MEMO

ARCADIS Design & Consultancy for natural and built assets

Date	28/03/2018
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From	Westley Owers (Arcadis)
Copy to	Andrew Wiltshire (Tactical Group), Richard Johnson (Aspect), Shannon Blackmore (Arcadis), Ketan Patel (Arcadis), Stuart Hill (Arcadis)
Subject	Moorebank Precinct West (MPW) – DP&E comments January 2018

1. Introduction

The purpose of this technical memorandum is to respond to the 'Request for Information' (letter dated 16/01/2018[1] from Karen Harragon- Department of Planning and Environment (DP&E)) regarding both the MPW Stage 2 (SSD 7709) and MPW Concept Modification (SSD 5066 MOD 1) Applications. This memorandum provides SIMTA's collated response to the Request for Information that has been informed by presentation of draft documentation progressively at DP&E meetings with the Approvals team (12/02/2018 and 12/03/2018).

The information provided within this memorandum provides DP&E with the requested documentation to enable progression of the MPW Stage 2 Proposal (the Proposal) and MPW Concept Modification.

Table 1 provides a summary of the information provided within this memorandum.

Table 1 SIMTA response to DP&E Request for Information (dated 16 January 2018)

Topic	Requested information	Corresponding MPE Stage 2 CoC	Reference
Water sensitive urban design, drainage and landscaping	Review of the Alluvium Review Report (dated 16 November 2017).	N/A	Refer to separate submission.
	Amended Development plans	A22-A24 / B40	Refer to separate submission which responds to the Alluvium Review Report. Amended development plans subject to further discussions with DP&E.
	Urban Design and Landscape Plans	B140	Refer to Section 2.1/ *Appendix A*
	Landscape Vegetation Management Sub Plan	B141(a)	Refer to Section 2.2.
	Bushfire Management	B143 / B144	Refer to Section 2.3.
	Lighting Sub Plan	B141(b) and (c)	Refer to Section 2.4 / *Appendix B*.

[1] This letter was received in early January 2018 and therefore we believe that "2017" is to read "2018".

Topic	Requested information	Corresponding MPE Stage 2 CoC	Reference
	Cycling and Pedestrian Access and Facilities Sub Plan	B141(d)	Refer to Section 2.5 / *Appendix C*.
	Employee Outdoor Meal Break sub plan	B141(e)	Refer to Section 2.6 / *Appendix D*.
	Signage Sub Plan	B141(f)	Refer to Section 2.7 / *Appendix E*.
	ESD	B142	Refer to Section 2.8.
Works in the Georges River riparian zone	Maps and plans	N/A	Refer to Section 3 / *Appendix F*.
Urban heat island effect	Urban Heat Island Mitigation Strategy	B139	Refer to Section 4.
Contamination and remediation	MPW Stage 1 contamination works	N/A	Refer to Section 5 / *Appendix G*.
Staging	Staging plans and details	N/A	Refer to Section 6 / *Appendix H*.
Concrete batching plant	Concrete batching plant details	N/A	Refer to Section 7 / *Appendix I*
Port shuttle operations – noise and air quality	Best Practice Review	N/A	Refer to Section 8.
Satisfactory arrangements		N/A	Refer to Section 9.
Land owners' consent		N/A	Refer to Section 10.
Plans, architectural drawings and diagrams		N/A	Refer to Section 11 / *Appendix J*

2. Urban and Landscape design

2.1 Urban Design Landscape Plan

A Landscape Design Statement and Plans have been prepared and are provided at *Appendix A* of this memorandum. This plan provides the equivalent level of detail as that required in CoC B140 of the MPE Stage 2 Consent. In particular, it details the following:

- Identification of design objectives and principles with a particular focus on using plant species endemic to the Liverpool Local Government Area (LGA)
- Ensuring that landscaping provides a visual buffer to surrounding residential receiver and 'softens' the potential visual impact of the development including:
  - Moorebank Avenue / Wattle Grove – landscaped setback on average of 18 m along the Moorebank Avenue frontage, which will provide screening of the proposed built form from the roadway and Wattle Grove.
  - Casula – retention of the conservation area (riparian corridor) along the Georges River coupled with landscaped areas on the eastern side of the permitter road which would predominately screen direct views to warehouses from Casula.
- All vegetation would be removed within the construction area, however, within areas of high quality intact native vegetation proposed to be removed (i.e. within the construction area) (refer to the mitigation measures (No. 4F) in Section 8 of the RtS):
  - Topsoil (and seedbank) would be collected from native vegetation areas that are to be permanently cleared for use in the revegetation of riparian areas
  - Where feasible and reasonable native plants in areas that are to be permanently cleared would be relocated and transplanted in riparian areas identified for rehabilitation
- Pedestrian movement through the site would generally adjoin and be integrated into landscaped areas with a series of connected pathways along the internal road network (refer also Section 3.4 of this memorandum).

In addition to the identified requirements of the CoC B140 (within the MPE Stage 2 Consent) compliance with the key landscaping design criteria is demonstrated in this submission. A response to the landscape design criteria requested in CoC B140(e) is provided in Table 2. In addition to the Landscape Design Statement and Plans, measurements of landscape areas have been provided on the Landscape Measurement Plan also included at *Appendix A*.

Table 2 CoC B140(e) (MPE Stage 2 Consent) – MPW Stage 2 compliance with design criteria

CoC B140(e) criteria	Response
A minimum landscaped width of 10m within the 18 m setback from Moorebank Avenue	A setback of 18 m (landscaping and OSDs) and 10 m (landscaping) has been provided on average along the Moorebank Avenue frontage. One location where a reduced setback (3.1 m) has been provided is adjacent to the main entrance to the MPW Stage 2 site. This reduced setback is required at this location to accommodate the upgrade to the Moorebank Avenue / Anzac Road intersection and is considered acceptable because the total setback area (landscaping and OSDs) is greater than what would have been achieved by a uniform 18 metre setback. Regardless of this reduced setback landscaping would provide a visual screen between Moorebank Avenue and the MPW Stage 2 Proposal. Further, at this location warehousing is setback

CoC B140(e) criteria	Response
	(approximately 173 m) from Moorebank Avenue and the setback is to a locomotive shifter (which is a piece of inground infrastructure with minimal negligible visual bulk). This further reduces any visual impact.
the footprint of the warehouses along the eastern boundary[2] must be reduced so that the car parking area and warehouse can be setback a minimum of 5 m from the eastern internal road to provide visual screening of the building, and adequate landscape width to support canopy trees	A 5 m setback on the western boundary from the perimeter road to the car parking and warehousing has been provided. This landscaped setback, along with the conservation area, would provide visual screening of the buildings from both the perimeter road (users of the Proposal) and Casula. These landscaped areas would also be of an adequate width to accommodate canopy trees.
landscaping located around the car parking areas is to support sufficient canopy trees to provide visual screening to the warehouse buildings;	Landscaping has been located around the car parking areas to accommodate canopy trees and provide visual screening of the car parking areas and warehousing from the internal road network.
15% of the site landscaped at ground level, 10% of which must include soft landscaping and not include land set aside for future access ways;	Based on an operational area (not including the conservation area) of 9.5 ha[3], the Proposal includes soft landscaping (grass, planted areas and OSDs) totalling 188,681 m^2 (19.91% of the operational area). This area does not include any land set aside for future development (i.e. the southern part of the MPW site). In addition to this a conservation area (retained and rehabilitated bushland) is included in the Proposal which comprises another 3.4 ha of soft landscaping. This further adds to the landscaped areas, reducing potential visual impacts and improving general amenity across the Proposal site.
minimum rate of 1 canopy tree per 30 m^2 of landscaped area	The landscaped area would include 1 canopy tree per 30 m^2 of landscaped area (as an average across the Proposal site) for soft landscaping in accordance with the control, i.e. 10% of the site area. Retained trees and proposed canopy trees are shown on the landscape plans included in Appendix B of the MPW Stage 2 RtS. The incorporation of canopy tree planting into car park areas is illustrated by **Error! Reference source not found.**.
a 2.5 m wide landscaped bay every 6-8 car spaces incorporating canopy trees for shade;	It is understood that the objective of this requirement is to provide shade within the car parking area to soften the industrial visage of the site and to provide benefits in respect of reducing urban heat island potential. Three approaches[4] to addressing this requirement and have been recently provided to DP&E for consideration. These approaches are described below and illustrated in more detail by the drawings included in *Appendix A*:

[2] For the purposes of applying this to MPW Stage 2 it is assumed that this would refer to the western boundary.

[3] This area is shown in Appendix B and includes only the operational area for the Proposal, i.e. not the area on the southern part of the Proposal site that is intended to be utilised for future development.

[4] Note that it may be appropriate to use two or more of these approaches throughout the site (rather than selecting a single approach and applying it uniformly).

CoC B140(e) criteria	Response
	• Provision of a 3.0 m wide planting bed at selected locations on the car park perimeter to promote the healthy establishment of compact canopy trees • Provision of turf growing in turf cell product every 6-8 car spaces and establishment of adjacent compact native planting using proprietary tree cell system • Provision of permeable paving every 6-8 car spaces with establishment of adjacent compact native planting using proprietary tree cell system. Note that for car parking that adjoins a warehouse, landscaping would not be provided as in this instance provision of a canopy tree would impact on the structural integrity of the warehouse and associated underground services. Further, the majority of this car parking (immediate eastern side of warehouse) would be shaded by the warehouse in the afternoon.
perimeter site screening using advanced shrubs and canopy trees;	Perimeter site screening along Moorebank Avenue and also the western site boundary would utilise advanced shrubs and canopy trees. Refer to the landscape plans included in Appendix A of this memorandum which include a planting schedule, including pot sizes.
perimeter and on site detention and biofiltration/bioretention basin fences higher than 1.2 m must be transparent and dark in colour but not constructed of chain wire.	Perimeter fences on the Proposal site for OSDs would be a minimum of 1.2 m in height and transparent and dark in colour, however not be constructed of chain wire. Figure 1 provides examples of the types of fencing that would be utilised for security fencing around OSDs.
include a planting schedule including details of the soil specification and depth and irrigation systems as well as tree and shrub species, expected mature height, pot sizes and planting densities) and deep soil areas containing soil (not spoil);	The Landscape Design Statement and Plans included in Appendix B of the MPW Stage 2 RtS, includes planting schedules with species, mature heights and pot sizes. The soil used for landscaping purposes will be low in phosphorous content as required by native plant varieties. The soil mix specification will be designed to promote the optimum growing conditions for the plant species identified in the landscape plans. The soil mix will be comprised of a sandy to clay loam topsoil mix designed for mass planting of grasses, woody and herbaceous perennial planting. Site-won topsoil will be considered for re-use for landscaping requirements, following analysis by a soil testing laboratory (e.g. Sydney Environmental & Soil Laboratory (SESL)) and would be remediated as deemed necessary to meet the fit-for-purpose application on site. All of the proposed landscaping would be in 'deep soil', therefore the soil profile would be a minimum of 200mm for turf, 400mm for shrubs and mass planting and 450mm for trees over a 45 litre bag installation size. A low-volume drip irrigation system would be provided to support establishment and maintenance of proposed site landscaping. The irrigation rates and / or centres of irrigation outlets would take into consideration the requirements of nominated plant species, with advice on water rates to be sought from supply nurseries as required. Unless recommended otherwise by the manufacturer, all work would be carried out using equipment and installation process as outlined in the relevant Australian Standards and industry codes. The product

CoC B140(e) criteria	Response
	would be NETAFIM range (or equivalent) including controller(s), inline drip emitter tube, solenoid, valves, pressure valves, air and low drainage valves.
a description of the retaining walls, including the graphics such as sections, perspective views and material details;	Plans showing the location and design retaining walls have been provided at *Appendix A*. Retaining walls would be of variable height (to a 4.2 metre maximum) and would be concrete formed finish. Walls would be backfilled to specified levels. In addition to being obscured screening vegetation, western facing wall faces would be painted in suitable colours to minimise visual prominence.
details of the landscaped areas and solid fencing required to screen waste bin or other outside storage areas;	Waste bins screening, which would be located adjacent to warehouse buildings (generally in areas adjacent to the loading docks) would be undertaken through slat fencing Colorbond® (or similar) as shown in Figure 2 and Figure 3.
graffiti management commitments and provisions;	As discussed in the Consolidated Proposal Description (Section 4.4.7 of Appendix O of the RtS), the Proposal includes a number of on-site security measures to ensure the protection and safety of the Proposal site, its employees and authorised visitors. Security at the Proposal site would include: • Fencing around the perimeter of the Proposal site, and the Rail link connection, along the Moorebank Avenue boundary • A controlled circuit television (CCTV) security system at key locations including site entrances and along boundaries • An integrated telecommunications system which involves connection to all main buildings and structures. With restrictions on access, active surveillance and opportunities for passive surveillance, the risk of graffiti within the Proposal site is considered to be low. There is the potential for external signage to be subject to graffiti, however the CCTV monitoring should reduce this risk. Regardless, should graffiti of external signage be encountered the site operator would be responsible for cleaning this graffiti. Consistent with principle of maintaining well cared for spaces outlined in *Crime prevention and the assessment of development applications Guidelines under section 79C of the Environmental Planning and Assessment Act 1979* (Department of Urban Affairs and Planning, 2001), graffiti would be removed soon after it is identified. In most instances, it is anticipated that any graffiti to external signage would be removed by the operator within 48 hours of the incident. If graffiti has offensive content, more immediate removal would be organised.

Figure 1 Example of OSD security fencing – mesh fencing (or similar)

Figure 2 Example of screening – slat fencing colourbond (or similar)

Figure 3 Example of waste bin screening – slat fencing colourbond (or similar)

The landscape design for the Proposal site would integrate with other key plans and key aspects of the Proposal as discussed in Table 3.

Table 3 Landscape design and integrating with other key aspects (and plans) for the Proposal

Element	Approach
Stormwater Management	• Soft landscaping has been provided along the perimeter of the Proposal site to maximise the opportunities for infiltration • Soft landscaping (biofiltration medium) is also proposed within the OSDs to allow for filtration of stormwater prior to discharge and also to improve the visual amenity of the Proposal site • Landscaping chosen is native and therefore requires minimal irrigation to both improve the visual amenity of the Proposal site and reduce site demand for water.
Heritage Interpretation	• Provision has been made to accommodate on-site heritage interpretation options such as interpretative panels, paving inlays, balustrades with panels and naming elements within the landscaping. • Finalisation of interpretive media and locations will be detailed in a Heritage Interpretation Plan.
Urban Heat Island	• A key element of the approach to minimising potential Urban Heat Island (UHI) effects is the provision of the landscaping across the site which as demonstrated above would achieve the expectation of 15% of landscaping (at ground level) and 10% of soft landscaping. Landscape plantings reduce UHI affects through increased levels of evapotranspiration. • The landscape design allows for shading on the site with the provision of 1 canopy tree per 30 m^2 and the incorporation of canopy trees into car parking areas.
Flora and Fauna	• All vegetation would be removed within the construction area, however, within areas of high quality intact native vegetation proposed to be removed (i.e. within the construction area) (refer to the mitigation measures (No. 4F) in Section 8 of the RtS): – Topsoil (and seedbank) would be collected from native vegetation that are to be permanently cleared for use in the revegetation of riparian areas – Where feasible and reasonable native plants in areas that are to be permanently cleared would be relocated and transplanted in riparian areas identified for rehabilitation • Landscaping on the Proposal site (surrounding the operational areas) has been designed to provide a transition to conservation area and includes plant species that are compatible with, and do not compromise the viability of, those in the surrounding conservation area. • As the plant species includes those endemic to the Liverpool LGA they would provide habitat capable of supporting endemic native fauna.
Bushfire	• On-going landscaping maintenance requirements that would contribute to a reduction in bushfire threat have been identified. Refer also to Section 3.3 of this memorandum.
Outdoor eating areas	• Soft and hard landscaping would be proximate to outdoor eating areas to improve amenity for site employees.

