and leave the site in a forward direction. 	
Hazard and Risk		
B28	<p>Fire Management</p> <p>The Applicant shall:</p> <ul style="list-style-type: none"> a) implement suitable measures to minimise the risk of fire on-site; b) extinguish any fires on-site promptly; and c) maintain adequate fire-fighting capacity on-site. 	Section 5.2.2
Visual Amenity		
B29	<p>Lighting</p> <p>All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with <i>Australian Standard AS 4282 1997</i>.</p>	Not Triggered
Landscaping		
B30	<p>Prior to the commencement of construction of the Development, the Applicant shall prepare a Landscape Management Plan to the satisfaction of the Secretary. The plan shall:</p> <ul style="list-style-type: none"> a) detail the landscaping measures including vegetation that is to be planted to minimise the visual impact of the Development, particularly from adjoining premises and public vantage points; and b) include measures for monitoring and maintenance of revegetated areas. 	Section 4.8
B31	<p>The Applicant shall carry out the Development in accordance with the Landscape Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.</p>	Not Triggered

Condition	Requirement	CEMP Reference
Heritage		
B32	The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered. If human remains are uncovered, you must immediately stop work, not further disturb the remains and notify NSW Police. OEH and the Aboriginal community must be contacted if the remains are suspected to be of Aboriginal origin. If other Aboriginal objects are discovered, you must immediately stop work, not further disturb the objects and notify OEH by calling Environment Line on 131 555. Works must not resume in the designated area until the relevant written consent is received from NSW Police and/or OEH. Any Aboriginal objects discovered must be registered on the Aboriginal Heritage Management Information System (AHIMS), in accordance with section 89A of the <i>National Parks and Wildlife Act 1974</i> .	Section 3.6.2& Section 4.6
B33	The Applicant shall: a) install and maintain a perimeter fence and security gates on the site; and b) ensure that the security gates on site are locked whenever the site is unattended.	Noted
Part C: Environment Management, Reporting & Auditing		
Environment Management		
C1	Construction Environment Management Plan Prior to the commencement of construction of the Development, the Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must: a) be prepared by a suitably qualified and experienced person(s); b) describe all activities to be undertaken on the site during construction, including a clear indication of construction stages; c) identify the statutory approvals that apply to the Development; d) outline all environmental management practices and procedures to be followed during construction (e.g. construction traffic management and construction noise and vibration management), including all reasonable and feasible mitigation measures to protect the amenity of the surrounding environment; e) detail how the environmental performance of construction will be monitored, and what actions will be taken to address identified adverse environmental impacts; f) describe of the roles and responsibilities for all relevant employees involved in construction; g) include arrangements for community consultation and complaints handling procedures during construction; and h) consolidate the construction related parts of any management plans and monitoring programs required in the conditions of this consent;	Noted Section 2.3.1 Section 1.4 Section 4 Section 6.3,6.4,6.5 & 6.6 Section 5.1 Section 6.2 Section 1-Introduction, Section 1.1& Section 6.5
C2	The Applicant shall carry out the development in accordance with the Construction Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Noted
C3	Operational Environmental Management Strategy	Not Triggered

Condition	Requirement	CEMP Reference
	<p>Prior to the commencement of operation, the Applicant shall prepare an Operational Environmental Management Strategy to the satisfaction of the Secretary. This strategy must:</p> <ul style="list-style-type: none"> a) be prepared by a suitably qualified and experienced person(s); b) provide a strategic framework for environmental management of the Development; c) identify the statutory approvals that apply to the Development; d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development; e) describe in general how the environmental performance of the Development would be monitored and managed; and f) describe the procedures that would be implemented to: <ul style="list-style-type: none"> (i) keep the local community and relevant agencies informed about the operation and environmental performance of the Development; (ii) receive, handle, respond to, and record complaints; (iii) resolve any disputes that may arise; (iv) respond to any non-compliance; and (v) respond to emergencies. 	
C4	<p>The Applicant shall carry out the Development in accordance with the Operational Environmental Management Strategy approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.</p>	Not Triggered
C5	<p>Management Plan Requirements</p> <p>The Applicant shall ensure that the environmental management plans/strategies required under this consent are prepared in accordance with any relevant guidelines and include:</p> <ul style="list-style-type: none"> a) detailed baseline data; b) a description of: <ul style="list-style-type: none"> (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures/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; (iv) the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; c) a program to monitor and report on the: <ul style="list-style-type: none"> (i) impacts and environmental performance of the Development; (ii) effectiveness of any management measures; (iii) a contingency plan to manage any unpredicted impacts and their consequences; (iv) a program to investigate and implement ways to improve the environmental 	Noted

Condition	Requirement	CEMP Reference
	<p>performance of the Development over time;</p> <p>d) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> (i) incidents; (ii) complaints; (iii) non-compliances with statutory requirements; and (iv) exceedances of the impact assessment criteria and/or performance criteria; and (v) a protocol for periodic review of the plan. 	
C6	The Secretary may waive some of the requirements in Condition C5 if they are unnecessary or unwarranted for particular management plans/strategies.	Noted
Reporting		
C7	<p>Incident Reporting</p> <p>The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>	Section 5.4
C8	<p>Regular Reporting</p> <p>The Applicant shall provide regular reporting on the environmental performance of the Development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.</p>	Section 5.5
C9	<p>Independent Environmental Audit</p> <p>Within 1 year of the date of this consent and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:</p> <ul style="list-style-type: none"> a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; b) led by a suitably qualified auditor, and include experts in fields specified by the Secretary; c) include consultation with the relevant agencies; d) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals and relevant EPL/s (including any assessment, plan or program required under the approvals); e) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and f) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under the consents. 	Section 6.4

Condition	Requirement	CEMP Reference
C10	Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Noted
C11	<p>Annual Review</p> <p>Within 1 year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the Development. This review must:</p> <ul style="list-style-type: none"> a) describe the Development that was carried out in the previous calendar year, and the Development that is proposed to be carried out over the next year; b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of the results against the: <ul style="list-style-type: none"> (i) the relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) the monitoring results of previous years; and (iv) the relevant predictions in the EIS; c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; d) identify any trends in the monitoring data over the life of the Development; e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and f) describe what measures will be implemented over the next year to improve the environmental performance of the Development. 	Section 6.6
C12	<p>Revision of Strategies, Plans and Programs</p> <p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> a) annual review under Condition C11 above; b) incident report under Condition C7 above; c) audit under Condition C9 above; or d) any modification to this consent, <p>the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent.</p>	Section 6.6
C13	The Applicant shall ensure that the operation of the Development is undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary.	Noted
C14	<p>Access to the Information</p> <p>The Applicant shall:</p> <ul style="list-style-type: none"> a) ensure a 24 hour contact telephone number for the site is posted on the front fence of 	Section 6.2

Condition	Requirement	CEMP Reference
	<p>the site, and on its website;</p> <p>b) make copies of the following publicly available on its website:</p> <ul style="list-style-type: none"> (i) the documents referred to in Condition A2; (ii) all current statutory approvals for the Development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (v) a complaints register, updated on a monthly basis; (vi) the annual reviews of the Development; (vii) any independent environmental audit of the Development, and the Applicant's response to the recommendations in any audit; and (viii) any other matter required by the Secretary; and <p>c) keep this information up to date.</p>	

2. Project Overview

2.1 Site Description

The Site is located within the industrial precinct in the north-eastern part of the Camellia Peninsula, NSW. The Camellia Peninsula is an approximately triangular area of land bounded by the Parramatta River to the north, Duck River to the south and James Ruse Drive to the west. The Site is located on the north-eastern part of the Peninsula and fronts the Parramatta River.

The site was used until August 2009 as a waste liquid treatment plant and as depot for waste collection vehicles. Waste liquid treatment operations have since ceased, however the majority of infrastructure related to these operations is demolished (demolition works completed under Development Consent no: DA/459/2015, approved by the Parramatta City Council) except car park area at the rear and three existing liquid waste storage tanks along southern sections of western site boundary.

Identification information for the site is detailed below in table 2-1.

Table 2-1 Site Identification

Title	Details
Street Address	37 Grand Avenue, Camellia, NSW
Property Description	Lot 1 Deposited Plan (DP) 539890
Property Size	2,023 ha
Local Government Area	Parramatta Council
Current Land Use	Vacant
Subdivision	No subdivisions are planned
Zoning-Existing and ongoing	IN3 Heavy Industrial

2.2 Surrounding Land

The land uses of the areas surrounding the Site are described in the following table 2-2.

Table 2-2-Site Surrounds and Potential Receptors

Direction	Details
North	Parramatta River, with mangroves on foreshore (NSW Maritime land). The foreshore is approximately 2.5 metres below average site level. A ferry terminal is present directly opposite the site on the opposite side of the Parramatta River. Open space, residential and commercial/industrial properties are present on the opposite bank of the Parramatta River.
South	Grand Avenue, with industrial uses beyond: Sami Bitumen and SITA. A 1200mm diameter water main runs under Grand Avenue. Grand Avenue is approximately level with the site.
East	The land is sealed and had a ground level approximately between 0.6m and 0.8m higher than the site, prior to preloading. This land is also a declared Cr (VI) remediation site. The Parramatta River bends from the north of the site around to the east of the commercial parking yard.

West	<p>Along northern section of western site boundary: Concrete recycling facility, with a building and large stockpile adjacent to the boundary. Ground level is approximately 0.4 metre above site level</p> <p>Along southern section of western site boundary:</p> <p>Earth Power, food waste processing facility. The ground level is approximately 2 metre higher than at the site.</p>
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Potential human receptors for contamination at the Site are predominantly the workers at the Site and potentially workers at adjacent properties. The closest sensitive human receptors reside approximately 215 m to the north-east of the Site, on the opposite side of the Parramatta River. Due to the dense industrial area along the riverbank of the Camellia peninsula, absence of pathways and dense mangrove vegetation the access for general public to the foreshore from Grand Avenue will be restricted. The identified receptor for the shallow groundwater and seepage water at the Site is the adjacent mangroves and Parramatta River.

2.3 Re-development

Veolia is proposing to develop a Material Recycling Facility (MRF) capable of processing up to 200,000 tonnes per annum (tpa) of general solid (non-putrescible) waste on the Site, primarily dry waste from the commercial and industrial sector.

The development involves the construction of a new enclosed building to house a multi-stage processing system and new stormwater management system. The multi-stage processing system will include a combination of processing equipment designed to separate the waste into recyclables for transfer to secondary markets. The MRF will reduce the volume of waste sent to landfill and contribute to the local area in terms of employment and expenditure.

2.3.1 Construction activities

Construction of the MRF will be carried out in two stages that include:

1. Preloading the Site
2. Construction of the MRF

The approved Stage 1 works have now been completed. This CEMP relates to the additional Stage 1A works not originally anticipated to be undertaken under the previously approved Stage 1 CEMP.

The completed Stage 1 works involved ground compaction, followed by preloading and levelling the Site with imported fill materials. The imported fill was a well graded material with a maximum particle size of 100mm and was classified as Virgin Excavated Natural Material (VENM).

Along with raising site levels above the existing pavement, the filling placed over the Site was left until consolidation settlement within the subsurface layers was achieved.

The proposed Stage 1A works, involve levelling, grading and placing a two coat seal over the fill material to stabilise the preload and improve water management on the site. The proposed water management system has been designed to satisfy Condition B6 and will be carried out in accordance with Condition B7 of SSD 4964.

Details of the completed preloading are shown in drawings C020, C021 and C022 (Appendix C)

Details of the proposed additional Stage 1 works are shown in drawings RAP10-0, RAP20-0, RAP25-0, RAP30-0, RAP31-0, RAP35-0, RAP36-0, RAP36-B, RAP45-0, RAP46-B, RAP48-0, RAP50-0 (Refer to the Appendix C).

2.4 Construction Hours

The Stage 1 activities will be restricted to the construction hours specified in the Table 2-3.

Table 2-3 Operating Hours

Activity	Day	Hours
Construction	Monday – Friday	7:00am – 6:00pm
	Saturday	8:00am – 1:00pm
	Sunday & Public Holidays	Nil

3. Potential Construction Impacts

Construction environmental impacts for the 37 Grand Ave Camellia were identified and evaluated in the Environmental Impact Statement (EIS). This includes potential impacts based on the hours of construction, movements of personnel and the proposed plant and equipment to be utilised.

The results of the risk assessment indicated that cumulative impacts from the parameters like to cause environmental impact during the Stage 1A works would be low to moderate.

The CEMP has been prepared on the basis of this and the management strategies detailed therein providing the mitigation measures for the likely environmental impacts.

A summary of the key environmental risks of this is provided in Table 3.1 below.

Table 3-1 Construction Key Environmental Risks

Issue	Construction Environmental Impacts	Comments
Air quality	Dust, Asbestos and Chromium (VI) emissions	Management strategy and control measure are presented in the Section 4.1
Noise	Noise impacts	Management strategy and control measure are presented in the Section 4.3
Traffic	Traffic congestion issues on main site access road, local road network	Management strategy and control measure are presented in and section 4.2
Soil	Encountering Acid Sulphate Soils (ASS) during earthworks	Management strategy and control measure are presented in section 4.4
Water	Flooding impacts Groundwater and surface water contamination during earthworks	Management strategy and control measure are presented in the Water Management Plan (WMP) section 4.5
Waste	Waste generation, litter. Asbestos containment material	Management strategy and control measure are presented in section 4.5

Identified risks and controls will be communicated to the Contractor and development of appropriate performance trackers to ensure effective implementation. This review will include the following:

- Specified construction activities which are within the defined scope of works;
- Identified environmental aspects and impacts associated with that scope of works;
- Evaluated the inherent and residual risk associated with environmental hazards and specify mitigation measures for identified environmental risks.

The Contractor will be responsible for ensuring appropriate checks for risks identified, implementation and maintenance of controls and for reporting any issues.

3.1 Air Quality

An assessment of the predicted air quality impacts during the construction works was undertaken in the EIS (CH2MHILL, 2013). The modelling indicated that the identified air quality pollutant emissions from the Stage 1A activities are unlikely to have any significant or prolonged effect at any off-site receiver.

3.1.1 Existing Environment

The existing sealed pavement and concrete hardstand across the site currently forms the base for the preload material which is encapsulated with geotextile material, and the grassed embankment at the northern end of the site has been sealed with a bitumen geotextile, presenting minimal opportunities for dust generation and dispersal. The proposed works area also extends into the 40m riparian corridor offset from the foreshore of the Parramatta River.

The closest EPA air quality monitoring site is located at Chullora, approximately 10 km to the south of the Site. This monitoring site monitored ozone, carbon monoxide, nitrogen monoxide, sulphur dioxide, nitrogen dioxide, fine particles, wind speed, wind direction, ambient temperature and relative humidity. Given the distance from the Site, this suite of air quality constituents is unlikely to be representative of the existing air quality at the Site. Monitoring for dust deposition, including the presence of trivalent chromium and hexavalent chromium has been undertaken at the Site during March and April 2012. This monitoring identified that the levels of total solids were above the EPA criteria for dust deposition (with recordings of 4.4 g and 6.1 g exceeding the 4 g/m²/month criteria limit (DEC, 2005)). However, this could be the result of the Site proximity to operations at Concrete Recyclers and the unsealed neighbouring site. No trivalent or hexavalent chromium was identified in dust deposition samples collected on the Site.

3.1.2 Stage 1A Potential Impacts

During Stage 1A activities, the local air quality could potentially be impacted on as a result of the following:

- dust generation from levelling the Site with fill material currently placed on site, ground compaction works and the movement of machinery and trucks;
- exhaust emissions (mainly diesel exhaust) from construction traffic and machinery.

Dust Generation

Levelling of the Site with the fill material currently placed on site will present opportunities for dust generation.

It is expected that any dust generated during Stage 1A works will be localised to the site. The nearest residential areas, located 230 m north east of the Site, are not expected to be impacted by dust due to protection provided by the mangroves and the distance from the Site and the low potential for significant dust generation as a result of the wet nature of the excavated estuarine sediment.

The disturbance of contaminated material could potentially expose humans to contaminants such as Cr (IV), asbestos and acid sulphate soils (ASS). Further control measures to be implemented to manage dust generation during the Stage 1A works are discussed further in Section 4.1.

Odour

No fugitive odour emissions are anticipated during the Stage 1A activities due to no potential odour source on Site during this stage, therefore odour controls have not been considered as part of this CEMP.

Exhaust Emissions

Exhaust emissions, such as diesel exhaust from construction traffic and machinery, have the potential to temporarily impact on local air quality during the works.

Given the relatively low number of vehicles and machinery required for the works compared to existing traffic at the Camellia industrial area, exhaust emissions are unlikely to cause significant impacts on the local and regional air quality. However, vehicle and machinery exhaust systems, will be maintained so that exhaust emissions comply with relevant standards and exhaust emissions are kept to a minimum.

3.2 Traffic

3.2.1 Existing Traffic Volumes

The main northern access to the Site is via Grand Avenue from James Ruse Drive. The intersection of James Ruse Drive and Grand Avenue is signalised where traffic can access areas to the north, west south or east. From this intersection, both the M4 Motorway and Parramatta Road can easily be reached. The main southern access to the Site links it from Parramatta Road.

3.2.2 Stage 1 Potential Impacts

Stage 1A activities involving stabilisation of the preload are expected to take approximately 4 months, and are anticipated to commence mid November 2019. The anticipated traffic generation determined for the Stage 1A works are presented below.

It is noted here that there is likely to be variations in the amount of materials from the Site and thus there will be variations in the actual daily construction vehicle generation. An indicative construction timeframe and truck volume is summarised in Table 3-2 below.

Table 3-2 Indicative Construction Timeframe and Truck Volume

Construction Activity	Maximum truck movements per day	Indicative timing
Removal of the excess preload material	60 truck movements/ day	over a period of 1 week

Given the predicted maximum daily truck movements are significantly lower that what is predicted in the EIS during operations, it is expected that construction traffic is unlikely to result in congestion/traffic disruptions in the surrounding areas. In addition, there is an existing carpark within the Site that will be utilised for parking and deliveries.

Provided that mitigation measures outlined in Section 4.2 are undertaken, it is unlikely that Stage 1 activities would have a significant adverse impact on traffic in the area.

3.3 Noise

As part of the EIS, a noise assessment was conducted by Bridges Acoustics Pty Ltd to assess the predicted construction and traffic noise levels generated as a result of the construction. The noise from equipment used during Stage 1A activities will typically be generated from a grader, dump truck, excavator, scraper, roller, compactor and water cart which is generally consistent with what was identified in the EIS noise assessment.

3.3.1 Existing Noise Environment

The Site is surrounded by Parramatta River to the north, EarthPower and Concrete Recyclers to the west, a commercial parking yard that was previously a container handling facility to the east and the Shell Refinery to the south. Given the industrial nature of the area, the neighbouring properties are considered to be relatively insensitive to environmental noise. The nearest sensitive noise receivers are the residences located in and around John Street, Rydalmere (approximately 230 m from the Site).

3.3.2 Noise Criteria

No exceedance in noise impact above background levels from construction noise emissions is anticipated as per the EIS findings. Should cumulative noise emissions from the Stage 1A works result in noise complaints, a noise monitoring program shall be established to provide information to support ongoing noise management during construction works.

3.3.3 Potential Impacts

Due to the industrial nature of the area, the distance from residential dwellings and the fact the works will mainly be carried out at ground level, it is not expected that construction noise will cause a significant impact on the neighbouring properties. Construction noise will be temporary with an expected maximum schedule of 4 months. The following activities are likely to contribute to construction noise:

- Plant and machinery movements around the Site
- Light vehicle movements around the Site
- generator and intermittent compressor operation to power equipment on Site

Provided that mitigation measures outlined in Section 3 are undertaken, it is unlikely that Stage 1A activities would have a significant noise impact on the surrounding area.

3.4 Soils

3.4.1 Existing Environment

The subsurface geology beneath the Site consists of highly disturbed fill materials overlying natural alluvial materials. According to the 1:250,000 Geological series S1 56-5 (Sydney), the alluvial materials consist of sequentially deposited Tertiary sands, clays and peats.

Fill material is highly variable in regards to composition and thickness due to the use of these materials to reclaim former swampland (CMJA 2010). As the fill was placed on top of soft estuarine sediments, the fill has penetrated into underlying sediments in isolated areas creating an irregular interface between the two layers. The depth of fill ranges from 2 to 3.5 m and it overlies native sand, silt and clay deposits extending to a depth of approximately 7 m below the existing ground surface. The northernmost portion of the Site also contains peat deposits adjacent to the edge of the river.

The Site and surrounding properties on the Camellia Peninsula have a layered geological profile, consisting of top to bottom (CMJA, 2007 and 2010):

- Unit 1 Fill: Fill materials, containing a mixture of natural and waste materials
- Unit 2 Estuarine Sediments: This layer consists of both alluvial and estuarine sediments, typically of Quaternary age, comprised of silty clay and clayey silt with occasional sand lenses and shell fragments.
- Unit 3 Deeper Alluvial Deposits: This layer, likely Tertiary in age, is typically comprised of stiff, red brown clay across the Peninsula, but sand lenses are present within the layer and the clays grade into clayey sand and gravel towards the base
- Unit 4 Residual Clay: This is the upper part of the Ashfield Shale that is commonly weathered clays up to 2 m thick
- Unit 5 Shale / Sandstone: The Ashfield Shale, comprising shale and laminite, overlies the Hawkesbury Sandstone, comprising quartz sandstone with very minor shale and laminate lenses

3.4.2 Acid Sulphate Soils

Typically the estuarine sediments underlying the fill material contain organic carbon and significant concentrations of reduced sulphur, increasing the potential for presence of Acid Sulphate Soils (ASS). The deeper Tertiary units are typically composed of stiff, red to brown clay which is approximately 20 m thick. The Site is mapped in the Parramatta Local Environmental Plan 2011 as having ASS within Class 3. This means ASS may occur for any works below 1 m.

3.4.3 Potential Impacts

Based on the proposed cut/fill profile, ASS are only expected to be encountered within the riparian zone which is covered under the PCC consent and will be managed in accordance with Contractor's ASS Management Plan.

3.5 Water Quality

3.5.1 Existing Environment

There are multiple groundwater layers beneath the Site due to the uneven interface of the fill and the underlying estuarine sediments (CMJA, 2007). Groundwater is generally present at depths of between 1 to 3 metres below ground level (mbgl), is of variable salinity and is affected by tidal variation. Shallow groundwater water is found within the fill material and within the uppermost estuarine sediments. Drilling and monitoring records from across the Camellia Peninsula indicate that these layers do not form a continuous aquifer, but rather that groundwater moves through a series of sand lenses of highly variable permeability (CMJA 2010).

A deeper aquifer is present which is persistent across the Camellia Peninsula, has a relative constant thickness of about 3 to 4 m and has relatively high hydraulic conductivity values. Groundwater monitoring wells installed across the Property screened this aquifer at a depth generally between 7.5 and 10.5 mbgl (CMJA 2010).

The inferred flow direction for groundwater encountered at the fill / estuarine interface flows in a northerly direction towards the Parramatta River where it discharges through shallow sediments. It is understood that at present, groundwater discharges vary in concentrations of Cr (VI) at the Site boundary; rising to the surface and migrating as shallow through-flow in the fill and upper estuarine sediments (CMJA, 2010).

3.5.2 Flooding

Localised flooding may occur in isolated locations of the site due to extreme rainfall events during construction. There exists a small likelihood that this type of flooding could result in soil erosion and sedimentation within the construction site. This risk however applies to all construction sites and can be appropriately managed by best practice soil and stormwater management, as indicated by the NSW Government's 'Blue Book' (Landcom, 4th Edition, 2004).

The Site has a Flood Emergency Response Plan (refer to Appendix D) which has been approved by the DPIE in May 2017 along with the Stage 1 – Preloading CEMP. This plan will be followed in the event of a major flood event during the proposed Stage 1A activities.

3.5.3 Potential Groundwater Impacts

During the Stage 1A works, it is unlikely that groundwater will be encountered or disturbed. In the event it is encountered on Site, water will be managed as per the Water Management Plan (refer to Appendix B).

3.5.4 Potential Surface Water Impacts

During the Stage 1A works, surface water will be managed in accordance with the Water Management Plan which has been updated to cover this next phase of works.

3.6 Waste

Under the POEO Act, it is an offence to 'without lawful authority, wilfully or negligently dispose of waste in a manner which harms or is likely to harm the environment'. Accordingly, the requirements of the POEO Act will need to be met during the project.

All waste material removed from Site will be assessed and classified in accordance with NSW EPA Waste Classification Guidelines.

Types of waste material that could be generated during the Stage 1A works include:

- general construction waste
- Excess preloading material;
- miscellaneous waste brought on-Site by workers such as food waste, paper, plastic and glass material

3.7 Other Environmental Issues

3.7.1 Visual Amenity

The existing environment around the Site is dominated by industrial uses. The Site is bound by the EarthPower Technologies food waste facility and the Concrete Recyclers facility and depot to the west of the Site, a commercial card yard to the east, Grand Ave to the south beyond which is Shell Refinery and the Parramatta River to the north

Potential visual impacts and changes to the local amenity, as a result of the Stage 1A works, were assessed in the EIS (CH2MHILL, 2013). The construction area will not take place outside the existing property fence and thus will not affect the existing vegetation screening in place along the foreshore. As such, it is expected that the construction will not result in any significant visual impact for users of either the Parramatta River or those along the river's northern banks.

3.7.2 Heritage

Items of non-indigenous heritage value are listed in statutory registers and schedules that provide the individual heritage item with a level of statutory protection. In Australia, statutory protection of heritage items is applied at the national, state and local level. Statutory registers relevant to the Site include:

- National Heritage Register;
- NSW Heritage Register; and
- Parramatta LEP - 2011.

A search of the above registers provided no listings of heritage items on either the national or NSW heritage registers occurring on the Site.

4. Management Measures

The following measures will be implemented during Stage 1A works to minimise the environmental impacts of this stage of construction works that have been discussed in section 3.

Construction personnel and relevant Veolia staff would be briefed on the Contractor's Work, Health & Safety Management Plan (WHSMP) and Project Environmental Management Plan which will be prepared and implemented by the Contractor prior to commencing this next phase of works. These plans will identify potential risks and management measures to be implemented during the works.

4.1 Air Quality

- The SafeWork NSW would be notified in writing five days before any licensed asbestos removal work commences.
- Air quality monitoring for asbestos fibres will be undertaken at the boundaries of works being conducted during the asbestos removal works. Monitoring locations will be dependent on the site activities and environmental conditions.
- Construction personnel and relevant Veolia staff would be briefed on the potential air quality risks and management measures identified in Contractor's Work, Health and Safety Plan prior to commencing work. This briefing would outline the difference between inhalation and other pathways where contact with contaminants is possible (e.g. ingestion, dermal absorption).
- Visually monitor dust generation on site to ensure no excessive dust generation;
- Personnel would wear appropriate personal protective equipment whilst on Site at all times during the works which are identified in the relevant Safe Work Method Statements (SWMS)
- Dust mitigation measures, such as water suppression, water sprinkler systems or similar would be employed during the works where required, to minimise any airborne dust generation and subsequent impact on neighbouring sites and workers. Moisture in soils increases aggregation and cementation of the particles, which reduces the potential for dust emissions.
- Ground disturbance and exposed surfaces would be minimised and will occur progressively to prevent generation of dust. Exposed soil would be covered overnight when necessary.
- All the vehicles on Site do not exceed a speed limit of 30 kilometres per hour which will be communicated through the Contractor's site signage and site inductions
- All the loaded construction vehicles leaving the Site have their loads covered
- To avoid tracking of dirt, sand and other materials, all loaded construction vehicles leaving the Site are cleaned using a cattle grid or wheel wash if necessary
- Any dust complaints associated with the construction works would be investigated and acted upon as soon as possible after receipt of the complaint.
- Machinery and vehicles would not be left running when not in use.
- Equipment will be operated in a proper, efficient and correct manner which includes proper maintenance in order to minimise exhaust emissions.
- No matter of any kind is to be burnt on Site.

4.2 Traffic

- The movement of construction related vehicles will be restricted to the construction hours as specified in Table 2-3.

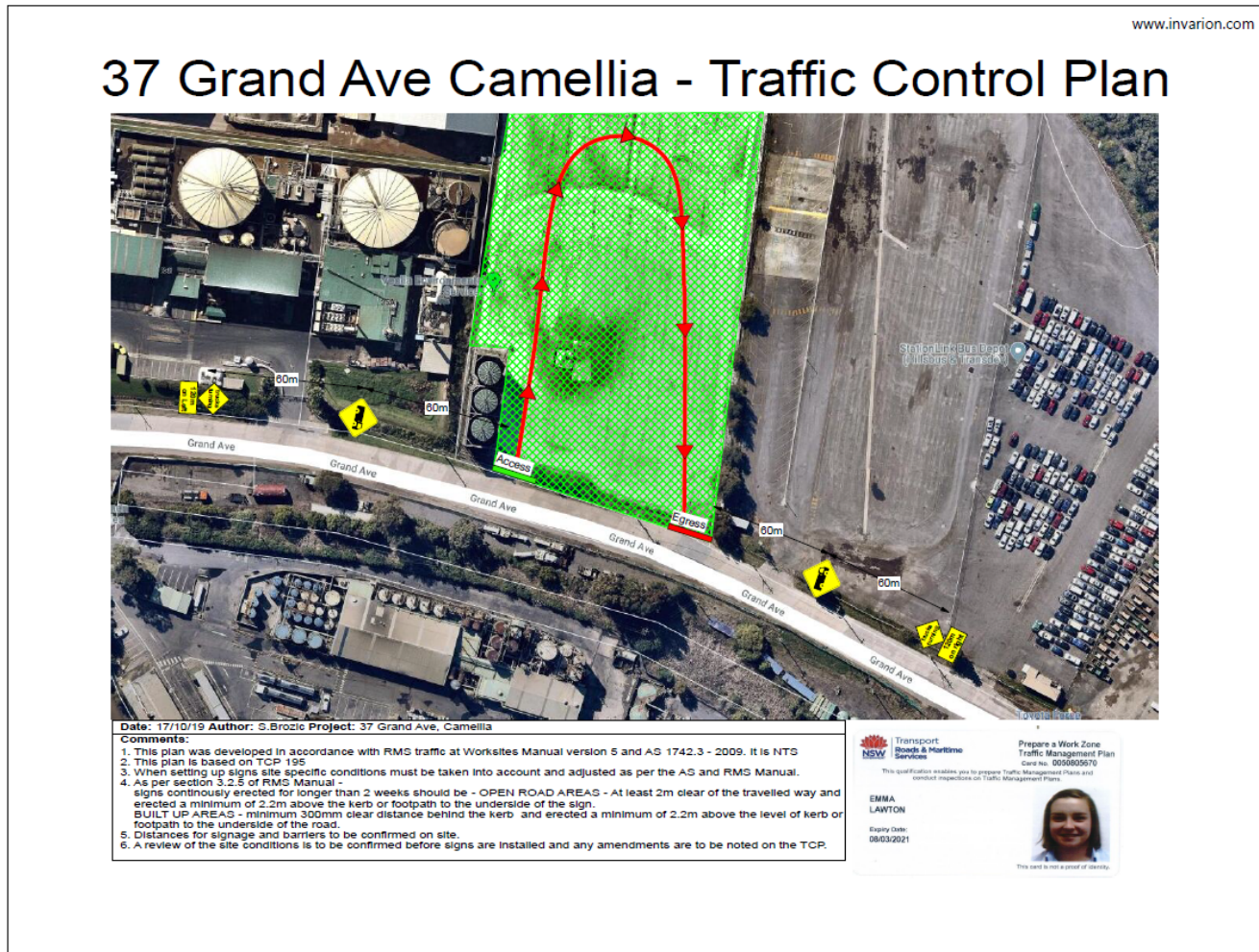
On Site Controls

- All material loading and unloading will occur within the construction Site. No loading or unloading will occur on any public roadways.
- Drivers will be advised of any changes to Site traffic controls during Site inductions and toolbox talks. The need for drivers to contact Site staff via UHF at the entry will ensure that there is opportunity to update drivers, with any recent changes to procedures.
- The maximum speed limit on Site during construction will be 30 kilometres per hour, however further restrictions may be imposed for specific areas or works phases on Site based on site risk assessments.

On Site Truck Movement

- Notifications for on-site truck movements will be managed via a combination of site induction and monitoring of truck movements by Contractor. The Contractor Site Induction will be a pre-requisite for drivers visiting the work site and establish the expected operating parameters covering the hazards identified in this plan.
- Workers within the Site would be separated from the primary circulation path for trucks
- Traffic will be managed in accordance with the Construction Traffic Management Plan (see Figure 4 below) which may change based on site activities and be developed and implemented based on these requirements. This plan will be communicated through Site inductions and toolbox talks.
- Private worker vehicles would be parked on Site in designated areas and away from the immediate traffic areas in order to avoid congestion.

Figure 4-1 - Construction Traffic Management Plan



4.3 Noise

The following construction mitigation measures will be implemented:

- Ensure no significant noise occurs on the Site outside the normal construction hours of 7am to 6pm Monday to Friday and 8:00am to 1:00pm on Saturday. No work is to be carried out on Sunday or public holidays
- Avoid unnecessary noise due to idling engines and fast engine speeds when lower speeds are sufficient for the task.
- The conditions of exhaust systems on the excavators and other heavy machinery will be assessed to ensure that they are operating efficiently.
- Ensure all machines used on the Site are maintained in good condition, with particular emphasis on exhaust silencers, covers on engines and transmissions, and squeaking or rattling components.
- In the event a complaint is received, noise monitoring will be carried out at the neighbouring residential area to compare noise levels against the set limits. Following this, a review of plant and equipment will be undertaken to resolve the issue.