2.2 Landscape Vegetation Management Sub Plan

CoC B141(a) of the MPE Stage 2 requests that a Landscape Vegetation Management Sub Plan be prepared as a sub-plan to the UDLP. A summary of the approach to landscape vegetation management for the MPW Stage 2 Proposal, in accordance with the requirements of CoC B141(a), is provided in Table 4.

This Landscape Vegetation Management Sub Plan would only relate to landscaping areas within the Proposal site and would not include the conservation area as this is subject to management measures under a biobanking agreement that is currently under review by the Office of Environment and Heritage (OEH).

Table 4 landscaping management and monitoring

MPE Stage 2 SSD 7628 CoC B141(a) requirements	Comments
Monitoring and maintenance procedures for landscape vegetation, rehabilitated vegetation and landscaping	All existing vegetation within the construction area would be removed (or where reasonable and feasible be relocated outside of the on-site landscaped area and into the conservation area) and therefore there would be no opportunity for on-site rehabilitation of existing plants. The approach to monitoring and maintenance of landscaping and landscape vegetation is outlined below. *Inspections:* Regular landscape maintenance inspections would be conducted to identify landscaping that requires rectification/repair and areas of landscape planting that are in poor health. *Watering:* Planted and grassed areas would be watered regularly to ensure continuous healthy growth. A low-volume drip irrigation system would be installed for this purpose. *Weeding & rubbish removal*: Weeds would be regularly removed from around the base of the trees, planting areas, mulched areas and paths so that the landscape contract areas may be observed in a completely clean and tidy condition, free from rubbish and weeds. All weeds, debris, clippings, etc. would be bagged and removed off site as soon as possible by the landscape contractor. Under no circumstances would the landscape contractor either burn off or stockpile weed clippings etc on site. *Replacements:* Failed, damaged or stolen plants would be replaced as required. Any plants which die during the initial maintenance period due to inadequate or incorrect maintenance by the construction contractor, would be replaced by the contractor. Plants lost due to vandalism or theft during the initial maintenance period, beyond the control of the contractor, would be replaced SIMTA. *Mulched surfaces*: Mulched surfaces would be kept in a clean and tidy condition. Mulch would be periodically reinstated to the depths as specified. Mulch would be swept from other paved surfaces. *Stakes and ties:* Stakes and ties would be adjusted and replaced where required. *Insecticide and fungicide treatment*: All occurrences of insect attack or disease in landscape vegetation would be treated. *Pruning:* Pruning work would occur to maintain dense foliage conditions and encourage suitable growth habits. Any branches overhanging or obstructing pathways and roads would be removed. An approved wound dressing would be applied to all cut surfaces in accordance with the manufacturer's instructions.

MPE Stage 2 SSD 7628 CoC B141(a) requirements	Comments
	Specified levels: Specified levels would be made good by lifting mulch, removing or adding topsoil mix, and replacing mulch to the required level.
Performance indicators	The following performance indicators would guide the monitoring and maintenance of landscaping and landscape vegetation. • Number of recorded instances of vegetation mortality, dieback, insect attack or fungal infection • Maintenance of landscape area percentages and canopy tree numbers as identified by the landscape plans included in *Appendix A.* Trends reporting on performance indicators would be used to guide any necessary rectifying actions.
Commitments	The following specific commitments are made in relation to the monitoring and maintenance of landscaping and landscape vegetation: • Undertake regular landscape maintenance inspections focussing on integrity of hard landscape elements, health of landscape vegetation and function of the irrigation system. • Undertake an annual arboreal health check in relation to canopy trees, seeking advice from an AQF5 qualified arborist in relation to trees identified as being in poor health or having potential structure defects. • Remove weeds on a regular basis to limit the spread of weeds and minimise competition with landscape vegetation. • Replace failed, damaged or stolen plants when identified to maintain committed landscape area percentages and canopy tree numbers.
Responsibilities (SIMTA and tenants)	The operator would be responsible for the monitoring and maintenance of landscaping on the Proposal site. All monitoring and maintenance would be managed by a singular entity (the operator) for the site, rather than individual tenants. These obligations would be documented within the OEMP for the MPW Site (as per equivalent condition of MPE Stage 2 consent).
Management of common land	Refer to comments above. The operator would be responsible for all landscaping management across the Proposal site.
Timing and duration for management	The operator would undertake regular maintenance of vegetation throughout the Proposal site for the life of the Proposal. The timing of maintenance would be based on seasonal conditions (i.e. influence of weather events and seasonal influence on plants).
Contingencies should landscaping fail	Should landscaping be determined to have failed, i.e. vegetation perished, then it would be replaced with vegetation that would provide a similar landscape function as soon as reasonable and feasible.

2.3 Bushfire Management

A Bushfire Protection Assessment (Appendix W of the EIS) has been previously prepared for the Proposal to consider the potential bushfire threat. A mitigation measure ((No 13B), Section 8 of the RtS) has been identified to reduce the threat of bushfire to the Proposal (during operation), and includes the following:

- A bushfire management strategy, (including a fire safety and evacuation plan) or equivalent, would be prepared as part of the OEMP and would include the following measures:
  - Management of the landscaped areas within the Proposal site would be undertaken to maintain minimum dry fuels loads
  - The full width of the Rail Link connection would be maintained in a low fuel state
  - Protocols would be developed for the monitoring of train access/egress during high – catastrophic fire weather days.

These mitigation measures address the equivalent requirements of CoC B143 / B144 of the MPE Stage 2 Consent.

2.4 Lighting

A summary of the approach to management of lightspill for the MPW Stage 2 Proposal, in accordance with the elements to be addressed within MPE Stage 2 SSD 7628 CoC B141(b) and (c), is provided in Table 5. A Lighting Plan for the Proposal has been included at *Appendix B*.

Table 5 MPW Stage 2 compliance with B141(b) and (c) of the MPE Stage 2 Consent

MPE Stage 2 SSD 7628 CoC B141(b) and (c) requirements	Comments
a Lighting Sub Plan to assist in the control of lighting and reduce the visual impact of the 24 hour operational facility when viewed from residents within residential areas within the locality. The Plan must provide an assessment of the location, design specification and impacts of operational lighting associated with the development and measures proposed to minimise lighting impacts and standardise lighting design within the MPE development. The Plan must be prepared and approved by the Secretary. The Applicant must ensure that the lighting associated with the development:	A Light Spill Assessment was included in Appendix T of the MPW Stage 2 EIS. The assessment specifically considers lighting location (Section 5.6), lighting design (Section 5.4) and lighting impacts in the local area, including the contribution and impacts of the Proposal on light spill at the local scale and to sensitive receivers. Mitigation measure 8C in the MPW Stage 2 RtS (Section 8) reflects the findings in Section 8.7 of the Visual Impact Assessment (also in Appendix T of the MPW Stage 2 RtS) and identifies the following for mitigation of light spill: • Design of lighting to minimise impacts on surrounding existing and future residents and the proposed conservation zone • Use of shields on luminaire lighting to minimise brightness effects would be considered • Selection of asymmetric light distribution-type floodlights as part of the proposed lighting design (i.e. the light is directed specifically to the task with minimal direct light spill to the surrounding area) • Consideration of low reflection pavement surfaces to reduce brightness • Minimising the quantity of light and energy consumption in parts of the Proposal site that are not active, while retaining safe operation. The lighting plan included in *Appendix B*, which provides updated details lighting throughout the site, reflects a standardised lighting design which uses three luminaire types, one for warehouse lighting and two for lighting of roads, consistent with the above mitigation measures from the RtS. The site's pole height has been limited to two different heights at 21 m and 13.5 m to provide consistent lighting throughout and minimise light spill.
(i) complies with the latest version of AS 4282-1997 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 1997);	The Light Spill Assessment (Appendix T of the MPW Stage 2 EIS) confirmed that the combination of the lighting design, luminaire selection, positioning, orientation and direction produce results that are compliant with the requirements of AS4282-1997 *Control of the obtrusive effects of outdoor lighting*.

MPE Stage 2 SSD 7628 CoC B141(b) and (c) requirements	Comments
	The updated lighting plan included in *Appendix B* has been reviewed and is also compliant with AS4282-1997. Type 5 internally illuminated/backlit business identification signage is proposed (refer to Section 3.7). This is considered preferable to external lighting fixtures and would comply with AS4282-1997 *Control of the obtrusive effects of outdoor lighting*.
(ii) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network; and	The site lighting has been designed to minimise any direct light spill by: • Optimising the position and mounting height of the luminaire to ensure adequate outdoor lighting is provided while ensuring the potential for light spill is kept to a minimum. • Selecting luminaires with a horizontal front glass for the warehouse yard and internal roads. The lighting along the proposed internal road along the Georges River will consist of traditional road lighting fixtures with side throw to maximise the light distribution along the site and minimise backwards light spill. Screening and direction of lighting is considered in below.
(iii) is designed to reduce light spill and mitigate the visual impact of the 24-hour facility when viewed from the residential areas in the locality and the Boot Land.	To address any direct light spill from warehouse yard lighting a luminaire that has a horizontal front glass when aimed and fixed in position has been selected. This typically requires a floodlight with an asymmetric distribution, which has also been specified in the light spill study and mitigation measures. The asymmetric flat glass optics provide excellent control and uniform illumination in conjunction with minimal scattered light. This facilitates compliance with AS4282-1997 *Control of the obtrusive effects of outdoor lighting* and limits the potential for lighting related impacts on the nearest residential areas to the west of the site.
The Lighting Sub Plan must identify and provide details of the common and individual lighting throughout the development to reduce light spill and mitigate visual impact on the residential areas in the locality by:	The lighting plan included in *Appendix B* provides updated details of lighting throughout the site.
(i) eliminating upward spill light;	The luminaires for warehouse lighting would be positioned to direct light downwards. Road lighting fixtures with side throw to maximise the light distribution along the site and minimise backwards light spill. The luminaires selected for the lighting design have shielded or partially shielded fittings to minimise light above the horizontal plane Refer to Section 5.4 of the Light Spill Assessment included in Appendix T of the MPW Stage 2 EIS).
(ii) directing light downwards, not upwards;	Refer to item (ii) above. The luminaires for warehouse lighting would be positioned to direct light downwards. Road lighting fixtures with side throw to maximise the light distribution along the site and minimise backwards light spill. Refer to Section 5.4 of the Light Spill Assessment included in Appendix T of the MPW Stage 2 EIS).

MPE Stage 2 SSD 7628 CoC B141(b) and (c) requirements	Comments
(iii) using shielded fittings;	The luminaires selected for the lighting design have shielded or partially shielded fittings to minimise light above the horizontal plane. Refer to Section 5.4 of the Light Spill Assessment included in Appendix T of the MPW Stage 2 EIS).
(iv) avoiding 'over' lighting;	The lighting design aims to minimise the quantity of light and energy consumption in parts of the Proposal site that are not active, while retaining light levels consistent with industry standards and suitable for safe operation. Relevant standards include AS/NZS 1158 Set:2010, *Lighting for roads and public spaces*.
(v) switching lights off when not required;	Refer to (iv) above. The quantity of light would be minimised in parts of the Proposal site that are not active.
(vi) using energy efficient bulbs;	Both metal halide (typically 75–100 lumens per watt) and high pressure sodium (typically 100 lumens per watt) lights are energy efficient lighting systems.
(vii) using asymmetric beams, where floodlights are used;	Floodlights with an asymmetric distribution have been selected. Refer to Section 5.4 of the Light Spill Assessment included in Appendix T of the MPW Stage 2 EIS).
(viii) ensuring lights are not directed towards reflective surfaces; and	The luminaires would be positioned to direct light downwards and away from reflective surfaces. Road lighting fixtures along the internal access road have been designed to minimise backwards light spill and therefore the potential for reflection associated with any water within OSDs.
(ix) using warm white colours.	Luminaires for the warehouse yard and internal roads would deliver the following colour temperatures: • High pressure sodium lights on carparks and internal road - 2700K warm yellow. Luminaires with this colour temperature are widely used in street lighting due to their efficiency. Warmer colour temperature lights also have a lower propensity to attract insects. • Metal halide lighting – 3200K warm white.

2.5 Cycling and Pedestrian Access

A Cycling and Pedestrian Access Plan has been prepared for the MPW Stage 2 Proposal and is included at *Appendix C*. A summary of the compliance of this plan in consideration of MPE Stage 2 SSD 7628 CoC B141(d) is provided in Table 6.

Table 6 MPW Stage 2 compliance with B141(d) of the MPE Stage 2 Consent

CoC B141(d) requirements	Comments
The Plan must detail the construction, timing and responsibility for the delivery of Cycling and Pedestrian Access Facilities and take into account the following:	The Proposal is to be constructed in a number of stages (refer to Section 7 of this memorandum for further information). Section 7, identifies the relationship between the construction of warehousing and the IMT and the timing for the construction of road and cycle/pedestrian networks. Cycling and pedestrian facilities would be constructed periodically and established prior to the occupation of warehousing. For example, a

CoC B141(d) requirements	Comments
	warehouse would not be operational until a cycle way/pedestrian access has been provided. In some instances, temporary access routes may need to be provided, i.e. where there is an active construction zone (i.e. an adjoining warehouse is still under construction) that may impact on the safety of cyclists and pedestrians. In addition to this, on-site facilities such as bicycle storage and end of trip facilities would be provided for each warehouse once operational, thereby ensuring that these facilitates are available on occupation of these warehouses.
(i) all relevant policies, guidelines and plans	Arcadis have undertaken a review of the relevant bicycle facilities (end of trip facilities) guidelines attributed to similar types of development throughout the Greater Sydney Metropolitan Area and NSW. A consideration of the following guidelines was undertaken: • Liverpool City Council DCP 2008, Part 1, General Controls for All Developments • City of Sydney Section 3 - General Provisions • DIPNR (referred to currently as the Department of Planning and Environment) • Planning Guidelines for Walking and Cycling 2004 The City of Sydney Section 3 – General Provisions was considered a suitable guideline in that it specified bicycle provisions for individual land uses, similar types of development and providing a standard which is mid-range (i.e. did not over or under provide). Mitigation measure 1F in the MPW Stage 2 RtS commits to providing bicycle and end of trip facilities in accordance City of Sydney Section 3 – General Provisions. The City of Sydney Section 3 – General Provisions stipulates the following on-site bike parking rates for Industry or Warehouse/Distribution Centres: • 1 bicycle rack per 10 staff/employees • 1 personal locker for each bike parking space • 1 shower and change cubicle for up to 10 bike parking spaces • 2 shower and change cubicles for 11 to 20 or more bike parking spaces are provided • 2 additional showers and cubicles for each additional 20 bike parking spaces or part thereof. Based on the proposed warehouse and office populations for the Proposal, an indicative total of 127 bicycle parking spaces, 127 lockers and 15 shower/change cubicles would be included in the Proposal. Notwithstanding this, the specific number may change slightly as a result of final staffing levels, all bicycle facilities would be in accordance with the City of Sydney Section 3 – General Provisions.
(ii) provide details for the provision of safe and efficient pedestrian and cyclist access connectivity within the development and include integration with the existing and future	The Cycling and Pedestrian Access Plan (*Appendix C* of this memorandum) identifies safe and efficient cycle and pedestrian paths through the Proposal site. In addition to this, the upgrade of Moorebank Avenue and Anzac Road intersection would also include an upgrade to pedestrian and cycle pathways which would be connected to the surrounding network. The upgrade of Moorebank Pedestrian and cycle networks connect to surrounding pedestrian and cycling networks (shown in network figure

CoC B141(d) requirements	Comments
pedestrian and cycling access in the locality	included in Appendix C of this memorandum). Further, Casula Station is approximately 3 km away from the Proposal site and therefore it is anticipated that pedestrians would travel to this station via the connecting bus network. The proposed upgrade of Moorebank Avenue and Anzac Road would accommodate bus stops facilitating improved pedestrian movement within the locality.
(iii) provide details of end of trip facilities available on-site at each warehouse which are to include under cover bike storage, showers and change facilities sufficient to accommodate the needs of the forecast number of employee	Mitigation measure 1F in the MPW Stage 2 RtS commits to providing bicycle and end of trip facilities in accordance City of Sydney Section 3 – General Provisions. A summary of the facilities proposed has been provided in this table under (i) above. These would be integrated into each warehouse and associated office.
(iv) the layout, design and security of bicycle facilities must comply with the minimum requirements of *Australian Standard AS 20890.3-1993 Parking Facilities Part 3: Bicycle Parking Facilities*	The layout, design and security of bicycle facilities would comply with the minimum requirements of *Australian Standard AS 20890.3-1993 Parking Facilities Part 3: Bicycle Parking Facilities.*

2.6 Employee outdoor meal break areas

More detailed information on employee outdoor meal break areas has been prepared for the MPW Stage 2 Proposal and is included in the plan at *Appendix D*.