4.4 Soil

The following general construction mitigation measures will be implemented during Stage 1A works:

General Construction

- Any excavated material would be placed in stockpiles on level land. Stockpiles would be covered with an impermeable covering and bunded to prevent loss of soil, where possible.
- No public access is allowed to the Site. The site is secured after hours with a 1.8m high fence to prevent access.
- Erosion and sediment control measures would be consistent with those specified in the NSW Government's 'Blue Book' (Landcom, 4th Edition, 2004) on erosion and sediment control.
- Sedimentation controls (such as geotextile sediment fences and berms) would be placed in accordance with the Erosion Sediment Control Plan and associated drawings

In the event contamination is encountered the following additional control measures will be implemented:

Contaminated Material Mitigation Measures

- Stockpiles containing contaminated material would be signposted as contaminated material.
- Disposal of any asbestos material would be undertaken by a licensed asbestos removalist.
- Contaminated material will be classified and disposed of at an appropriately licenced facility.
- Wash facilities would be available immediately outside the contaminated zone, which will be defined in the Contractor's, to wash splashes from skin. Contaminated clothes and shoes would not be worn outside of the contaminated zone and would be cleaned daily.
- Personnel would be briefed on Site contamination, risks and management measures prior to work commencing. This briefing would outline the difference between inhalation and other pathways where contact with contaminants is possible (e.g. ingestion, dermal absorption).
- Personnel would wear appropriate personal protective equipment whilst working in contaminated zones such as gloves, disposable dust masks and disposable coveralls

4.5 Water

Water generated as a result of construction will be managed onsite where possible. Any excess water will be managed as per the Water Management Plan (Appendix B) which details control measures to be implementing including:

- The installation of erosion and sediment control measures as outlined in Water Management Plan would minimise sediment runoff into the waterway.
- Silt fences around the boundary of the Site, pit filters and a cattle grid, if required to avoid the tracking of soil, dirt and other materials onto public roads.
- Once the site is sealed, erosion control will no longer be necessary, however if deemed appropriate by Veolia, the silt fence may remain. Sediment control will be assisted by bio-retention rain garden.
- The Site will be inspected and all sediment and erosion controls returned to good working order following (as applicable):
 - rainfall of greater than 29.5mm over a five-day period, when the site is being levelled; or
 - rainfall events of equal to or greater than the 20% Annual Exceedance Probability event, once the site is sealed.
- The Contractor is responsible for site induction training of all relevant employees and contractors working on site which will cover issues relating to soil and water management
- Targeted training in the form of toolbox talks or specific training will also be provided to personnel with key roles in soil and water management onsite
- In the event groundwater is encountered during excavation works, dewatering activities would be conducted by trained staff, experienced with implementing site dewatering and discharge procedures.

In addition to the above, the following chemical handling and storage control measures will be in place in accordance with the Contractor's WHSMP:

- As per the Contractor's Work Health and Safety Management Plan all chemicals stored on Site would be recorded on a register. The relevant Safety Data Sheets would also be kept on Site in accordance with the *Work Health and Safety Regulation 2017*.
- Refuelling, fuel decanting and vehicle maintenance work would take place within a designated bunded area adjacent to the fuel tank away from the River with spill response kits available for immediate use in the event of a spill.
- A functioning 'spill kit' would be kept on Site at all times for immediate clean-up of accidental chemical/fuel spills. Any contaminated spill rags would be disposed of at an approved waste.

4.5.1 Flooding

Stage 1A works are a continuation of Stage 1 works and fall under the Stage 1 - Flood Emergency Response Plan (refer to Appendix D) which was approved by DPIE in May 2017. In the event a major flood event occurs, the site will be managed in accordance with the Flood Emergency Response Plan.

4.6 Waste

Management strategies for waste generated during the construction phase of the 37 Grand Avenue Camellia will be aimed at implementing effective controls, correct classification and disposal methods including reuse and recycling where possible. Any materials deemed beyond their useful life shall be disposed at the appropriately licensed facility or under a resource recovery exemption order.

5. Environmental Management

It is essential that all personnel associated with Stage 1A activities comply with the legal, contractual and environmental requirements presented by Veolia and addressed in this CEMP.

All necessary approvals with respect to the planning and implementation of the Stage 1A works will be obtained by Veolia and/or by the Contractor as directed by Veolia. All relevant conditions of licences, permits, consents and approvals are to be adhered to during demolition stages. Copies of all licences, consents, permits and approvals will be held on Site.

5.1 Roles and Responsibility

Responsibilities for implementation of the CEMP are summarised in Table 5-1 below.

Table 5-1 Summaries of Responsibilities

Action	Responsibility
Overall implementation of the CEMP	Project Manager and Contractor
Coordinate monitoring and compile reports if required	Environmental Representative (ER) and/or nominee
Identify Non Conformance and notify Construction Manager/Veolia Safety Health Environment Quality Representative	Contractor and ER and/or nominee
Authorise and confirm the implementation of mitigation measures	Project Manager
Develop specific Work Methods and carry out Job Specific Safety Analysis for site personnel	Contractor
Coordinate site health and safety monitoring as required and compile reports	Contractor

All personnel shall be responsible for the implementation of the CEMP. In addition to Table 5-1, the authorities and environmental responsibilities of key personnel for this project are noted below:

Project Manager

- Ensure that the Construction Environmental Management Plan is effectively implemented on the project;
- Appoint/nominate the Environmental Representative and/or site nominee;
- Report to Veolia senior management on the performance of the system and environmental breaches;
- Allocate project resources to handle environmental issues;
- Take action to resolve major non-conformances; and
- Ensure suppliers and contractors comply with requirements.

Contractor Site Supervisor

- Ensure that the Construction Environmental Management Plan is effectively implemented on the project;
- Allocate project resources to handle environmental issues;
- Take action to resolve major non-conformances; and
- Ensure suppliers and contractors comply with requirements.
- Ensure that site personnel receive appropriate environmental awareness training;
- Ensure that environmental records and files are maintained;
- Ensure that non-conformances are recorded and actioned;
- Completing environmental checklists

Environmental Representative (or nominee)

- Ensure that the CEMP is effectively established, implemented and maintained at the project level;
- Review and update the CEMP and associated documentation;
- Provide support to the project team to enable them to meet their environmental commitments;
- Undertake environmental monitoring requirements

Principal Contractor/Contractors/Sub-contractors

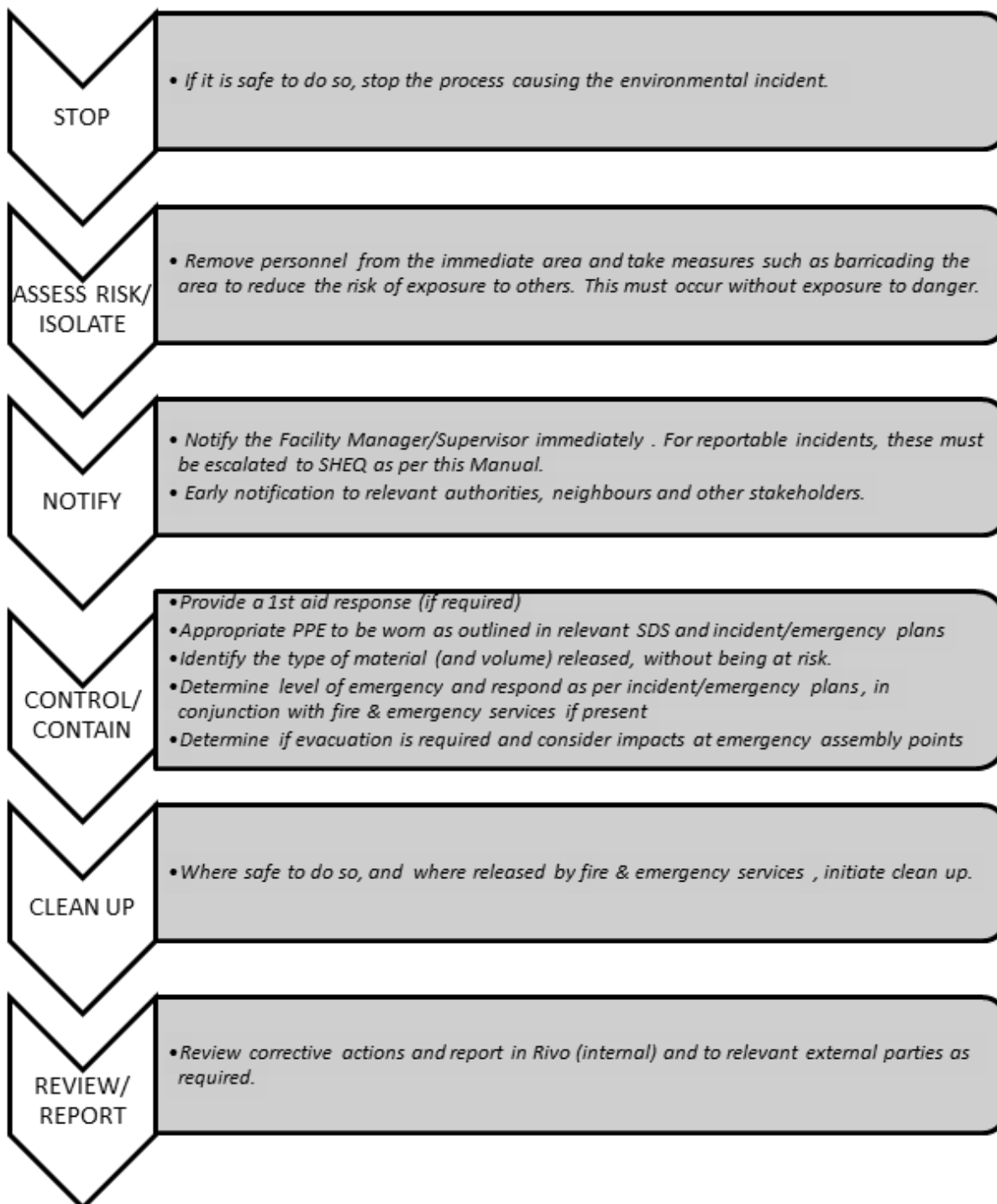
- Comply with all legal, contractual and environmental requirements;
- Comply with management / supervisory directions; and
- Participate in induction and training as directed.

All Construction Personnel/Staff

- Comply with the relevant Acts, Regulations and Standards.
- Comply with Veolia's Environmental Policy and procedures.
- Promptly report to management on any non-conformances and/or breaches of the system.
- Undergo induction and training in CEMP as directed by management.

5.2 Incident and Emergency Response Plan

All incidents will be managed in accordance with an Incident Response Plan (IRP) as shown in Figure 5-1 below. This includes external and internal notification, recording, reporting and response process.



5.2.1 Spills

In the event of a liquid spill during Stage 1A works, the emergency response, outlined in the Veolia Spill Response Procedure and/or the Contractor’s relevant health, safety and environmental plans.

5.2.2 Fire or Explosion

In the event of a fire or explosion at the Site, the Incident response plan is outlined in Figure 5-1 and the contacts provided in Section 5.3 of this plan.

5.3 Emergency Contacts

A list of personnel to be contacted during any Site or environmental emergencies has been compiled and presented in Table 5-2 below:

Table 5-2 Site Construction Emergency Contact

Contact	Position	Contact Details
Promit Biswas	Project Manager	0409 740 824
Sara Maddison	Environmental Representative	sara.maddison@veolia.com 0439 820 254
Stefan Brozic	Principal Contractor/Builder/Site Supervisor	JK Williams

5.4 Incident Reporting

Veolia must notify the Secretary and any other relevant agencies or stakeholders of incidents causing or threatening material harm to the environment or human health as soon as practical after they become aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident.

Incident reporting will be done in accordance with the Pollution Incident Response Management Plan Manual.

5.5 Performance Reporting


During the construction phase of the Site, the Contractor or site nominee will collect and record all environmental performance data for Veolia’s reporting obligations. Veolia will provide updates on the status of construction activities on Veolia’s webpage (<https://www.veolia.com/anz/our-services/services/municipal-residential/recovering-resources-waste/camellia-recycling-centre>)

5.6 Environmental Training

Upon commencement, all contractors shall be made aware of their environmental responsibilities and shall familiarise themselves with the requirements of the CEMP.

All contractors will receive induction/training in the following areas:

- Environmental Policy
- CEMP and related documents

- 
- Significant project aspects, impacts and controls
 - Emergency procedure and response
 - Understanding the legal obligations

Personnel performing tasks that can cause significant environmental impacts shall be competent on the basis of appropriate education, training and/or experience.

Further requirements will be explained to contractors during a site induction and any training that may be required will be provided via toolbox meetings. All inductions and on-going training, if required, shall be recorded.

6. Implementation of the CEMP

6.1 Work Health and Safety Plan

The contractor shall develop a Work Health and Safety Management Plan (WHSMP) and risk assessment in accordance with the CEMP, which will be implemented at the commencement of Stage 1A activities.

The management of the risks identified in this CEMP in relation to site contamination issues, as well as general safety practices during Stage 1A works, controls to be implemented and the selection of appropriate personal protective equipment will be prepared by the Contractor in conjunction with Veolia and disseminated to all workers associated with the construction activities.

A training and induction program will be put in place to ensure that workers are inducted to the WHSP and made aware of their obligations under the *Work Health and Safety (WHS) Act 2011*, the WHS Regulation 2017, as well as all relevant codes of practices and standards. This will include:

- Being made aware of details of the site contamination, risks and management measures;
- Understanding the difference between inhalation and other pathways whether contact with contaminants is possible such as via ingestion or dermal absorption;
- Measures to minimise exposure pathways;
- Knowing first aid and emergency contact personnel;
- Methods to implement emergency stop work procedures;
- Awareness of incident notification and reporting processes;

All work, health and safety associated documentation such as Site Safety Procedures, Safe Work Method Statements, Job Safety Environmental Analyses, Site Hazard Identification and Assessment Reports will be prepared by the Contractor in consultation with Veolia. As required, relevant updates will be made to the WHSP.

Veolia is certified under ISO9001 Quality Management Systems (QMS), ISO14001 Environmental Management Systems (EMS) and Australian Standard AS4801 for Risk Management. All safety documentation prepared for the construction of the will need to adhere to the requirements of these standards, relevant legislation and industry best practice. This documentation will form part of the Veolia's National Integrated Management System which is the platform for housing all health, safety, environmental and quality policies, plans and procedures.

The WHSP will be reviewed and updated as required based on any additional risks identified.

6.2 Communication Measures

In addition to management measures already detailed in this plan to manage environmental and work health and safety, the following communication avenues will be employed during the construction phase of the Site.

6.2.1 Communication

With respect to the functioning of the project's EMS, all contractors and other interested parties shall be kept informed in the following manner:

Internal communication methods may include the following where applicable:

- Site meetings
- Project reports
- Performance Assessment Reports
- Audit reports, non-conformance reports
- Noticeboards
- Staff meetings (as required)
- Employee induction, training and tool box sessions (as required)

- Subcontractor coordination meetings

External communication methods may include the following where applicable:

- Community consultation and dissemination of information
- Public notices and announcements
- Meetings and correspondence with appropriate regulatory authorities
- Discussions with adjoining land owners / neighbours who may be affected by the project
- Veolia's webpage (<https://www.veolia.com/anz/our-services/services/municipal-residential/recovering-resources-waste/camellia-recycling-centre>);
- Project's community phone line 132 955
- Handling of complaints in accordance with Section 6.2.3

6.2.2 Community Liaison

In addition to the communication process discussed in section 6.2.1, Veolia will also keep neighbours informed of Stage 1A works as required, through the established communication methods (community liaison meetings, newsletters or webpage).

6.2.3 Complaint Handling

Complaints or adverse reports received from any external source by the Site office or through the Community Phone Line number displayed on the front gate sign shall be deemed to be public complaints. Community feedback will be possible through the dedicated project email address and Veolia's webpage.

The Project Manager shall be notified of all public complaints. All public complaints received (either written or verbal) will be documented to contain the following information:

- The nature and extent of the complaint.
- The method by which the complaint was made.
- The name and address of the person lodging the complaint.
- Details of location, date, time and effects of the complaint.
- The action taken to address the complaint including follow up contact with the complainant.

The Project Manager, or their nominee, shall investigate and determine appropriate corrective/preventive actions to be taken to address all complaints. The complainant shall be informed in writing the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken the reasons why are to be recorded.

The Environmental Representative or site nominee shall establish and maintain a system of records which provides full documentation of complaint handling and responses to non-conformances, during the construction phases.

The Environmental Representative or site nominee will record and follow-up:

- Details of any complaints, including the complainant's name, address and contact number.
- Details of the response to complaints (including supplementary monitoring, corrective action).
- Weather conditions occurring at the time of the event, where relevant, relating to the complaint, including wind conditions

Details of all complaints received will be kept in the complaints register to ensure that a response is provided to the complainant as soon as practicable. The corrective action may involve supplementary monitoring to identify the source of the non-conformance, and/or may involve modification of construction or operational techniques to avoid any recurrence or minimise its adverse effects.

The Environmental Representative or site nominee will make available a report on complaints to the local community and, upon request, relevant government agencies.

Records of complaints shall be filed in the complaints register which has been established to ensure any complaints are correctly recorded and addressed and shall be kept for at least four years after the complaint was made.

The contractor shall establish and maintain procedures for the collection, indexing, filing, storage and maintenance of site records. Archived records shall be kept in accordance with Veolia's document control procedures.

6.2.4 Access to Information

Information required to be made publicly available under the Consent will be accessible via the Veolia website. This information will include management plans, monitoring results, complaints register and audits and reviews and will be kept up to date as required.

6.3 Monitoring Construction Activities

The monitoring of Stage 1A works shall be undertaken to ensure environmental controls and mitigation measures are being effectively implemented on Site.

The effectiveness of Site environmental controls will be assessed on a regular basis. To document this, a number of checklists, registers and forms will be completed by the Contractor. Veolia will also undertake site inspections during the proposed Stage 1A activities to ensure site environmental controls are implemented and effective.

These will provide a means to evaluate and verify compliance with the relevant regulatory requirements and the contractual environmental requirements.

Any non-conformances identified during site inspections or through monitoring results will be investigated to determine the cause and to ascertain the necessary corrective actions.

6.4 Audits

Veolia has an integrated Business Management System (BMS) which is certified under ISO 14001 Environmental Management System and therefore undertakes comprehensive monitoring of its management system for performance. Accordingly system and compliance audits form part of the annual governance program in NSW, to address the environmental performance of Veolia activities and is managed internally by the NSW Safety, Health, Environment, and Quality (SHEQ) team. An annual audit schedule incorporates review of the environmental performance of the Site against relevant environmental legislative requirements. Review of the CEMP for compliance and any site inspections, as required, will be undertaken by suitably qualified and experienced NSW SHEQ team members.

6.5 Environmental Monitoring Schedule

The environmental monitoring schedule provides an outline of the monitoring programme to address all practicable measures to prevent and minimise harm to the environment as a result of the Stage 1A works, in accordance with its regulatory requirements. Environmental Monitoring Schedule is identified in the table 6-1 below.

In the event pollutants are detected, monitoring is to occur. A monitoring report is to include the following:

- The locations and results of the potential pollutant monitoring.
- Tabulation of results, together with notes identifying the principal sources of potential pollutants.

- Summary of any measurements exceeding the criteria levels, and descriptions of the circumstances causing these exceedances.
- Details of corrective action applicable to criteria exceedances, and confirmation of its successful implementation. Where corrective action has not yet been implemented, it may be shown as pending, and the status of its implementation shall be carried forward to the site's reporting requirements.

Veolia must notify the Secretary, and any other relevant agencies or stakeholders of incidents causing or threatening material harm to the environment or human health as soon as practical after they become aware of the incident. Notification will initially be made via telephone. The contact telephone numbers are presented in Section 5.3 of this CEMP.

Table 6-1 Environmental Monitoring Schedule

Environmental Parameters	Frequency	Type of Monitoring	Reference in the CEMP
Air quality	As required	Regular site inspection	Section 4.1
		Airborne Asbestos Monitoring	Section 4.1
Traffic	As required	Spot monitoring	Section 4.2
Noise	Following the receipt of a noise complaint	Noise level monitoring	Section 4.3
Water	As per the WMP	Regular site inspections	Section 4.5 and the Water Management Plan

6.6 Reporting and Review of the EMP

6.6.1 Compliance Reporting

Compliance reporting is required to produce systematic, comprehensive and informative reports on the environmental performance as a result of the activities undertaken on Site in accordance with legislative requirements. The reports required are summarised in Table 6-2.

The reporting parameters, frequency of reporting, and items to be included in the reports are also provided.

Table 6-2 Camellia MRF reporting requirements

Type of Report	Frequency	Distribution	Report Inclusions
Independent Environmental Audit	Every three years	Condition 9 of Part C DPIE, EPA	Assessment of environmental performance of facility
Annual Return	Yearly	EPA	Annual Return Form
Annual Environmental Monitoring Report (AEMR)	Yearly		An Annual Environmental Management Report (AEMR) including annual monitoring undertaken, summary of

Type of Report	Frequency	Distribution	Report Inclusions
		Condition C11 of Part C DPIE	complaints, compliance with EPL conditions and overall environmental performance of the facility

6.6.2 Management Review

Management review includes review of the performance of the site, any incidents reported and testing of the ERP for input in the annual return and AEMR.



Appendices

- Appendix A - Conditions of Development Consent

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning under delegation executed 14 September 2011, the Planning Assessment Commission of New South Wales grants consent to the development application referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.



Garry West
Member of the Commission



Andrew Hutton
Member of the Commission

Sydney

6 July 2016

SCHEDULE 1

Application No.:	SSD 4964
Applicant:	Veolia Environmental Services (Australia) Pty Ltd
Consent Authority:	Minister for Planning
Land:	37 Grand Avenue, Camellia (Lot 1 DP 539890)
Development:	Construction and operation of a materials recycling facility

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DEFINITIONS

Act	<i>Environmental Planning and Assessment Act 1979</i>
Applicant	Veolia Environmental Services (Australia) Pty Ltd, or anyone else entitled to act on this consent
Construction	The demolition of buildings or works, the carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this consent
Council	Parramatta City Council
Department	Department of Planning and Environment
Development	The development that is approved by this development consent and as generally described in Schedule 1
EIS	The Environmental Impact Statement titled <i>Camellia Recycling Centre</i> prepared by CH2M Hill Australia Pty Ltd dated 22 February 2013
ENM	Excavated Natural Material
EPA	Environment Protection Authority
EPL	Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i>
Feasible	Feasible relates to engineering considerations and what is practical to build
Heavy vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Heritage Item	An item as defined under the <i>Heritage Act 1977</i> , and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the <i>National Parks and Wildlife Act 1974</i> .
Incident	A set of circumstances that: <ul style="list-style-type: none"> • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this consent
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
OEH	Office of Environment and Heritage
Operation	The receipt or processing of waste
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
RTS	Response to Submissions Report titled <i>Veolia Environmental Services</i> prepared by CH2M Hill Australia Pty Ltd dated 3 December 2014
Secretary	Secretary of the Department, or nominee
Site	Land referred to in Schedule 1
Site Auditor	As defined in the <i>Contaminated Land Management Act 1997</i>
Site Audit Report	As defined in the <i>Contaminated Land Management Act 1997</i>
Site Audit Statement	As defined in the <i>Contaminated Land Management Act 1997</i>
VENM	Virgin Excavated Natural Material
Waste	As defined in the POEO Act

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

- A1. The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Development.

TERMS OF CONSENT

- A2. The Applicant shall carry out the Development in accordance with the:
- EIS;
 - RTS;
 - Site layout plans and drawings (see Appendix A); and
 - Management and Mitigation Measures (see Appendix B).
- A3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.
- A4. The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
- any reports, plans, strategies, programs or correspondence that are submitted in accordance with this consent; and
 - the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

LIMITS OF CONSENT

- A5. This consent lapses 5 years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before the date on which the consent would otherwise lapse under Section 95 of the Act.

STATUTORY REQUIREMENTS

- A6. The Applicant shall ensure that all licences, permits, and approvals/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals/consents.

BUILDING CODE OF AUSTRALIA

- A7. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the *Building Code of Australia*.

LIMITS OF CONSENT

Waste limits

- A8. The Applicant shall not receive or process on the site more than 200,000 tonnes of waste per calendar year.

Waste type

- A9. The Applicant shall not cause, permit or allow any materials or waste generated outside the site to be received at the site for storage, use, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by an EPL.

OPERATION OF PLANT AND EQUIPMENT

- A10. The Applicant shall ensure that all plant and equipment used for the Development is:
- maintained in a proper and efficient condition; and
 - operated in a proper and efficient manner.

DEMOLITION

- A11. The Applicant shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.

STAGED SUBMISSION OF PLANS OR PROGRAMS

- A12. With the approval of the Secretary, the Applicant may:
- submit any strategy, plan or program required by this consent on a progressive basis; and/or
 - combine any strategy, plan or program required by this consent.

SURRENDER OF CONSENTS

- A13. In order for the development of land to proceed in a coordinated and orderly manner and to avoid potential conflicts with this consent, the Applicant shall and in the manner prescribed by clause 97 of the Regulation, surrender the development consents described in Table 1 prior to the issue of an Occupation Certificate for the Development.

Table 1 – Consents to be surrendered

Determination date	DA number	Details
3 December 1969	1054/J	
26 May 1970	G114/70	
23 July 1992	DA 39288/L91	Food waste recycling depot (grease trap plant)
15 March 1996	DA 96/00019/DJ	Upgrade of existing waste water treatment plant and the construction of two (2) vertical tanks
12 July 1996	DA 95/00886/DJ A	Relocate the already approved metal clad workshop towards the street frontage
28 October 1997	DA 97/00532/DJ	To erect an awning to an existing wash bay and to extend an existing storage bay
9 July 2001	DA IT/01476/99	To extend and upgrade an existing liquid waste treatment facility
5 April 2005	DA/532/1997/A	Section 96 application to modify Council original approval and in increase the height of the storage bays
22 October 2007	DA/658/2007	Conversion of a vehicle workshop to a packaged waste store
4 December 2007	DA/848/2007	Alterations and additions including replacement of 3 liquid storage tanks, increase in the size of the bunded area, extension of soil bay awning and additional soil bays

METEOROLOGICAL MONITORING

- A14. Within 14 days of the issue of a Construction Certificate for the Development, the Applicant shall ensure that there is a suitable meteorological station on the site that complies with the requirements in the latest version of the *Approved Methods for Sampling of Air Pollutants in New*

South Wales. The Applicant shall operate the meteorological station for the life of the Development.

PROTECTION OF PUBLIC INFRASTRUCTURE

A15. The Applicant shall:

- a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Development; and
- b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Development.

SITE AUDIT STATEMENT

A16. Prior to the issue of a Final Occupation Certificate for the Development, the Applicant shall obtain from a Site Auditor, a Site Audit Statement and a Site Audit Report which demonstrates that the site is suitable for its intended use(s).

DISPUTE RESOLUTION

A17. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the Development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

DEVELOPER CONTRIBUTIONS

A18. Prior to the issue of a Construction Certificate for the development, unless otherwise agreed with Council, the Applicant shall pay development contributions to Parramatta Council calculated in accordance with *Section 94A Development Contributions Plan (Amendment No. 4) Parramatta City Council 20 May 2015*.

PART B ENVIRONMENTAL PERFORMANCE

WASTE MANAGEMENT

Waste Monitoring Program

- B1. From the commencement of operation, the Applicant shall implement a Waste Monitoring Program for the Development. The program must:
- a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operation;
 - b) include suitable provision to monitor the:
 - (i) quantity, type and source of waste received on site; and
 - (ii) quantity, type and quality of the outputs produced on site.
 - c) ensure that:
 - (i) all waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the site; and
 - (ii) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.

Waste storage and processing

- B2. All processed and unprocessed waste must be stored within the building on the site.

Pests, vermin and noxious weed management

- B3. The Applicant shall:
- a) implement suitable measures to manage pests, vermin and declared noxious weeds on the site; and
 - b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.

SOIL AND WATER

Compliance Certificate

- B4. A Section 73 Compliance Certificate under the *Sydney Water Act 1994* must be obtained from Sydney Water prior to the commencement of construction.

Pollution of Waters

- B5. The Development shall comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.

Water Management Plan

- B6. Prior to the commencement of construction of the Development, the Applicant shall prepare a Water Management Plan to the satisfaction of the Secretary. The plan must:
- a) be prepared by a suitably qualified and experienced person(s) in consultation with Council;
 - b) include the details of:
 - (i) the Water Management System (see Condition B8);
 - (ii) erosion and sediment control measures (see Condition B9); and
 - (iii) bunding (see Condition B11).
- B7. The Applicant shall carry out the Development in accordance with the Water Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Water Management System

- B8. The Applicant shall operate a Water Management System for the site. The system must:
- a) be designed by a suitably qualified and experienced person(s) in consultation with Council;
 - b) include:

- (i) a berm at the front of the site, which is designed to prevent catchment flows up to the 1 in 20 year Average Recurrence Interval event from entering the site;
- (ii) drainage for surface water toward the Parramatta River where possible;
- (iii) one way devices to prevent the ingress of river water to the water management system; and
- (iv) clean surface water diversion around operational areas of the site

Erosion and sediment control

B9. The Applicant shall implement erosion and sediment control measures on-site in accordance with *Managing Urban Stormwater: Soils and Construction Vol 1*. (Landcom, 2004).

Acid Sulfate Soils

B10. The Applicant shall implement acid sulfate soils management measures in accordance with the guidance in the NSW Acid Sulfate Soil Management Advisory Committee's *Acid Sulfate Soil Manual*.

Bunding

B11. The Applicant shall store all chemicals, fuels and oils used on-site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participant's Manual 2007*.

Flood management

B12. The Applicant shall ensure that:

- a) the finished floor level of any new building is a minimum of 0.5 metres above the 1 in 100 year Average Recurrence Interval flood level; and
- b) any part of a new structure is designed and constructed to be structurally sound during a flood event equivalent to the Probable Maximum Flood.

Flood emergency response plan

B13. Prior to the commencement of construction of the Development, the Applicant shall prepare a flood emergency response plan to the satisfaction of the Secretary. The plan must:

- a) be prepared by a suitably qualified and experienced person(s) in consultation with Council;
- b) address the provisions of the *Floodplain Risk Management Guideline* (25 October 2007, Office of Environment and Heritage);
- c) include the details of the flood emergency responses for both construction and operation phases of the development;
- d) include details of:
 - (i) site planning and design features;
 - (ii) predicted flood levels;
 - (iii) flood warning time and flood notification;
 - (iv) evacuation and refuge protocols; and
 - (v) awareness training for employees and contractors.

B14. The Applicant shall carry out the Development in accordance with the flood emergency response plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Imported soil

B15. The Applicant shall:

- a) ensure that only VENM, or ENM, or other material approved in writing by the EPA is used as fill on the site;
- b) keep accurate records of the volume and type of fill to be used; and
- c) make these records available to the Department upon request.

AIR QUALITY

Odour

B16. The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).

Air emissions mitigation

B17. The Applicant shall:

- a) carry out the Development so that air and odour emissions are minimised during all meteorological conditions; and
- b) implement best management practice, including all reasonable and feasible air and odour emission mitigation measures to minimise emissions from the Development.

Construction emissions mitigation

B18. During construction, the Applicant shall ensure that:

- a) all vehicles on site do not exceed a speed limit of 30 kilometres per hour;
- b) all loaded construction vehicles entering or leaving the site have their loads covered; and
- c) all loaded construction vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.

Odour Audit

B19. The Applicant shall carry out an Odour Audit of the Development no later than 6 months after operation of the Development. The audit must:

- a) be carried out by a suitably qualified, experienced and independent person(s), whose appointment has been endorsed by the Secretary;
- b) audit the Development in full operation;
- c) include a summary of odour complaints and any actions that were carried out to address the complaints;
- d) validate the Development against odour impact predictions in the EIS;
- e) review design and management practices in the Development against industry best practice for odour management; and
- f) include an action plan that identifies and prioritises any odour mitigation measures that may be necessary to reduce odour emissions.

Note: The odour audit may be prepared so that it addresses the requirements of this consent and the EPL for the Development.

B20. Within six months of commissioning the Odour Audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with the Applicant's response to any recommendations contained in the audit report.

B21. The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of the Odour Audit report.

NOISE AND VIBRATION

Construction and operation hours

B22. The Applicant shall comply with the construction and operation hours in Table 2 unless otherwise specified in the EPL and agreed in writing by the Secretary.

Table 2: Construction Hours

Activity		Day	Hours
Construction		Monday - Friday	7 am to 6 pm
		Saturday	8 am to 1 pm
		Sunday & Public Holidays	Nil
Operation	Waste processing	Any day	6 am to 10 pm
	Delivery and dispatch	Any day	Any time

B23. Despite Condition B22, any activity may occur at any time if that activity is required to be performed by police or other authorities for safety reasons; and/or if there is an on-site emergency that poses an immediate danger to personnel or equipment; and/or the operation or personnel or equipment is endangered. In such circumstances, prior notification shall be provided to the EPA and any affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise mitigation

B24. The Applicant shall:

- a) implement best practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development;
- b) minimise the noise impacts of the Development during adverse meteorological conditions;
- c) install a steel fence on the northern and north-eastern side of the truck path;
- d) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
- e) regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

Noise criteria

B25. The Applicant shall ensure that the operational noise generated from the Development does not exceed the criteria in Table 3:

Table 3: Sleep Disturbance Criteria

Receiver/Location	Sleep Disturbance Criteria ($L_{A1, 1min}$)
M1 John Street and M2 Milton Street	56

Vibration criteria

B26. The Applicant shall ensure that vibration resulting from the Development does not exceed the continuous or impulsive vibration criteria in EPA's *Assessing Vibration: A Technical Guideline* (February 2006) at residential receivers.

TRAFFIC AND ACCESS

Operating Conditions

B27. The Applicant shall ensure that:

- a) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are constructed and maintained in accordance with the latest versions of *Australian Standard AS 2890.1* and *AS 2890.2*;
- b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with *AUSTROADS Guide to Road Design*;
- c) the Development does not result in any vehicles queuing on the public road network;
- d) all vehicles are wholly contained on site before being required to stop;
- e) all loading and unloading of materials is carried out on site;
- f) turning areas in the car park are kept clear of any obstacles, including parked cars, at all times;
- g) all trucks entering or leaving the site with loads have their loads covered;
- h) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads; and
- i) all vehicles enter and leave the site in a forward direction.

HAZARD AND RISK

Fire Management

B28. The Applicant shall:

- a) implement suitable measures to minimise the risk of fire on-site;
- b) extinguish any fires on-site promptly; and
- c) maintain adequate fire-fighting capacity on-site.

VISUAL AMENITY

Lighting

B29. All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *Australian Standard AS 4282 1997*.

Landscaping

B30. Prior to the commencement of construction of the Development, the Applicant shall prepare a Landscape Management Plan to the satisfaction of the Secretary. The plan shall:

- a) detail the landscaping measures including vegetation that is to be planted to minimise the visual impact of the Development, particularly from adjoining premises and public vantage points; and
- b) include measures for monitoring and maintenance of revegetated areas.

B31. The Applicant shall carry out the Development in accordance with the Landscape Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

HERITAGE

B32. The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered. If human remains are uncovered, you must immediately stop work, not further disturb the remains and notify NSW Police. OEH and the Aboriginal community must be contacted if the remains are suspected to be of Aboriginal origin. If other Aboriginal objects are discovered, you must immediately stop work, not further disturb the objects and notify OEH by calling Environment Line on 131 555. Works must not resume in the designated area until the relevant written consent is received from NSW Police and/or OEH. Any Aboriginal objects discovered must be registered on the Aboriginal Heritage Management Information System (AHIMS), in accordance with section 89A of the *National Parks and Wildlife Act 1974*.