Outdoor meal break areas would:

- Include suitable outdoor tables and seating
- Include paved areas and raised planter boxes
- Be suitably lit and positioned to maximise security through passive surveillance.
- Be maintained by warehouse tenants.

2.7 Signage

A Signage Plan has been prepared for the MPW Stage 2 Proposal and is included at *Appendix E*.

A number of illuminated signs would be located at relevant access locations and within the Proposal site. These signs would be for the purposes of way-finding and access to/from the IMT facility, warehousing area and freight village. A summary of the type of signs that would be included within the site is provided in Table 7.

Table 7 Signage details

Signage type	Maximum height (m) (from final site levels to top of sign)	General locations
Type 1 – Street estate signage	3	Main site entrance off Moorebank Avenue

Signage type	Maximum height (m) (from final site levels to top of sign)	General locations
Type 2 – Street signage	6	Street entrances
Type 3 – Tenant identification signage and IMT facility signage	5	IMT facility entrance and warehouse entrances along the internal road
Type 4 – Tenant directional signage	3	Within the warehousing area
Type 5 – Corporate signage	Refer to drawings	Each warehouse.
Type 6 – Variable signage panel	To be specified	Main entrance to the intermodal terminal area.

Internally/backlit illuminated corporate signage (Type 5) would be provided on each warehouse as would warehouse identification numbers. A variable signage panel (Type 6) would be provided at the main entrance to the intermodal terminal area to convey messages to drivers entering the MPW site. Backlit illuminated corporate signage is shown on the elevations and perspectives included in *Appendix E* (identified with the reference S2).

A summary of the alignment of this approach to current requirements under MPE Stage 2 SSD 7628 of CoC B141(f) is provided in Table 8.

Table 8 MPW Stage 2 alignment with B141(f) of the MPE Stage 2 Consent

CoC B141(f) requirements	Comments
(i) provision of wayfinding signage for internal streets to individual buildings and loading docks;	Wayfinding signage is shown on the signage plan and specifications included in *Appendix E*.
(ii) individual building signage integration within building forms no higher than 3m above the finished ground;	The integration of signage with building forms is illustrated by the elevations and perspectives included in *Appendix E*. While positioned above 3m in height, the size and height of the signage is considered appropriate in the context of the building facades and the need to display clearly visible information about warehouse tenants. This signage has been assessed for light spill in *Appendix B* and would comply with AS4282-1997 *Control of the obtrusive effects of outdoor lighting*.
(iii) no general advertising;	No general advertising is proposed.
(iv) no form of moving or flashing signs;	No moving or flashing signage is proposed.
(v) no east or south facing illuminated building signage;	West facing illuminated warehouse signage would be provided to be viewed from the western perimeter road. The illumination, size of the signs and the topography and distance from neighbouring properties would ensure that while the signs may be visible from some viewpoints, they would not be visually prominent and in many cases, would be screened by new and retained vegetation. The nearest assessed viewpoint to the proposed signage with adjacent residential properties is Viewpoint 3 as identified in the MPW Stage 2 EIS (distance of approximately 240 metres). The Visual Impact Assessment (Appendix I of the MPW Stage 2 RtS) concluded that the Amended Proposal

CoC B141(f) requirements	Comments
	(including the internally illuminated / backlit business identification signage) would not alter the 'moderate' level of visual impact identified for Viewpoint 3 in the MPW Stage 2 EIS. Therefore, based on the level of impact was considered to be acceptable in the context of the surrounding properties. It is also noted that the backlit signage, like other site lighting, would comply with AS4282-1997 *Control of the obtrusive effects of outdoor lighting*.
(vi) details of the location and specifications of the common directory board;	A common directory board (Type 1) is proposed at the site entry. Tennant names would be integrated with street (Type 2) and Lot (Type 3) signage as shown on the signage plan included in *Appendix E*. Tenants would also be identifiable by warehouse numbering and Type 5 corporate signage (shown as S1 and S2 on the perspectives included in *Appendix E.*
(vii) signs are to display corporate logos and company names and must not to occupy more than 10% of any façade or wall of building; and	Type 5 corporate signage would not occupy more than 10% of any façade or wall of a building.
(viii) internally illuminated signs are not permitted.	Type 5 corporate signage would be internally illuminated / backlit. This is considered preferable to external lighting fixtures and is addressed under item (v) above. Backlit signage would comply with AS4282-1997 *Control of the obtrusive effects of outdoor lighting*.

2.8 Ecological Sustainable Development

Sustainability initiatives

As a new facility, the Proposal would strive for a high level of energy and water efficiency, and potential measures to further enhance efficiency and implement the principles of ESD would be considered at detailed design. ESD and energy efficiency measures and management strategies would also be reviewed and updated as appropriate for incorporation into the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP), as relevant. ESD measures that may be considered during detailed design could include:

- Use of alternate fuels in operational machinery (such as LPG or biofuels)
- Use of natural light and ventilation (and air conditioning) for office spaces
- Use of natural light ventilation for warehouses spaces
- The procurement of energy efficient equipment for construction and operation
- Water harvesting, including collection of roof rainwater on warehouses and potential reuse for irrigation, toilet flushing and washdown facilities. This will reduce the site potable water demand.
- Energy efficiency design measures (such as for lighting types and controls, control systems, compressors, variable speed drives for fans/pumps)
- Measures to minimise heating, ventilation and air conditioning demand (such as use of natural cooling vents and doors to control air movement, insulation, routine maintenance, and economy cycles that exchange ambient air to help control indoor temperature)
- Installation of energy efficient conveyors and automatic sortation systems

- Use of a warehouse management systems (enabling multi-tasking of mobile equipment, optimising storage locations, and allowing integration of energy management systems and other management systems)
- Use of renewable energy sources, such as solar energy, prioritised in accordance with the prioritising the Carbon Management Principles for Emissions Reduction (such that offsetting is considered as a last priority). There is a specific commitment to provide a 12 megawatt solar system (including underground cabling) within the Moorebank Intermodal Terminal Precinct (MPW and MPE sites).

3. Works in the Georges River riparian zone

Plans showing the built form works within the conservation area adjacent to the Georges River, which includes only drainage outlets, are included at *Appendix F*.

The four OSDs (and associated outlets) identified in the MPW Stage 2 Proposal, have been reduced to three (plus a covered drain) as part of the MPW Stage 2 Amended Proposal, in order to minimise fragmentation of the riparian vegetation and the basin outlets have been located in areas already disturbed, with high abundance and cover of exotic species including invasive weedy species. The areas to be disturbed for the channels would be re-contoured and partially revegetated upon completion of the basin outlets to enable habitat connectivity.

The conservation area will be subject to management measures under a biobanking agreement that is currently under review by the Office of Environment and Heritage (OEH).

4. Urban heat island effect

4.1 Context

The Urban Heat Island Effect (UHI) refers to the phenomena whereby urban regions experience warmer temperatures than their rural surroundings. UHI occur in two key forms; namely atmospheric UHI and surface UHI.

Atmospheric UHI is typically a result of urban geometry (i.e. the dimensions and spacing of buildings within an urban area). Urban geometry influences wind flow, energy absorption and how effectively radiation can be emitted back to space. Heat from energy use in human activities is a further contributor.

Surface UHI is influenced by reduced vegetation (with associated reduced shading and reduced evapotranspiration) and the characteristics of urban materials (which affects how the sun's energy is reflected, emitted, and absorbed).

CoC B139 of the MPE Stage 2 consent requires the preparation of an Urban Heat Island Mitigation Strategy. The requirements for the strategy are as follows:

- review the current architectural details, building layout, landscaping provision, shading provision, landscape irrigation, stormwater water detention and WSUD, as well as building and paving material specifications;
- make recommendations to mitigate the UHI effects generated by the development including but not limited to:
  - provision of WSUD elements;
  - street tree planting;
  - landscape coverage and screening;
  - use of building material including reflectivity;
  - use of pavement material including reflectivity;

  - improved green space maintained by independent, climate resilient water supplies, to achieve increased amenity and urban cooling; and
  - heat generation from operations; and
- include a design strategy with the goal to achieve a 4°C degree decrease in temperature compared to neighbouring industrial developments;

4.2 Management approach

Atmospheric UHI

As noted above, atmospheric UHI results primarily from urban geometry and heat generated from energy use.

In terms of urban geometry, the Proposal allows for a low-moderate density industrial use. The orientation of and spacing between warehouses (varying between about 30 m and 100 m), as well as the open area between the MPE and MPW sites, would take advantage of the dominant westerly, south westerly and southerly winds to assist air movement through the site, thereby reducing the potential for atmospheric UHI effects. The average wind speed and infrequency of calm wind conditions at the Proposal site (occurring approximately 12% of the time (refer to Appendix O of the EIS)), would further reduce the potential for atmospheric UHI effects.

The proposed site layout and the associated suitable spacing between warehouses, would minimise the following:

- Absorption of solar radiation caused by multiple reflection of radiation between building surfaces when buildings are located close together
- Trapping of heat in the space between warehouses when minimal spacing between buildings is provided
- Inhibiting of radiation loss due to screening by the immediately adjacent buildings.

The Proposal also occurs in the context of large areas of a major watercourse (Georges River) and substantial green space, including the conservation area to the west and the Bootlands to the south-east of the Proposal site.

In terms of heat generation from energy use, it is noted that warehouses also have a substantially lower energy demand per square metre than residential or commercial buildings. While machinery and equipment would have an energy demand requirement; this would be substantially lower than that of the warehouse building energy demand. Additionally, the use of solar panels, which is discussed further below, would serve to reduce cooling energy demand because a roof partially covered with solar panels receives less incoming solar radiation than a typical roof and, consequently, a smaller amount of heat is diffused into the building.

Noting the proposed urban geometry and energy demand, the potential for the Proposal to contribute to atmospheric UHI is considered to be low.

Surface UHI

The Proposal would increase impervious areas and would have the potential to result in surface UHI effects, albeit to a lesser extent than more dense areas of residential development. Green spaces help reduce surface temperatures through enhanced evapotranspiration while research has shown that temperatures adjacent to and downwind of water bodies are reduced by around 1–2ºC compared to surrounding areas nearby[5]. Selection of building materials with higher albedo ratings (ratio of

[5] Coutts et al, 2012, Watering our cities: The capacity for Water Sensitive Urban Design to support urban cooling and improve human thermal comfort in the Australian context. *Progress in Physical Geography,* 37(1) 2–28

irradiance reflected to the irradiance received) and use of solar panels (which have been shown reduce near-surface air temperature) are further surface UHI mitigation strategies.

The Proposal includes measures to minimise surface UHI effects and, consistent with the MPE Stage 2 project, aims for a 4°C degree decrease in temperature compared to existing neighbouring industrial developments.

Intended management measures for surface UHI comprise consideration of non-structural and structural options:

- Warehouse orientation and layout (ie with sufficient spacing between warehouses to allow the movement of prevailing winds (westerly and south westerly) through the site to help dissipate surface UHI. This also addresses the potential for atmospheric UHI as noted above.
- Green cover/landscaping including the provision of canopy trees for shading and bioretention in OSDs
- Solar panels
- Cool roofs (selection of materials higher albedo ratings (ratio of irradiance reflected to the irradiance received)).

Warehouse orientation and layout

The orientation of and spacing between warehouses in the Proposal (varying between about 30m and 100m) would take advantage of the westerly and south westerly winds to assist air movement through the site assisting the dissipation of surface UHI effects.

Green cover

The Proposal includes the provision of green cover (including landscape plantings and bioretention in OSDs) exceeding the expected requirements and this would minimise potential UHI effects by increasing evapotranspiration. As noted in Section 2, the Proposal includes soft landscaping (grass, planted areas and OSDs) totalling 188,681 m^2 (19.91% of the operational area).

In addition to this a conservation area (retained and rehabilitated bushland) is included in the Proposal which comprises a further 3.4 ha of green cover. The total combined area of the soft landscaping and conservation area approaches a quarter of the approximately 100 hectare site area.

With a view to the provision of shading across the Proposal site, the landscaped area would include 1 canopy tree per 30 m^2 of landscaped area (as an average across) for soft landscaping up to the required soft landscape provision (10% of the site area). While shading does not necessarily decrease the air temperature, it can decrease radiant temperature significantly and lead to enhanced outdoor thermal comfort in public spaces[6].

A 2.5m wide landscaped bay every 8 car parking spaces, incorporating canopy trees for shade has also generally been included in the Proposal. The canopy shading of street trees and planting in carparks can reduce the pavement/ground surface temperature by up to 8°C[7].

Increased evapotranspiration and shading associated with green cover will be the key contributor to reducing the potential for surface UHI at the Proposal site.

Solar panels

There is a commitment to provide a 12 megawatt solar system within the Moorebank Intermodal Terminal Precinct (MPW and MPE sites), and this will necessitate the provision of solar panels on warehouse roofs within the MPW site.

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[6] Osmond, P, Sharifi, E, 2017, Guide to Urban Cooling Strategies

[7] Moore, G., 2012, For a great return on investment, try trees, The Conversation as cited in Urban Green Cover in NSW Technical Guidelines, Office of Environment and Heritage, 2015.

Recent investigations have documented a reduction of the annual cooling load of a building and the cooling of regional outdoor near-surface temperature as a consequence of the deployment of solar PV roof systems[8][9][10].

Solar panel will be an important contributor to the overall approach to mitigating potential surface UHI effects.

Cool roofs

Cool roofs use reflective material to reflect and emit more solar energy than traditional dark roofs. Cool roofs use two processes to cool the building:

- Solar reflectance: solar energy is reflected by the surface of the roof
- Thermal emittance: the amount of absorbed heat that is radiated from a roof.

Cool roofs can be white roofs, cool coloured roofs and blue roofs.

The specific roof treatments for warehousing have not yet been determined, however dark and/or warm coloured roofs are not proposed.

Cool roofs have the potential to be an important contributor to the overall approach to mitigating potential surface UHI effects.

5. Contamination and remediation

Remediation works have been completed on the MPW site in accordance with the Land Preparation Works Stage 1 and Stage 2 – Remediation Action Plan (RAP) (Golder, 2016), to make the site suitable for the proposed commercial/industrial land use. Remediation completed as part of MPW Early Works (Stage 1) includes the removal of asbestos and anthropogenic fill in soils, fuel infrastructure, and hotspot contamination.

A NSW EPA accredited Site Auditor has been engaged and has provided progressive reviews of Interim Validation Reports in relation to the remediated and validated areas. The Site Auditor's involvement will continue during the onsite works until they are satisfied that all site contamination has been remediated entirely, or to the extent that it does not pose a risk to human health and the environment, and that any residual contamination is able to be appropriately managed under a Long Term Environmental Management Plan (LTEMP), see below.

A site wide LTEMP is under development for addressing unexpected finds during the Intermodal Terminal construction. The LTEMP will include an Unexpected Finds Protocol with provide a process for recording, assessing and managing residual hazards, including reporting. It is also expected to include a groundwater monitoring plan (GMP).

The use and distribution of PFAS chemicals on the MPW site are currently being investigated and remediation/management plans developed. The Site Auditor is reviewing identified PFAS contamination as required for the Stage 1 consent, with the additional overlay of the requirements for consultation with the EPA and other considerations as outlined in the *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme* (EPA, 2017). As contemplated by the RAP (Golder, 2016), a routine PFAS monitoring regime may be required as part of LTEMP.

Further details regarding contamination and remediation are included at *Appendix G*.

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[8] Scherba, A., Sailor, D. J., Rosenstiel, T. N., & Wamser, C. C. (2011). Modeling impacts of roof reflectivity, integrated photovoltaic panels and green roof systems on sensible heat flux into the urban environment. *Building and Environment*, 46(12), 2542-2551.

[9] Masson, V. r., Bonhomme, M., Salagnac, J.-L., Briottet, X., & Lemonsu, A. (2014). Solar panels reduce both global warming and urban heat island. *Frontiers in Environmental Science*, 2.

[10] Salamanca, F., Mahalov, A., Moustaoui, M., Georgescu, M., & Martilli, A. (2016). Citywide Impacts of Cool Roof and Rooftop Solar Photovoltaic Deployment on Near-Surface Air Temperature and Cooling Energy Demand. *Boundary-Layer Meteorology*, 1-19.

6. Staging

Figures showing the staging of the Proposal are included at *Appendix H*. The following four main stages for the delivery of the Proposal have been identified:

- Intermodal Rail Link
- Warehousing North
- Central Warehousing Earthworks
- Southern Earthworks OSD

The above stages are intended to illustrate the current understanding of the nature of environmental controls and infrastructure that would be developed during each stage, irrespective of the order in which the stages are actually delivered.

Stages may overlap and in some cases, it may be desirable to build and operate part of a stage identified above. However, in all cases, suitable infrastructure (access roads, pedestrian/cyclist facilities, drainage, OSD capacity, lighting, noise walls) would be provided to support the extent of each stage proposed (ie the trigger for implementation is the commencement of the nominated stage, rather than the completion of the stage).

7. Concrete batching plant

As noted in the Consolidated Proposal Description included in Appendix O of the MPW Stage 2 RtS, the Proposal includes the establishment of temporary batching operations (potentially including concrete, cement and pre-mix and hot-mix works).

Key elements of the temporary batching plant are summarised in

Table 9, while further detail is provided in *Appendix I*

Table 9 MPW Stage 2 concrete batching – key elements

Element	Description
Plant type	Concrete and bitumen
Capacity	Approximately 500 m^3 of pre-mixed concrete per day
Cement silos	Up to six silos, up to 25 metres high
Other plant components	• Aggregate storage bins • Mixers • Water settlement and storage pits • Water holding tanks • Aggregate conveyor with cover • Admixture tanks and bunds • Batch office.
Water quality	First flush system to capture the first 20 mm of a rainfall event for areas with cementitious material or hydrocarbons. Flows exceeding the first flush capacity would be directed to the adjacent Proposal construction site and managed in accordance with the Construction Soil and Water Management Plan.

Element	Description
Water sources	• Mains water • Recycled water from batching operations.
Air quality	Stockpiles fitted with a dust suppression system. Covering of aggregate conveyor Dust extraction system and filter bag system to minimise release of dust associated with the transfer of cement and aggregates Management of bitumen product temperature to minimise odorous emissions.
Waste	• Rejected concrete transferred to a concrete recycling facility. • Cementitious waste water recycled within the batching process. • Silt from settlement basins dewatered onsite and transferred to a recycling facility. • Domestic wastes collected for off-site reuse, recycling or disposal consistent with Construction Waste and Resources Management Plan (to be prepared post consent).

8. Port shuttle operations – noise and air quality

The MPW Stage 2 Proposal would implement the commitments included in the MPE Stage 1 Best Practice Review (Arcadis, 2017). The NSW Environment Protection Authority (EPA) endorsed the Best Practice Review in September 2017. As a result of consultation with the EPA and an understanding of industry best practice SIMTA has established benchmarks in relation to air emissions and noise.

It is noted that the MPE Stage 1 Consent (as recently modified by the NSW Land and Environment Court in *Residents Against Intermodal Development Moorebank Incorporated v Minister for Planning* [2018] NSWLEC 1130) includes conditions requiring the implementation of best practice noise technologies for port shuttle operations. Specifically, Condition G6(b) requires submission of a report that has been prepared in consultation with TfNSW and the EPA that justifies the technology proposed and how it meets the objective of best practice noise technologies.

8.1 Air emissions

In summary, SIMTA would restrict port shuttle locomotives, that do not meet the following air emissions standards identified in Table 10.

Table 10 Port shuttle locomotives – air emissions standards

Locomotive type	Standard	Periodic improvements	Ultimate outcome
Existing locomotives	operate with diesel particulate emissions less than 0.30 grams per kilowatt hour	Any overhauls of existing locomotives after the commencement of operations	All existing locomotives to comply with 7 years of operation
New locomotives	operated with diesel particulate emissions less than 0.27 and NOx emissions of less	Any new locomotives ordered after the	N/A

Locomotive type	Standard	Periodic improvements	Ultimate outcome
	than 7.37 grams per kilowatt hour.	commencement of operations	
	operated with diesel particulate emissions less than 0.13 and NOx emissions of less than 7.37 grams per kilowatt hour.	Any new locomotives ordered after 5 years of the commencement of operations	N/A

The above measures would be adopted until such time as an industry standard or guideline has been established, at which time the relevant standard or guideline including associated timeframes would apply.

8.2 Noise emissions

SIMTA would restrict port shuttle locomotives, that do not meet the noise requirements of Environment Protection Licences (EPLs) 3142 and 12208, from entering the MPE Stage 1, IMEX terminal.

SIMTA also proposes to further investigate available best practice technologies to ensure that available best practice benchmarks are current, relevant and achievable.

9. Satisfactory arrangements

It is understood that SIMTA and Roads and Maritime Services, along with DP&E, are currently in discussions to confirm that 'satisfactory arrangements have been made to contribute to the provision of State public infrastructure' as required by Clause 7.36 of the *Liverpool Local Environmental Plan 2008*.

10. Land owners' consent

Landowners consent has now been secured from all relevant parties and issued to DP&E via separate correspondence.

11. Plans, architectural drawings and diagrams

DP&E have requested SIMTA provide detailed plans showing key project elements. Detailed plans showing the Proposal are included at *Appendix J*. SIMTA could provide A1 print outs of these plans on request from DP&E.

DP&E also requested a list of detailed plans, architectural drawings and diagrams for which approval is sought under the MPW Stage 2 SSD Application. In a meeting with DP&E (on 12/02/2018) SIMTA indicated that approval is sought for all documentation provided with the EIS, RtS and the Consolidated assessment clarification responses (to be provided post-discussion of this memorandum with DP&E). As a result, it is requested that the SSD approval instrument for the Proposal reference this documentation, as has been undertaken for CoC A2 within the MPE Stage 2 Consent (instrument).

APPENDIX A – URBAN DESIGN AND LANDSCAPE PLANS

MOOREBANK PRECINCT WEST STAGE 2

LANDSCAPE PLAN

LEGEND

- Proposal Construction Boundary
- MPW Site Boundary
- Proposal Operational Boundary
- MPE Stage 1 Site Boundary

DRAWING LIST

LDA-000	LANDSCAPE MASTERPLAN
LDA-001	LANDSCAPE PLAN
LDA-002	MOOREBANK AVE LANDSCAPE PLAN
LDA-003	OFFICE LANDSCAPE PLAN
LDA-004	OSD LANDSCAPE PLAN
LDA-005	INTERNAL ROAD LANDSCAPE PLAN
LDA-006	LANDSCAPE PLAN - WAREHOUSES 1A & 2A
LDA-007	LANDSCAPE PLAN - WAREHOUSES 1B & 2B
LDA-008	LANDSCAPE PLAN - WAREHOUSES 1C & 2C
LDA-009	RAIL LINK LANDSCAPE PLAN
LDA-010	ESTATE ENTRY SIGNAGE LANDSCAPE

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Architect
REIDCAMPBELL

Project Manager
TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project
MOOREBANK PRECINCT WEST STAGE 2

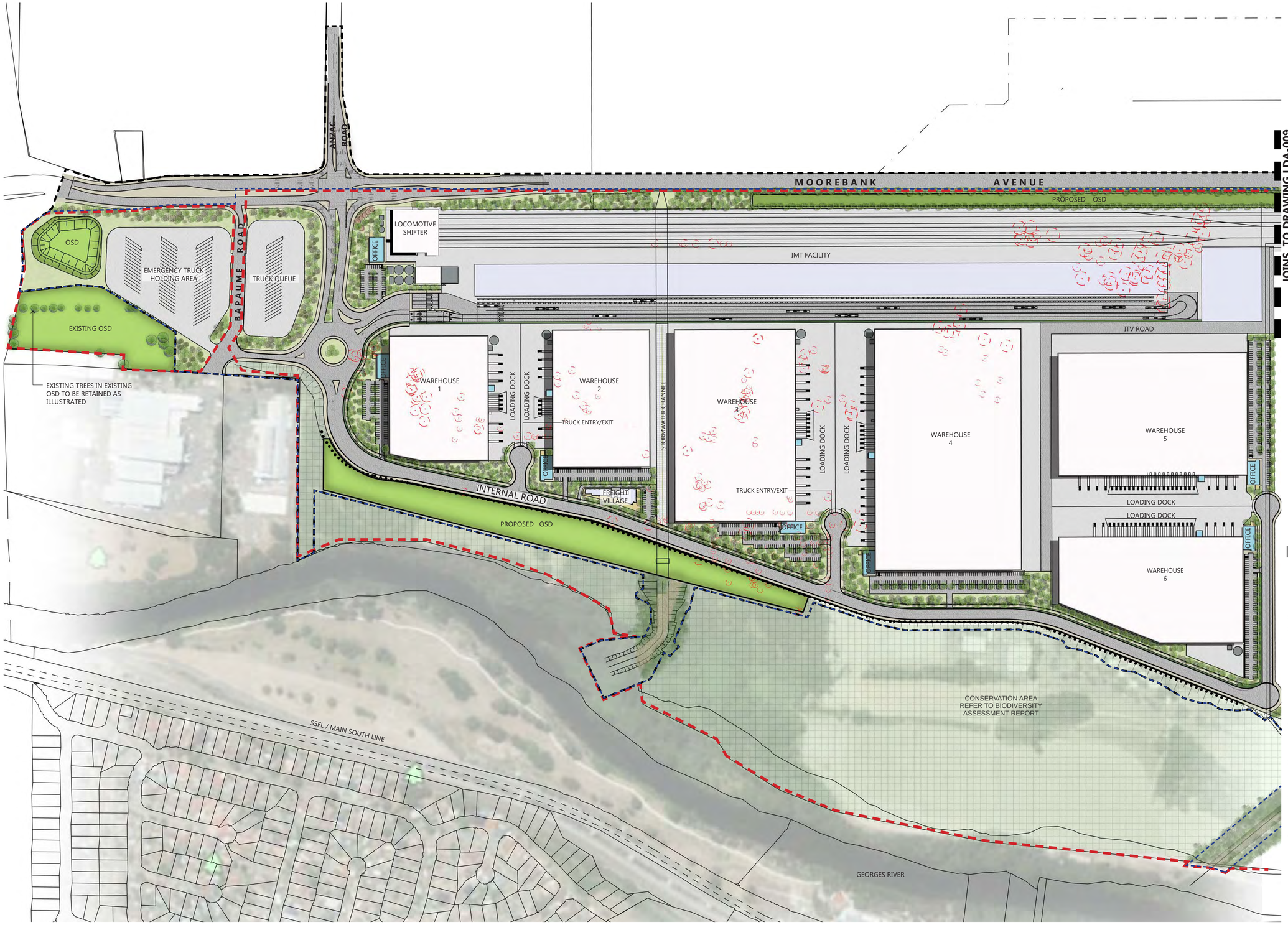
Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-000**

Scale
1:4000 @ A1 (1:8000 @ A3)
0 20 40 60 80 100m 200m

North

Drawing Name
LANDSCAPE MASTERPLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- Proposal Construction Boundary
- MPE Stage 1 Site Boundary
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall to Engineer's Details
- Indicative Truck Parking
- SSFL / Main South Train Line
- Existing Trees to be Removed
- Existing Trees to be Retained

LANDSCAPE DESIGN STATEMENT

The Moorebank Precinct West Stage 2 Proposal involves the development of an intermodal terminal facility including warehouses and distribution facilities, stormwater, landscaping, servicing and associated works west of Moorebank Avenue. The Proposal also includes a Rail link connection. The Proposal interfaces with a vegetation conservation area.

The focus of the proposed landscape works includes:
- The integration of the Moorebank Avenue frontage,
- Landscape works associated with internal roads,
- Landscape works associated with proposed warehouses,
- Landscape works interface with the vegetation conservation areas.

Given that the site is bounded to the south with existing vegetation communities, the landscape design serves to integrate the development with the surrounding environment by using tree, shrub and groundcover species that are local to the area to create habitat opportunities and links to the surrounding context. The proposed tree planting has been designed with the intent of creating a uniform canopy cover throughout the area. Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

The positioning of the built forms has maximised planting opportunities along the western side of the site. Large trees planted within this area will serve to minimise visual impacts from the surrounding urban landscape.