SECURITY

B33. The Applicant shall:

- a) install and maintain a perimeter fence and security gates on the site; and
- b) ensure that the security gates on site are locked whenever the site is unattended.

PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

- C1. Prior to the commencement of construction of the Development, the Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must:
- a) be prepared by a suitably qualified and experienced person(s);
 - b) describe all activities to be undertaken on the site during construction, including a clear indication of construction stages;
 - c) identify the statutory approvals that apply to the Development;
 - d) outline all environmental management practices and procedures to be followed during construction (e.g. construction traffic management and construction noise and vibration management), including all reasonable and feasible mitigation measures to protect the amenity of the surrounding environment;
 - e) detail how the environmental performance of construction will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - f) describe of the roles and responsibilities for all relevant employees involved in construction;
 - g) include arrangements for community consultation and complaints handling procedures during construction; and
 - h) consolidate the construction related parts of any management plans and monitoring programs required in the conditions of this consent;
- C2. The Applicant shall carry out the development in accordance with the Construction Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Operational Environmental Management Strategy

- C3. Prior to the commencement of operation, the Applicant shall prepare an Operational Environmental Management Strategy to the satisfaction of the Secretary. This strategy must:
- a) be prepared by a suitably qualified and experienced person(s);
 - b) provide a strategic framework for environmental management of the Development;
 - c) identify the statutory approvals that apply to the Development;
 - d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;
 - e) describe in general how the environmental performance of the Development would be monitored and managed; and
 - f) describe the procedures that would be implemented to:
 - (i) keep the local community and relevant agencies informed about the operation and environmental performance of the Development;
 - (ii) receive, handle, respond to, and record complaints;
 - (iii) resolve any disputes that may arise;
 - (iv) respond to any non-compliance; and
 - (v) respond to emergencies.
- C4. The Applicant shall carry out the Development in accordance with the Operational Environmental Management Strategy approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Management Plan Requirements

- C5. The Applicant shall ensure that the environmental management plans/strategies required under this consent are prepared in accordance with any relevant guidelines and include:
- a) detailed baseline data;
 - b) a description of:
 - (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - (ii) any relevant limits or performance measures/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;
- (iv) the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
- c) a program to monitor and report on the:
 - (i) impacts and environmental performance of the Development;
 - (ii) effectiveness of any management measures;
 - (iii) a contingency plan to manage any unpredicted impacts and their consequences;
 - (iv) a program to investigate and implement ways to improve the environmental performance of the Development over time;
- d) a protocol for managing and reporting any:
 - (i) incidents;
 - (ii) complaints;
 - (iii) non-compliances with statutory requirements; and
 - (iv) exceedances of the impact assessment criteria and/or performance criteria; and
 - (v) a protocol for periodic review of the plan.

C6. The Secretary may waive some of the requirements in Condition C5 if they are unnecessary or unwarranted for particular management plans/strategies.

REPORTING

Incident Reporting

C7. The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

C8. The Applicant shall provide regular reporting on the environmental performance of the Development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

INDEPENDENT ENVIRONMENTAL AUDIT

C9. Within 1 year of the date of this consent and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:

- a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
- b) led by a suitably qualified auditor, and include experts in fields specified by the Secretary;
- c) include consultation with the relevant agencies;
- d) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals and relevant EPL/s (including any assessment, plan or program required under the approvals);
- e) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and
- f) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under the consents.

C10. Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

Annual Review

- C11. Within 1 year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the Development. This review must:
- a) describe the Development that was carried out in the previous calendar year, and the Development that is proposed to be carried out over the next year;
 - b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of the results against the:
 - (i) the relevant statutory requirements, limits or performance measures/criteria;
 - (ii) requirements of any plan or program required under this consent;
 - (iii) the monitoring results of previous years; and
 - (iv) the relevant predictions in the EIS;
 - c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - d) identify any trends in the monitoring data over the life of the Development;
 - e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and
 - f) describe what measures will be implemented over the next year to improve the environmental performance of the Development.

Revision of Strategies, Plans and Programs

- C12. Within 3 months of the submission of an:
- a) annual review under Condition C11 above;
 - b) incident report under Condition C7 above;
 - c) audit under Condition C9 above; or
 - d) any modification to this consent,

the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Development.

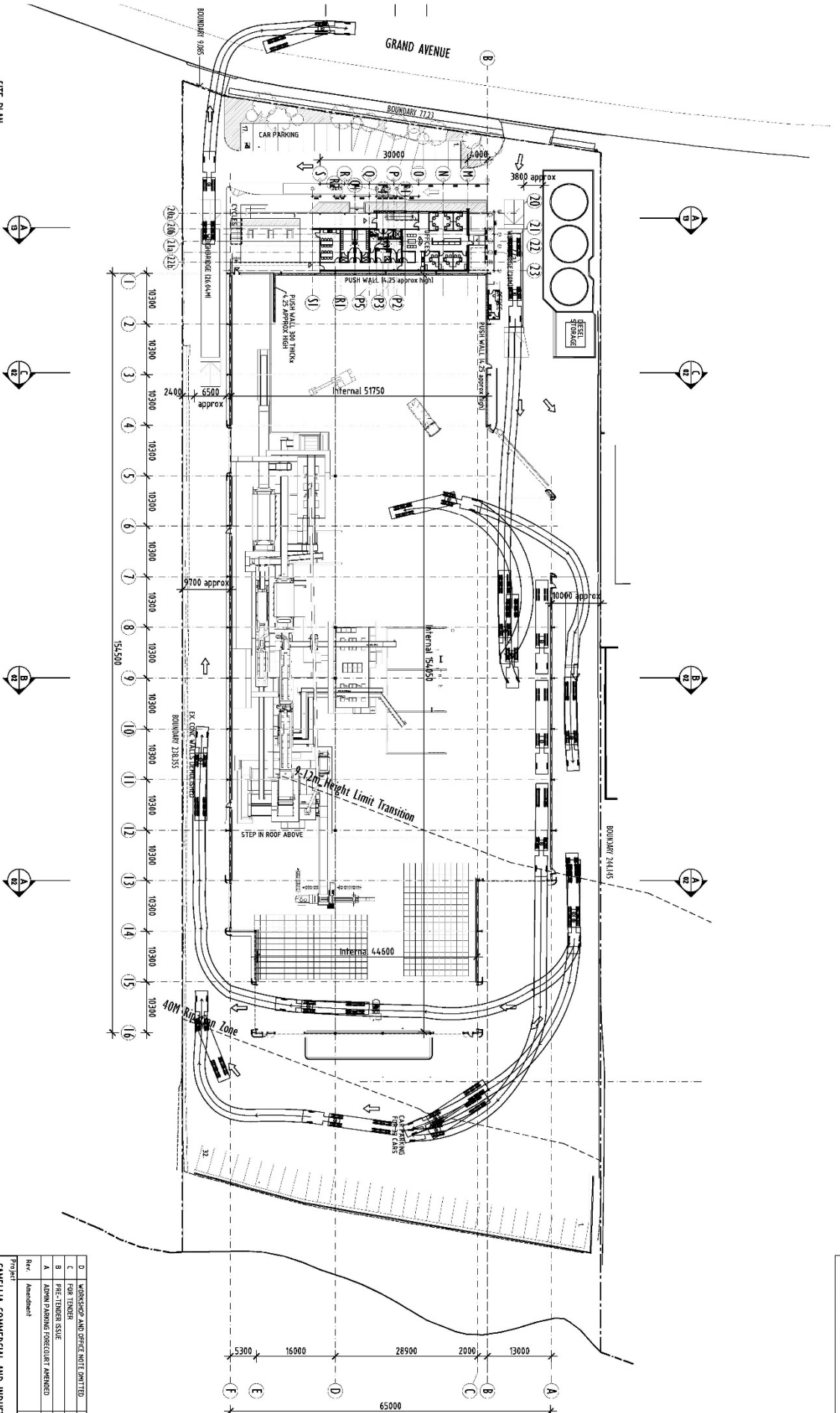
- C13. The Applicant shall ensure that the operation of the Development is undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary.

ACCESS TO INFORMATION

- C14. The Applicant shall:
- a) ensure a 24 hour contact telephone number for the site is posted on the front fence of the site, and on its website;
 - b) make copies of the following publicly available on its website:
 - (i) the documents referred to in Condition A2;
 - (ii) all current statutory approvals for the Development;
 - (iii) all approved strategies, plans and programs required under the conditions of this consent;
 - (iv) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;
 - (v) a complaints register, updated on a monthly basis;
 - (vi) the annual reviews of the Development;
 - (vii) any independent environmental audit of the Development, and the Applicant's response to the recommendations in any audit; and
 - (viii) any other matter required by the Secretary; and
 - c) keep this information up to date.

APPENDIX A – SITE AND LAYOUT PLANS

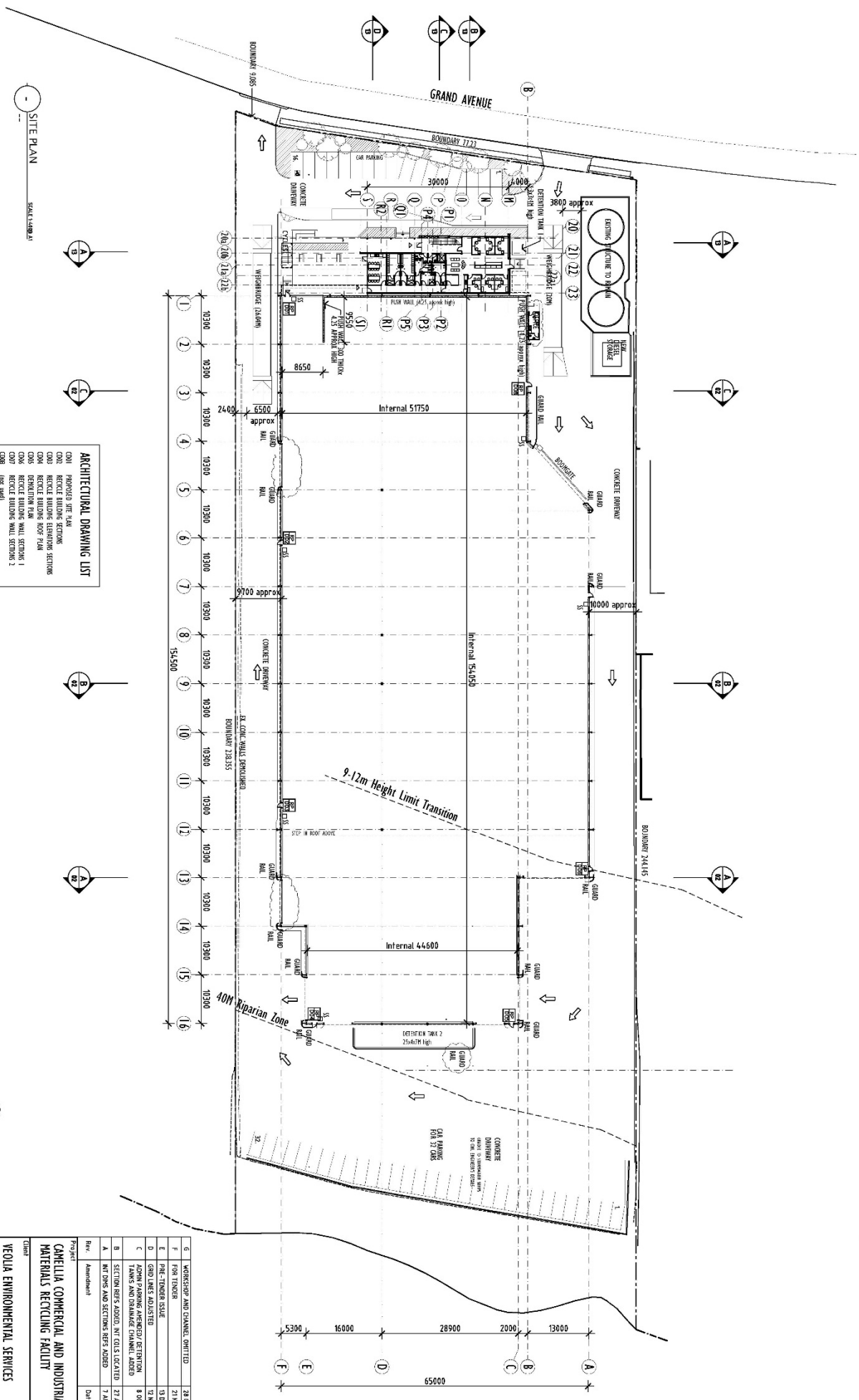
SITE PLAN
SHOWING EQUIPMENT LAYOUT



0	WORKSHOP AND SHEET NOTE DIMITED	28 OCT 15
1	FOR TENDER	27 NOV 14
2	PRE-1 TENDER ISSUE	19 DEC 14
3	FOR TENDER	19 DEC 14
4	ADDITIONAL DRAWING FOR TENDER AMENDED	8 OCT 15
Rev	Amendment	Date
PROJECT CAMELLA COMMERCIAL AND INDUSTRIAL MATERIALS RECYCLING FACILITY		
CLIENT VEOLIA ENVIRONMENTAL SERVICES		
DRAWING PROPOSED PLAN SHOWING EQUIPMENT LAYOUT		
DRAWN BY BUTLER & CO ARCHITECTS Pty Ltd ARCHITECTS & INTERIORS DESIGNERS 27 Albert Ave, Chishwood NSW 2067 Phone: 021 9411 1311 Fax: 021 9419 2868		
WF	Checked By	Date
MF	Approved	28 OCT 15
1400	Revision	D
1224 0021		

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SITE PLAN
SCALE: 1:400

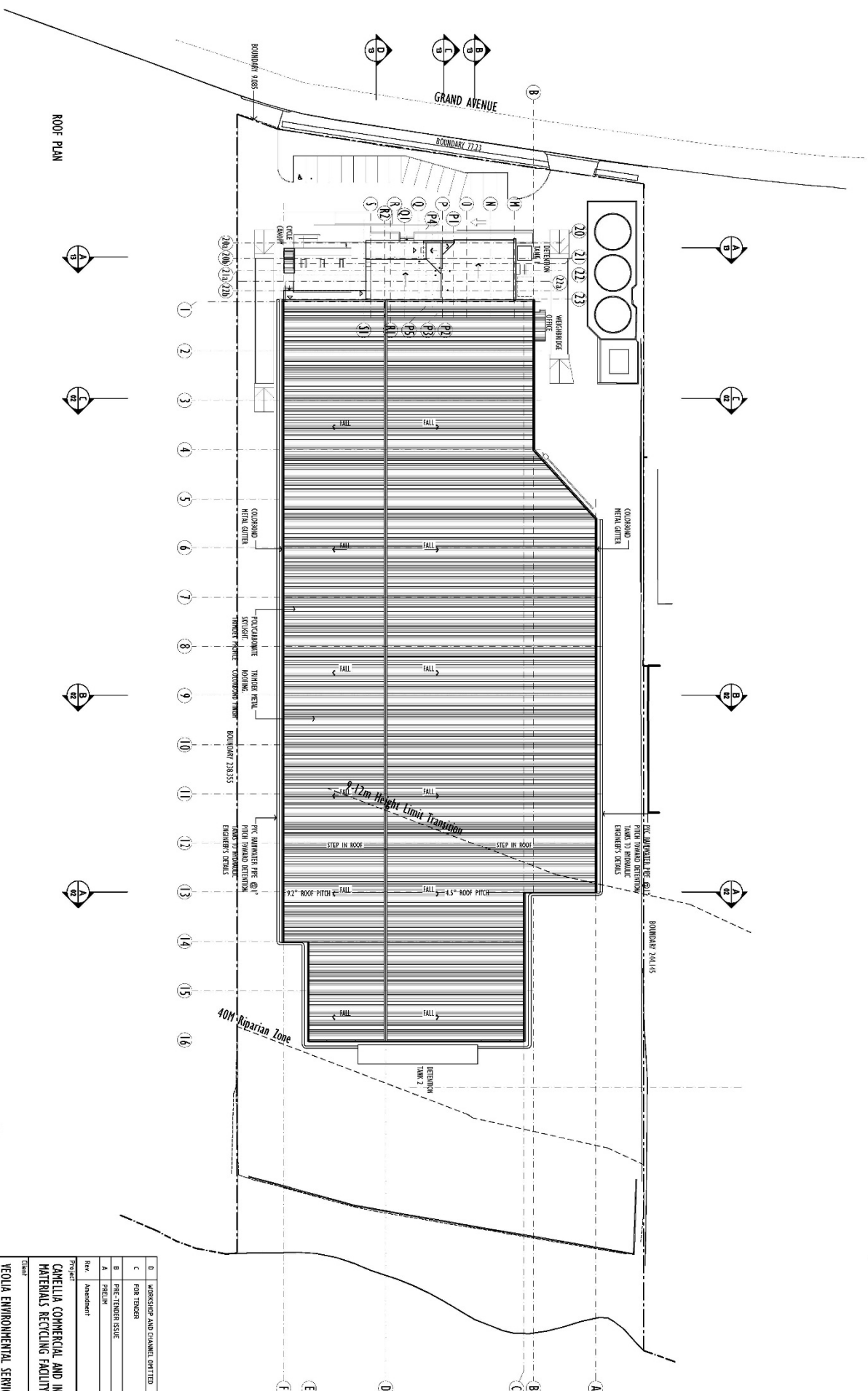
- ARCHITECTURAL DRAWING LIST**
- C001 PROPOSED SITE PLAN
 - C002 RECYCLE BUILDING SECTIONS
 - C003 RECYCLE BUILDING SECTIONS
 - C004 RECYCLE BUILDING SECTIONS
 - C005 RECYCLE BUILDING SECTIONS
 - C006 RECYCLE BUILDING SECTIONS
 - C007 RECYCLE BUILDING WALL SECTIONS 1
 - C008 RECYCLE BUILDING WALL SECTIONS 2
 - C009 RECYCLE BUILDING WALL SECTIONS 3
 - C010 RECYCLE BUILDING WALL SECTIONS 4
 - C011 RECYCLE BUILDING WALL SECTIONS 5
 - C012 RECYCLE BUILDING WALL SECTIONS 6
 - C013 RECYCLE BUILDING WALL SECTIONS 7
 - C014 RECYCLE BUILDING WALL SECTIONS 8
 - C015 RECYCLE BUILDING WALL SECTIONS 9
 - C016 RECYCLE BUILDING WALL SECTIONS 10
 - C017 RECYCLE BUILDING WALL SECTIONS 11
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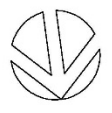
Rev.	Amendment	Date
A	SECTION REFS ADDED, INT COLS LOCATED	27/AUG/13
B	SECTION REFS ADDED, INT COLS LOCATED	27/AUG/13
C	ADJACENT PARKING AREAS IDENTIFICATION	8/OCT/13
D	ADJACENT PARKING AREAS IDENTIFICATION	12/NOV/13
E	GRID LINES ADJUSTED	13/DEC/13
F	PRE-TENDER ISSUE	21/NOV/14
G	WORKSHOP AND CHANNEL OMITTED	28/OCT/15

Project: **CAMELLIA COMMERCIAL AND INDUSTRIAL MATERIALS RECYCLING FACILITY**
 Client: **VEOLIA ENVIRONMENTAL SERVICES**
 Architect: **BITTNER & CO ARCHITECTS Pty Ltd**
 Address: 77/78 WILSON STREET, SYDNEY NSW 2007
 Phone: (02) 94117311 Fax: (02) 94197384
 Email: info@bittner.com.au
 Scale: 1:400
 Drawing No: 1224 (001)
 Date: 28 OCT 15
 Revision: G

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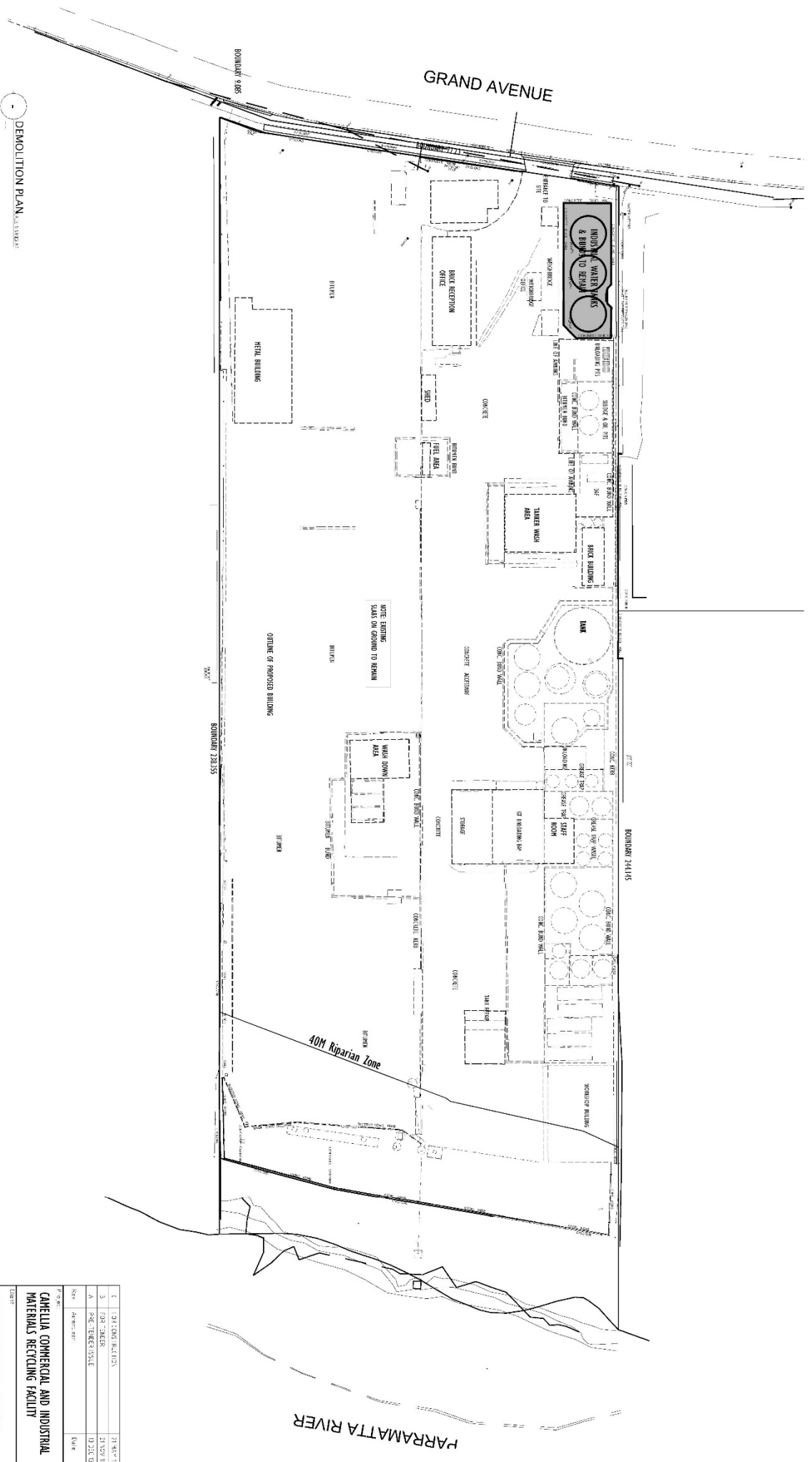


ROOF PLAN



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C	FOR TENDER	21 NOV 14
B	PRE-TENDER S&E	19 DEC 13
A	PRELIM	21 NOV 13
Rev	Amendment	Date
Project: CANTELLA COMMERCIAL AND INDUSTRIAL MATERIALS RECYCLING FACILITY		
Client: VEOLIA ENVIRONMENTAL SERVICES		
Drawing: PROPOSED ROOF PLAN		
Butler & Co Architects Pty Ltd		
27 Albert Ave, Auckland NSW 2007		
Phone (02) 9411 7311 Fax (02) 9429 2668		
Drawn: [Name]	Approved: [Name]	Date: 28 Oct 15
Scale: 1:400	Drawing No: 1224-004	Sheet: D

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DEMOLITION PLAN

EXISTING BUILDINGS, TANKS & STRUCTURES TO BE DEMOLISHED. REFER CHIL DRAWINGS FOR PAVING RETENTION!



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VEOLIA ENVIRONMENTAL SERVICES
 DEMOLITION PLAN
 BUTLER & TO ARCHITECTS Pty Ltd
 ARCHITECTS & DESIGNERS
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APPENDIX B – MANAGEMENT AND MITIGATION MEASURES

Environmental Issue	Mitigation Measures
Air Quality & Odour	Construction Mitigation Measures
	Any disturbance required to the subsurface would be undertaken in accordance with the existing control measures, provided in the SSEMP and the RAP, which was prepared to protect workers from any potential exposure to contamination.
	Further identification of these areas would be undertaken as part of the Construction Environmental Management Plan.
	An industrial hygienist would be involved in the development of an asbestos management plan for the construction works and would be onsite at all times during the exposure of any materials under the capping layer.
	If required, the WorkCover Authority of NSW (WorkCover) would be notified in writing five days before any licensed asbestos removal work is commenced.
	Air monitors will be set up around the site to monitor key air quality parameter including dust and potential contaminants prior to exposure of the cap, and for the duration of the construction phase.
	Staff would be briefed on site contamination, risks and management measures prior to work commencing. This briefing would outline the difference between inhalation and other pathways where contact with contaminants is possible (e.g. ingestion, dermal absorption).
	Personnel would wear appropriate personal protective equipment whilst on site at all times during construction, including disposable dust masks and disposable coveralls during any disturbance of the cap.
	A Health and Safety Plan and risk assessment would be developed and implemented prior to construction commencing.
	During demolition works there is the potential for asbestos to be present on site. If suspected asbestos is encountered the following mitigation measures should be followed:
	Works should cease immediately until a licensed asbestos contractor can conduct removal of material;
	Appropriate personal protective equipment must be worn; and
	All removal works to be conducted in accordance with the Commonwealth's Work Health and Safety (WHS) Act and Regulation 2011 and the NSW WorkCover applicable How to Safely Remove Asbestos Code of Practice (WorkCover).
	Dust mitigation measures such as water suppression, would be employed during the construction phase to minimise any potential airborne dust and subsequent impact on neighbouring sites. Moisture in soils increases aggregation and cementation of the particles, which reduces the potential for dust emissions.
	Following the construction of the CRC, the site would again remain fully sealed to prevent any contact with contaminated soil and also assist in reducing the potential for dust impacts from the operation of the CRC.
Time between ground disturbance and rehabilitation and the number of exposed surfaces will be minimised to prevent generation of dust.	

Environmental Issue	Mitigation Measures
	<p>All loads of excavated material, soil, fill and other erodible matter transported to or from the work site will be kept covered at all times during their transportation where required.</p> <p>Any dust complaints associated with the construction works will be investigated as soon as practical.</p> <p>Machinery and vehicles will not be left running when not in use.</p> <p>All vehicles and equipment must comply with the POEO Act 1997 and be fitted with properly maintained emission controls relevant to their date of manufacture.</p> <p>Exhaust emissions from stationary equipment such as generators will be directed away from residential properties.</p> <p>No matter of any kind is to be burnt on site.</p> <p>Operational Mitigation Measures</p> <p>All quality assurance picking stations and mobile equipment will have air conditioning, this will help to control air quality for employees within these confined areas.</p> <p>The building will have a dust suppression system installed within the receival and product areas.</p>
Hazard & Risk Management	<p>Construction Mitigation Measures</p> <p>The CEMP would include emergency response measures to be implemented during construction if required. All contractors would be trained in these measures prior to construction commencing.</p> <p>Fully stocked spill kits would be available at the premises and located in key areas. Spills to be cleaned up immediately. The spill kit must immediately be replenished when used.</p> <p>Operational Mitigation Measures</p> <p>The existing safety management measures and emergency response plans would be updated to reflect the proposed changes at the site.</p> <p>Fully stocked spill kits would be available at the premises and located in key areas. Spills to be cleaned up immediately. The spill kit must immediately be replenished when used.</p> <p>Faulty or unsafe equipment would be identified immediately and taken out of operation and replaced.</p> <p>Fire protection measures would include sprays, hoses and extinguishers. A Fire Brigade response would also be included in the emergency response plan.</p> <p>Fire protection equipment would be maintained as per the requirements of AS1851.</p> <p>All staff would be aware and trained in emergency response procedures for the site.</p> <p>All operators would be trained in fire prevention and fire fighting.</p> <p>Hot Work Permits would be required prior to undertaking any hot work.</p> <p>No smoking permitted and signs in the processing areas would be installed.</p>

Environmental Issue	Mitigation Measures
	<p>Scheduled inspections on electrical equipment / cords would be completed by a competent person and in accordance with manufacturer's instructions.</p> <p>All equipment would be fitted with appropriate safety switches (e.g. ensure residual current device is positioned between tools and general power outlets, emergency stop button).</p> <p>Service plant and equipment would be maintained as per manufacturer's requirements.</p> <p>Regular workplace inspections would be carried out to identify hazards and implement any necessary rectifications.</p> <p>All materials would be stored within enclosed structures to minimise impact of storm flooding.</p> <p>All visitors must report / sign-in to the office and be accompanied by site personnel at all times when on-site.</p> <p>Site security process / procedure would be clearly documented (e.g. security services).</p> <p>Security measures would include fencing, CCTV, security patrols, operator / driver vigilance.</p>
Noise & Vibration	<p>Construction Mitigation Measures</p> <p>A Construction Noise Management Plan would be developed.</p> <p>Noise monitoring will be conducted during construction.</p> <p>Construction works are to be carried out within the standard construction hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. No work is to occur on Sundays or Public Holidays unless prior approval from EPA has been sought.</p> <p>Minimise construction-related vehicle movements on the site outside the normal construction hours identified above.</p> <p>Choose appropriate machines for each task and adopt efficient work practices to minimise the total construction period and the number of noise sources on the site. Avoid unnecessary noise due to idling diesel engines and fast engine speeds when lower speeds are sufficient for the task.</p> <p>Ensure all machines used on the site are maintained in good condition, with particular emphasis on exhaust silencers, covers on engines and transmissions and squeaking or rattling components. Excessively noisy machines should be repaired or removed from the site.</p> <p>Machines with excessively noisy reverse alarms should similarly be modified or removed from the site.</p> <p>Consult with nearest Rydalmere residences before work begins, including machines required on the site and the expected construction program.</p> <p>Should particular activities be required at night, every effort should be made to notify residents in advance, minimise noise during each event and carry out the activity as early as possible in the evening.</p> <p>Operational Mitigation Measures</p> <p>Ensure all machines used on the site are maintained in good condition, with particular emphasis on exhaust silencers, covers on engines and transmissions and squeaking or rattling components. Excessively noisy machines should be repaired or removed from the site.</p>

Environmental Issue	Mitigation Measures
	<p>Machines with excessively noisy reverse alarms should similarly be modified or removed from the site.</p> <p>Replace the existing cyclone fence at the northern end of the site with a 1.8 m steel fence (minimum 0.42 mm Base Metal Thickness) from the northwest corner of the property, aligned with the kerb along northern boundary, around to northeast corner of the property and finish level with the northeast corner of the CRC building.</p> <p>Maintain existing site speed limit of 20 km/hr and include no stopping requirement along the northern boundary for all heavy vehicles.</p>
Waste	<p>Construction Mitigation Measures</p> <p>Portable toilets would be provided on site for the workers, if existing site toilets are removed prior to new toilets being installed. Toilet waste from any portable is to be removed by an appropriately licensed contractor.</p> <p>All waste generated as a result of the proposed works would be managed in accordance with DECCW Waste Classification Guidelines (December 2009). All wastes will be securely stored to prevent pollutants from escaping.</p> <p>All contaminated waste would be managed in accordance with the measures outlined for contaminated material.</p> <p>Any waste (excluding toilet waste) generated each day would be stored in a suitable container and transported from the site to an appropriate facility. A sufficient number of suitable receptacles for general waste, hazardous waste and recyclable materials will be provided for waste disposal, including sufficient bins to allow separation of wastes for recycling.</p> <p>Concrete pumps would be cleaned in accordance with the POEO Act 1997.</p> <p>The contractor would be required to follow the Waste Resource Management Hierarchy principles of the Waste Avoidance and Recovery Act 2001.</p> <p>Waste streams would be sorted to maximise the recycling potential and minimise disposal costs.</p> <p>Any fuel, lubricant or hydraulic fluid spillages would be collected using absorbent material and the contaminated material disposed at a licensed waste facility. Apart from the material contained beneath the cap, no contaminated waste is to remain on site.</p> <p>Documents and records of the transport and fates of all materials removed from the site would be kept as proof of correct disposal and for environmental auditing purposes.</p> <p>The site would be left clean and free of weeds, debris and other rubbish at the end of the works.</p> <p>Sustainable initiatives are to be incorporated into the construction contract to encourage the contractor to source recycled material as part of construction activities.</p> <p>If suspected asbestos is encountered the mitigation measures outlined for air quality and contaminated material should be followed.</p> <p>Operational Mitigation Measures</p> <p>Any waste (excluding toilet waste) generated each day would be stored in a suitable container, with a lid, and transported from the site to an</p>

Environmental Issue	Mitigation Measures
	<p>appropriate facility or processed through the CRC. A sufficient number of suitable receptacles for general waste and recyclable materials will be provided for waste disposal, including sufficient bins to allow separation of wastes for recycling.</p> <p>Any fuel, lubricant, or hydraulic fluid spillages would be collected using absorbent material and the contaminated material disposed at a licensed waste facility. No contaminated waste is to remain on Site.</p> <p>The site would have an adequate quantity of spill kits and these will be restocked as needed.</p>
<p>Greenhouse Emissions</p> <p>Gas</p>	<p>Construction Mitigation Measure</p> <p>All trucks leaving the site carrying waste would be filled to the maximum amount allowable, to the extent that is practicable depending on the truck size, making certain that trucks are adequately covered in order to reduce the number of traffic movements required.</p> <p>The contractor would limit idling time of plant and equipment whilst onsite.</p> <p>The contractor would be required to include energy efficiency tips and requirements into the site environmental induction.</p> <p>The contractor would make certain that the only lighting left on overnight around the site office will be security or emergency/access lighting.</p> <p>Earthmoving equipment and on-site vehicles would be fitted with exhaust controls in accordance with the POEO (Clean Air) Regulation.</p> <p>The contractor would be required to check that all equipment is properly maintained so that unacceptable exhaust emissions do not occur in accordance with the POEO (Clean Air) Regulation.</p> <p>Incorporation of energy efficiency and GHG reduction measures would be monitored through the implementation of detailed design, procurement management and construction.</p> <p>Operational Mitigation Measures</p> <p>Investigate the feasibility of energy efficiency initiatives with suppliers of:</p> <ul style="list-style-type: none"> • Lighting and heating, ventilation, and air conditioning (HVAC); and • Insulation. <p>Power factor controls would be installed on machinery and less energy intensive process options would be selected.</p> <p>Natural lighting would be maximised where possible in the building.</p> <p>Sensors/timers would be installed on external and internal lighting and separate switches would be provided for lighting different functional zones where appropriate.</p> <p>The building would be fitted with recycled materials where possible, solar hot water, energy efficient rated appliances and artwork of recycled themes.</p>
<p>Soils, Geology & Contamination</p>	<p>Contaminated Material Mitigation Measures</p> <p>The existing SSEMP would be incorporated into the CEMP where relevant.</p> <p>An industrial hygienist would be involved in the development of an asbestos management plan for the construction works and would be onsite at all times during the exposure of the capping layer.</p>

Environmental Issue	Mitigation Measures
	The WorkCover Authority of NSW (WorkCover) would be notified in writing five days before any licensed asbestos removal work is commenced. Only the licensed asbestos removalist can lodge the notification. The site would need to be classified as friable or non-friable by a suitably qualified occupational hygienist prior to the notification being prepared.
	Air monitors will be set up around the site prior to exposure of the cap.
	Personnel to understand and be briefed on Materials Safety Data Sheet (MSDS) for Cr (VI) during safety briefing.
	Wash facilities to be available immediately outside contaminated zone to wash splashes from skin. Contaminated clothes and shoes are not to be worn outside of the contaminated zone and should be cleaned daily.
	Staff would be briefed on site contamination, risks and management measures prior to work commencing. This briefing would outline the difference between inhalation and other pathways where contact with contaminants is possible (e.g. ingestion, dermal absorption).
	All equipment would be decontaminated once excavations have been completed.
	Surfaces would be wetted downs during excavation activities to control dust production.
	Personnel would wear appropriate personal protective equipment whilst on site at all times during construction, including disposable dust masks and disposable coveralls during disturbance of the capping layer.
	A Health and Safety Plan and risk assessment would be developed and implemented prior to construction commencing.
	<i>Contaminated Groundwater Interception & Dewatering Mitigation Measures</i>
	During the excavation phase of construction shallow groundwater may be encountered. Steps to minimise groundwater interception and dewatering will be taken into account during the detailed design, construction phase and post construction site management and may include:
	<p>Prior to construction, materials handling plans will be prepared based upon the selected design. Materials handling procedures could include:</p> <ul style="list-style-type: none"> • minimisation of the area of excavation and immediate backfilling • minimisation of groundwater drawdown • off-site disposal of surplus groundwater • neutralisation of excavated acid sulphate soils, or • off-site disposal of surplus excavated soil.
	During construction, if dewatering is required onsite, consultation will be undertaken with NOW to further ascertain licensing requirements. All water would be tested for contamination prior to disposal at an appropriate licensed waste facility, if required.
	<i>General Construction Mitigation Measures</i>
	Excavations onsite are to be kept to a minimum.
	Any excavated material would be placed in stockpiles on an impermeable surface to prevent leaching of contaminated material.
	Stockpiles would be covered with an impermeable covering and bunded to prevent loss of soil.

Environmental Issue	Mitigation Measures
	Stockpiles containing contaminated material would be signposted as contaminated material.
	A record of all site works including the status of any excavation or stockpiles would be maintained throughout the works in accordance with the existing SSEMP.
	Excavated material will be reused on site where possible. Any excavated material that requires disposal would be subject to waste classification under the EPA Waste Classification Guidelines 2014 and would be disposed of at an appropriate licensed facility.
	Disposal of any asbestos material would be undertaken by a licensed asbestos removalist.
	Sedimentation and erosion mitigation measures would be implemented during all construction work that has the potential to cause sedimentation and erosion.
	Permanent or temporary drainage works would be installed early in the construction program to minimise uncontrolled drainage and associated erosion. 'Clean' surface runoff would be diverted around and away from working areas to prevent erosion and 'dirty' runoff would be diverted away from work areas and into sediment control devices.
	The wheels of all vehicles would be cleaned prior to exiting the construction site where excavation occurs to prevent the tracking of mud. Where this is not practical, or excessive soil transfer occurs onto paved areas, street cleaning would be undertaken when necessary.
	Areas of exposed soil would be limited to those areas being actually worked.
	If possible, disturbed areas would be stabilised as soon as possible and in a progressive manner as works are completed.
	Earthworks would not take place during or after heavy rain when doing so is likely to cause soil erosion or soil structural damage. Under such circumstances, earthworks would stop and only recommence after the ground surfaces have sufficiently dried out.
	If any contamination (eg discoloured soil, strong chemical odours, refuse or leachate) is discovered during excavation, works would cease immediately and the nominated Environmental Representative would be notified to instruct the appropriate course of action.
	If any potential acid sulphate soil material is discovered during excavation, works would cease immediately and the nominated Environmental Representative is to be notified to advise of the appropriate course of action.
	An Acid Sulphate Soils Management Plan would be implemented for the duration of the construction.
	If required, salt-resistant building materials would be used in any saline risk areas.
	Post construction, the site specific environmental management plan will be updated to reflect any changed required to the current controls regarding excavation if required.
	Operational Mitigation Measures
	Periodically monitor discharges, especially dry weather discharges, from the storm drain system and periodically video survey the system to detect

Environmental Issue	Mitigation Measures
	<p>potential damage and leakage. Establish a maintenance program as necessary to maintain the integrity of these drains.</p> <p>Erosion and sedimentation control measures would be implemented as required during maintenance activities.</p> <p>The diesel fuel tank and refuelling area would be appropriately bunded. All refuelling would take place within this area.</p> <p>A spill management plan would be developed for operation of the site. A spill kit would be provided onsite at all times. A refuelling procedure would also be developed and implemented for all refuelling activities undertaken</p>
Hydrology	<p>Groundwater & Salinity</p> <p>Removal of any water using a vacuum truck or similar, where necessary the water would then be classified, tracked and disposed of at an appropriate licensed facility</p> <p>Given the contaminated nature of the groundwater at the site, mitigation measures outlined for contaminated groundwater interception and dewatering would be implemented.</p> <p>Stormwater</p> <p>Refuelling, fuel decanting and vehicle maintenance work would take place within a designated bunded area adjacent to the fuel tank. If re-fuelling is necessary, it would be undertaken away from the River with spill response kits immediately available.</p> <p>A functioning 'spill kit' would be kept on site at all times for immediate clean up of accidental chemical/fuel spills. Any contaminated spill rags would be disposed of at an approved waste facility.</p> <p>Flooding</p> <p>Driveways and carpark would remain at existing levels (i.e. below the 100 year ARI level) with the exception of the site entry. At the Site entry, vehicular traffic will be required to drive over a "berm" which will be constructed to a top level of RL 3.76m AHD. In the 100 year ARI water will spill over the "berm" into the Site. The maximum depth on the top of the berm in the 100 year ARI is 0.06m.</p> <p>The kerb adjacent to Parramatta River would provide 500mm freeboard on the 100 year ARI flood event level to allow for uncertainty related to climate change or wave action.</p> <p>The minimum finished floor level (FFL) would be at RL 4.13 m, which is 500 mm above the 1 in 100 year flood level of RL 3.63 m AHD.</p> <p>The development would be constructed on imported fill that will ensure all FFLs are located 0.5m above the 100 year ARI. All fences will be flood compatible. All building and drainage components will be suitably designed to be structurally sound for all flood events.</p> <p>During a flood event greater than 1 in 100 year ARI, all on-site vehicles will be directed to move into the building, which will be constructed at a level above the 1 in 100 year ARI.</p> <p>Reliable access and safe access will be available for pedestrians on the site to a level above the PMF level, with the FFL of the second floor to be a minimum of 7.0 AHD.</p>

Environmental Issue	Mitigation Measures
	The Flood Emergency Response Plan will be updated prior to the operational phase of the facility.
	No storage of materials would be below the 100 year ARI flood level.
	<i>Water Balance and Wastewater</i>
	Rainwater tanks would be installed and the water used for any process water as well as garden maintenance, toilet flushing, grey water, fire, deluge system, dust suppression.
	Leachate tanks would be installed to capture any cleaning or dust suppression water that has come into contact with the waste.
	Water saving devices will be installed where appropriate.
	All chemicals stored on site would be recorded on a register. The relevant Material Safety Data Sheets would also be kept on site.
<i>Traffic Transportation</i>	<i>& Construction Mitigation Measures</i>
	A detailed construction traffic management plan will be prepared as part of the detailed plan in the CEMP.
	The requirements of the Roads Act 1993 will be followed at all times prior to and during all works (i.e. notice requirements, consultation and consent/concurrence requirements for works in, or closures of, public and classified roads).
	Work vehicles will not obstruct roadways or private driveways and will stay on formed roads or designated lay down areas.
	Private worker vehicles would be parked on the site and not on Grand Avenue.
	<i>Operational Mitigation Measures</i>
	Access and internal traffic arrangements will be designed to accord with the relevant Australian Standards.
	The provision of up to ten bicycle spaces for staff and visitors will be included into the detailed design of the site. The bicycle parking spaces will accordingly be designed in accordance with AS2890.3:1993.
<i>Visual Amenity</i>	<i>Construction Mitigation Measures</i>
	All vegetation clearing would be limited to only that which is necessary to undertake the works at the southern end of the site only.
	All work equipment and materials would be contained within the designated boundaries of the work site or works compound area(s).
	Accurate public information signs would be displayed while work is in progress and until site restoration has been completed.
	The spread of stockpiles, waste, and vehicle parking would be minimised during construction.
	<i>Operational Mitigation Measures</i>
	A landscaping plan would be developed as part of the detailed design of the Proposal. All landscaping would ensure that an effective cap is maintained below any vegetation. Vegetation will consist of shallow rooted native trees and grasses.
	The walls and roof of the new building are to be painted dark green in line with the foreshore vegetation and the existing tanker building. This would

Environmental Issue	Mitigation Measures
	<p>help to reduce the visual impact of the building when viewed from the north side of the river.</p> <p>Highly reflective building surfaces, bright colours and unpainted metal would be avoided.</p> <p>All signs for the CRC would be located on Grand Ave. Signs would comply with relevant standards and be consistent in style. No signage is to be displayed on the foreshore side of the site so that it is visible from the river.</p> <p>Where required, external light fittings and fixtures would be selected and installed in a manner which directs lighting downwards and minimises impacts upon nearby residents, fauna or other adjacent land users</p>
Socio-Economic Environment	Construction Mitigation Measures
	<p>Work hours would be limited to the following:</p> <ul style="list-style-type: none"> • 7am to 6pm, Monday to Friday • 8am to 1pm, Saturday • No work on Sundays and public holidays
	<p>The Community Engagement Plan would be implemented and built upon during construction, including the communication channels of a dedicated phone line, email address and section on Veolia's website regarding the Proposal.</p>
	<p>Consultation would be maintained with key government and community stakeholders prior to work commencing, and throughout construction as necessary.</p>
	<p>Neighbouring landholders would be kept informed of the Proposal, the construction hours and duration of works. They will be supplied with a contact name and number for any queries relating to the works.</p>
	Operational Mitigation Measures
	<p>Education Centre would be made available to any interested community groups for tours and education programs.</p>
	<p>Viewing platforms, windows and see through walls from the education centre will be installed to enable tours of the facility to assist in informing interested parties of the processes involved in recovering resources at the site.</p>
	<p>Sustainable design initiatives, such as a green fit out and sponsored materials for the education centre would be featured in any site education programs.</p>
Terrestrial & Aquatic Flora & Fauna	Construction Mitigation Measures
	<p>Prior to construction works commencing staff would be inducted on the potential for the Green and Golden Bell Frog and the Grey Headed Flying Fox. To assist with species identification, photos of these species would be shown in this induction and included within the CEMP. If any threatened species (flora or fauna) are discovered during the works, all work would stop immediately and the nominated Environmental Representative would be notified. Work would only recommence once the impact on the species has been assessed and appropriate control measures have been implemented.</p> <p>The spreading of exotic vegetation would be controlled by using local topsoil in any site landscaping, where possible, and implemented weed management (for example by physically removing weeds by hand).</p>

Environmental Issue	Mitigation Measures
	<p>f any damage occurs to vegetation outside of the nominated work area (as shown in the CEMP), the nominated Environmental Representative would be notified so that appropriate remediation strategies can be developed and implemented.</p> <p>Weed removal would be undertaken using mechanical and manual means; herbicides shall only be used as a last resort.</p> <p>All weeds, weed propagules and other plant parts that are likely to regenerate would be bagged, removed from site and disposed of at a council approved/licensed waste disposal facility.</p> <p>All contractors undertaking weed removal or control would be trained or experienced in weed identification and removal (as per the Pesticide Act 1999).</p> <p>Any non-target species removed/killed as a result of weed control activities would be replaced.</p> <p>All vegetation damaged by works would be appropriately remediated with native vegetation.</p> <p>All plants used in landscaping would be shallow rooted native and indigenous to the region and in accordance with a landscaping plan which will be developed as part of the CEMP.</p> <p>Operational Mitigation Measures</p> <p>No additional operational mitigation measures are proposed.</p>
Human Health	<p>Construction Mitigation Measures</p> <p>A safety management plan would be implemented prior to construction.</p> <p>Operational Mitigation Measures</p> <p>Manual sorting requirements would be minimised where possible, and limited to light weight material.</p> <p>Appropriate Personnel Protective Equipment would be worn at all times where necessary.</p> <p>Sorting would be conducted in air conditioned cabins.</p> <p>Conveyors would be sized appropriately to minimise overloading.</p> <p>Safety would be considered during detailed design of the CRC, to include elements such as controls to effectively separate machinery from people, provide good lines of sight on picking lines, consideration of distances required to reach or twist to pick material.</p> <p>Safety controls would form part of the Operational Environmental Management Plan (OEMP)</p>
Non-Indigenous Heritage	<p>The following mitigation measures have been recommended to reduce or minimise impacts if items of heritage significance are encountered:</p> <ul style="list-style-type: none"> • If an item (or suspected item) of non-Indigenous heritage is discovered during the works, all work in that area will cease and the nominated Environmental Representative will be contacted as soon as possible to determine the subsequent course of action. • An exclusion zone is to be formed along the existing northern fence line of the site to prevent access into the wetland area. <p>All contractors would be made aware of the heritage significance of the wetland area and the former tram alignment. These items will be included in the CEMP and environmental site inductions.</p>

Environmental Issue	Mitigation Measures
<i>Indigenous Heritage</i>	<p>The following mitigation measures have been recommended to reduce or minimise impacts if items of heritage significance are encountered:</p> <ul style="list-style-type: none"> • If an item (or suspected item) of Indigenous heritage is discovered during the works, all work in that area will cease and the nominated Environmental Representative will be contacted as soon as possible to determine the subsequent course of action. <p>If during execution of the Proposal any items that are indicative of past human activity of considerable age are discovered, works are to be discontinued until the significance of the items is established. If the items are of Aboriginal origin (e.g. artefacts such as stone tool, worked bone and animal bones), the OEH is to be notified.</p>

- Appendix B – Water Management Plan

Camellia Materials Recycling Facility Water Management Plan

Stage 1A Works Temporary Water Management Plan

17006-R02 Revision 3.2

Date: 19 December 2019



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Appendix A – Drawings

1 Introduction

This Temporary Water Management Plan (TWMP) dated 19 December 2019 version 3.2 replaces the previous Temporary Water Management Plan dated 14 October 2019 version 3.1 This TWMP is applicable to the Stage 1A activities described below.

1.1 Context

This TWMP forms part of the *Camellia Material Recycling Facility (MRF) Construction Environmental Management Plan (CEMP)* (Veolia, 2019). The WMP has been prepared to meet the requirements of the *Development Consent Environmental Performance Conditions* items B6, B7 and B9 for 37 Grand Avenue, Camellia (Lot 1 DP 539890) Application No. SSD 4964. It is noted the Site is subject to a Remediation Action Plan, which is currently being implemented at the site.

1.2 Background

The Camellia Materials Recycling Facility (MRF) will ultimately comprise a large warehouse building and office block with floor constructed on engineered fill. The warehouse building will have a building floor level of greater than RL 4.13mAHD which is 0.5m higher than the 100 year ARI flood level of 3.63mAHD.

1.3 Construction phasing

Construction of the MRF will be carried out in two stages.

The Stage 1A works will involve:

- preparing and levelling the site to the required site levels;
- sealing of the site at the required site levels, to stabilise the existing preload, which was placed during stage 1; and
- installing stormwater system infrastructure which has been designed to satisfy Consent Condition B6 and will be carried out in accordance with Consent Condition B7 of SSD 4964 to assist in managing surface waters to drain freely to Parramatta River

Stormwater works to be undertaken within the riparian zone have been approved by Parramatta City Council (PCC) under the PCC Development Consent (DA/54/2013) and have been addressed in the Contractor's Vegetation Soil and Erosion Plan for Riparian Works.

Stage 1 will be maintained until Stage 2 MRF construction works are carried out.

A summary of the site staging is presented in Figure 1.1.

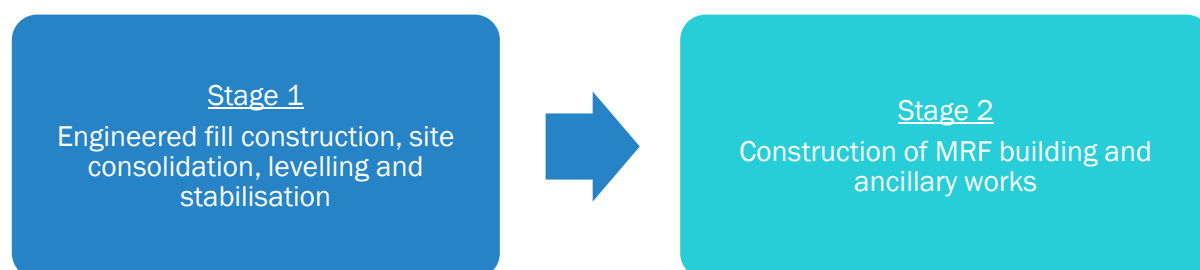


Figure 1.1 Development Phasing

1.4 Scope of this TWMP

This scope of this TWMP is for the proposed Stage 1A works.

This WMP will be updated prior to carrying out any future stages/phases.

2 Purpose and Objectives

2.1 Purpose

The purpose of this TWMP is to describe how Veolia proposes to manage and protect soil and manage stormwater during Stage 1A works.

2.2 Objective

The key objective of the TWMP is to implement water management and erosion and sediment controls to minimise the impacts on water quality downstream of the development within the scope permitted by the development consent.

To achieve this, Veolia will undertake the following:

- ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this WMP;
- ensure appropriate measures are implemented to address the relevant environmental performance criteria specified in the Development Consent (Section 3.2); and
- ensure reasonable and feasible controls (Section 6) and procedures (Section 7) are implemented during site activities to avoid or minimise potential erosion and sedimentation.

2.3 Targets

The following targets have been established for the management of water during Stage 1A works of the Camellia MRF:

- ensure full compliance with the relevant legislative requirements and Conditions of Consent;
- meet water quality discharge parameters for all planned discharges; and
- ensure training on soil and water management is provided to all relevant personnel through site inductions.

3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

Legislation relevant to soil and water management includes:

- Protection of the Environment Operations Act 1997 (POEO Act);
- Water Management Act 2000 (WM Act);
- Fisheries Management Act 1994 (FM Act); and
- Water Act 1912 (Water Act).

Relevant provisions of the above legislation that relate to the Camellia MRF are explained in Section 3.3 of the EIS (CH2M, 2013).

3.1.2 Guidelines

Guidelines, specifications and policy documents relevant to this WMP include:

- Managing Urban Stormwater, Soils and Construction “Blue Book” (Landcom, 2004);
- NSW Government Department of Primary Industries, Office of Water, Guidelines for Controlled Activities; and
- Department of Environment and Conservation, Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales (DEC, 2004a).

3.2 Conditions of Approval – Soil and Water

The Planning Assessment Commission has granted development consent for the construction and operation of a materials recycling facility at 37 Grand Avenue, Camellia (Lot 1 DP 539890). Schedule 2 Part B lists the Conditions of Consent and environmental performance measures to be implemented as part of the development.

Conditions B6, B7 and B9 are considered as part of the TWMP. Consistent with the CEMP Condition B8 is not triggered as the site is under construction (not operation).

The full set of conditions that relate to Conditions on Soil and Water are considered in the CEMP.

Water Management Plan

- B6. Prior to the commencement of construction of the Development, the Applicant shall prepare a Water Management Plan to the satisfaction of the Secretary. The plan must:
- a. be prepared by a suitably qualified and experienced person(s) in consultation with Council;
 - b. include the details of:
 - i. the Water Management System (see Condition B8);
 - ii. erosion and sediment control measures (see Condition B9); and
 - iii. bunding (see Condition B11)
- B7. The Applicant shall carry out the Development in accordance with the Water Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Erosion and sediment control

- B9. The Applicant shall implement erosion and sediment control measures on-site in accordance with *Managing Urban Stormwater: Soils and Construction Vol 1*. (Landcom, 2004).

4 WMP consultation

Condition B6 requires a WMP be submitted to City of Parramatta Council (Council) for consultation.

Consultation with Council, approvals from the Department of Planning, Infrastructure and Environment (DPIE) and relevant notifications associated with Stage 1A construction are described below.

- Version 0 of the TWMP (WMP) for Phase 1A and 1B was submitted to Council in December 2016 for information and comment.
- 20 December 2016 – No comments that relate temporary water management had been received from Council.
- 20 December 2016 – Version 1 of the TWMP was released. Council was provided with a copy of this document.

- 2 May 2017 – Veolia received comments from Council on the TWMP version 1 in a letter with the subject “Not for Council approval”. A copy of these comments was forwarded to DPIE for information.
- 25 May 2017 – Veolia received a letter from the DPIE accepting the staging of construction activities and staged submission of the WMP, CEMP and Flood Emergency Response Management Plan (FERMP).
- 27 May 2019 – Completion of consultation process which concluded with acceptance by Parramatta City Council of proposed site stormwater design.

Prior to construction of any future stages/phases of works, the WMP be updated in accordance with the requirements of SSD 4964.

5 Site Description

5.1 General

The Site is located on the Camellia Peninsula as shown in Figure 5.1. The Site is bounded by Parramatta River (waterfront land) to the north, a vacant empty lot with a sealed pavement to the east, Grand Avenue to the south, and two existing industrial facilities to the west.



Figure 5.1 Site Location

The Site covers an area of approximately 20,230 square metres (m²) and is approximately 85 metres (m) wide (east-west) and 238m long (north-south).

The Site is located on land within the 1% AEP. The 1% AEP flood level in Parramatta River is RL +3.63m AHD. Localised flooding may also occur due to heavy wet weather events.

Flooding affects the Site in two ways:

1. Fluvial flooding – flooding from Parramatta River (rising river waters) during very rare and extreme flooding events greater than the 1%AEP; and
2. Pluvial flooding (overland flow) – flooding from rainfall during frequent flooding events >1 EY within the local catchment (to the south-west) on the Camellia peninsula that is conveyed as overland flow along Grand Avenue.

5.2 Site demolition

The Site was demolished with all previous buildings and above-ground structures removed except for the three tanks in the south-eastern corner of the property adjacent to Grand Avenue.

5.3 Decommissioned stormwater system

Prior to Stage 1 preloading, the existing stormwater management system was decommissioned and sealed to prevent the ingress of CrVI contaminated groundwater into the existing stormwater system. Decommissioning involved:

- injection of a hydrophobic foam filler to seal against contaminated groundwater water ingress into:
 - existing stormwater pipes connecting into existing stormwater pits. Pipes were filled up to 10m from the relevant pit.
 - existing stormwater pits. Each pit was filled to 300mm below the pit lid and the remainder of the pits were filled with mass concrete.
- six cut-off trenches that intercepted the contaminated groundwater flow along existing stormwater pipe trenches. Each cut-off trench was filled with a xypex admixture to make the concrete used in the cut-off trench water tight.

The outlet to the existing Pit 1 was plugged with concrete, so that the pit could only operate as a sump. Gravity drainage via Pit 1 is not possible as the existing stormwater system was decommissioned prior to placement of preload at the Site.

Note: Refer to previous versions of the TWMP for details regarding the location of Pit 1.

5.4 Stormwater outlet works

The previous section of existing pipe between Pit P1 (approximately located at the fence line close to Parramatta River) and the outlet to Parramatta River has been removed and replaced with a new section of pipe to prevent infiltration of contaminated groundwater into the new drainage system.

Note: Refer to previous versions of the TWMP for details regarding the location of Pit P1.

5.5 Stage 1

5.5.1 Preload Phase 1A and 1B

The existing sealed pavement areas and concrete building pads formed the base for preload construction. This is referred to as the natural surface level NSL.

Phase 1A and 1B involved placement of fill across the site.

5.5.2 Preload Phase 1C and 1D

Phase 1C involved stripping preload material from Areas B and C to and moving preload material to Area A, further consolidating soils during Phase 1D.

6 Stage 1A Water Management

6.1 Drawings

All drawings that relate to temporary water management for the Stage 1A works are included in Appendix A. Drawings include:

- RAP10 Drawing List & General Notes
- RAP20 Erosion and Sediment Control Plan
- RAP25 Erosion and Sediment Control DetailsRAP30
- RAP30 Bulk Earthworks Plan
- RAP31 Bulk Earthworks Shading Plan
- RAP35 Bulk Earthworks Sections – Sheet 1
- RAP36 Bulk Earthworks Sections – Sheet 2
- RAP40 Stormwater Drainage Plan
- RAP45 Stormwater Drainage Details – Sheet 1
- RAP46 Stormwater Drainage Details – Sheet 2
- RAP48 Stormwater Long sections
- RAP50 RAP Capping Plan & Details

The above drawings should be used as a guide when implementing the water management and sediment and erosion control measures at the Site.

6.2 Water management

Site levelling

During site levelling and the installation of the stormwater system, existing water management measures would be maintained.

Temporary dewatering may be required if perched groundwater or the water table are intersected during installation of the stormwater system to maintain dry conditions in the excavation. The small amounts of extracted water would be stored at the site in tanks, tested and disposed at a licensed facility as required.

Water management features to support ongoing water management

Veolia will implement the following water management features for the Stage 1A.

- Surface flow under gravity for the entire site.
- A bio-retention rain garden along the northern boundary.
- A new pit (Pit A1) connected to Pit A2 which outlets stormwater directly to Parramatta River.
- Two new pits along the located along the southern boundary that collect runoff from the front of the site and pipe this into the existing Grand Avenue drainage system.

Existing water management measures associated with previous phases will be decommissioned.

6.3 Sediment and erosion control

Veolia will implement the following sediment & erosion control features whilst the site is undergoing levelling:

- Silt fences around the boundary of the Site, pit filters and a truck tyre shaker, if required to avoid the tracking of soil, dirt and other materials onto public roads.

Once the site is sealed, erosion control will no longer be necessary, however if deemed appropriate by Veolia, the silt fence may remain. Sediment control will be assisted by bio-retention rain garden.

7 Compliance

7.1 Monitoring and records

The following monitoring and record keeping will be undertaken.

- During the Stage, all inspections of water management systems (including sediment and erosion controls shall be documented.
- Any non-conformances and incidents that relate to the water management system (including system failures) will be immediately reported to the contractor and Veolia and immediately rectified.
- The Site must be inspected and all sediment and erosion controls returned to good working order following (as applicable):
 - rainfall of greater than 29.5mm over a five-day period¹, when the site is being levelled; or
 - rainfall events of equal to or greater than the 20% Annual Exceedance Probability event, once the site is sealed.

7.2 Training

All relevant employees and contractors working on site will undergo site induction training, which will cover issues relating to soil and water management including:

- the existence and requirements of this plan;
- relevant legislation;
- water quality management and protection measures; and
- procedures to be implemented in the event of an unexpected discovery of contaminated land.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with key roles in soil and water management onsite. Examples of training topics include:

- soil and water management control installation methodology;
- dewatering;
- working near or in drainage lines and creeks;
- emergency response measures in high rainfall events;
- preparedness for high rainfall events;
- lessons learnt from incidents and other events;
- spill response; and
- Identification of potentially contaminated material.

7.3 Weather monitoring

Rainfall will be measured and recorded in millimetres per 24-hour from 9am each day either using an On-Site gauge (once installed) or using latest weather observation data from the

¹ 5 day 80th percentile rainfall event.

Australian Government Bureau of Meteorology Gauge 066124 Parramatta North (Masons Drive)² or another suitable nearby gauge. Results will be included as part of monitoring and records.

8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this WMP will be undertaken through the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process is designed to:

- identify areas of opportunity for improvement of environmental management and performance;
- determine the cause or causes of non-conformances and deficiencies;
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies;
- verify the effectiveness of the corrective and preventative actions;
- document any changes in procedures resulting from process improvement; and
- make comparisons with objectives and targets.

8.2 WMP update and amendment

The processes described in Section 7 and 8 of this WMP and in the CEMP may result in the need to update or revise this WMP.

The approval of updates or revisions to the WMP will need to be considered in accordance with the *Stage 1 Preloading CEMP* (Veolia, 2016). Updates will be reviewed by the Veolia Environment Manager and Site Project Manager.

² <http://www.bom.gov.au/products/IDN60801/IDN60801.94764.shtml>

9 References

CH2M (2013), *Camellia Recycling Centre Environmental Impact Statement*, 22 February 2013.

Douglas Partners (2014), *Report on Geotechnical Assessment, Proposed Warehouse Building 37 Grand Ave Camellia*, Project 73879.00, June 2014.

Landcom (2004), *Managing Urban Stormwater, Soils and Construction “Blue Book”*, 4th Edition, March 2004.

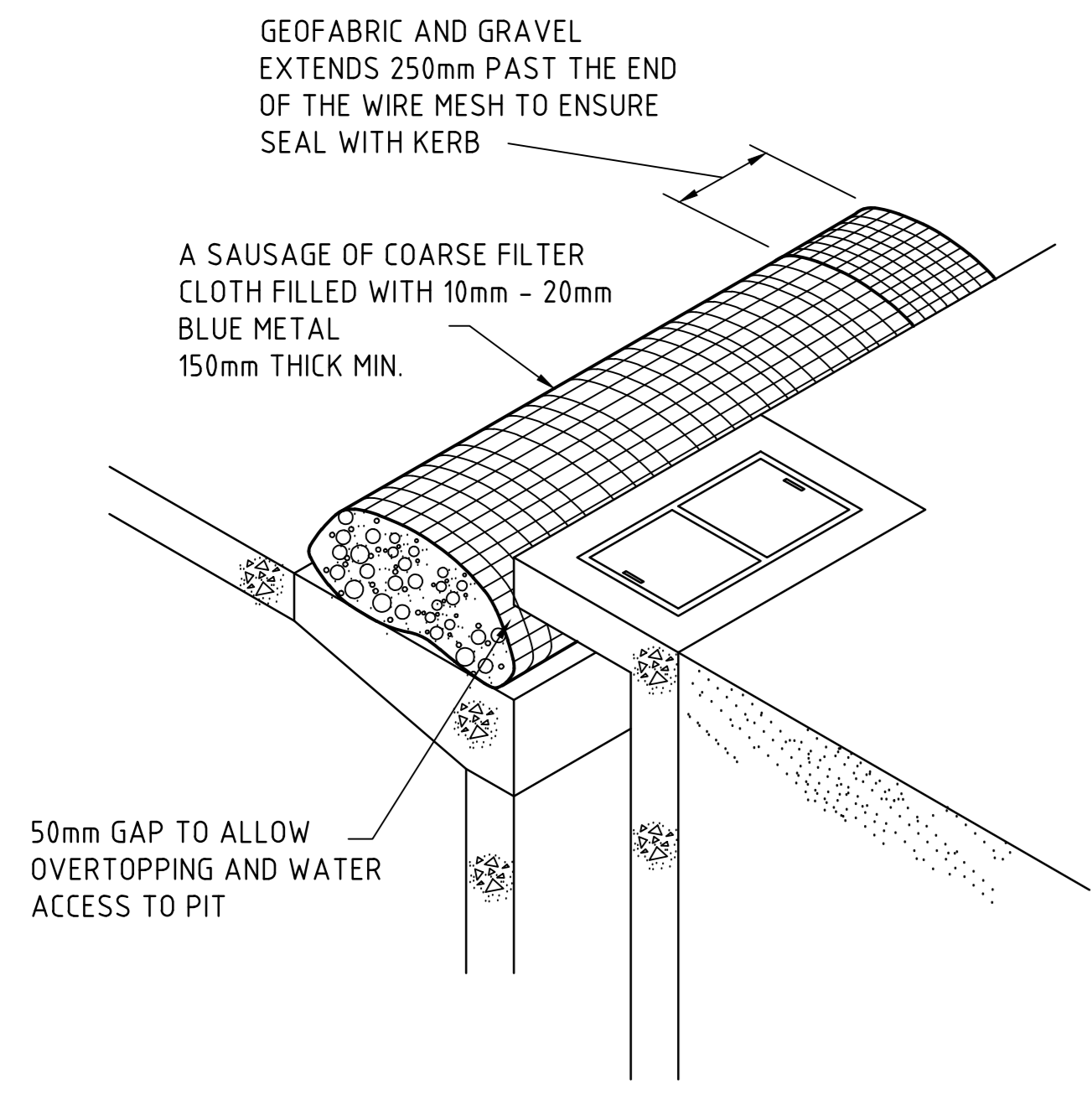
Pells Sullivan Meynink (2016a), David Piccolo to Danny Barac. November 28, 2016 In *Camellia Commercial and Industrial Materials Recycling Facility, 37 Grand Avenue Camellia, Interim Geotechnical Design Advice*, PSM3141-007L, 28 November 2016.

Pells Sullivan Meynink (2016b), *37 Grand Avenue Camellia – Bulk Earthwork Specification Filling, Cutting and Testing (With Preload Fill)*, PSM3141-008S Rev 0, 25 November 2016.