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-001**

Scale: 1:2500 @ A1 (1:5000 @ A3)
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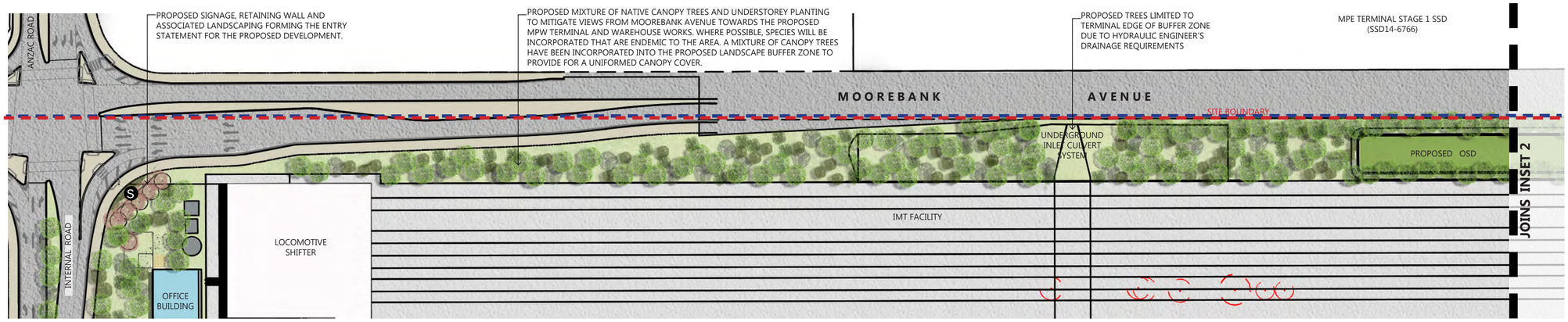
North

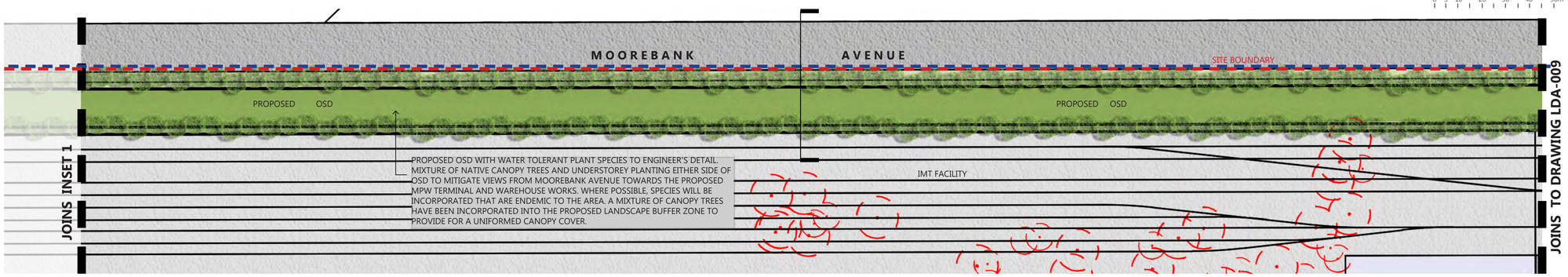
Drawing Name: **LANDSCAPE PLAN**



MOOREBANK AVENUE LANDSCAPE PLAN - INSET 1

SCALE: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m



MOOREBANK AVENUE LANDSCAPE PLAN - INSET 2

SCALE: 1:1000 @ A1 (1:2000 @ A3)

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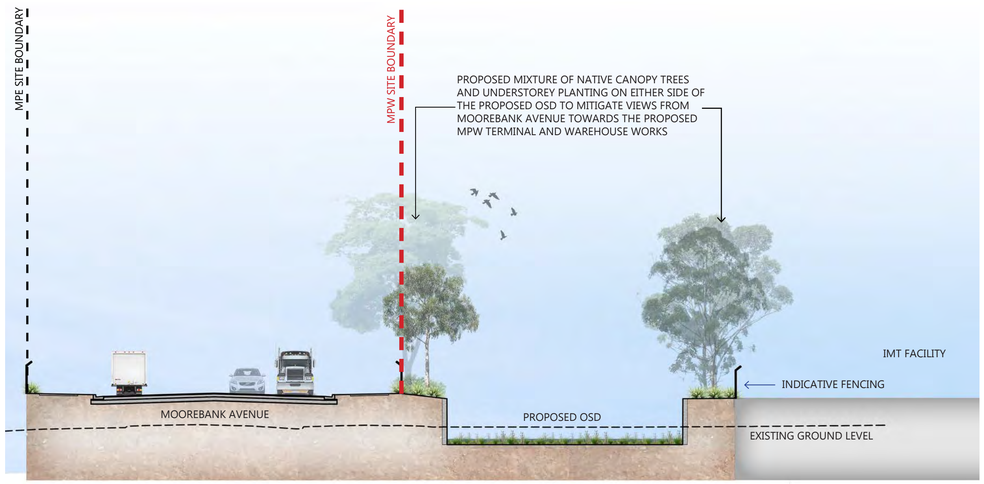


MOOREBANK AVENUE OSD LANDSCAPE SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

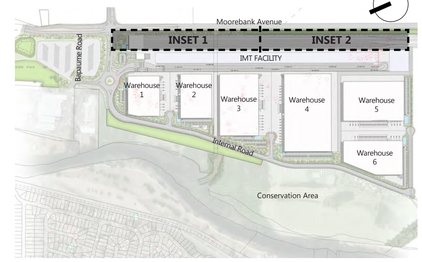
0 2 4 6 8 10 12 14 16 18 20M

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	MATURE HEIGHT	INSTALL SIZE
Trees				
Acmena smithii	*Lilly-pilly*	✓	12m	100L
Allocasuarina littoralis	*Black She-Oak*	✓	10m	100L
Angophora bakeri	*Narrow-leaved Apple*	✓	10m	100L
Angophora floribunda	*Rough-barked Apple*	✓	20m	100L
Angophora subvelutina	*Broad-leaved Apple*	✓	20m	100L
Casuarina glauca	*Swamp Oak, Swamp She-oak*	✓	18m	100L
Corymbia eximia	*Yellow Bloodwood*	✓	16m	100L
Corymbia maculata	*Spotted Gum*	✓	20-25m	100L
Eucalyptus amplifolia	*Cabbage Gum*	✓	20-25m	100L
Eucalyptus crebra	*Narrow-leaved Ironbark*	✓	15m	100L
Eucalyptus fibrosa	*Red Ironbark*	✓	20-25m	100L
Eucalyptus longifolia	*Woollybutt*	✓	20-25m	100L
Eucalyptus moluccana	*Grey Box*	✓	20m	100L
Eucalyptus parramattensis	*Parramatta Red Gum*	✓	8m	45L
Eucalyptus punctata	*Grey Gum*	✓	10-25m	100L
Eucalyptus racemosa	*Snappy Gum, Scribbly Gum*	✓	15m	100L
Eucalyptus sclerophylla	*Hard-leaved Scribbly Gum*	✓	15-20m	100L
Eucalyptus sideroxylon	*Mugga, Red Ironbark*	✓	25m	100L
Eucalyptus tereticornis	*Forest Red Gum*	✓	20-25m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Acacia brownii	*Golden Prickly Moses*	✓	1m	200mm
Acacia decurrens	*Black Wattle*	✓	10-15m	200mm
Acacia falcata	*Sickle Wattle*	✓	4m	200mm
Acacia floribunda	*White Sally*	✓	4m	200mm
Acacia parramattensis	*Parramatta Green Wattle*	✓	10m	200mm
Bossiaea heterophylla	*Variable Bossiaea*	✓	1m	200mm
Bossiaea scolopendria	*Bossiaea*	✓	1m	200mm
Breynia oblongifolia	*Coffee Bush*	✓	3m	200mm
Bursaria spinosa	*Boxthorn*	✓	5-10m	200mm
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon linearis	*Narrow-leaved Bottlebrush*	✓	3m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm

BOTANICAL NAME	COMMON NAME	NATIVE	MATURE HEIGHT	INSTALL SIZE
Daviesia ulicifolia	*Gorse Bitter-pea*	✓	2m	200mm
Dillwynia parvifolia	*Small Dillwynia*	✓	0.3-1m	200mm
Hakea dactyloides	*Finger Hakea*	✓	4m	200mm
Hakea salicifolia	*Willow Hakea*	✓	5m	200mm
Hakea sericea	*Needlebush, Silky Hakea*	✓	3m	200mm
Hakea teretifolia	*Needlebush, Dagger Hakea*	✓	2m	200mm
Kunzea ambigua	*Tick-bush*	✓	2.5m	200mm
Leptospermum polygalifolium	*Tantoon*	✓	0.5-3m	200mm
Leptospermum trinervium	*Slender Tea-tree*	✓	4m	200mm
Melaleuca armillaris	*Bracelet Honey-myrtle*	✓	5m	200mm
Melaleuca erubescens	*Rosy Honey-myrtle*	✓	2m	200mm
Melaleuca nodosa	*Ball Honey-myrtle*	✓	4m	200mm
Melaleuca thymifolia	*Thyme Honey-myrtle*	✓	0.8m	200mm
Notelaea longifolia	*Mock-olive*	✓	9m	200mm
Philotheca salsolifolia	*Philotheca*	✓	1m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Pultenaea retusa	*Notched Bush-pea*	✓	2.5m	200mm
Pultenaea tuberculata	*Wreath Bush Pea*	✓	1m	200mm
Pultenaea villosa	*Hairy Bush-pea*	✓	1.5m	200mm
Groundcovers				
Austrodanthonia fulva	*Wallaby Grass*	✓	0.7m	150mm
Billardiera scandens	*Hairy Apple Berry*	✓	0.5m	150mm
Dampiera stricta	*Blue Dampiera*	✓	0.5m	150mm
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Imperata cylindrica	*Blady Grass*	✓	1.2m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPE Stage 1 Site Boundary
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- S — Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

Planting along the western side of Moorebank Avenue serves to provide significant screening for the proposal. Plants, with a variety of tree and shrub heights will modulate views with a rich variety of forms, colours and textures. A diversity of species will enhance existing habitat values for the area.

Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

PLANT IMAGES

Eucalyptus sideroxylon

Callistemon citrinus

Acacia parramattensis

Kunzea ambigua

Dianella caerulea

Dichondra repens

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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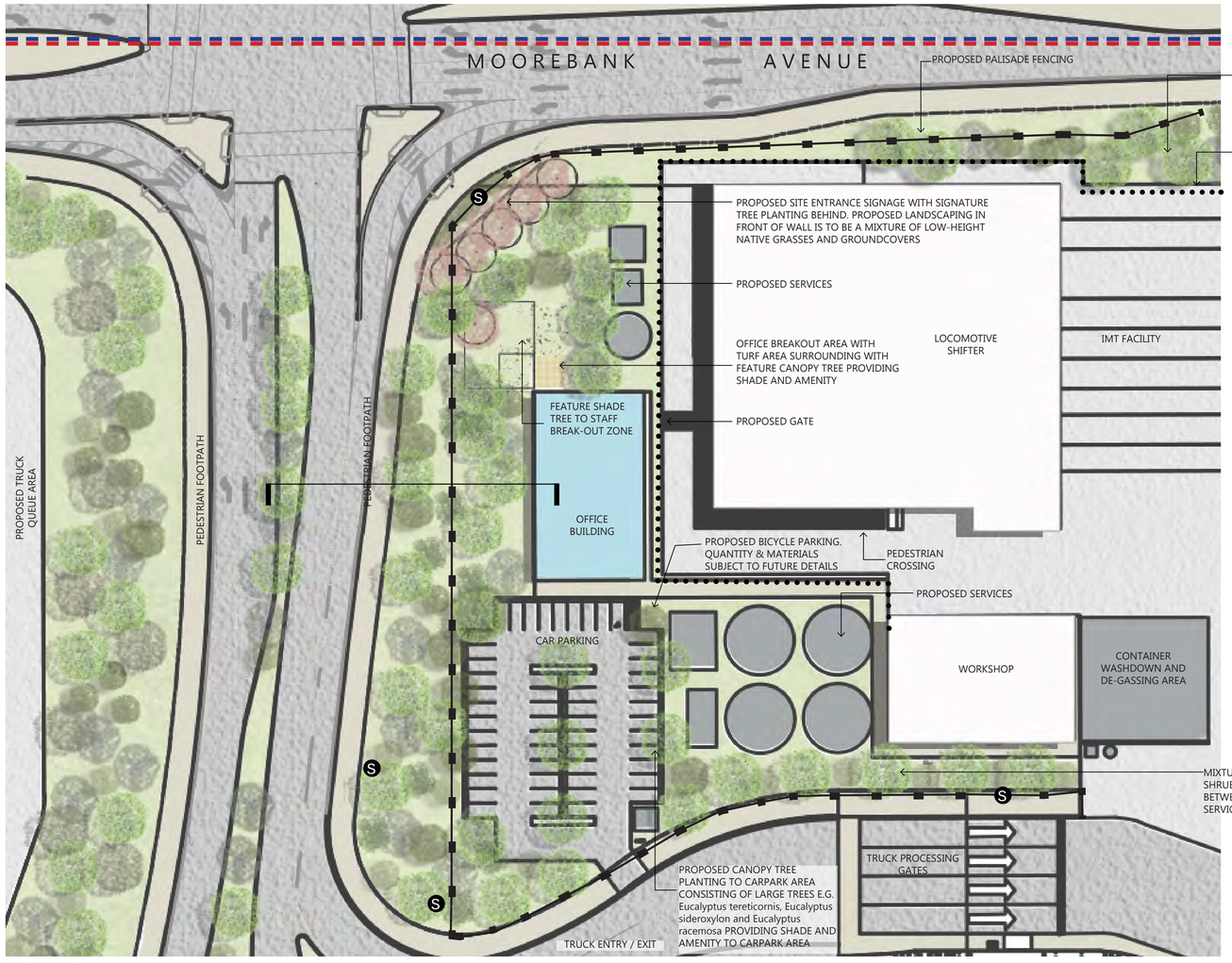
Project
MOOREBANK PRECINCT WEST STAGE 2

Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-002**

Scale: 1:1000 @ A1 (1:2000 @ A3)
0 5 10 20 30 40 50m
North

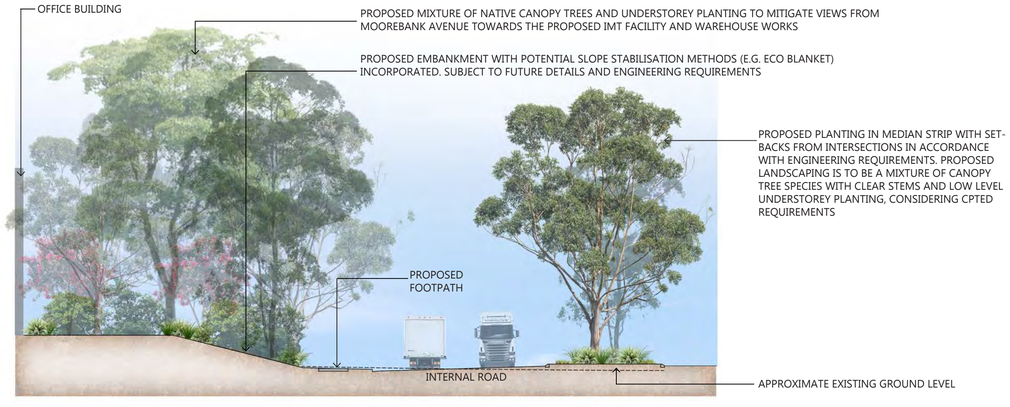
Drawing Name
MOOREBANK AVENUE LANDSCAPE PLAN



OFFICE LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

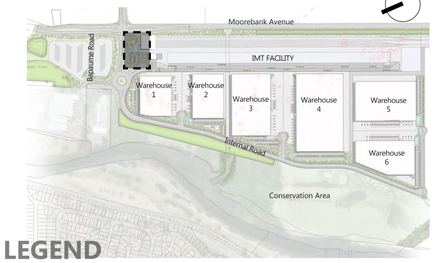


OFFICE LANDSCAPE SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposed Landscape Area
- Proposed security fence line
- Proposed palisade fence line
- Proposed feature tree
- S — Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

The corner of Moorebank Avenue and the new Internal Road will accommodate an administration building. The intent of the landscaping is to integrate the built works of the Proposal with the greater landscape character of the Moorebank area and neighbouring sites.