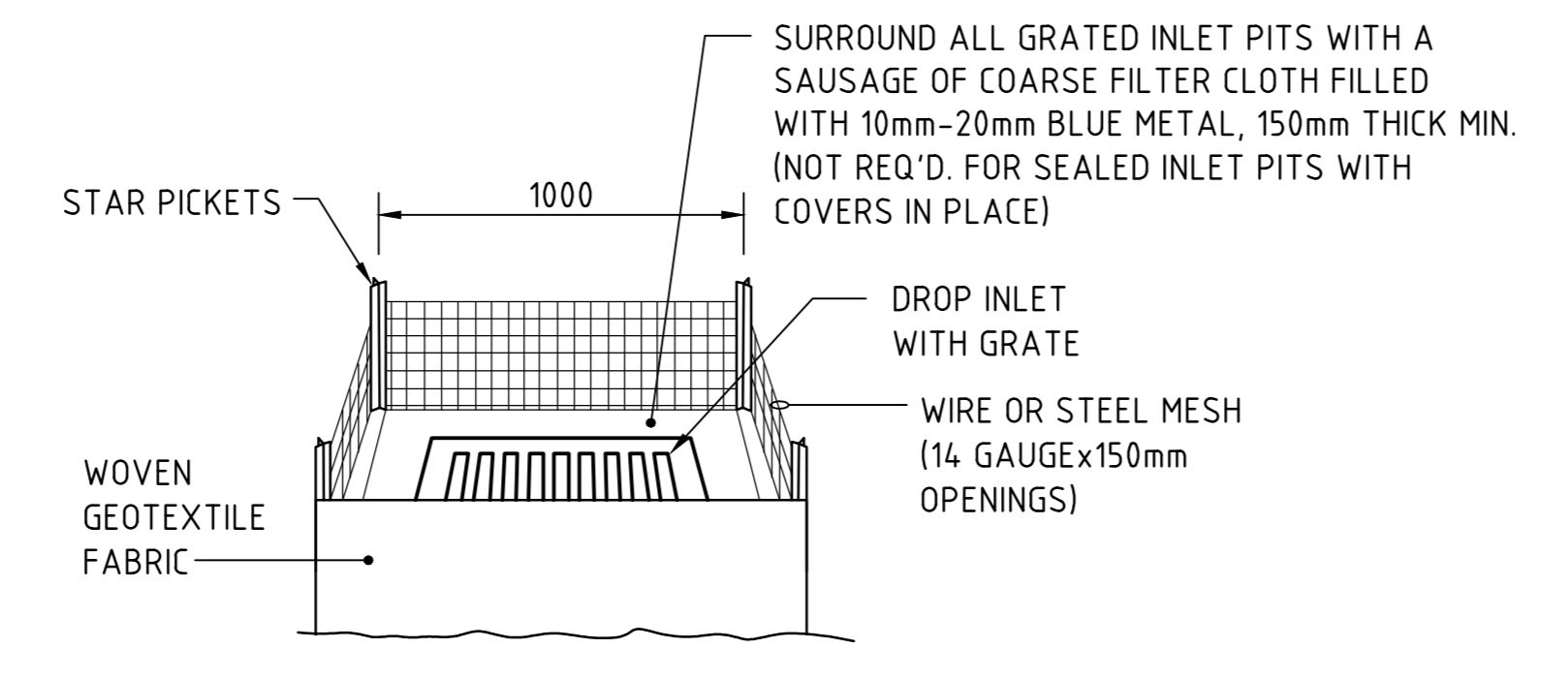
Veolia (2016), *Construction Environmental Management Plan (CEMP) Stage 1 Preloading*.

Appendix A – Drawings

- Appendix C –Drawings

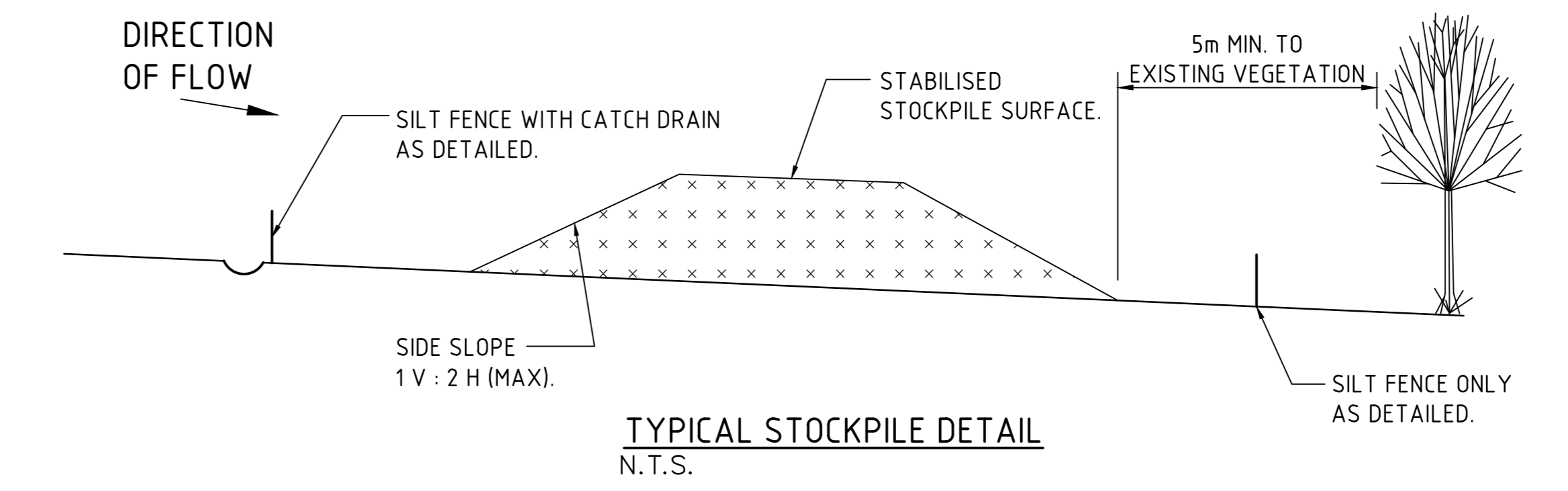


KERB INLET CONTROL
N.T.S.



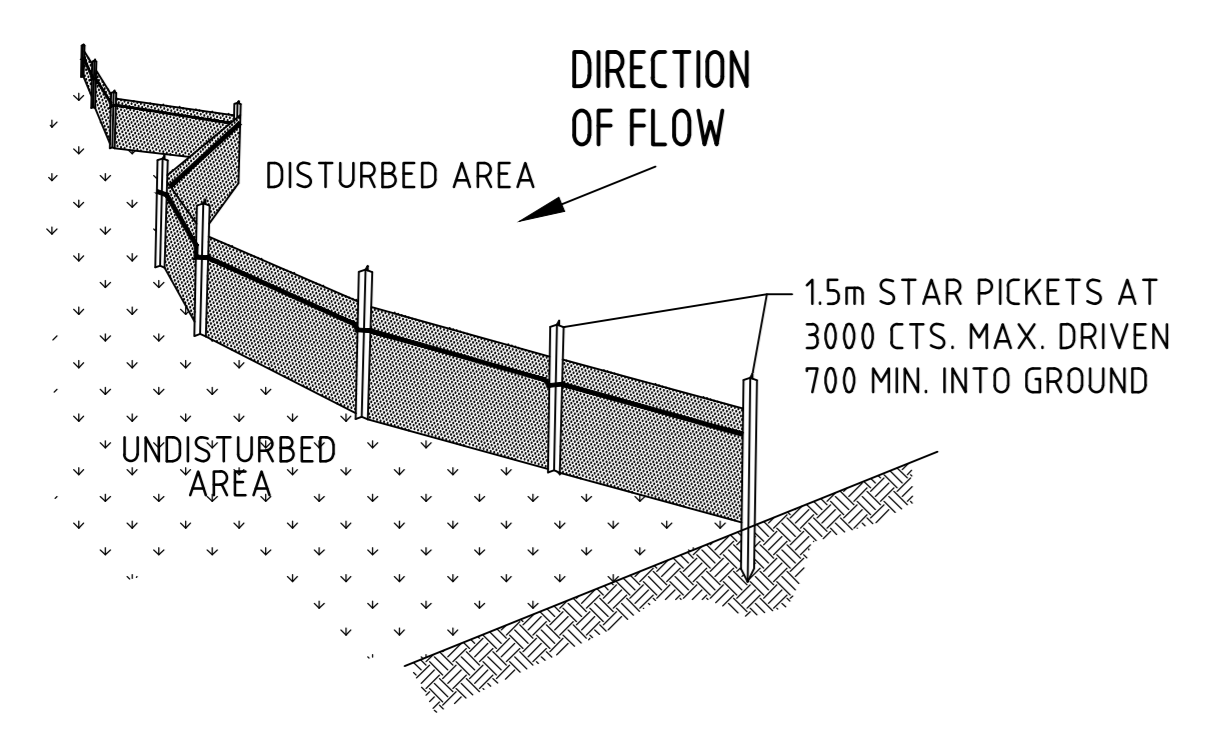
GRADED INLET PIT FILTER DETAIL
N.T.S.

NOTE: ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.

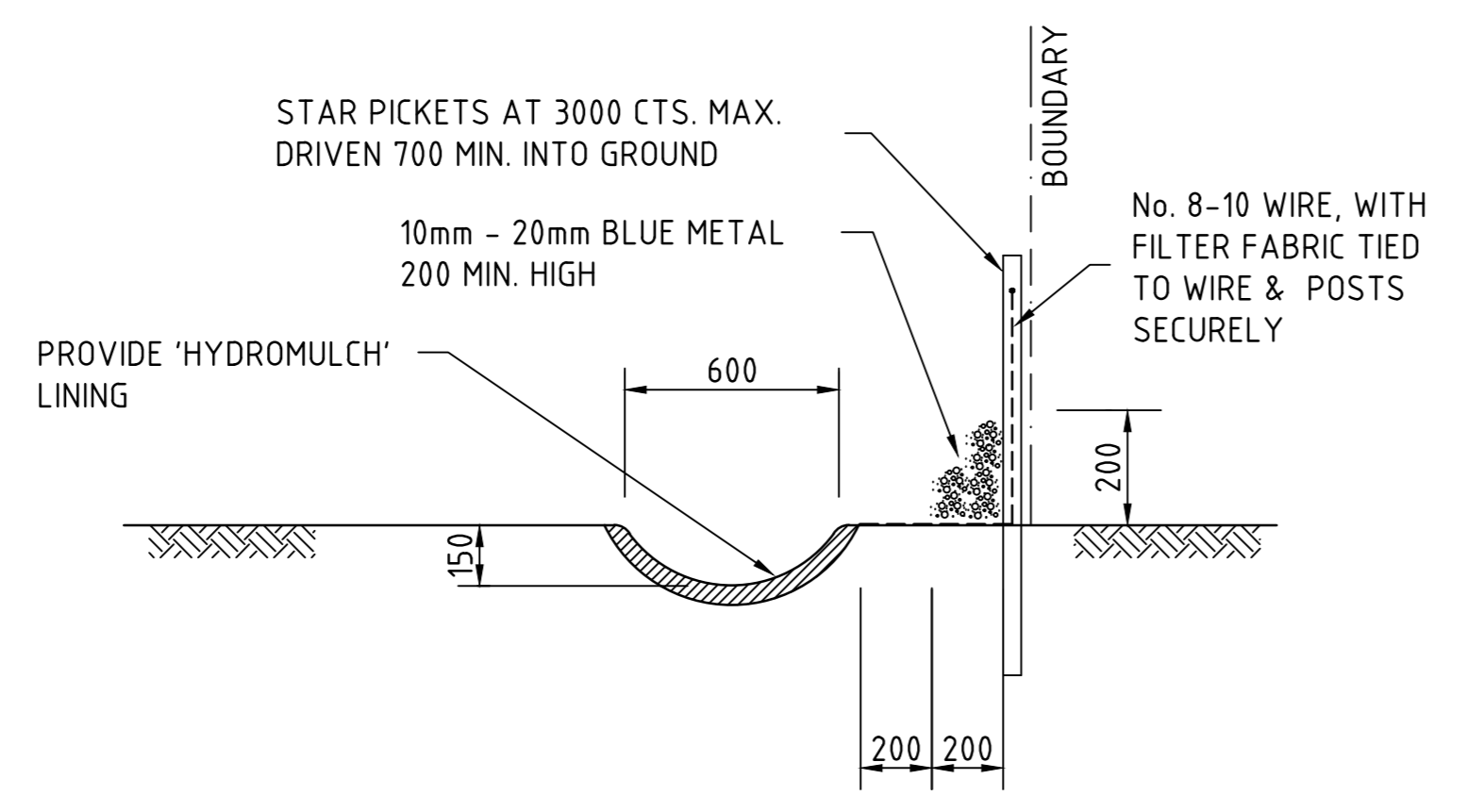


TYPICAL STOCKPILE DETAIL
N.T.S.

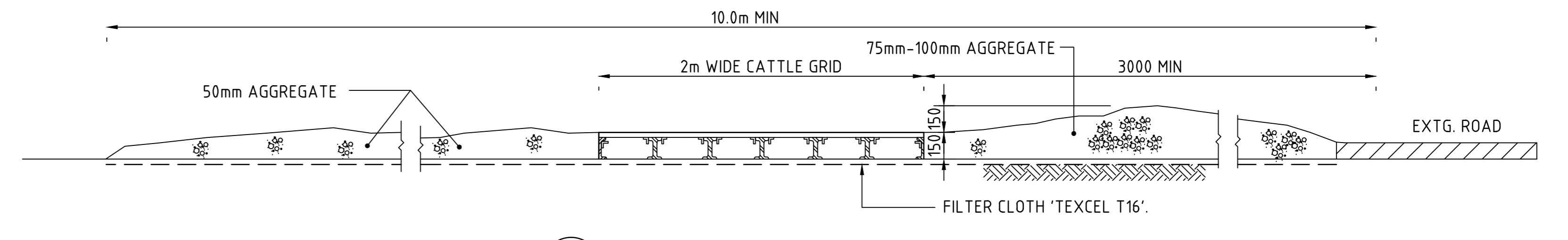
- STOCKPILE NOTES**
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
 3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
 4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
 5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.



TYPICAL SILT FENCE DETAIL
N.T.S.
PROVIDE 1m RETURNS AT 30m INTERVALS.
TYPICAL

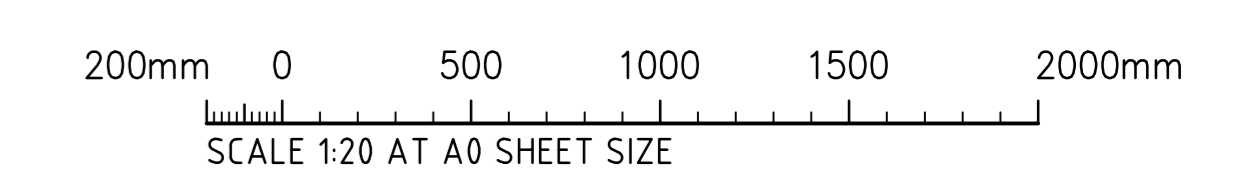


TYPICAL OPEN DRAIN & SILT FENCE
SCALE 1:20



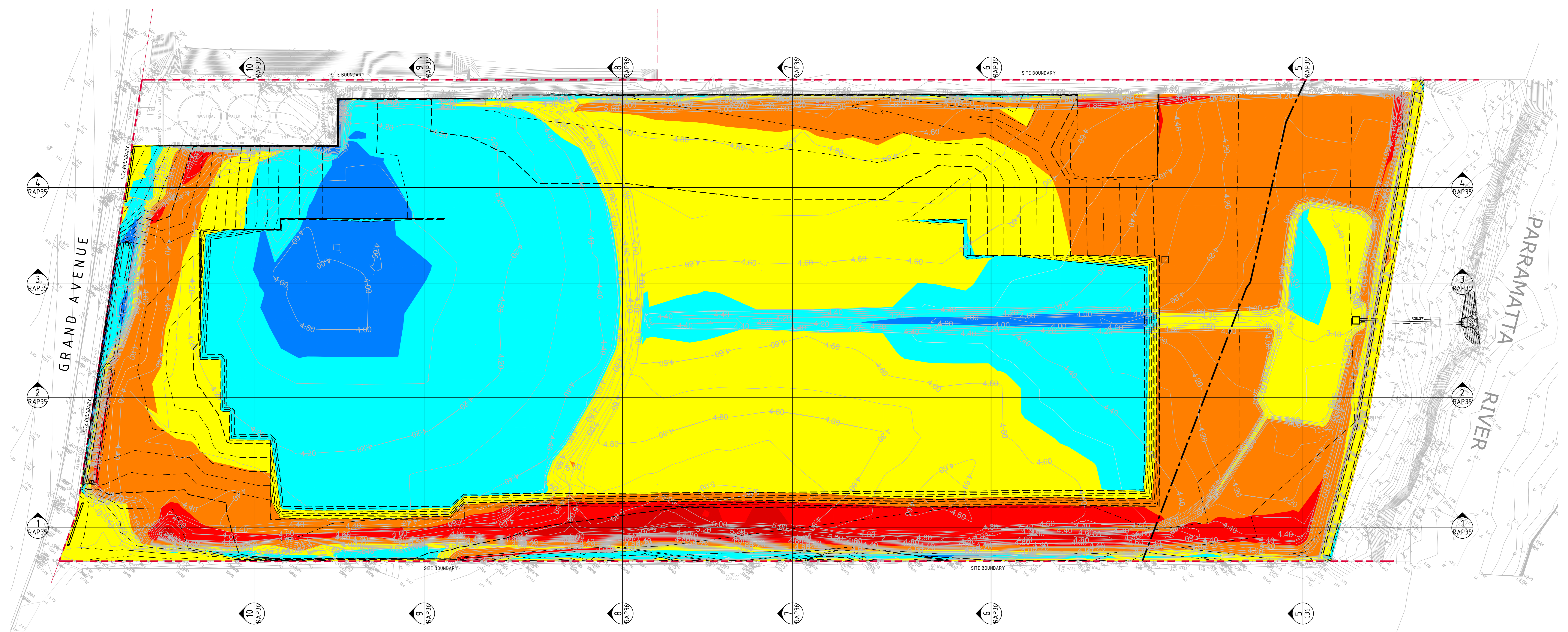
SECTION 1:20 (1/20): STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'

- NOTES:**
- ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.
 - MINIMISE DISTURBED AREAS.
 - ROADS & FOOTPATHS TO BE SWEEPED DAILY.
 - 1.2m TURF TO BE PLACED BEHIND KERBS.
 - DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS DIRECTED BY THE EPA.



FOR CONSTRUCTION

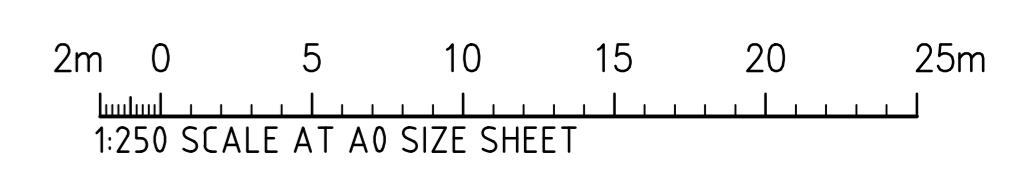
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AMENDMENTS		DATE	ISSUE	ARCHITECT		CLIENT		PROJECT		COSTIN ROE CONSULTING PTY LTD.						



DEPTH RANGE				
No.	FROM DEPTH	TO DEPTH	COLOUR	DEPTH RANGE VOLUME
1	-2.000	-1.500	Red	27m ³
2	-1.500	-1.000	Orange	313m ³
3	-1.000	-0.500	Yellow	1706m ³
4	-0.500	0.000	Light Yellow	4420m ³
5	0.000	0.500	Cyan	1820m ³
6	0.500	1.000	Blue	66m ³
7	1.000	1.500	Dark Blue	2m ³



BULK EARTHWORKS SHADING PLAN
1:250 SCALE



FOR CONSTRUCTION

ISSUED FOR CONSTRUCTION	01/11/19	0
ISSUED FOR PRICING	26/06/19	B
ISSUED FOR CONSULTATION	07/12/18	A
AMENDMENTS	DATE	ISSUE

AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE

ARCHITECT
CLIENT



PROJECT
CAMELLIA MATERIALS RECYCLING FACILITY
REMEDIAL ACTION PLAN WORKS
37 GRAND AVENUE, CAMELLIA, NSW, 2142

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 9 Windmill Street
Wahlab Bay, Sydney NSW 2000
Tel: (02) 9251-7899 Fax: (02) 9241-3721
email: mail@costinroe.com.au

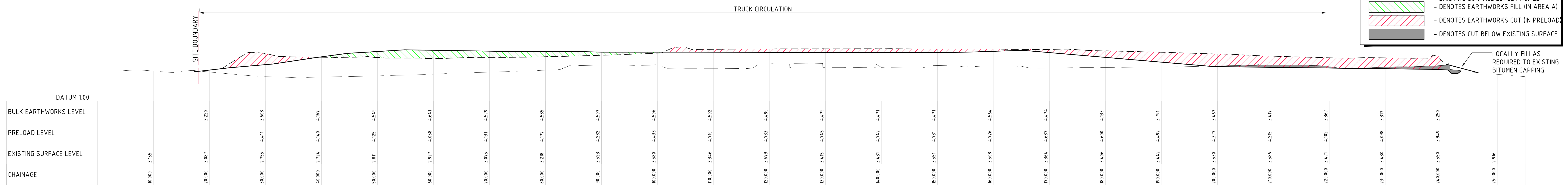


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DRAWING No. **C013189.03-RAP31** ISSUE **0**

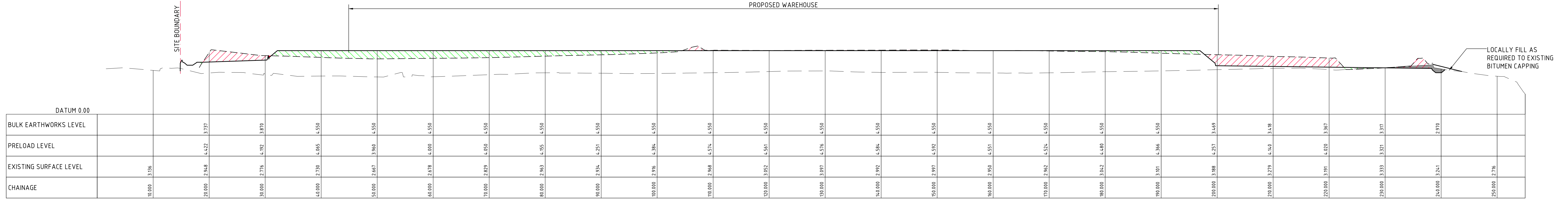
PRECISION | COMMUNICATION | ACCOUNTABILITY

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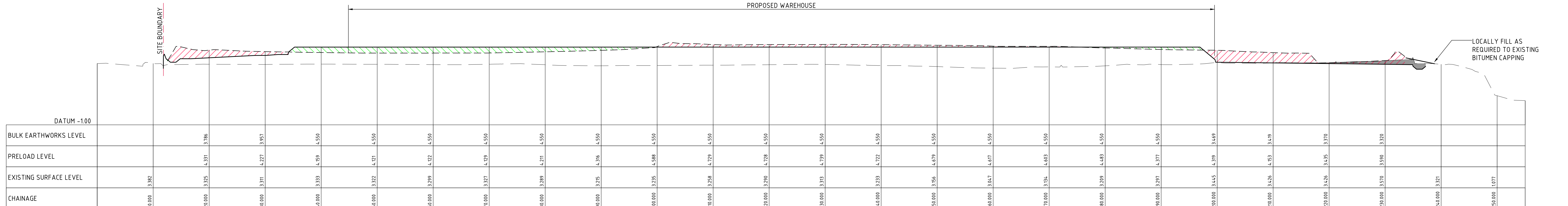
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- EXISTING SURFACE LEVEL PROFILE
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- DENOTES EARTHWORKS CUT (IN PRELOAD)
- DENOTES CUT BELOW EXISTING SURFACE



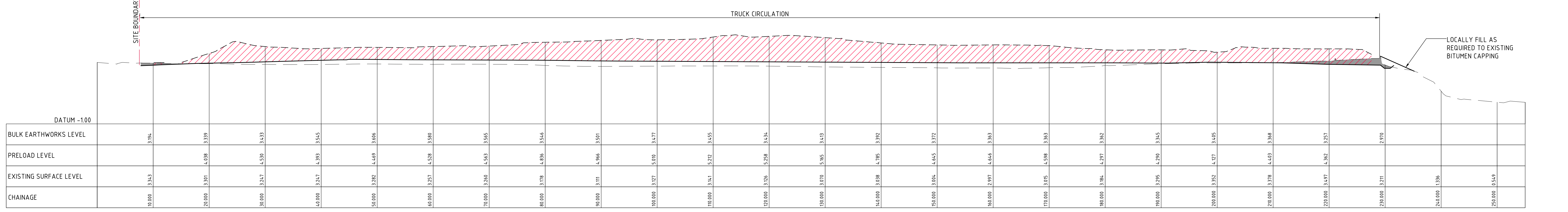
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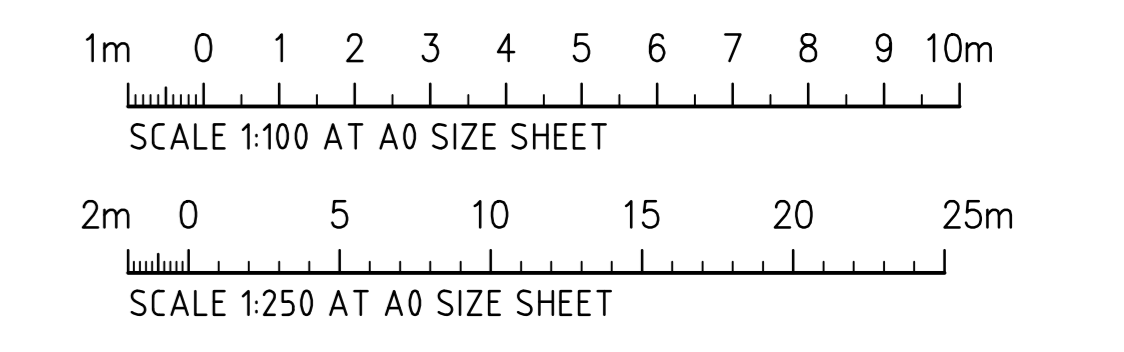
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SECTION 2
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:100



SECTION 1
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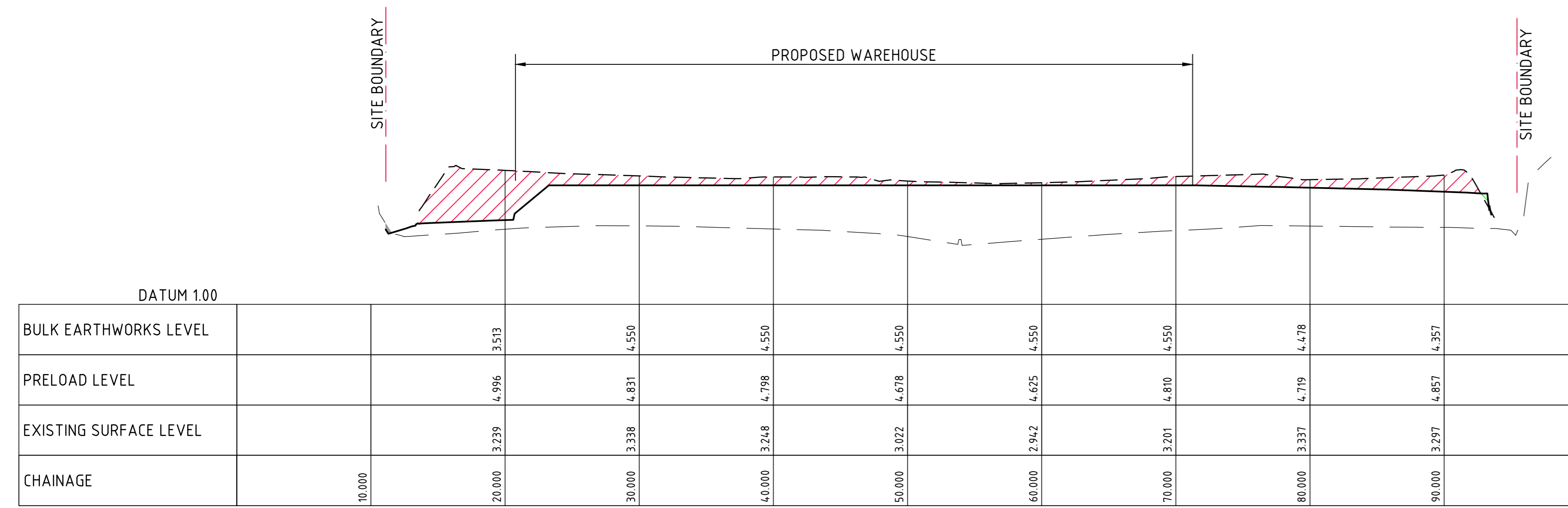


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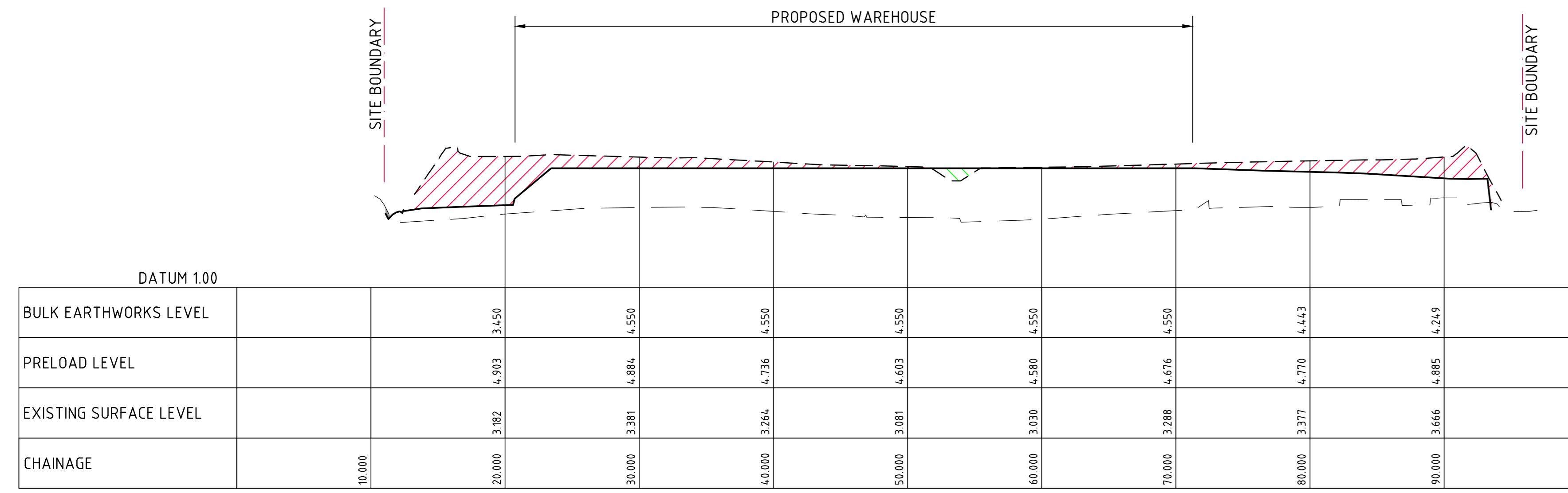
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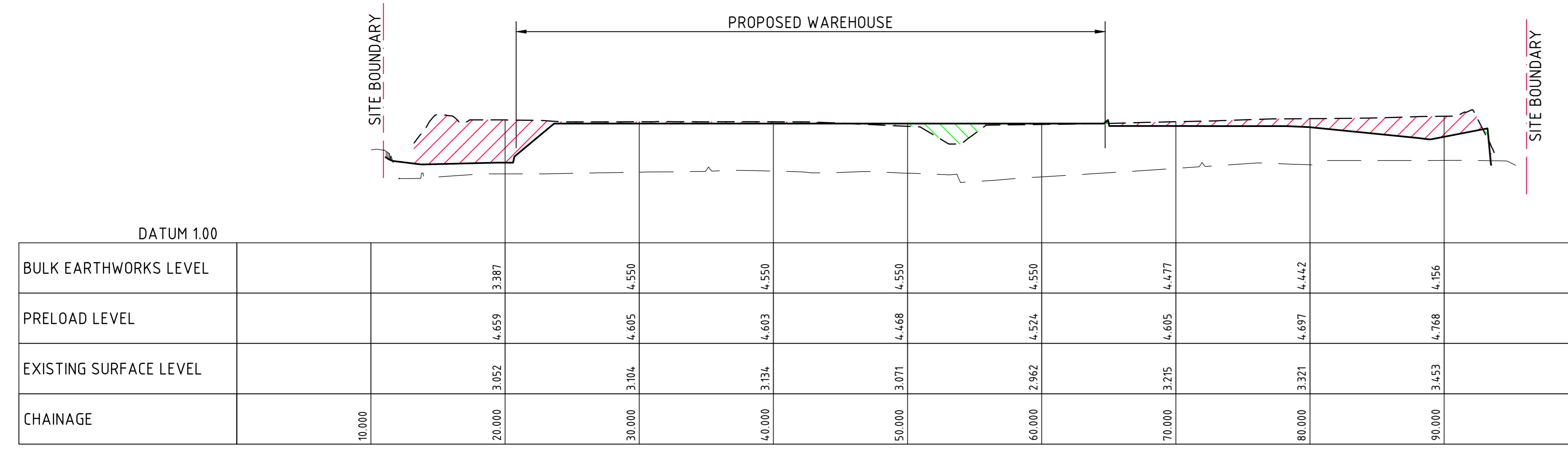
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- DENOTES CUT BELOW EXISTING SURFACE