The landscape for the main entrance aims to provide an easily-orientated pathway for visitors and workers of the site. Vehicular, pedestrian and bicycle entry are all integrated into one cohesive entry for the site. Proposed signage will use geometries and forms that strongly relate to rail transport. Signage will incorporate a natural looking material which has a strong association with bushland landscapes. Planting will provide significant screening from the roadway to the built structures of the site. It will use a range of local species that have been selected for their unique forms, colours and textures. Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Trees				
Allocasuarina littoralis	*Black She-Oak*	✓	10m	100L
Eucalyptus racemosa	*Snappy Gum, Scribbly Gum*	✓	15m	100L
Eucalyptus sideroxylon	*Mugga, Red Ironbark*	✓	20-25m	100L
Eucalyptus tereticornis	*Forest Red Gum*	✓	20-25m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Acacia brownii	*Golden Prickly Moses*	✓	1m	200mm
Acacia parramattensis	*Parramatta Green Wattle*	✓	10m	200mm
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon linearis	*Narrow-leaved Bottlebrush*	✓	3m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm
Kunzea ambigua	*Tick-bush*	✓	2.5m	200mm
Melaleuca nodosa	*Ball Honey-myrtle*	✓	4m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Groundcovers				
Austrodanthonia fulva	*Wallaby Grass*	✓	0.7m	150mm
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily, Spreading Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass, Meadow Rice-grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

PLANT IMAGES

Allocasuarina littoralis

Eucalyptus racemosa

Melaleuca decora

Pittosporum undulatum

Themeda asutralis

Lomandra longifolia

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: Moorebank Avenue, Moorebank, NSW

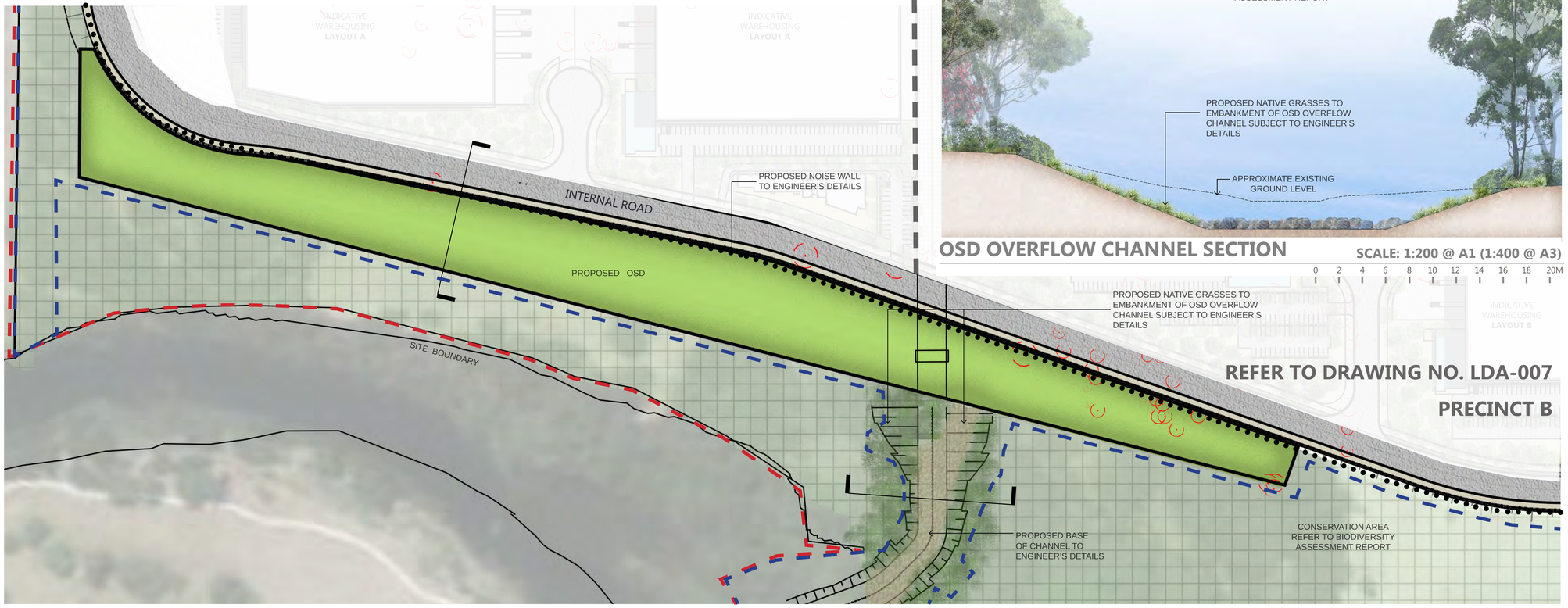
Date	Revision	Job Number	Drawing Number
29.05.2017	B	20150728	LDA-003

Scale: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

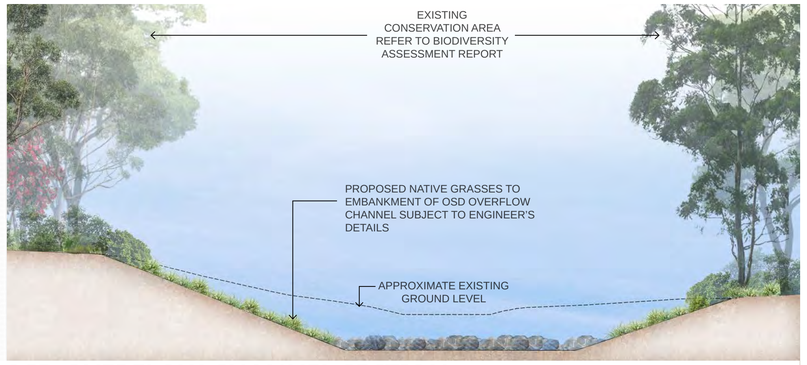
North

Drawing Name: **OFFICE LANDSCAPE PLAN**



OSD LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

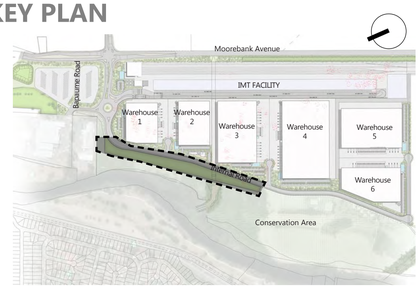


OSD OVERFLOW CHANNEL SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

KEY PLAN



LEGEND

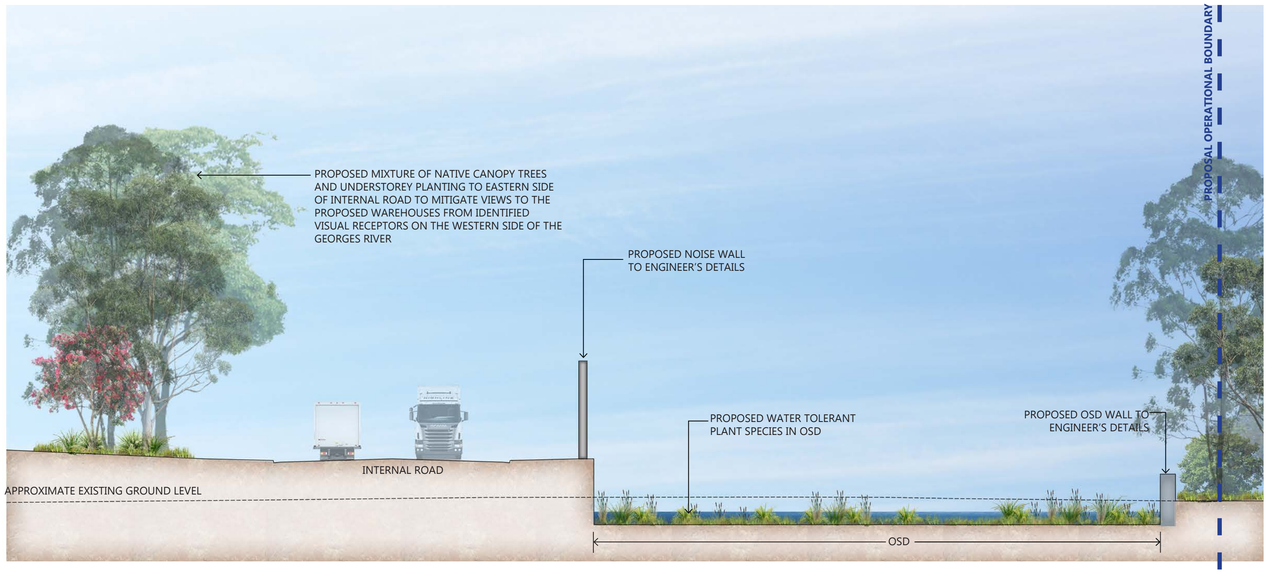
- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposal Operational Boundary
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall (refer to engineer's details)
- Existing Trees to be Removed

DESIGN STATEMENT

Planting within the conservation area is restricted to areas disturbed during the construction of the OSD overflow channel illustrated on this drawing.

Planting within the overflow channel is limited to the embankments as shown in the indicative section on this drawing. The proposed plant selections are local species which will integrate the infrastructure with the existing landscape. The selected species are also appropriate for the fluctuating hydrology of the channel. This will create biological connections in the landscape.

Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.



OSD LANDSCAPE TYPICAL SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Groundcovers				
Baumea articulata	*Jointed Twig-rush*	✓	1-2m	150mm
Bolboschoenus fluviatilis	*Club-rush*	✓	1m	150mm
Carex appressa	*Tall Sedge*	✓	0.8m	150mm
Carex breviculmis	*Short-Stem Sedge*	✓	0.4m	150mm
Dampiera stricta	*Blue Dampiera*	✓	0.3m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Gahnia clarkei	*Tall Saw-sedge*	✓	1.5m	150mm
Goodenia hederacea	*Ivy Goodenia*	✓	0.5m	150mm
Hemarthria uncinata	*Mat Grass*	✓	1m	150mm
Isolepis inundata	*Water Club-rush*	✓	0.5m	150mm
Juncus continuus	*Rush*	✓	1m	150mm
Juncus prismatocarpus	*Branching Rush*	✓	0.6m	150mm
Juncus usitatus	*Common Rush*	✓	1m	150mm
Laxmannia gracilis	*Slender Wire Lily*	✓	0.2m	150mm
Leptocarpus tenax	*Slender Twine Rush*	✓	0.4m	150mm
Lepyrodia scariosa	*Scale Rush*	✓	0.9m	150mm
Microlaena stipoides	*Weeping Grass, Meadow Rice-grass*	✓	0.7	150mm
Philydrum lanuginosum	*Woolly Waterlily, Frogmouth*	✓	2m	150mm
Schoenus apogon	*Fluke Bog-rush, Common Bog-rush*	✓	0.2m	150mm

PLANT IMAGES

Carex appressa

Dampiera stricta

Gahnia clarkei

Isolepis inundata

Juncus usitatus

Microlaena stipoides

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Ph (02) 9411 3279 www.groundink.com.au

Project
MOOREBANK PRECINCT WEST STAGE 2

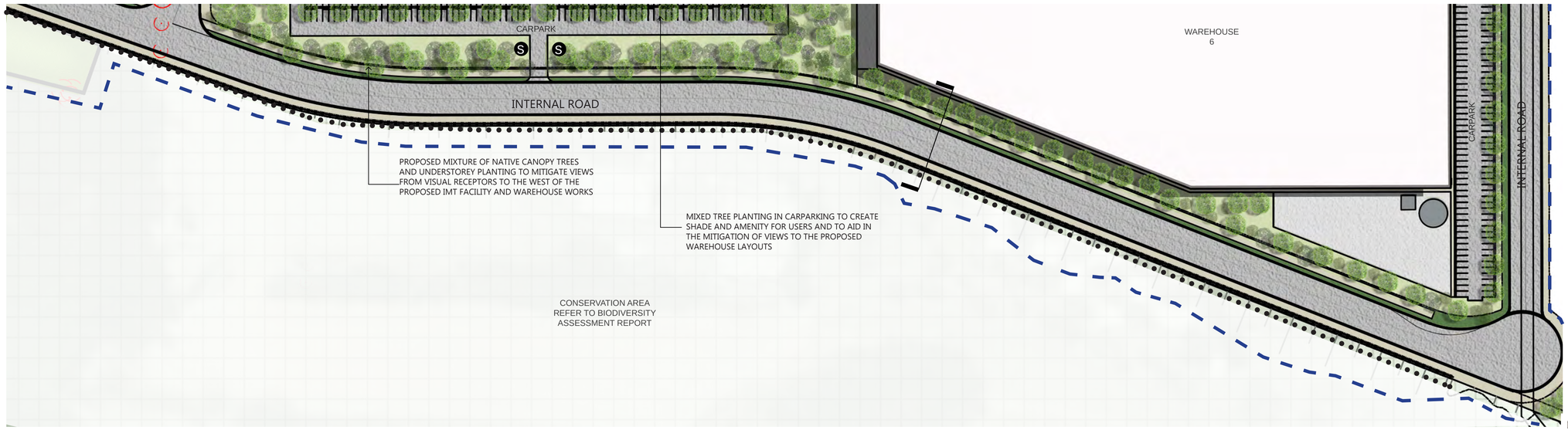
Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-004**

Scale
1:1000 @ A1 (1:2000 @ A3)
0 5 10 20 30 40 50m

North

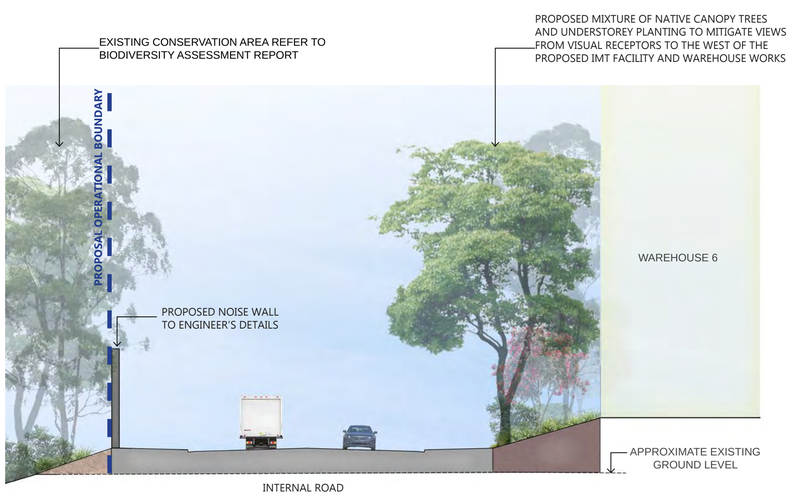
Drawing Name
OSD LANDSCAPE PLAN



INTERNAL ROAD LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

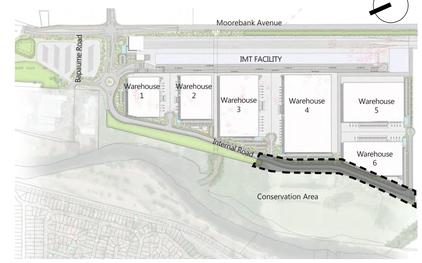


INTERNAL ROAD LANDSCAPE SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall (refer to engineer's details)
- Indicative Truck Parking
- Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

Areas of existing vegetation within the conservation area are, where possible, retained. In areas that are clear of vegetation, embankments are created linking the new levels of the internal road to the conservation area.
Embankments are to be planted with species that are found within the conservation area. This serves to enhance the habitat of the conservation area with species common to vegetation found within the area.
Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Trees				
Corymbia maculata	*Spotted Gum*	✓	20-25m	100L
Eucalyptus sideroxylon	*Mugga, Red Ironbark*	✓	20-25m	100L
Eucalyptus tereticornis	*Forest Red Gum*	✓	20-25m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Groundcovers				
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm

PLANT IMAGES

Eucalyptus sideroxylon

Callistemon salignus

Corymbia maculata

Eucalyptus tereticornis

Dianella caerulea

Dichondra repens

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project
MOOREBANK PRECINCT WEST STAGE 2

Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-005**

Scale
1:1000 @ A1 (1:2000 @ A3)
0 5 10 20 30 40 50m

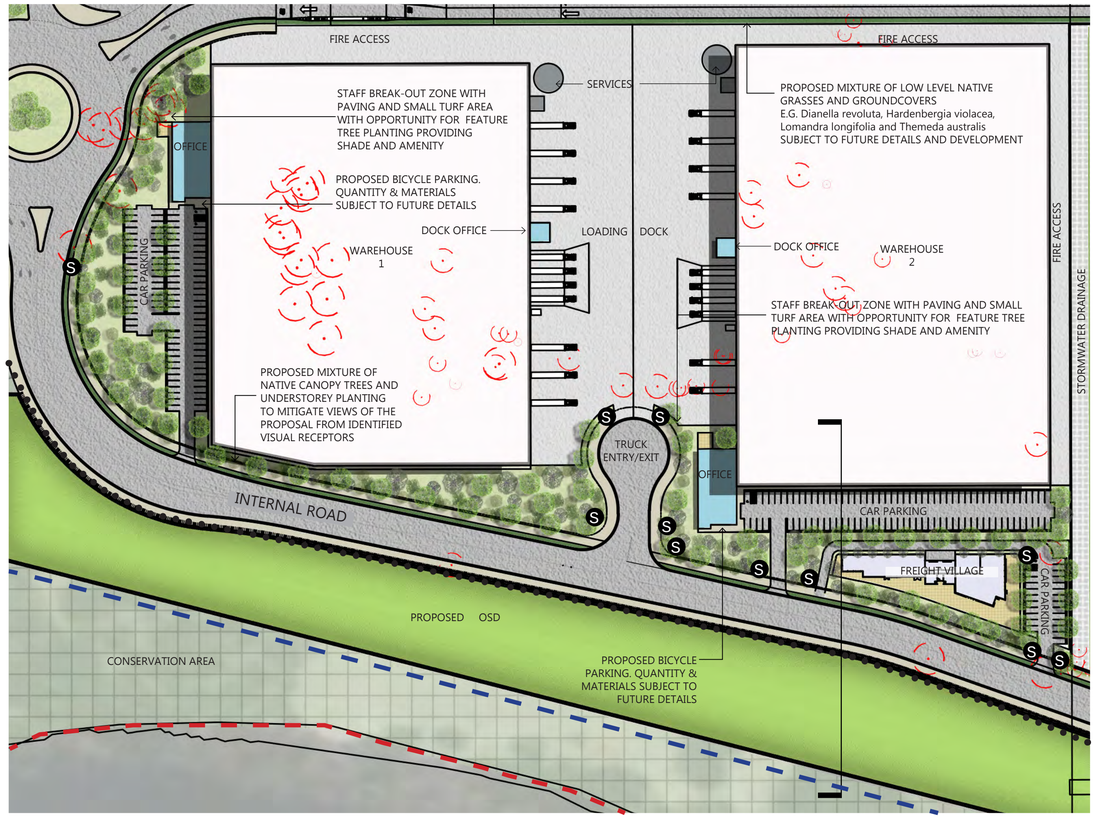
North

Drawing Name
INTERNAL ROAD LANDSCAPE PLAN

PRECINCT A LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

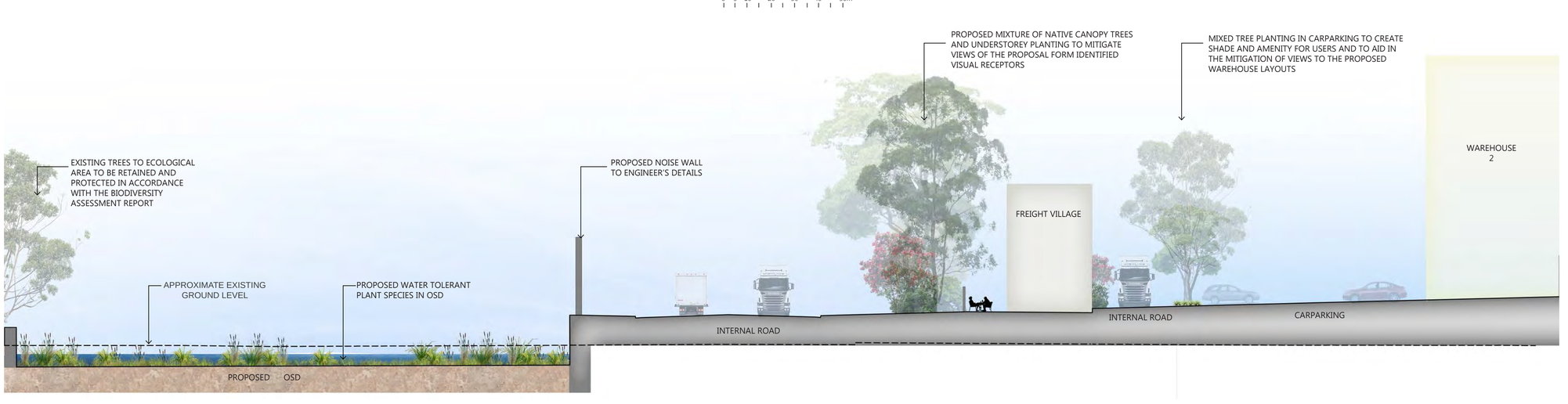
0 5 10 20 30 40 50m



PRECINCT A LANDSCAPE SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

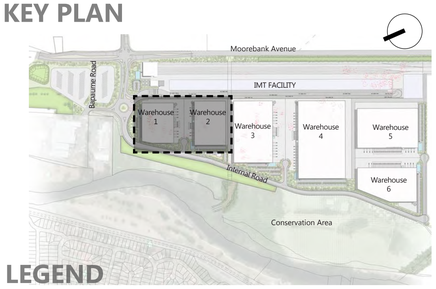
0 2 4 6 8 10 12 14 16 18 20M



INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Trees				
Acmena smithii	*Lilly-pilly*	✓	12m	100L
Angophora bakeri	*Narrow-leaved Apple*	✓	10m	100L
Angophora floribunda	*Rough-barked Apple*	✓	20m	100L
Angophora subvelutina	*Broad-leaved Apple*	✓	20m	100L
Corymbia maculata	*Spotted Gum*	✓	20-25m	100L
Eucalyptus racemosa	*Snappy Gum, Scribbly Gum*	✓	15m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Acacia decurrens	*Black Wattle*	✓	10-15m	200mm
Acacia falcata	*Sickle Wattle*	✓	4m	200mm
Acacia parramattensis	*Parramatta Green Wattle*	✓	10m	200mm
Bossiaea heterophylla	*Variable Bossiaea*	✓	1m	200mm
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon linearis	*Narrow-leaved Bottlebrush*	✓	3m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm
Daviesia ulicifolia	*Gorse Bitter-pea*	✓	2m	200mm
Kunzea ambigua	*Tick-bush*	✓	2.5m	200mm
Leptospermum polygalifolium	*Tantoon*	✓	0.5-3m	200mm
Leptospermum trinervium	*Slender Tea-tree*	✓	4m	200mm
Melaleuca armillaris	*Bracelet Honey-myrtle*	✓	5m	200mm
Melaleuca nodosa	*Ball Honey-myrtle*	✓	4m	200mm
Melaleuca thymifolia	*Thyme Honey-myrtle*	✓	0.8m	200mm
Philotheca salsolifolia	*Philotheca*	✓	1m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Groundcovers				
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily, Spreading Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Imperata cylindrica	*Blady Grass*	✓	1.2m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass, Meadow Rice-grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall (refer to engineer's details)
- Indicative Truck Parking
- S — Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

The warehouses have been located to provide opportunities for landscaping and screen planting along the western edges of the facade, responding to visual receptors to the west of the development. This arrangement allows for maximum planting along the western side of the internal road. This strategy provides opportunities for screening built forms from the surrounding urban context. The proposed carparking areas include a mixture of large canopy trees providing shade and amenity to the hard-stand area and reducing the heat island effect in these zones.

A variety of tree forms - both small and large - are proposed to create a hierarchy in the proposed landscape works.

PLANT IMAGES

Corymbia maculata

Eucalyptus sideroxylon

Eucalyptus tereticornis

Melaleuca decora

Melaleuca linariifolia

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project
MOOREBANK PRECINCT WEST STAGE 2

Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	B	20150728	LDA-006

Scale: 1:1000 @ A1 (1:2000 @ A3)
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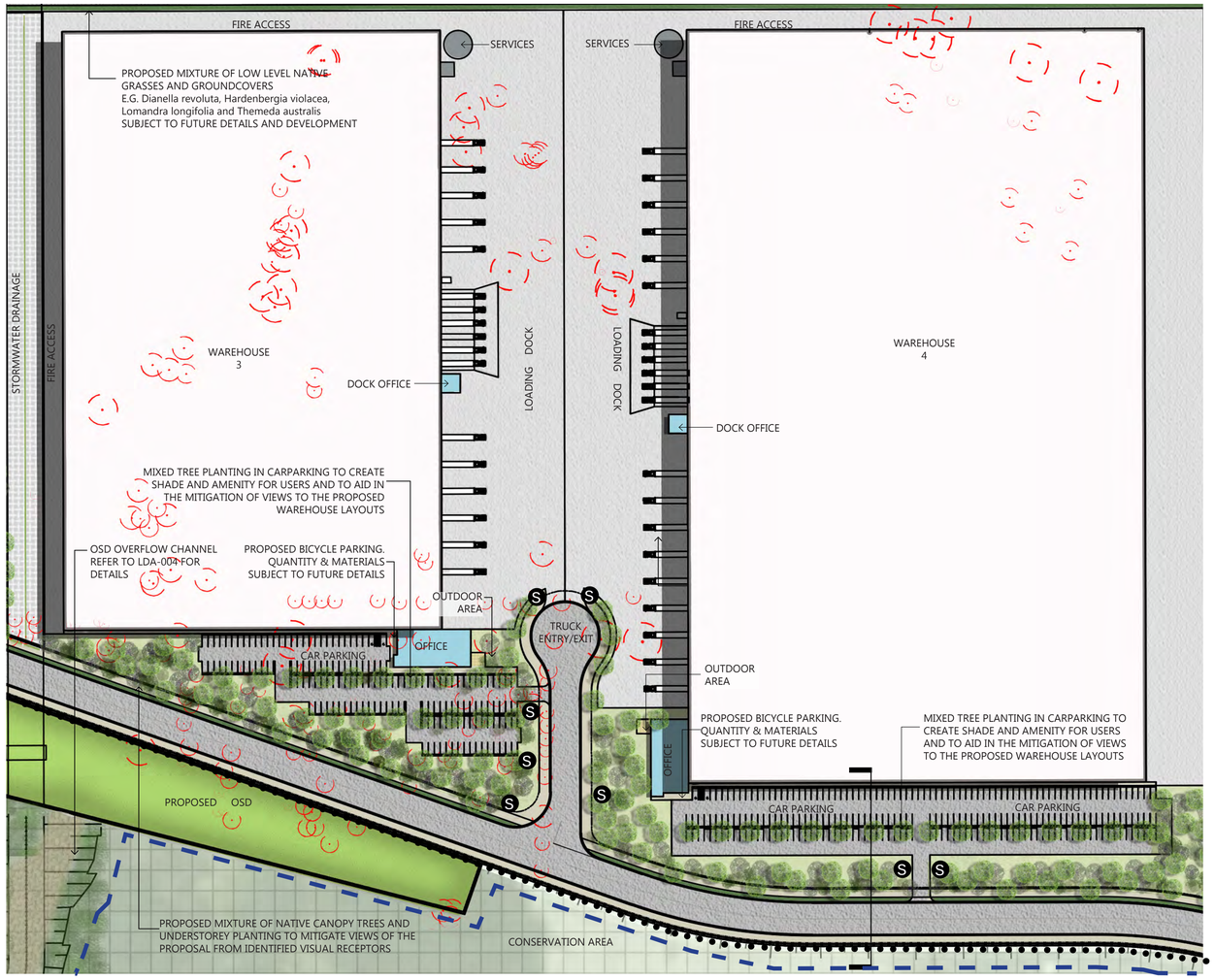
North

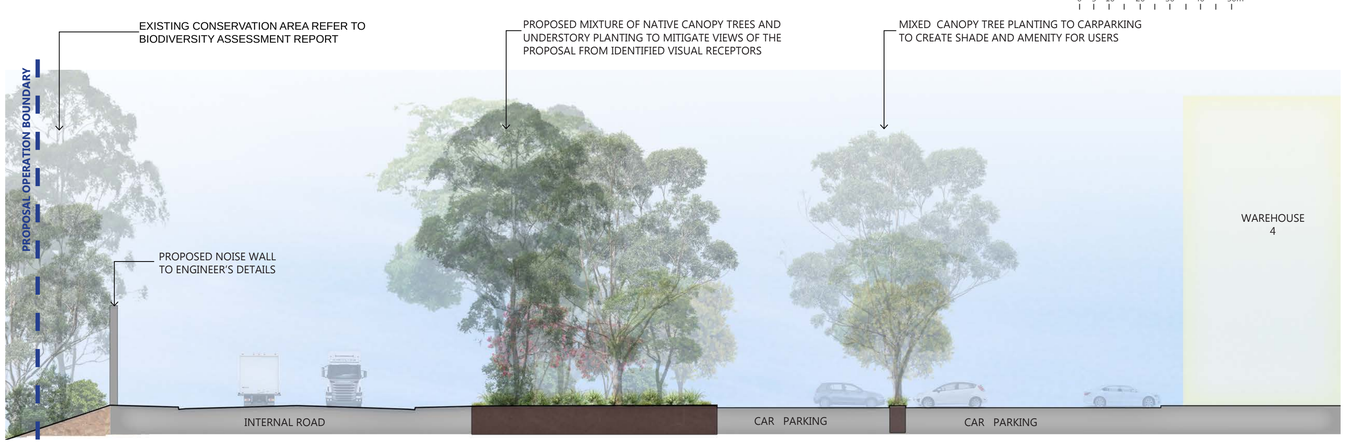
Drawing Name
LANDSCAPE PLAN - WAREHOUSES 1A & 2A



PRECINCT B LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m



PRECINCT B LANDSCAPE SECTION

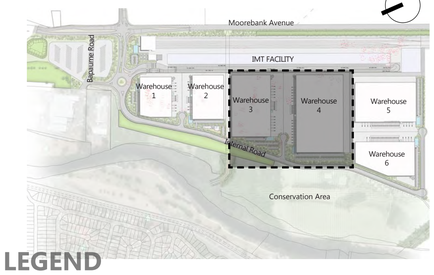
SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Trees				
Acmena smithii	*Lilly-pilly*	✓	12m	100L
Angophora bakeri	*Narrow-leaved Apple*	✓	10m	100L
Angophora floribunda	*Rough-barked Apple*	✓	20m	100L
Angophora subvelutina	*Broad-leaved Apple*	✓	20m	100L
Corymbia maculata	*Spotted Gum*	✓	20-25m	100L
Eucalyptus racemosa	*Snappy Gum, Scribbly Gum*	✓	15m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Acacia decurrens	*Black Wattle*	✓	10-15m	200mm
Acacia falcata	*Sickle Wattle*	✓	4m	200mm
Acacia parramattensis	*Parramatta Green Wattle*	✓	10m	200mm
Bossiaea heterophylla	*Variable Bossiaea*	✓	1m	200mm
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon linearis	*Narrow-leaved Bottlebrush*	✓	3m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm
Daviesia ulicifolia	*Gorse Bitter-pea*	✓	2m	200mm
Kunzea ambigua	*Tick-bush*	✓	2.5m	200mm
Leptospermum polygalifolium	*Tantoon*	✓	0.5-3m	200mm
Leptospermum trinervium	*Slender Tea-tree*	✓	4m	200mm
Melaleuca armillaris	*Bracelet Honey-myrtle*	✓	5m	200mm
Melaleuca nodosa	*Ball Honey-myrtle*	✓	4m	200mm
Melaleuca thymifolia	*Thyme Honey-myrtle*	✓	0.8m	200mm
Philotheca salsolifolia	*Philotheca*	✓	1m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Groundcovers				
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily, Spreading Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Imperata cylindrica	*Blady Grass*	✓	1.2m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass, Meadow Rice-grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall (refer to engineer's details)
- Indicative Truck Parking
- Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

The warehouses have been located to provide opportunities for landscaping and screen planting along the western edges of the facade, responding to visual receptors to the west of the development. This arrangement allows for maximum planting along the western side of the internal road. This strategy provides opportunities for screening built forms from the surrounding urban context. The proposed carparking areas include a mixture of large canopy trees providing shade and amenity to the hard-stand area and reducing the heat island effect in these zones.