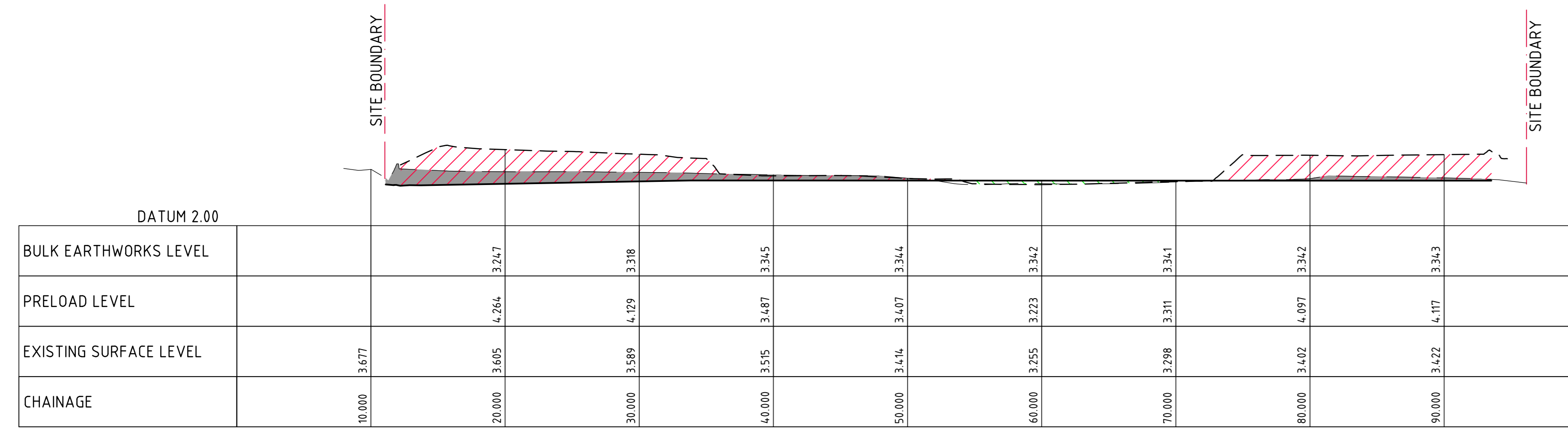
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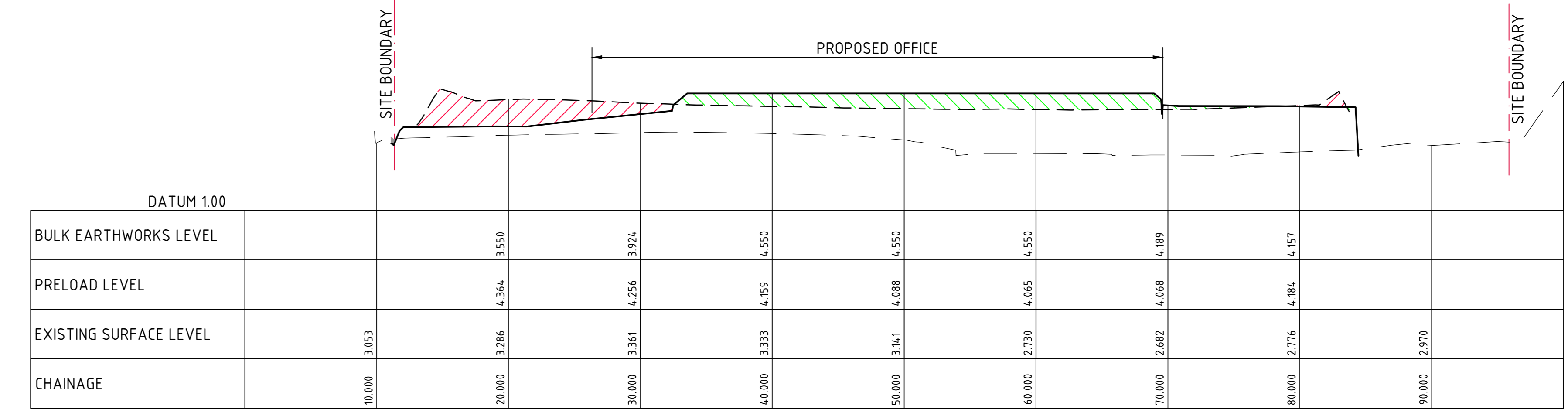
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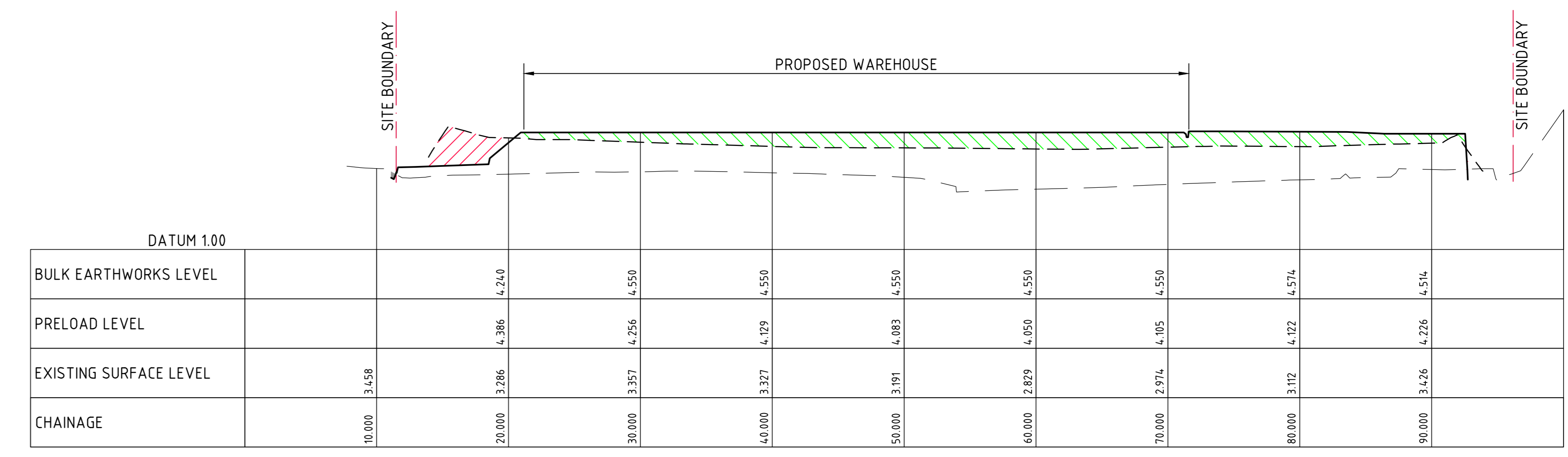
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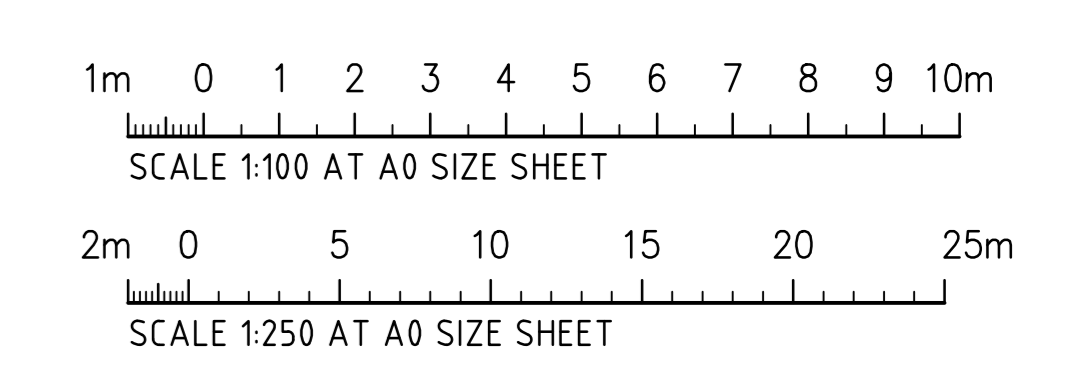
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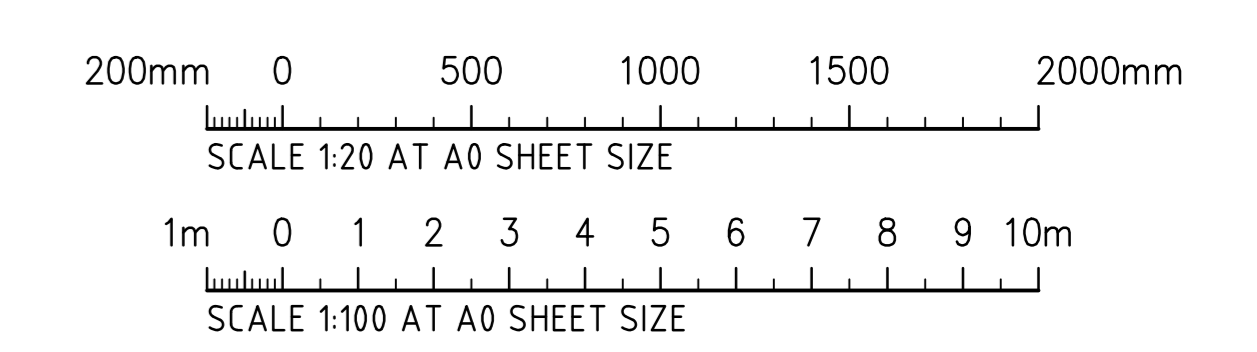
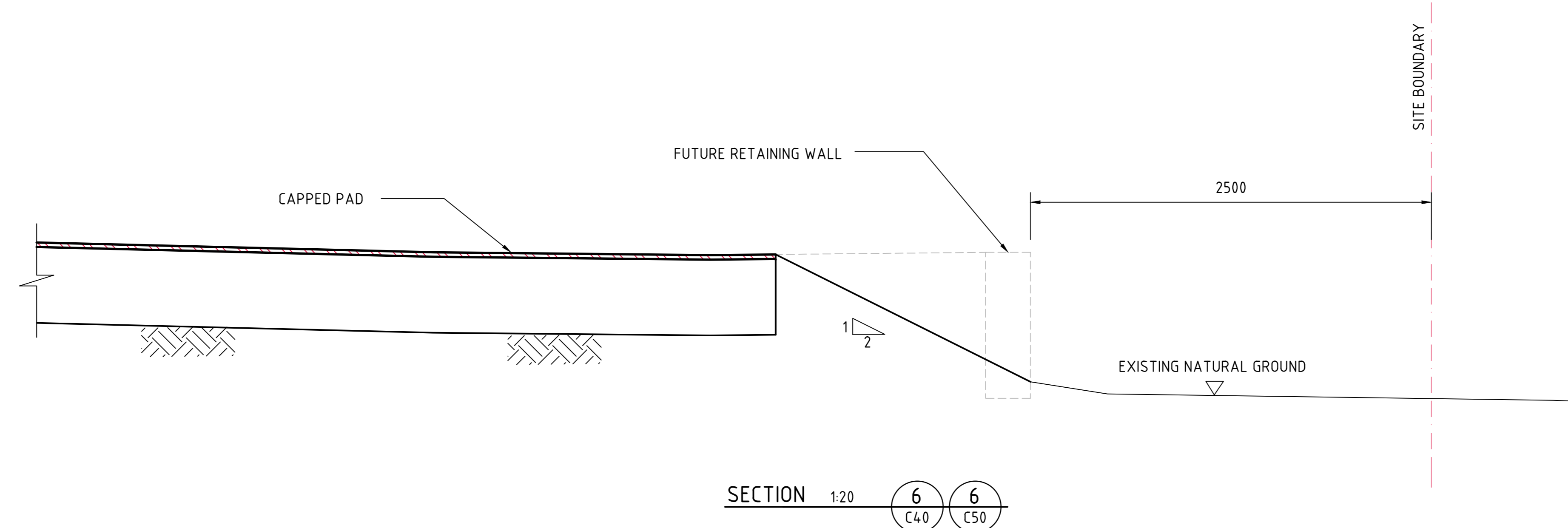
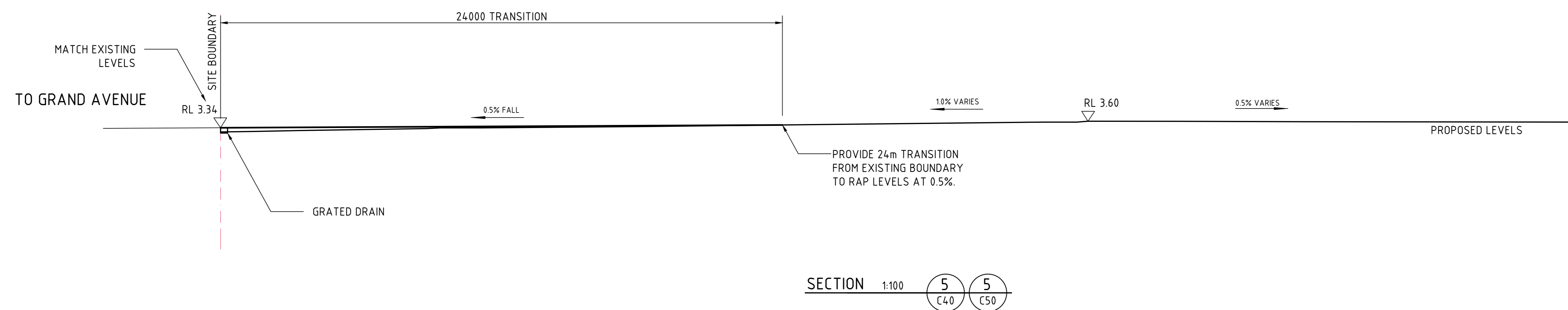
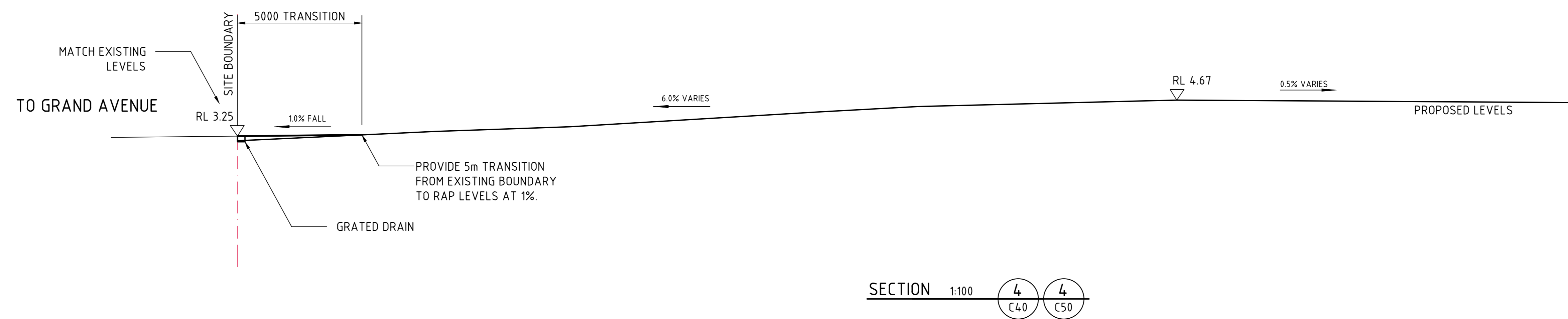
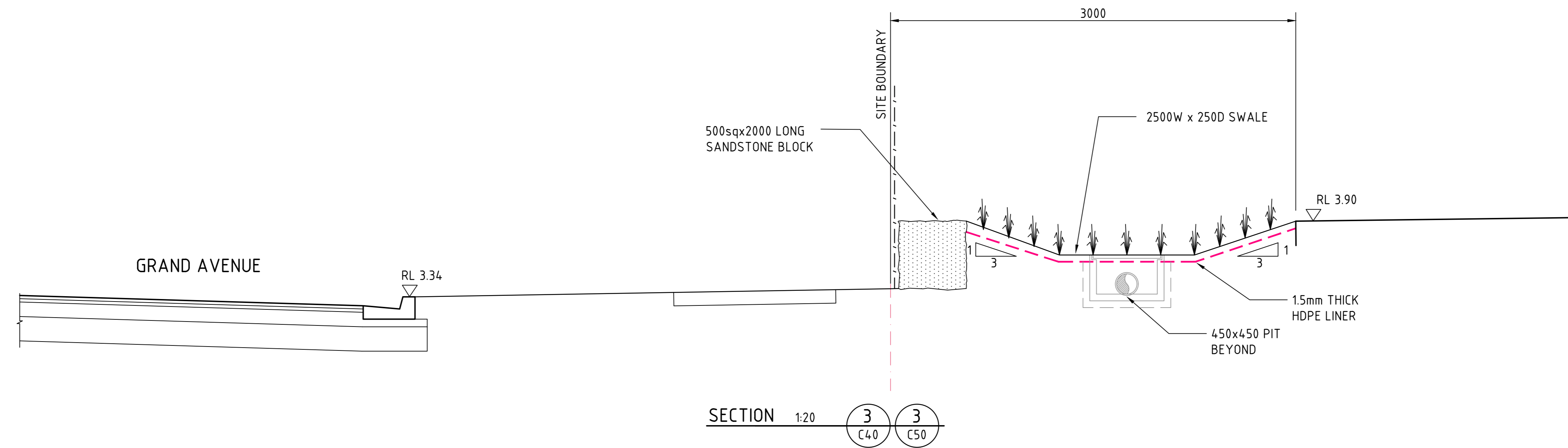


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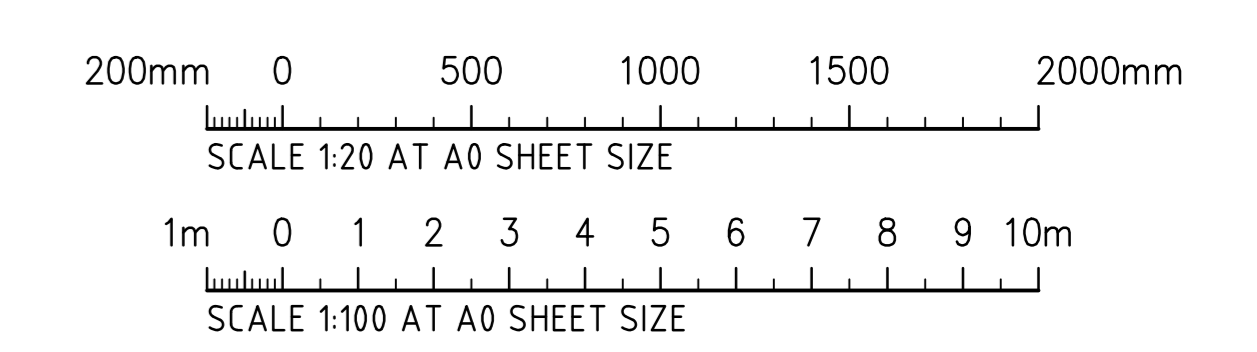
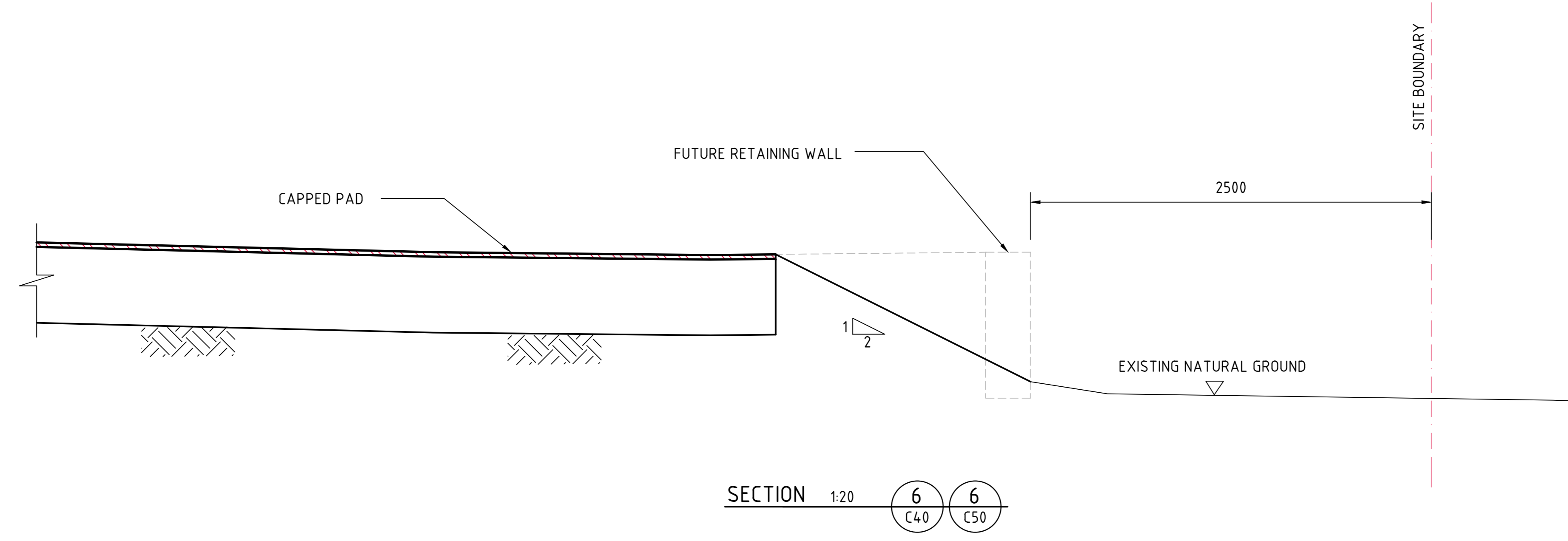
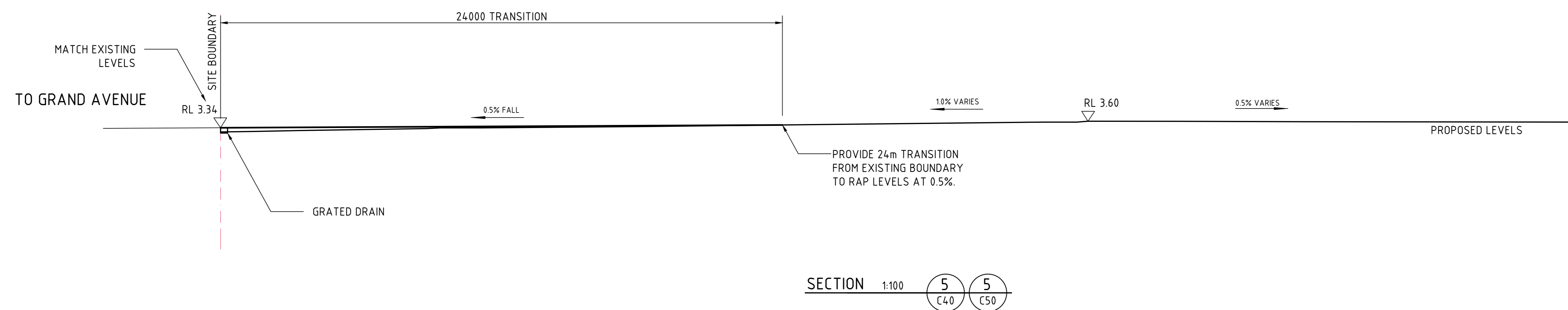
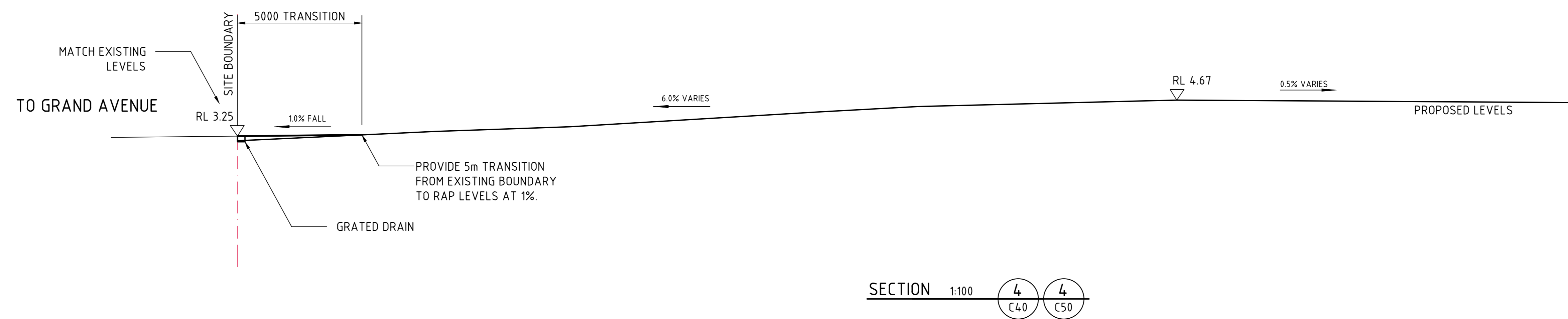
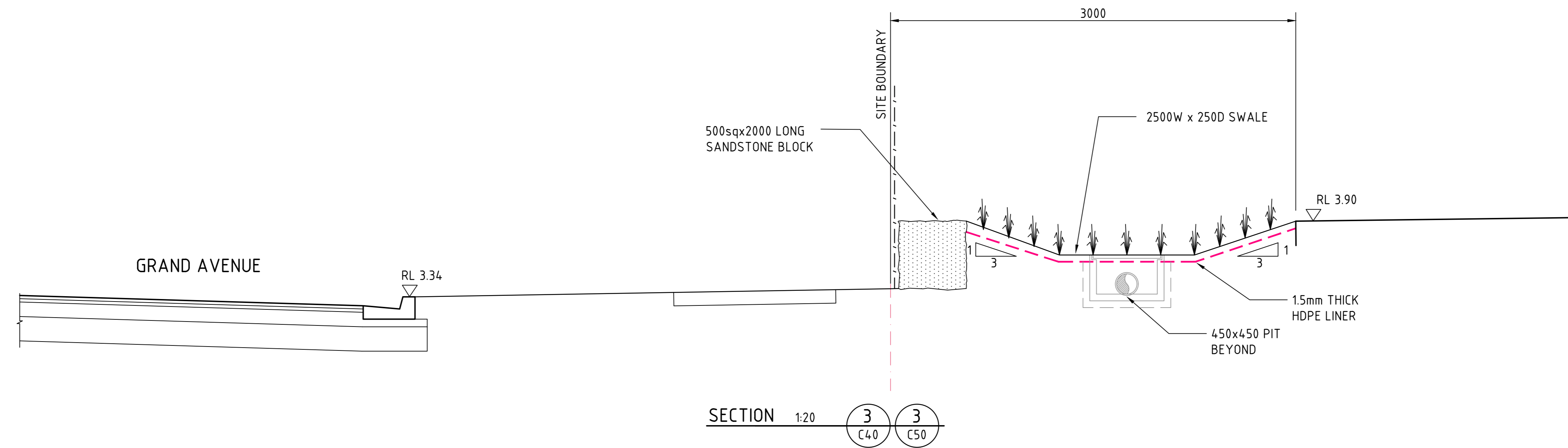
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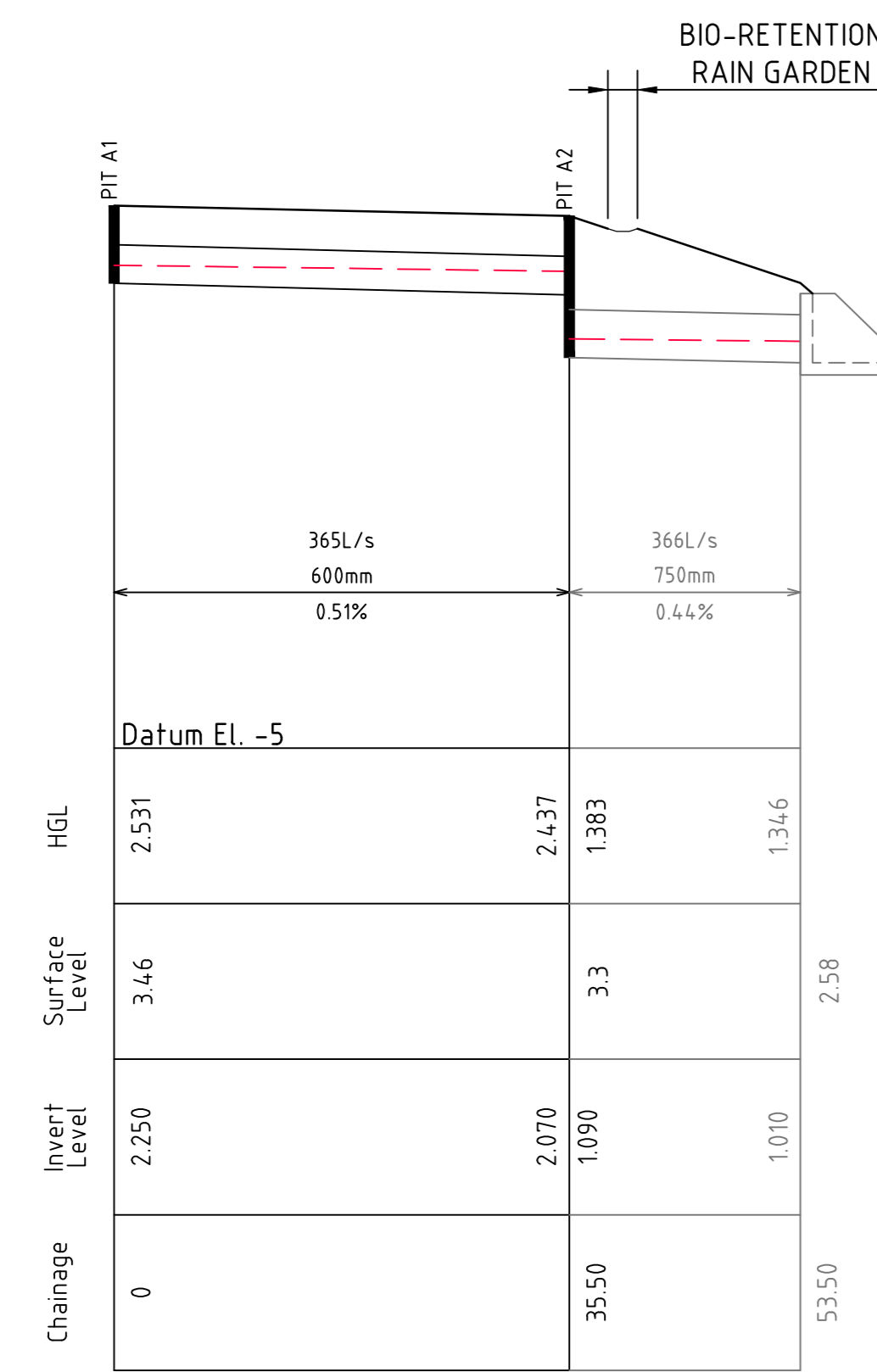
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PRECISION COMMUNICATION ACCOUNTABILITY													



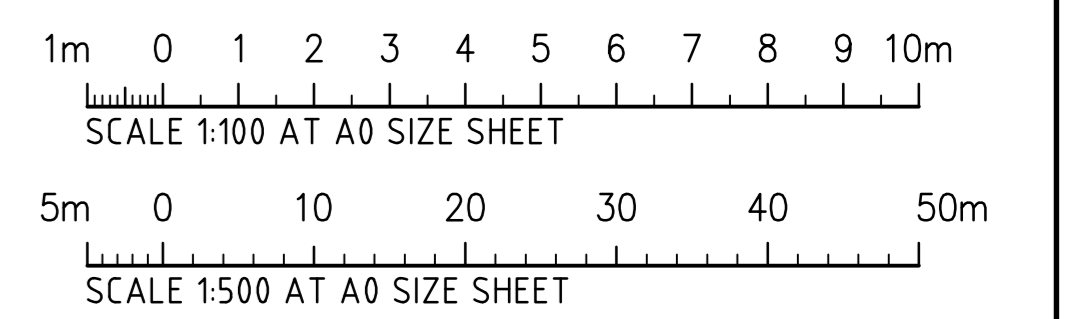
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LONG SECTION - PIT A1 TO PARRAMATTA RIVER
SCALE 1:500 HORIZONTAL
1:100 VERTICAL

NOTE:
H.G.L & FLOWRATE SHOWN FOR Q20 A.R.I STORM EVENT



FOR CONSTRUCTION

ISSUED FOR CONSTRUCTION	01.10.19	0
ISSUED FOR PRICING	28.06.19	B
ISSUED FOR PRICING	07.12.18	A
AMENDMENTS	DATE	ISSUE

ARCHITECT	CLIENT



PROJECT
CAMELLIA MATERIALS RECYCLING FACILITY
REMEDATION ACTION PLAN WORKS
37 GRAND AVENUE, CAMELLIA, NSW, 2142

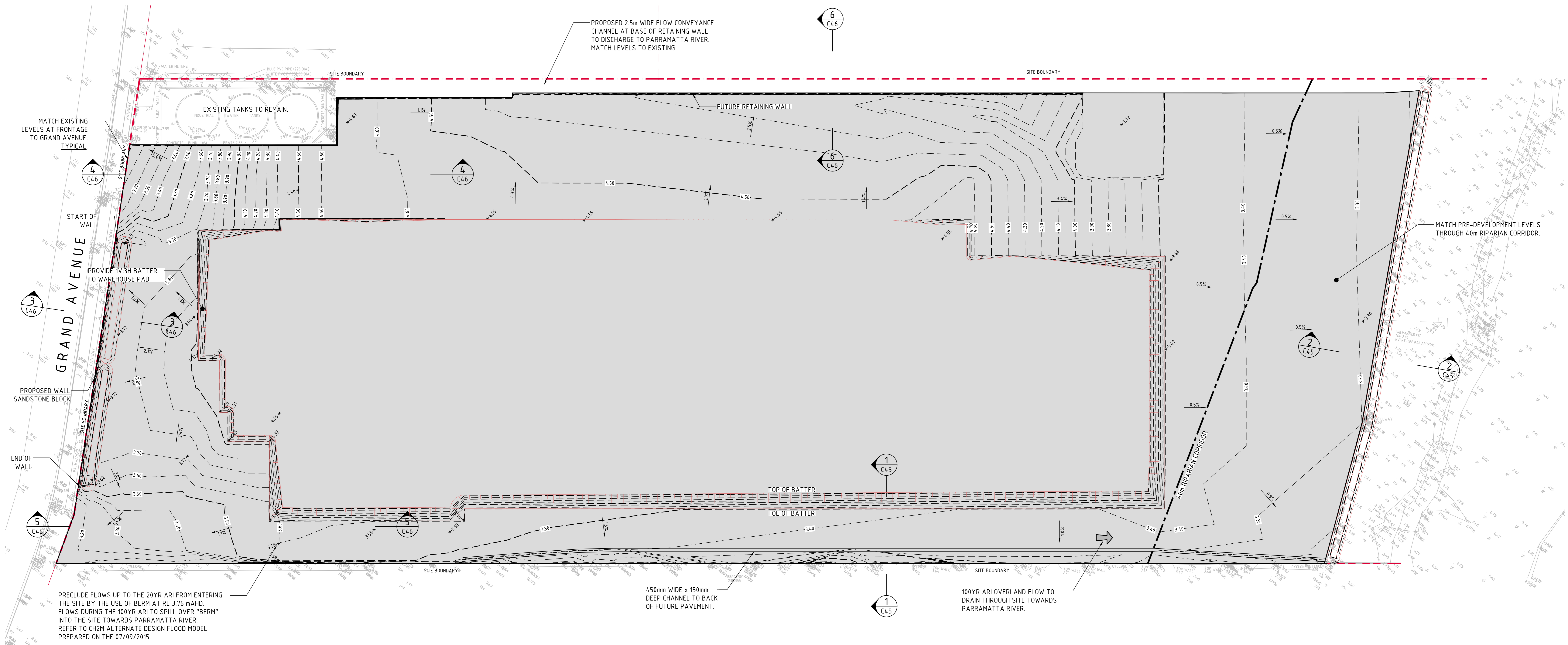


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Level 1, 9 Windmill Street
Wahib Bay, Sydney NSW 2000
Tel: (02) 9251-7899 Fax: (02) 9241-3721
email: mail@costinroe.com.au

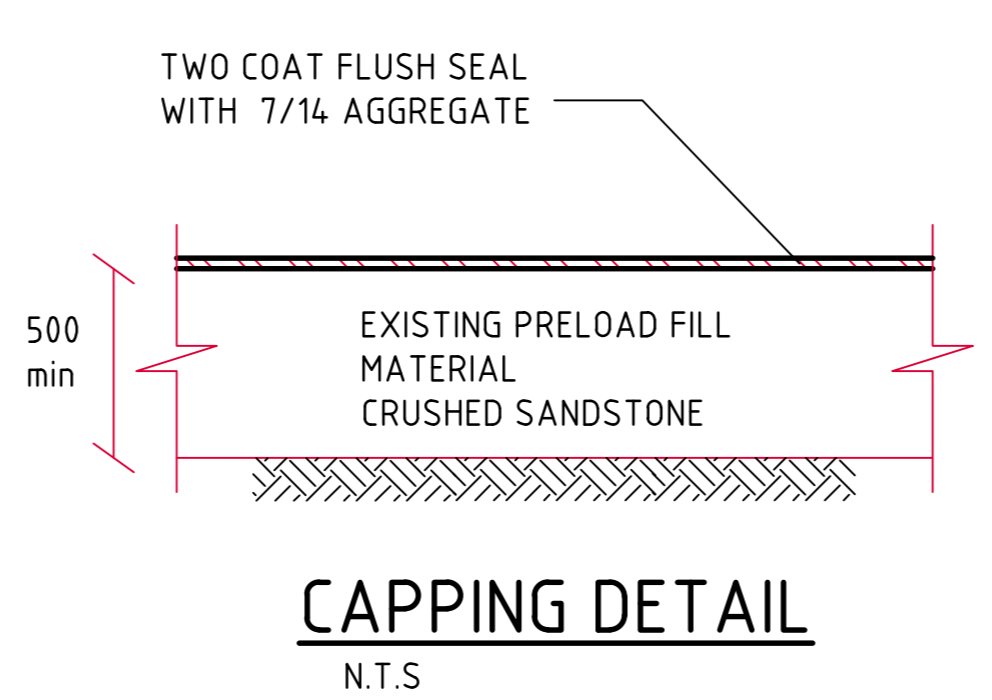
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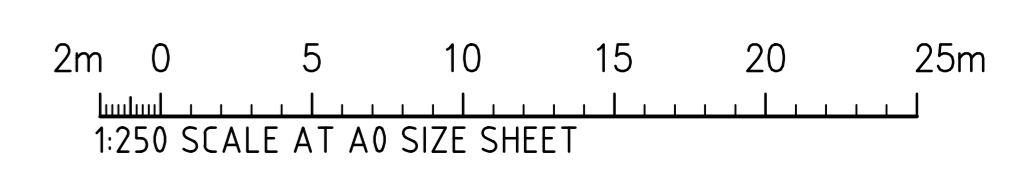
RAP FINISHED LEVELS & DETAILS
1:250 SCALE



LEGEND:
LEVELS DATUM IS AHD.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- EXISTING SPOT HEIGHT
- PAVEMENT FALL DIRECTION AND GRADE
- GRATED DRAIN
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- FINISHED PAVEMENT SPOT HEIGHT

NOTE:
REFER TO DRAWING C013189.03-DA10 FOR FINISHED LEVELS NOTES.



FOR CONSTRUCTION

ISSUED FOR CONSTRUCTION			01.10.19	0	ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd.														
REVISED AS CLOUDED			13.08.19	C				VEOLIA			CAMELLIA MATERIALS RECYCLING FACILITY			Consulting Engineers														
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AMENDMENTS			DATE	ISSUE	AMENDMENTS			DATE			ISSUE			Tel: (02) 9251-7899 Fax: (02) 9241-3721														
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																				RAP FINISHED LEVELS & DETAILS			ISSUE 0					

- Appendix D – Emergency Response Plan

Camellia Recycling Centre - Flood Emergency Response Plan

PREPARED FOR: Veolia Environmental Services
 DOCUMENT NO: 476707.D4.002
 DATE: 7 September 2015
 REVISION NO.: 0
 PREPARED BY: Mark Favetta
 ENDORSED BY: Christine Hodgkiss

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1 Introduction

This Flood Emergency Response Plan (FERP, the 'Plan') should be considered a "living" document. Information contained within this document will require revision, amendment and/or updating as the Camellia Recycling Centre (CRC) moves from the planning phase into the construction phase; and into the operational phase. In particular, amendments are likely to be required to Sections 3 and 4; including provision of the details concerning appropriate responsible persons and their contact details.

1.1 Purpose

The purpose of this Plan is to provide key information and instructions to manage flood risk during the construction and operational phases of the Camellia Recycling Centre.

Key elements of the plan include identification of local incident management procedures, safety requirements, commercial implications, training requirements and record keeping requirements.

1.2 Area covered by this plan

The area covered by this plan comprises 37 Grand Ave, Camellia, referred to as the 'Site' herein.

This need for this plan was identified by the Department of Planning and Environment (DoPE) during a meeting between Veolia, Parramatta Council and DoPE held on 22 June 2015.

1.3 Context

The CRC FERP is site-specific and should be read in conjunction with relating studies including:

- Camellia Recycling Centre – Alternative Design #1 Flood Model (CH2M HILL, 2015)
- Camellia Recycling Centre – Flood Study Rev 1, Response to Request for Additional Information (CH2M HILL, 2014)
- Camellia Recycling Centre – Flood Study, Revision 1 (CH2M HILL, 2013a)
- Camellia Recycling Centre – Response to Submissions Report (CH2M HILL, 2013b)
- Parramatta Local Disaster Plan (DISPLAN) (Parramatta City Council, 2010)
- Local Floodplain Risk Management Policy Parramatta City Council (2006)
- Lower Parramatta River: Floodplain Risk Management Study – Flood Study Review (SKM, 2005b)
- Lower Parramatta River: Floodplain Risk Management Study and Plan, Volume 1 – Main Report (SKM, 2005a)

The CRC will be constructed with a building floor level of RL 4.13m AHD which is 0.5m higher 100 year ARI flood level 3.63m AHD. The PMF extreme event flood level is 6.06m AHD.

Reliable access and safe refuge is available for pedestrians to a level above the PMF (RL 6.06m AHD), with the Finished Floor Level (FFL) of the second floor to be between 7.0 – 8.0m AHD. Vehicle refuge above the PMF is not possible as the entire Camellia Peninsula is inundated by the PMF.

During a major flood event (defined as flooding greater than the 10 year ARI), all on-Site vehicles will be directed to move inside the CRC which is constructed at a level above the 100 year ARI. No additional special traffic signage or instructions is required to direct traffic around the Site during flood events.

1.4 Review of this Flood Response Plan

This plan should be reviewed by periodically by Site management at key stages. Key stages when this plan should be reviewed are:

- **During detailed design** – to confirm all proposed flood mitigation measures and site features are incorporated into design as allowed for during conceptual design and submission for planning approval.
- **Following construction completion** – to confirm flood mitigation measures were constructed as designed. “Works as Executed” information should be documented.
- **Every 5-years or following a major flood event** – a major flood event is defined as an event greater than a 10 year ARI.

1.5 Key Contacts

Key contacts and their responsibility are shown in Table 1.

Table 1 Key contacts and responsibility

Responsibility	Name / contact no.	Warning provided / responsibility
Camellia Recycling Centre Project Manager	Promit Biswas - 02 9841 2927	Update of this Plan. Communication to all construction and operations staff. Responsibility for Site coordination.
Bureau of Meteorology (BOM)	http://www.bom.gov.au/nsw/warnings/	Specific warnings, including evacuation warnings to the community (as described in the DISPLAN)
NSW SES	13 25 00 http://www.ses.nsw.gov.au	Local flood advice, flood bulletins, flood heights and evacuation warnings to the Local Emergency Operations Controller and relevant emergency services and functional areas (as described in the DISPLAN).
Parramatta City Council	02 9806 5050	Regulate property development building construction through LEPs & DCPs Development of maintenance and flood mitigation works. Preparation of floodplain management plans. Preparation of mitigation schemes and Floodplain Risk Management Plans.
NSW Police	Emergency 000 Parramatta (02) 9633 0799	Evacuation warnings, public safety directions and warnings relating to spillages into waterways.
NSW Fire and Rescue	02 9265 2999	Assistance and rescue during flooding emergencies,
Ambulance	Emergency 000	Ambulance services.

2 Flood emergency response management

One way of reducing the flood risk is to develop and implement a FRP (this plan). The primary objective of a FRP is to reduce the threat that floods pose to the safety of people living and/or working on or adjacent to flood affected land.

2.1 Flood mechanisms

The site may be impacted by two flood mechanisms/types of flooding:

1. Fluvial flooding – flooding from Parramatta River (rising river waters); and
2. Pluvial flooding (overland flow) – flooding from rainfall within the local catchment on the Camellia peninsula that is conveyed as overland flow along Grand Avenue.

It is important to understand both types of flooding as they pose different risks, have different consequences and evacuation & refuge response.

Flooding at the Site is expected to persist at most for a few hours during the 100 year ARI when fluvial (river) flooding is expected to inundate the Site.

Flood maps (depth, velocity, hazard) for the 20 year ARI and 100 year ARI flood events are included as **Appendix A**.

2.2 Flood emergency response planning

2.2.1 Site planning and design features

The site has incorporated a number of planning and design features developed in accordance with Parramatta City Council's Local Floodplain Risk Management Policy (Parramatta City Council, 2006). Site planning and design features are summarised in Table 2.

Table 2 Planning and design features

Planning and design feature	Description of feature with reference to CH2M (2013a)
Floor Level	All proposed floor areas have a minimum finished floor level (FFL) of 0.5m greater than the 100 year ARI flood level in Parramatta River of 3.63m. The minimum FFL is therefore RL 4.13m AHD.
Building Components & Method	The proposed development will be constructed on imported fill that will ensure all FFLs are located 0.5m above the 100 year ARI. There are no proposed buildings that will be exposed to the 100 year ARI. All fence-lines will be flood compatible.
Structural Soundness	The proposed development will be constructed on imported fill that will ensure all FFLs are located 0.5m above the 100 year ARI. As the proposed development requires the installation of drainage related flood mitigation measures, drainage components will be suitably designed to be structurally sound for all events.
Flood Affection	The preparation of the CRC-Flood Study (CH2M HILL, 2013a) Camellia Recycling Centre – Alternative Design #1 Flood Model technical memorandum satisfactorily address Lower Parramatta River Floodplain

	<p>Risk Management Study (LFRMP) requirements for an Engineers Report.</p> <p>As demonstrated by the modelling the reports, the fill necessary for construction of the proposed development will have little effect on the temporary storage of floodwaters. Cumulative impacts are also investigated. There is some local minor increase in flood levels in the range of 0.02 to 0.10 m immediately in front of the Site at Grand Avenue as described in (CH2M HILL, 2015)</p>
<p>Car Parking & Driveway Access</p>	<p>Vehicle refuge above the PMF is not possible as the entire Camellia Peninsula is inundated by the PMF. There are no garages proposed, however it is noted that the CRC materials recycling building will be set at a FFL of RL 4.13 m AHD.</p> <p>Under normal operating conditions, only trucks would access have access to the building with FFL at 4.13 m AHD.</p> <p>During a major flood event (defined as flooding greater than the 10 year ARI), all on-Site vehicles will be directed to move inside the CRC which is constructed with FFL at 4.13m AHD i.e. 0.5m above the 100 year ARI. No additional special traffic signage or instructions is required to direct traffic around the Site during flood events.</p> <p>Generally the levels of all driveways are higher than RL 3.43m AHD (0.2 m less than 100 year ARI level of 3.63m AHD as required by Council’s LFRMP) with the exception of the entrance to the Site with the exception of the Site entry. At the Site entry, vehicular traffic will be required to drive over a “berm” which will be constructed to a top level of RL 3.76m AHD. In the 100 year ARI water will spill over the “berm” into the Site. The maximum depth on the top of the berm in the 100 year ARI is 0.06m.</p> <p>It is noted that in the 100 year ARI, the car park at the front of the Site could potentially have flood depths where a vehicle may float (at a depth of 0.2m). To avoid a scenario with floating cars at the location of the car park, all vehicles must follow this FERP.</p>
<p>Evacuation</p>	<p>Reliable access is available for pedestrians to a level above the PMF (6.06 m AHD), with second floor FFL between 7.0 to 8.0m AHD. Vehicle refuge above the PMF is not possible as the entire Camellia Peninsula is inundated by the PMF. Further information on flood evacuation and refuge can be found in Section 2.5.</p>
<p>Management and Design</p>	<p>The Site FERP (this Plan) will be updated once development approval is granted.</p>

2.2.2 NSW OEH Floodplain Risk Management Guidelines

The NSW Office of Environment and Heritage (OEH) has released a range of standard documents to support the implementation of the NSW Government’s Flood Prone Land Policy through the development and implementation of FRM plans by local government through the FRM process as outlined in the Floodplain Development Manual (2005).

Flood Emergency Response Planning (ERP) – Classification of Communities

Of relevance to the CRC FRP is the guideline *Flood Emergency Response Planning (ERP) – Classification of Communities*.

The guideline recommends that the ERP classification of the floodplain be undertaken for the probable maximum flood (PMF) and 20 and 100 year average recurrence interval (ARI) events. Classifications are to be provided for each event with reference back to the event.

The Site is classified according to NSW OEH definitions as shown in Table 3.

Table 3 NSW OEH definitions – flood emergency response planning

ARI	NSW OEH classification	NSW OEH definition
20 year ARI – Fluvial (River) Flood	Area with Rising Road Accessible (RRA)	<i>Areas with Rising Road Access (RRA) are those areas where access roads rising steadily uphill and away from the rising floodwaters. The community cannot be completely isolated before inundation reaches its maximum extent, even in the PMF. Evacuation can take place by vehicle or on foot along the road as floodwater advances. People should not be trapped unless they delay their evacuation from their homes. For example people living in two storey homes may initially decide to stay but reconsider after water surrounds them.</i>
20 year ARI – Pluvial flood (overland flow)	High Flood Island (HFI)	<i>High Flood Island (HFI). The flood island includes enough land higher than the limit of flooding (i.e. above the PMF) to cope with the number of people in the area. During a flood event the area is surrounded by floodwater and property may be inundated.</i>
100 year ARI		<i>However, there is an opportunity for people to retreat to higher ground above the PMF within the island and therefore the direct risk to life is limited. The area will require resupply by boat or air if not evacuated before the road is cut. If it will not be possible to provide adequate support during the period of isolation, evacuation will have to take place before isolation occurs.</i>
PMF		

State Emergency Services Requirements from the Floodplain Risk Management Process

Also of relevance to the CRC FERP is the State Emergency Services Requirements from the Floodplain Risk Management Process which describes how the FRM process assists State Emergency Service (SES) in effective emergency response planning (ERP).

For HFI’s, the key considerations are:

- External access cut, area becomes isolated;
- Transport infrastructure shutdown (railways/airports);
- Risk Of Flooding Of Key Public Utilities (Water/Sewage/Gas/Power) Starts; and
- Whole area flooded or max flood extents occur.

2.3 Flood levels

Fluvial (river) flooding

Fluvial flood waters may potentially impact the Site. Peak fluvial flood levels at the Site are:

- PMF RL 6.06m AHD
- 100 year ARI RL 3.63m AHD
- 20 year ARI RL 3.09m AHD

20 and 100 year ARI fluvial flows do not overtop the existing river bank and enter the site along the northern boundary (river frontage). There is an existing kerb at the edge of the carpark along the northern boundary in that is RL 3.70m AHD.

The 100 year ARI climate change water levels in 2050 will reach RL 3.63mAHD + 0.25m i.e. RL 3.88mAHD.

Pluvial flooding (overland flow)

Pluvial flooding (overland flow) may potentially impact the Site. The berm along the Grand Avenue street frontage (southern boundary) is proposed at RL 3.76m AHD¹.

Peak pluvial (overland flow) flood levels at the Site are:

- PMF Not modelled, in this event, the Site is likely to be flooded by fluvial flood flows.
- 100 year ARI RL 3.55m AHD
- 20 year ARI Site is not impacted

In the 100 year ARI² water conveyed eastward along Grand Avenue flowing in a direction towards the Parramatta River spills over the “berm” at the front of the Site and enters the Site. Flood waters that enter the Site from Grand Avenue are temporarily contained around the building footprint, before draining to the Parramatta River (via the Site drainage system). In this scenario, the Site effectively behaves as a shallow detention basin which reaches a maximum water level of RL 3.55m AHD. Similar to previous design runs described in CH2M (2013a), the “berm” located at the rear of the Site precludes river flood waters from entering the Site via the rear boundary.

In the 20 year ARI³, water conveyed eastward along Grand Avenue directed towards the Parramatta River does not spill over the “berm” (at the front of the Site) and enter the Site. River water levels do not reach a level high enough to enter the Site.

2.4 Flood warning time

Fluvial (river) flooding

The rate of rise of pluvial (river) flood waters in the PMF is 1.3 m/hour (0.022m/min) at the Site.

The rate of rise of pluvial (river) flood waters in the 100 year ARI is 0.9 m/hour (0.015 m/minute) at the Site.

Refer Figure 1 for more information.

¹ Refer to CH2M HILL (2015) *Camellia Recycling Centre – Alternative Design #1 Flood Model* for more information.

² Results based on the peak local catchment/subcatchment flow event.

³ Ibid.

Typically, SES, Police or other emergency services via radio, phone and other telecommunications would provide sufficient flood warning. However, if this does not occur, the following flood warning is possible.

Visual observation of floodwaters nearing the kerb on the northern boundary of the Site (rising floodwaters with:

- 0.5m depth until overtopping the kerb on the northern boundary (RL 3.7m AHD), would provide 33 minutes for vehicles and pedestrians to evacuate in the 100 year ARI and 22 minutes for evacuation in PMF); and
- 1.0m depth until overtopping the kerb on the northern boundary (RL 3.7m AHD), would provide 66 minutes for vehicles and pedestrians to evacuate in the 100 year ARI and 44 minutes for evacuation in PMF).

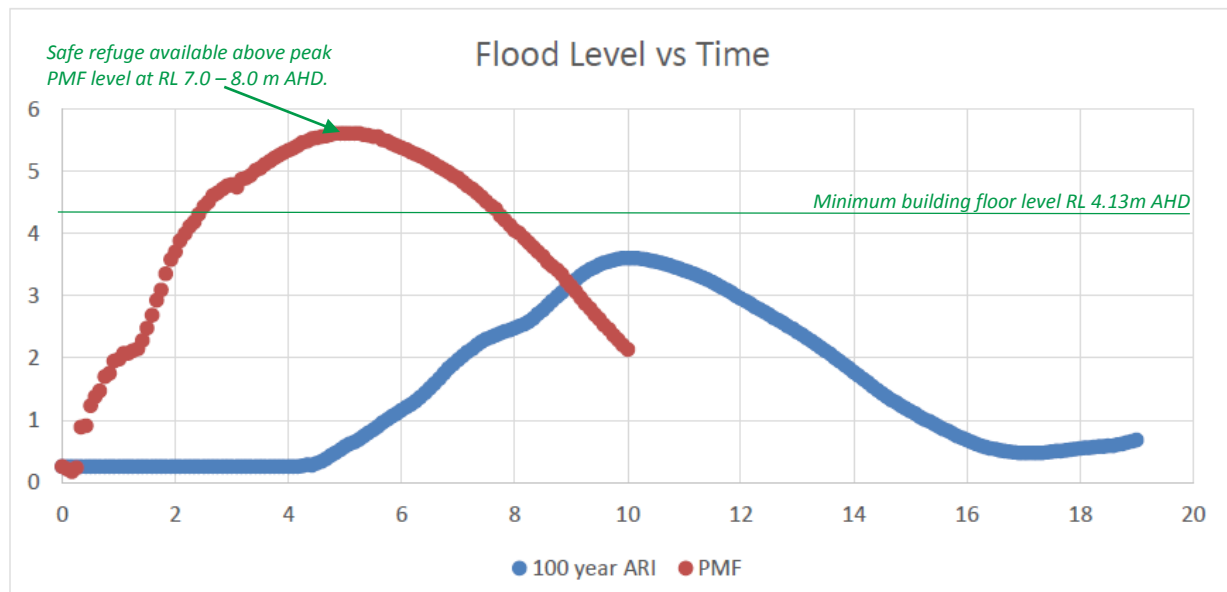


Figure 1 Flood level vs time: Critical 100 year ARI and PMF events

Pluvial flooding (overland flow)

There is limited warning time available for pluvial flooding (overland flow events). The critical flood duration is 25 minutes for all fluvial storms for all storm events up to the 100 year ARI. Warning time may therefore be less than 25 minutes. Flood depths will subside quickly following peaks to depths that would be trafficable with pedestrians and Vehicles.

Typically, SES, Police or other emergency services via radio, phone and other telecommunications would provide sufficient flood warning. Should this not be possible, any flood waters unable to be contained within the road kerb and guttering on Grand Avenue (approx. RL 3.09 – 3.41 m AHD at front of the Site), is considered warning for an imminent local pluvial (overland flow flood).

Close monitoring of predicted rainfall, radar rainfall and actual rainfall should be undertaken by monitoring nearby active BOM rainfall stations, pluviograph data and weather radar. If rainfall exceeds the 10 year ARI (refer Figure 2), preparations should be made to seek safe refuge.

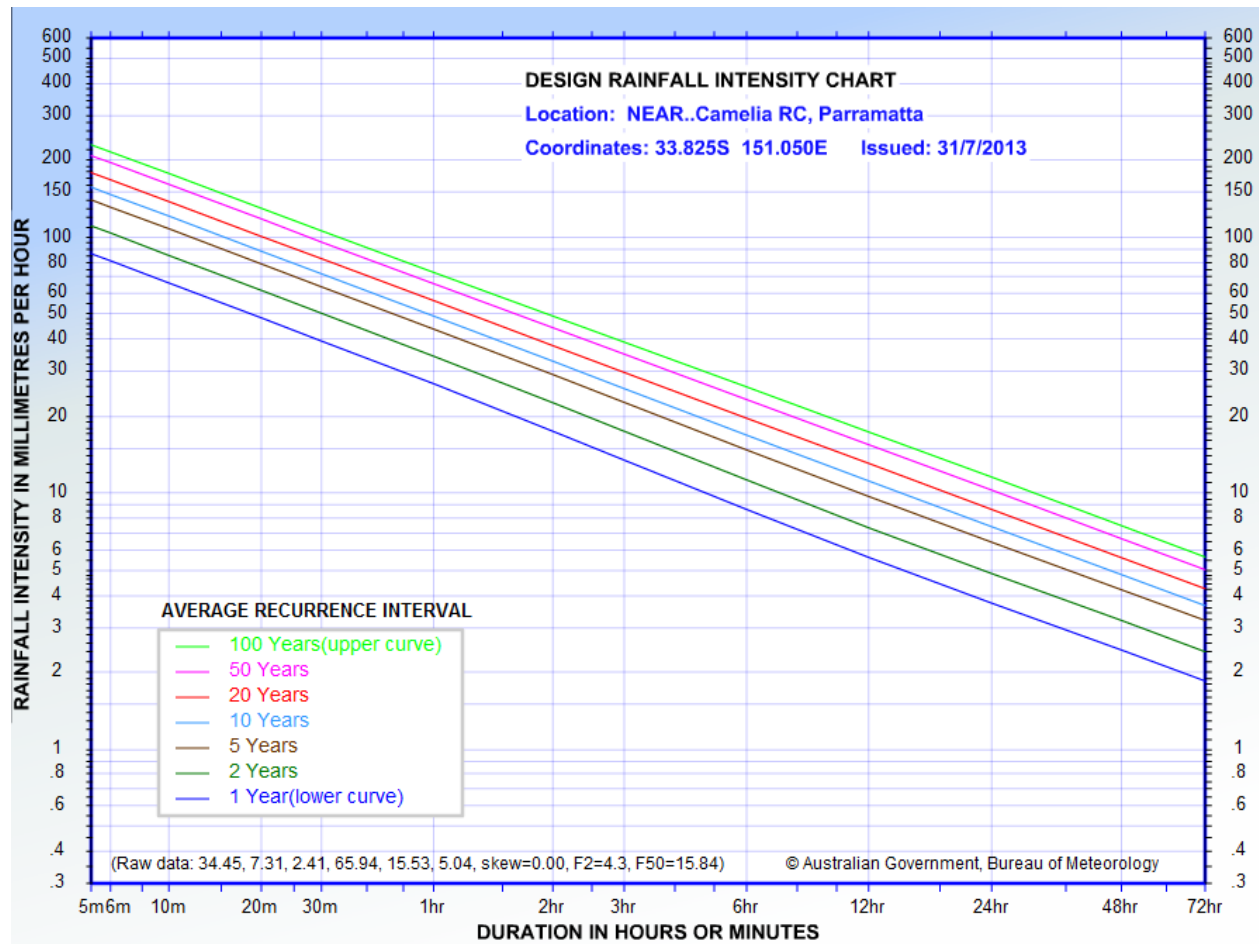


Figure 2 Design Rainfall IFD Curve at CRC Site

Box 1 How to determine if rainfall may exceed 10 year ARI

How to determine if rainfall may exceed 10 year ARI

To determine whether rainfall may result in a flood equal to a greater than the 10 year ARI, compare predicted / actual rainfall intensity with the time predicted / elapsed on Figure 2.

Example:

1. Actual rainfall is measured to be 25 mm in 10 minutes.
 - a. Rainfall intensity = $25 \text{ mm} / (10\text{min}/60\text{min}) = 150 \text{ mm/hr}$.
 - b. Estimated 10 year ARI rainfall intensity at time $t=10$ minutes from Figure 2 = 125 mm/hr
 - c. Actual rainfall intensity 150 mm/hr exceeds estimated 10 year ARI at time $t=10$ minutes
 - d. Action: seek refuge.
2. Actual rainfall is measured to be 40 mm over a period of 60 minutes.
 - a. Rainfall intensity = $40 \text{ mm} / 60\text{min} = 40 \text{ mm/hr}$.
 - b. Estimated 10 year ARI rainfall intensity at time $t=60$ minutes from Figure 2 = 50 mm/hr

- c. Actual rainfall intensity 40 mm/hr is less than estimated 10 year ARI at time t=60 minutes.
 - d. Action: Continue to monitor rainfall, prepare staff for possible evacuation / refuge.
3. Predicted rainfall is 150 mm over 4 hours.
- a. Rainfall intensity = 150 mm / 120 minutes = 37.5 mm/hr
 - b. Estimated 10 year ARI rainfall intensity at time t=4 hours from Figure 2 = 22.5 mm/hr
 - c. Actual rainfall intensity 37.5 mm/hr exceeds estimated 10 year ARI at time t=4 hours
 - d. Action: seek refuge.

More information on New South Wales weather warnings can be found at the Australian Government Bureau of Meteorology website.

- Current warnings <http://www.bom.gov.au/nsw/warnings/>
- Forecasts and observations <http://www.bom.gov.au/nsw/>

2.5 Flood Evacuation and refuge

2.5.1 Potential evacuation routes

If a flood warning is issued for the Parramatta River, sufficient warning time is available for fluvial (river) flooding to evacuate the Site, however, this does prevent staff from being placed at risk for any potential flooding at the Site.

When a major flood warning for Parramatta River is issued by BOM or the SES, staff should not enter the Site. Staff must be made aware that they are not to enter the Site if:

- A major flood warning has been issued for Parramatta River;
- Ponding of water on Grand Avenue reaching top of Kerb;
- Rainfall in excess of 10 year ARI is measured or predicted (refer Box 1); or
- They have been advised not to enter the Site.

If staff are unable to enter the Site, they should avoid the Camellia Peninsula. If they are already approaching the Site along Grand Avenue, then they should return to higher ground by following Grand Avenue to James Ruse Drive.

2.5.2 Refuge

As the Site has the potential to become a High Flood Island (HFI), adequate flood warning is available at the Site to enable refuge to a level above the PMF for pedestrians and above the 100 year ARI for vehicles. The decision to seek refuge would occur based on any of the following triggers:

- Recommendations made by SES, Police or other emergency services via radio, phone and other telecommunications;
- Visual observation of floodwaters nearing the kerb on the northern boundary of the Site (rising floodwaters with 0.5m depth until overtopping the northern curve, would provide 33 minutes for vehicles and pedestrians to evacuate in the 100 year ARI and 22 minutes for evacuation in PMF); and

- Water ponding in Grand Avenue (above road kerb and guttering) causing the Site to become isolated.

2.5.3 Evacuation timing

The time to peak before the onset of fluvial flooding is approximately 10 hours in the 100 year ARI and 5 hours in the PMF (for critical storm durations) – refer Figure 1. Although other duration events may also impact the Site, they would have additional evacuation timing available.

It is expected that warnings would be issued by the BOM in advance of rainfall causing major flooding, the ability to evacuate would be evaluated based on BOM warnings. If evacuation does not occur and there is visual observations of flood waters within 0.5m (depth) of the northern boundary (top of kerb level), then all staff should immediately seek refuge at the nominated location above the PMF.

For pluvial rainfall driven events, evacuation timing is more difficult to predict as a localised storm cell may result in brief flooding occurring for 25 min or less. If ponding in Grand Avenue is observed, staff should remain at the building floor level (RL 4.13 m AHD) in an area that will provide safe passage to refuge above the PMF level should river flood waters rise.

2.6 Suggested emergency response measures

Flood education and emergency response training will be undertaken with all Site staff.

It will be the Site owners' responsibility to:

- Identify and nominate flood wardens and staff responsible for relocating vehicles and equipment to the building floor (RL 4.13 m AHD) so that it is not damaged during a major flood.
- Conduct Flood awareness workshops for employees at regular 6 monthly intervals to allow for staff turnover.
- Formalise pathways for distributing flood intelligence during the onset of a major flood so that they can take advantage of the warning time that is available. This can occur through interpretation of Bureau of Meteorology Flood Bulletins and SES flood warnings.

3 Construction phase

This section of the FERP will be updated following planning approval, nomination of a Site contractor and once construction methodology is established.

3.1 Site coordination

During the construction phase, Veolia and the nominated contractor will hold project coordination meetings in addition to formal and informal consultation to arrange how evacuation would be coordinated during the construction phase – with an emphasis on evacuation and safe refuge when refuge above the PMF is not available.

Following Site planning approval, and nomination of a Site contractor, a project organisational chart will be prepared and inserted into this document when a detailed construction plan is developed and a contractor has been nominated to complete the work.

It is important that BOM and SES advance flood warnings are monitored, appropriately understood so that the Site project manager is engaged to make the appropriate decisions.

3.2 Responsible persons

Following Site planning approval, and nomination of a Site contractor, key personnel involved in Site coordination will be identified, with their role described in this plan.

3.3 Procedures for reducing impacts

Following Site planning approval, nomination of a Site contractor and once construction methodology is fully understood, considerations for flooding will be incorporated into Site risk assessments and the Site Construction Environmental Management Plan (where appropriate).

All construction flood related risks will be documented within this FERP, with mitigation and response measures identified.

3.4 Recovery Plan

A Site recovery will be finalised once planning approval is received and a contractor is nominated. Generally during recovery the following should be observed:

1. **Road and surface structural damage.** Water damage to the subsurface layer could lead to instability. Drive slowly and carefully. Advise the Site project manager of any potentially hazardous areas and do not enter these.
2. **Power.** Site power should remain off until a qualified electrician checks any inundated or water effected power boxes and electrical equipment.
3. **Impacted or damaged equipment.** Equipment should be moved to safe positions.
4. **Erosion and sedimentation.** River banks, stockpiles, trenches, excavations, walls, bunds, berms and any other structures or construction areas (whether temporary or permanent) should be checked to ensure contents are stable and are functioning as per the sediment and erosion control plan.
5. **Water and wastewater systems.** These should be checked for damage and serviced immediately if required. Portable toilets should be serviced.

6. **Flood report.** If a flood greater than the year ARI occurs, a flood report would be prepared by a suitably qualified person(s). Contents of the report should include:
 - a. identification of the properties surrounding the Site and infrastructure (located on-Site) affected by flooding during the reportable event;
 - b. a comparison of the actual extent, level and duration of the flooding event against the impacts predicted in the flood study;
 - c. where the actual extent and level of flooding exceeds the predicted level with the consequent effect of adversely impacting on property, structures and infrastructure, identification of the measures to be implemented to reduce future impacts of flooding including the timing and responsibilities for implementation.
 - d. Flood mitigation measures would be developed in consultation with the Veolia and Parramatta City Council.

Further information on Site infrastructure that will require inspection during recovery can be found in the Construction Waste Management Plan and Erosion and Sediment Control Plan.

4 Operational Phase

This section of the FERP will be updated prior to construction completion.

4.1 Site coordination

If a flood event is anticipated or advance warning been given by the SES or BOM all vehicles parked at the front of the Site are to be relocated to designated areas inside the facility building with a floor level equal to greater than RL 4.13 m AHD (0.5m above the 100 year ARI).

It is important that BOM and SES advance flood warnings are monitored, appropriately understood so that the Site operations manager is engaged to make the appropriate decisions.

4.2 Responsible persons

Prior to Site operations commencing, key personnel involved in Site coordination will be identified, with their role described in this plan.

4.3 Procedures for reducing impacts

Prior to Site operations commencing, considerations for flooding will be incorporated into Site risk assessments and management plans.

All operational related flood related risks should be documented within this FERP, with mitigation and response measures identified.

Training and educational material will be provided for all employees outlining roles, responsibilities and what to do during a flood event.

4.4 Recovery Plan

A Site recovery will be finalised prior to Site operation.

Generally during recovery steps outlined in Section 3.4 should be adhered to. Steps will be refined prior to Site operation.

5 References

Australian Water Resources Council (1992) Floodplain Management in Australia, AWRC Management Series, No.21, Department of Primary Industries and Energy.

CH2M HILL (2015), Camellia Recycling Centre – Alternative Design #1 Flood Model, prepared for Veolia Environmental Services.

CH2M HILL (2013a), Camellia Recycling Centre – Flood Study, Revision 1, prepared for Veolia Environmental Services.

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CH2M HILL (2014), Camellia Recycling Centre – Flood Study Rev 1, Response to Request for Additional Information.

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NSW Government (2005), *Floodplain Development Manual – the management of flood liable land*, April 2005.

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Parramatta City Council (2010), Parramatta Local Disaster Plan (DISPLAN).

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SKM (2005b), Lower Parramatta River: Floodplain Risk Management Study – Flood Study Review, Final, May 2005.

Appendix A

Flood Maps

20 year ARI

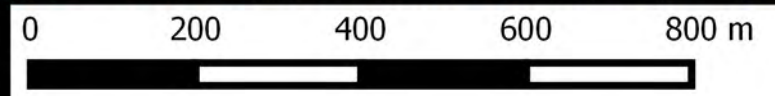


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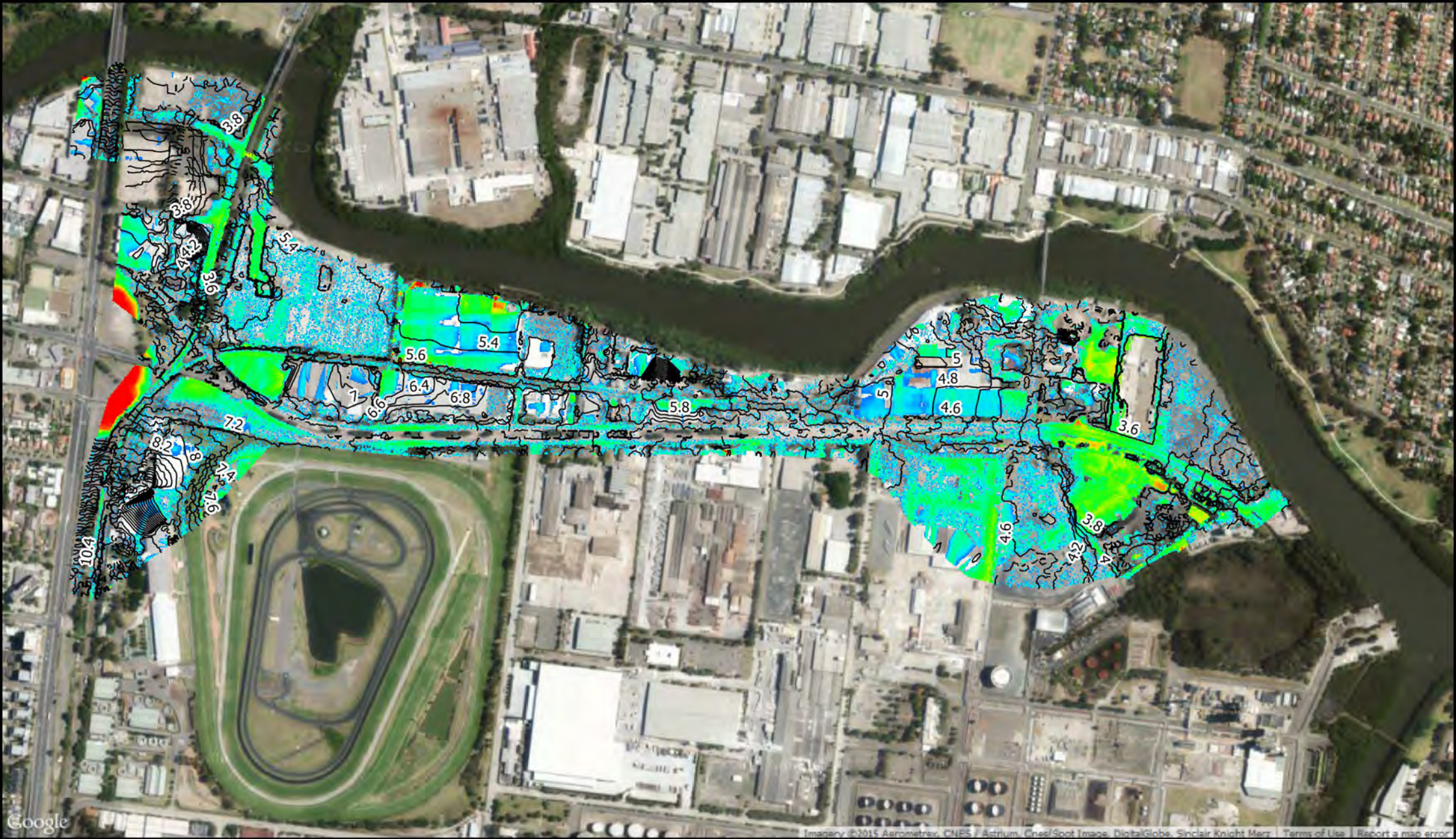
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Legend

■ <-0.5	■ -0.1 - -0.02	■ 0.2 - 0.3
■ -0.5 - -0.3	■ -0.02 - 0.02	■ 0.3 - 0.5
■ -0.3 - -0.2	■ 0.02 - 0.1	■ 0.5 +
■ -0.2 - -0.1	■ 0.1 - 0.2	



Design Impact 20yr 25minLocal LowFlowRiver event



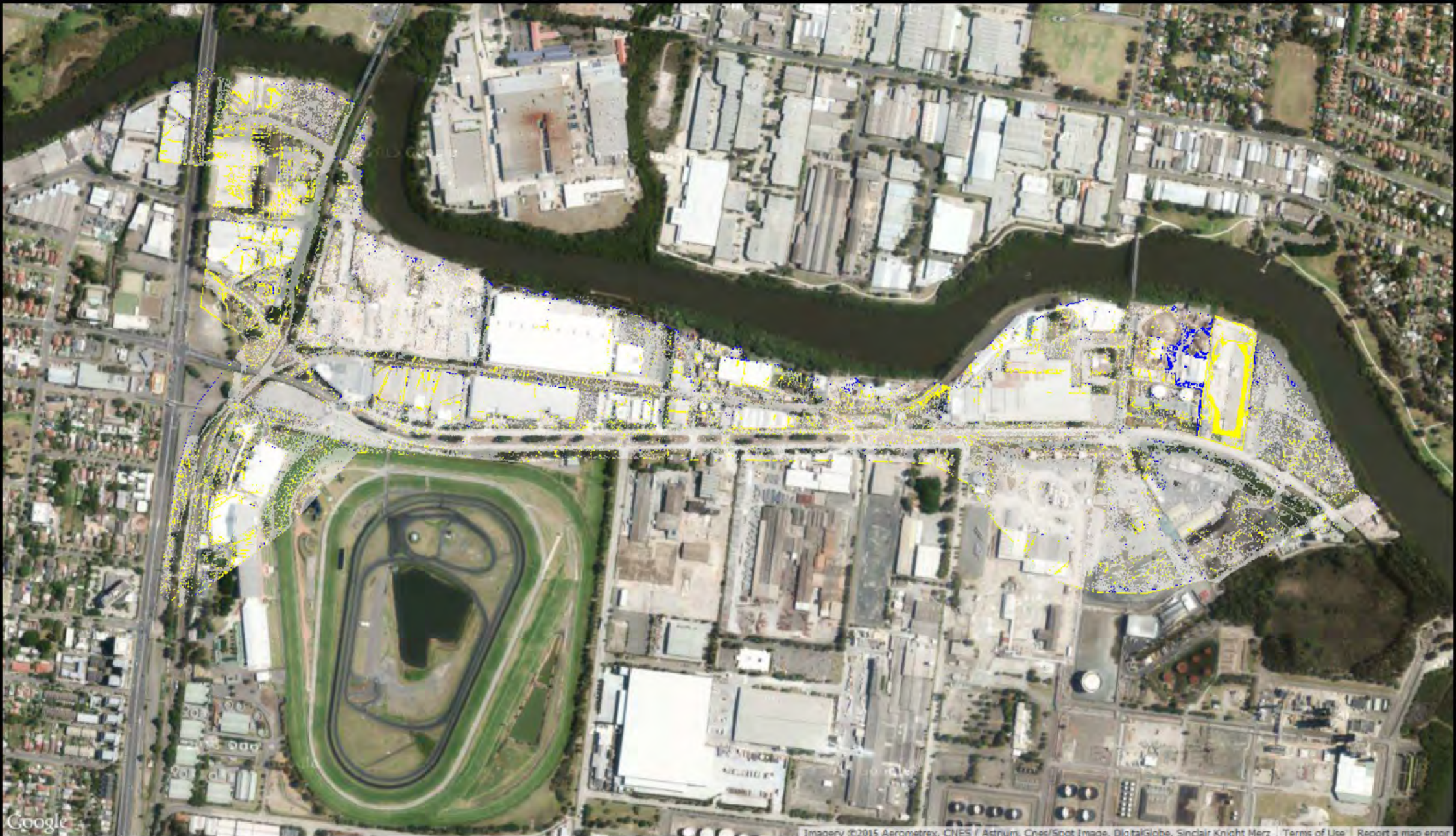
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|-------------|-----------|-------------|
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| 0.05 - 0.1 | 0.6 - 0.8 | 2.0 - 6.0 |
| 0.1 - 0.2 | 0.8 - 1.0 | Water Level |
| 0.2 - 0.4 | 1.0 - 1.5 | |

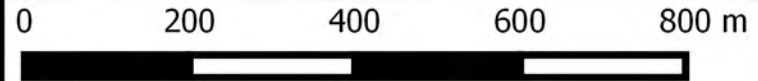
0 200 400 600 800 m



Maximum Depth (m) Design_20yr_25min_LowFlow

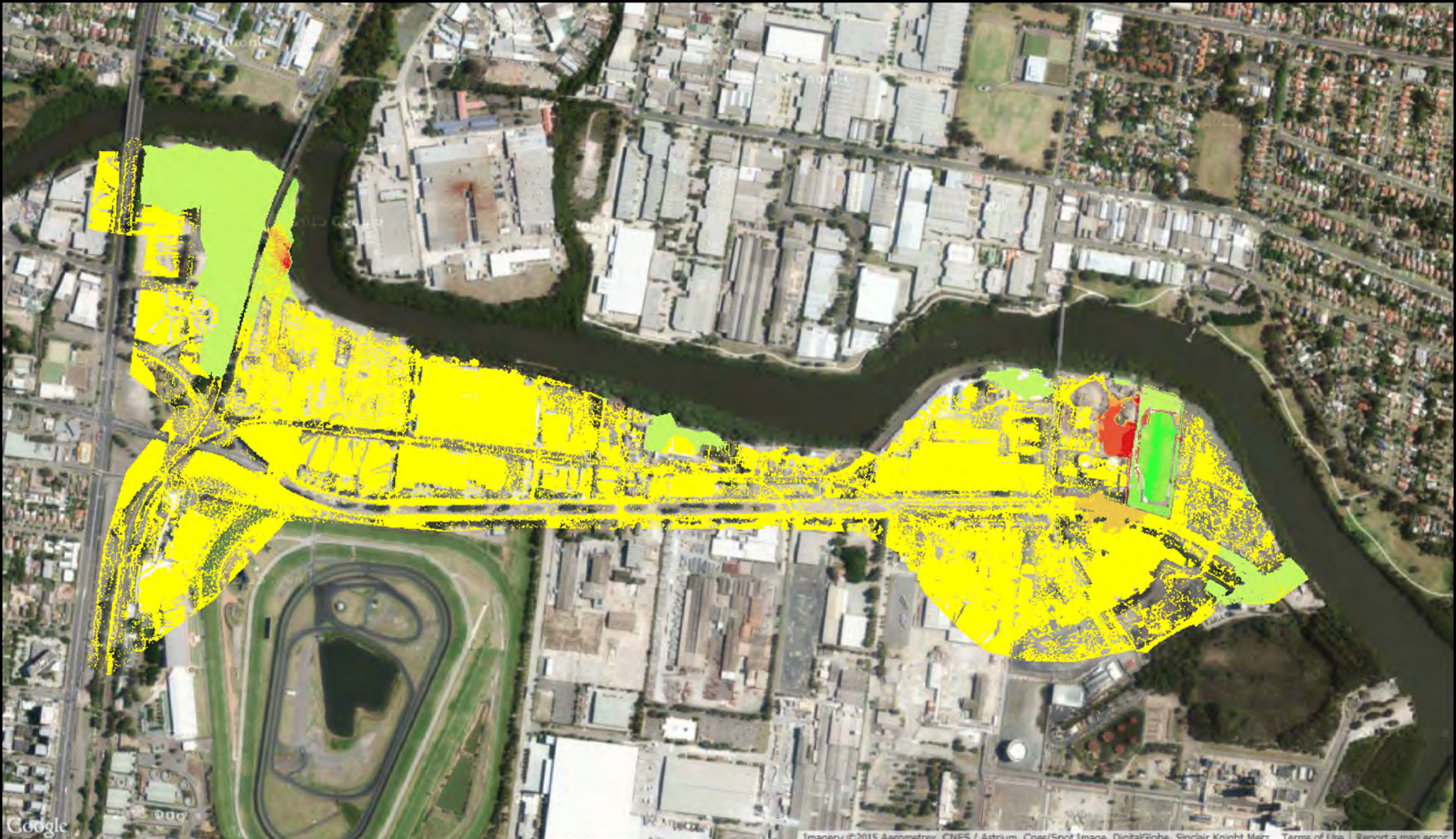


- Legend**
- Once Wet now Dry
 - Once Dry now Wet
 - Extent of maximum basecase flooding














**Comparison of Wet and Dry Cells
20yr_25min_LowFlow**

100 year ARI



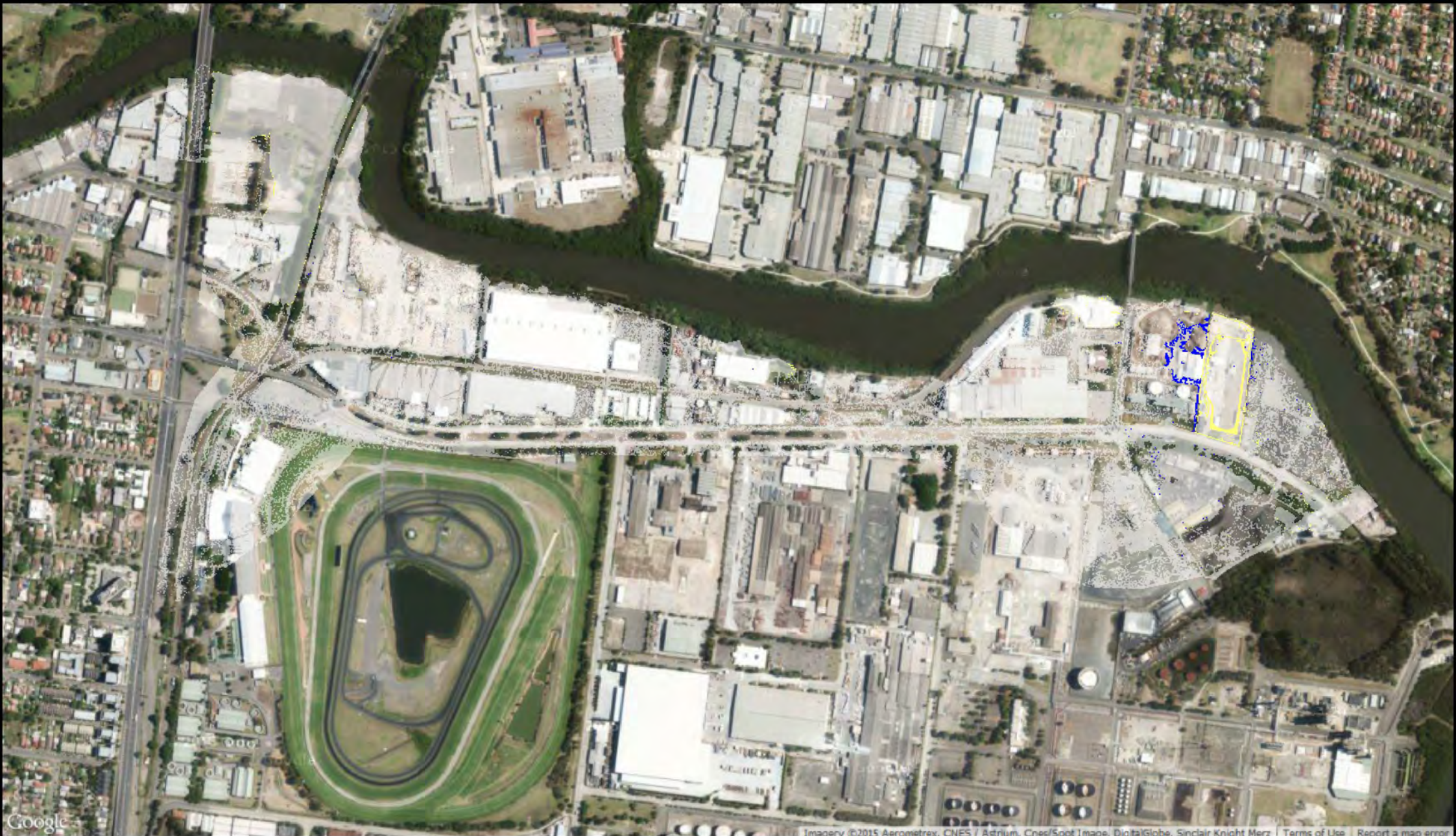
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 <-0.5	 -0.1 - -0.02	 0.2 - 0.3
 -0.5 - -0.3	 -0.02 - 0.02	 0.3 - 0.5
 -0.3 - -0.2	 0.02 - 0.1	 0.5 +
 -0.2 - -0.1	 0.1 - 0.2	

0 200 400 600 800 m



Design Impact 100yr 12hrLocal 9hrRiver event



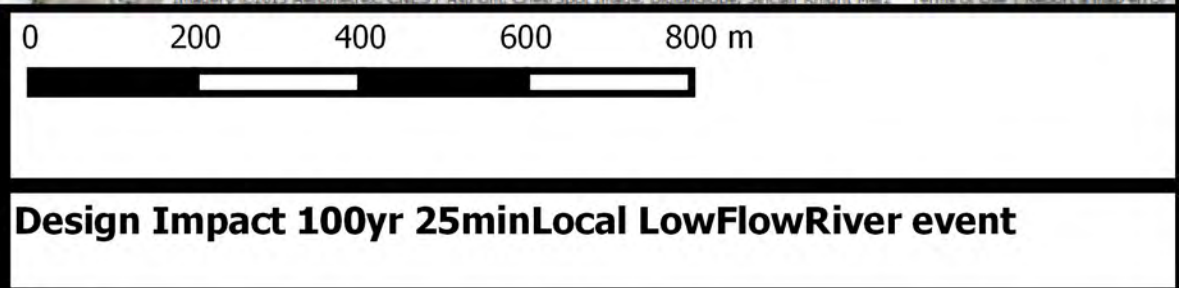
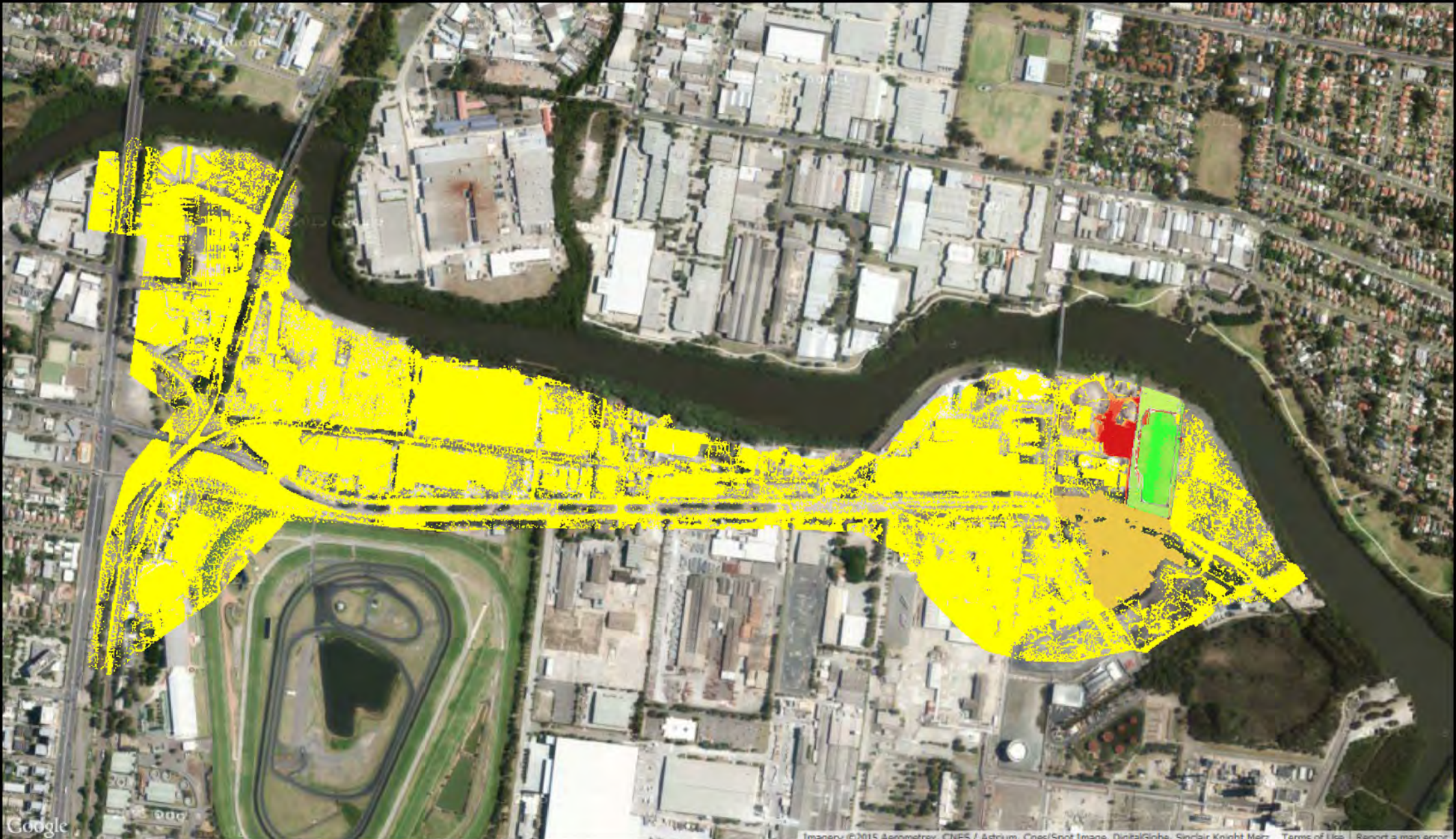
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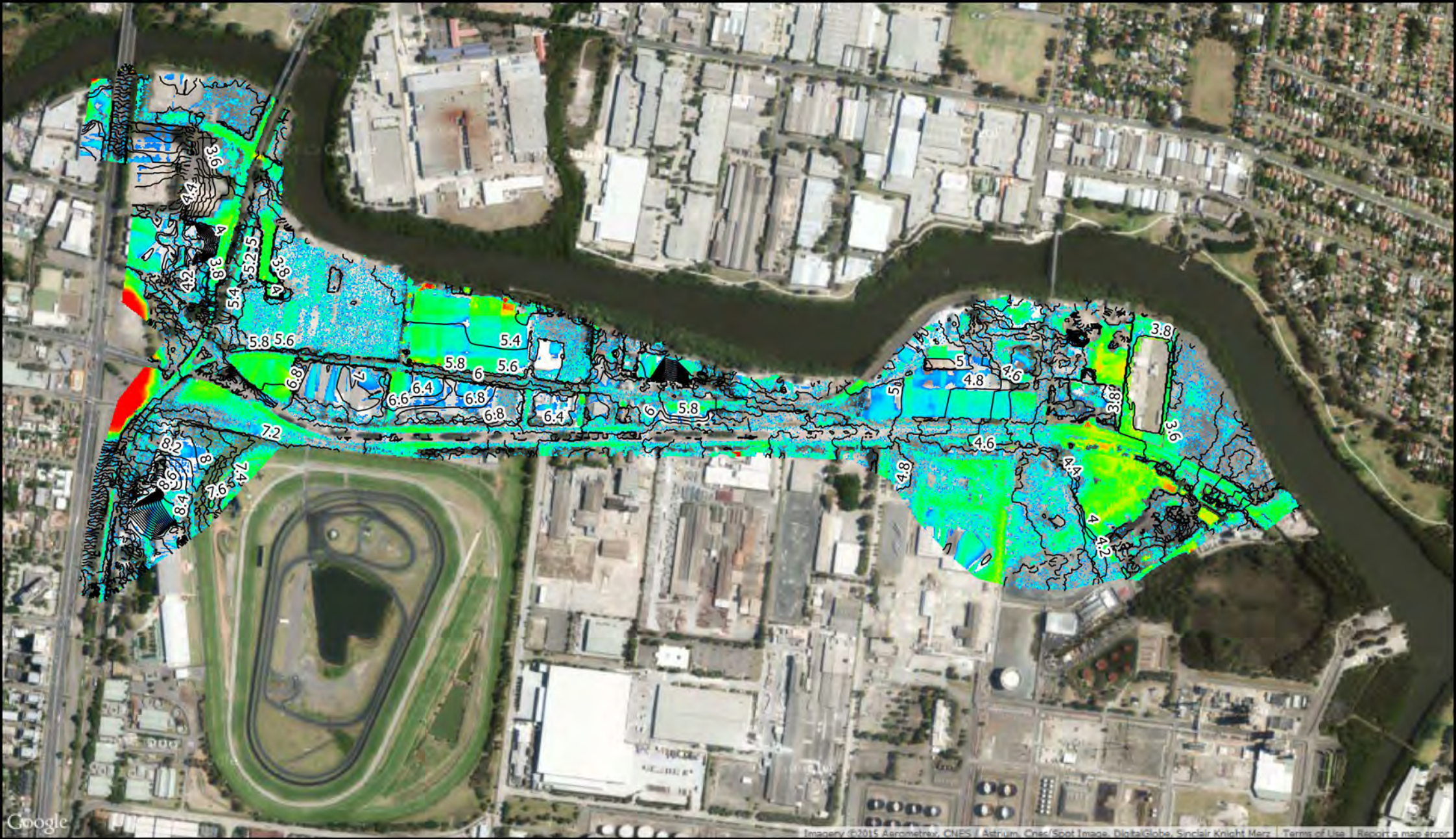
- Once Wet now Dry
- Once Dry now Wet
- Extent of maximum basecase flooding

0 200 400 600 800 m



**Comparison of Wet and Dry Cells
100yr_12hr_9hr**





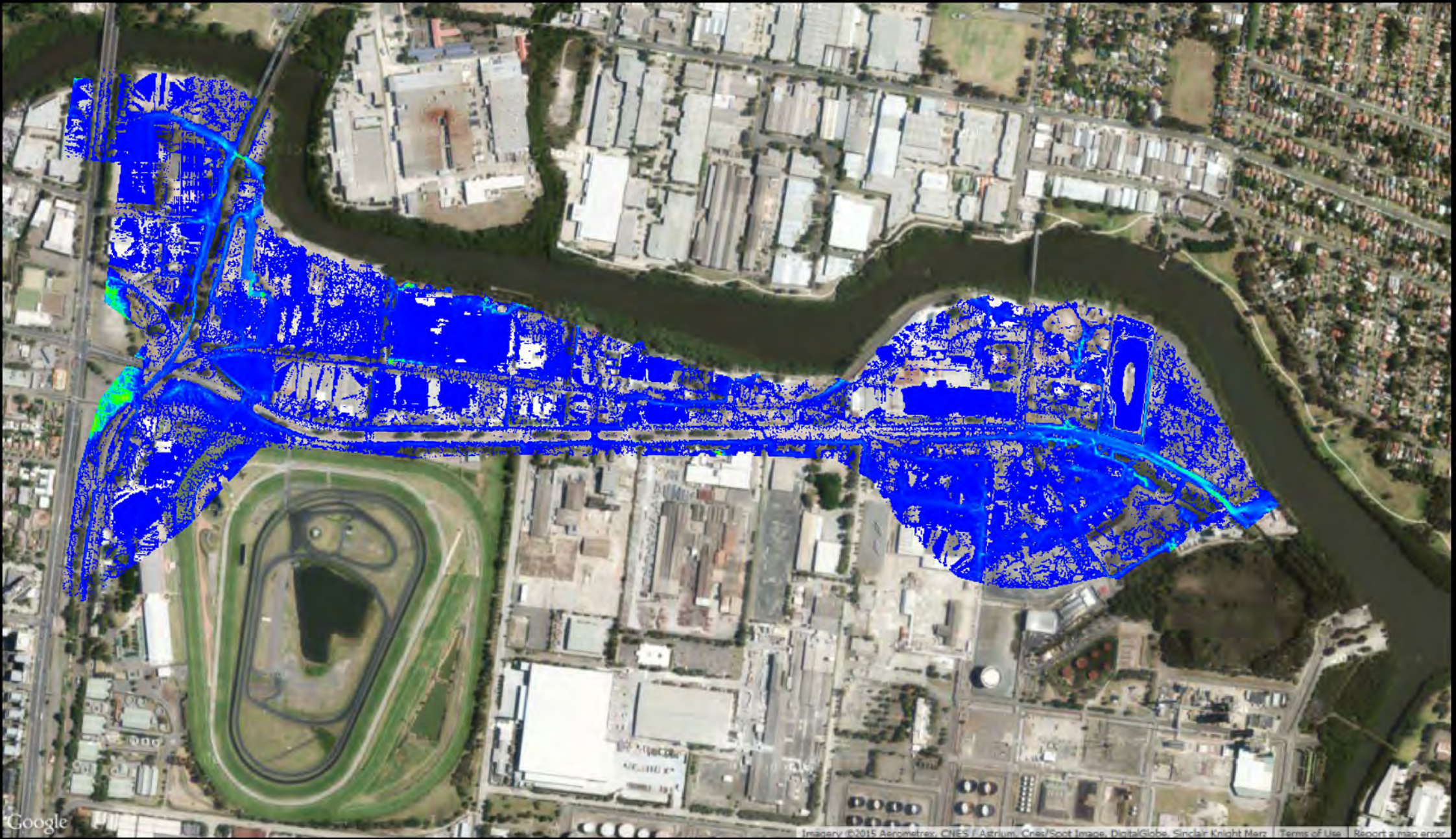
Legend

0.01 - 0.05	0.2 - 0.4	1.0 - 1.5
0.05 - 0.1	0.4 - 0.6	1.5 - 2.0
0.1 - 0.2	0.6 - 0.8	2.0 - 6.0
	0.8 - 1.0	

0 200 400 600 800 m



Maximum Depth (m) Design_100yr_25min_LowFlow



Google

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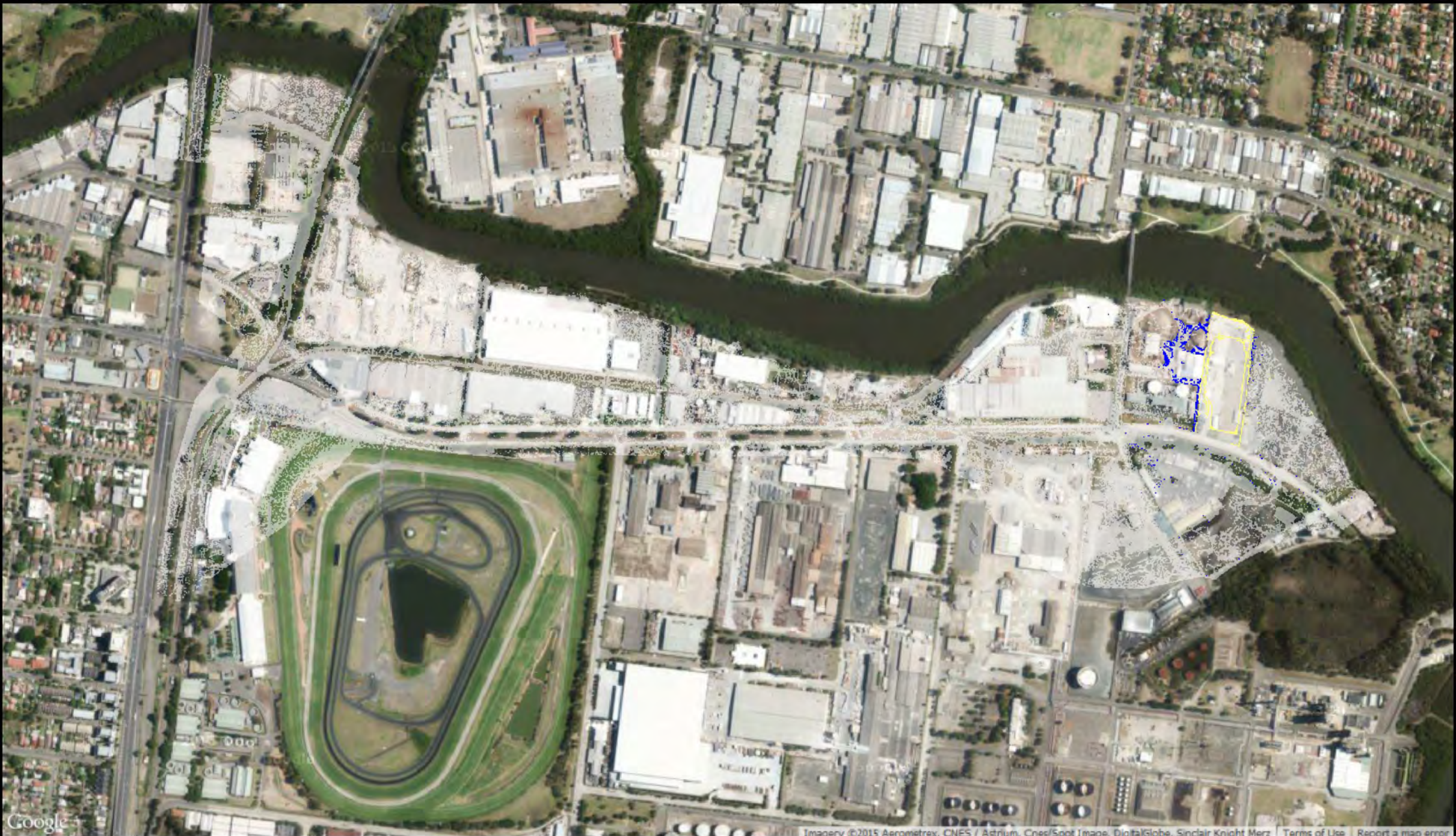
Legend

0	0.2 - 0.3	2.0 - 3.0
0 - 0.1	0.3 - 0.4	3.0 - 4.0
0.1 - 0.2	0.4 - 1.0	4.0 +
	1.0 - 2.0	

0 200 400 600 800 m



Hazard Design_100yr_25min_LowFlow



Legend

- Once Wet now Dry
- Once Dry now Wet
- Extent of maximum basecase flooding

0 200 400 600 800 m



**Comparison of Wet and Dry Cells
100yr_25min_LowFlow**