A variety of tree forms - both small and large - are proposed to create a hierarchy in the proposed landscape works.

PLANT IMAGES

Corymbia maculata

Eucalyptus sideroxylon

Eucalyptus tereticornis

Melaleuca decora

Melaleuca linariifolia

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: Moorebank Avenue, Moorebank, NSW

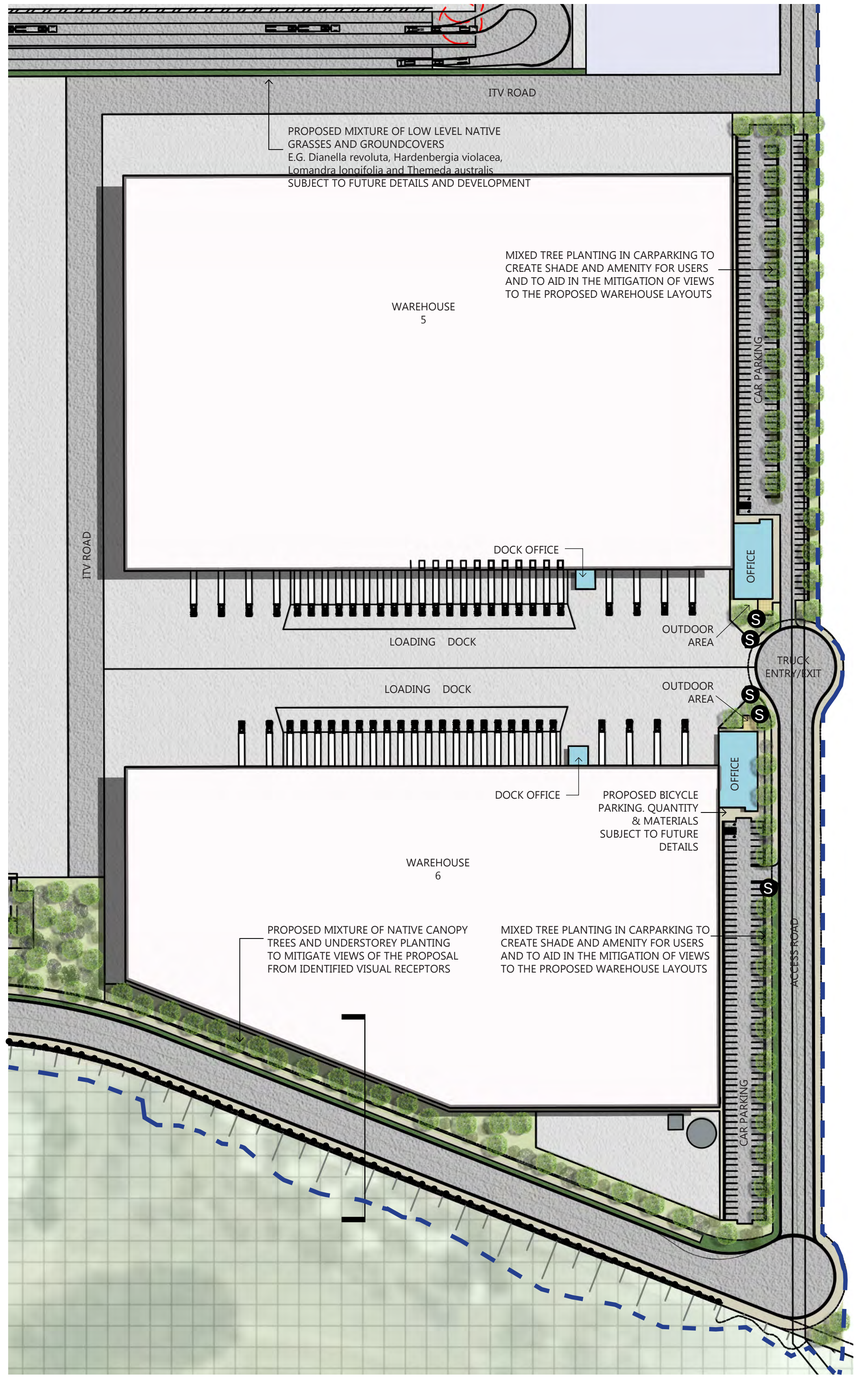
Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-007**

Scale: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

North

Drawing Name: **LANDSCAPE PLAN - WAREHOUSES 1B & 2B**



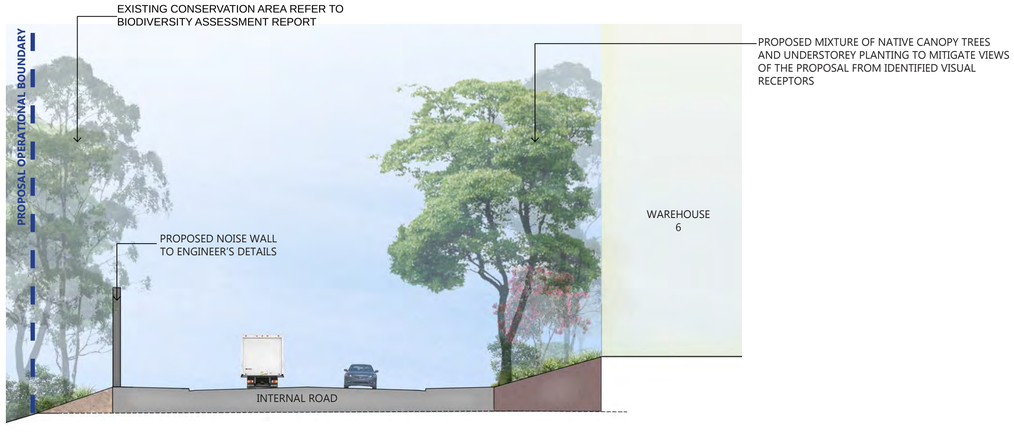
PRECINCT C LANDSCAPE PLAN

SCALE: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	EXPECTED MATURE HEIGHT	INSTALL SIZE
Trees				
Acmena smithii	*Lilly-pilly*	✓	12m	100L
Angophora bakeri	*Narrow-leaved Apple*	✓	10m	100L
Angophora floribunda	*Rough-barked Apple*	✓	20m	100L
Angophora subvelutina	*Broad-leaved Apple*	✓	20m	100L
Corymbia maculata	*Spotted Gum*	✓	20-25m	100L
Eucalyptus racemosa	*Snappy Gum, Scribbly Gum*	✓	15m	100L
Melaleuca decora	*White Cloud Tree*	✓	6-10m	45L
Melaleuca linariifolia	*Flax-leaved Paperbark*	✓	10m	45L
Shrubs				
Acacia decurrens	*Black Wattle*	✓	10-15m	200mm
Acacia falcata	*Sickle Wattle*	✓	4m	200mm
Acacia parramattensis	*Parramatta Green Wattle*	✓	10m	200mm
Bossiaea heterophylla	*Variable Bossiaea*	✓	1m	200mm
Callistemon citrinus	*Scarlet Bottlebrush*	✓	4m	200mm
Callistemon linearis	*Narrow-leaved Bottlebrush*	✓	3m	200mm
Callistemon salignus	*White Bottlebrush, Pink-tips*	✓	9m	200mm
Daviesia ulicifolia	*Gorse Bitter-pea*	✓	2m	200mm
Kunzea ambigua	*Tick-bush*	✓	2.5m	200mm
Leptospermum polygalifolium	*Tantoon*	✓	0.5-3m	200mm
Leptospermum trinervium	*Slender Tea-tree*	✓	4m	200mm
Melaleuca armillaris	*Bracelet Honey-myrtle*	✓	5m	200mm
Melaleuca nodosa	*Ball Honey-myrtle*	✓	4m	200mm
Melaleuca thymifolia	*Thyme Honey-myrtle*	✓	0.8m	200mm
Philotheca salsolifolia	*Philotheca*	✓	1m	200mm
Pittosporum undulatum	*Pittosporum*	✓	10m	200mm
Groundcovers				
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily, Spreading Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed, Mercury Bay Weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Imperata cylindrica	*Blady Grass*	✓	1.2m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass, Meadow Rice-grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

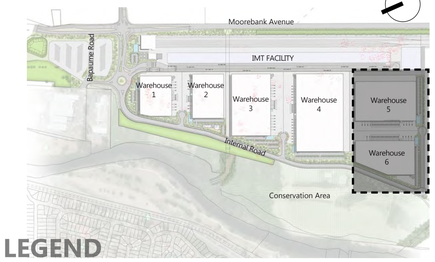


PRECINCT C LANDSCAPE SECTION

SCALE: 1:200 @ A1 (1:400 @ A3)

0 2 4 6 8 10 12 14 16 18 20M

KEY PLAN



LEGEND

- Proposed Canopy Tree Planting (refer to Plant Schedules on relevant plans)
- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Landscape Area
- Conservation Area (refer to Biodiversity Assessment Report)
- Proposed Noise Wall (refer to engineer's details)
- Indicative Truck Parking
- S — Proposed Site Signage refer to Architectural Drawing 115123_A_SSD_5000
- Existing Trees to be Removed

DESIGN STATEMENT

The warehouses have been located to provide opportunities for landscaping and screen planting along the western edges of the facade, responding to visual receptors to the west of the development. This arrangement allows for maximum planting along the western side of the internal road. This strategy provides opportunities for screening built forms from the surrounding urban context. The proposed carparking areas include a mixture of large canopy trees providing shade and amenity to the hard-stand area and reducing the heat island effect in these zones.

A variety of tree forms - both small and large - are proposed to create a hierarchy in the proposed landscape works.

PLANT IMAGES

Corymbia maculata

Eucalyptus sideroxylon

Eucalyptus tereticornis

Melaleuca decora

Melaleuca linariifolia

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Ph (02) 9411 3279 www.groundink.com.au

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: Moorebank Avenue, Moorebank, NSW

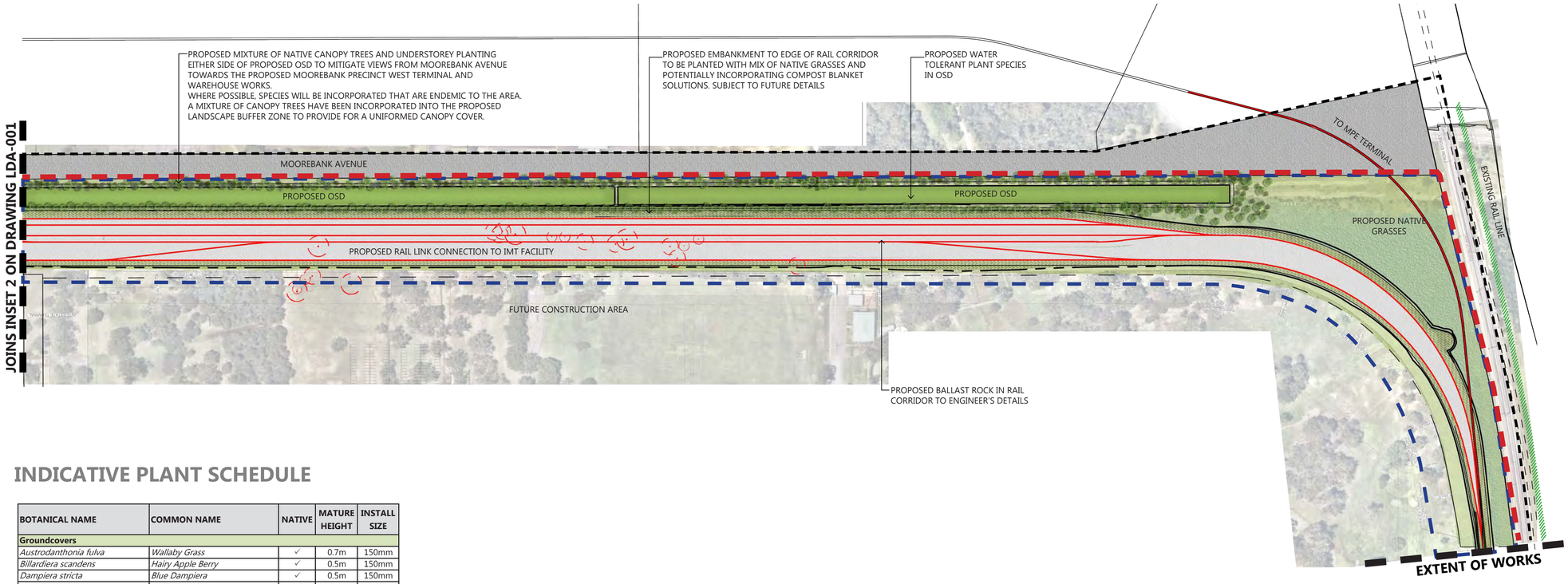
Date	Revision	Job Number	Drawing Number
29.05.2017	B	20150728	LDA-008

Scale: 1:1000 @ A1 (1:2000 @ A3)

0 5 10 20 30 40 50m

North

Drawing Name: **LANDSCAPE PLAN - WAREHOUSES 1C& 2C**



LEGEND

- MPW Site Boundary
- Proposal Operational Boundary
- Proposed Rail Line
- Existing Rail Line
- Proposed Landscape Area
- Extent of Embankment
- Existing Trees to be Removed

INDICATIVE PLANT SCHEDULE

BOTANICAL NAME	COMMON NAME	NATIVE	MATURE HEIGHT	INSTALL SIZE
Groundcovers				
Austrodanthonia fulva	*Wallaby Grass*	✓	0.7m	150mm
Billardiera scandens	*Hairy Apple Berry*	✓	0.5m	150mm
Dampiera stricta	*Blue Dampiera*	✓	0.5m	150mm
Dianella caerulea	*Blue Flax-lily*	✓	0.6m	150mm
Dianella revoluta	*Blue Flax-lily*	✓	0.8m	150mm
Dichondra repens	*Kidney-weed*	✓	0.3m	150mm
Hardenbergia violacea	*False Sarsaparilla*	✓	Creeper	150mm
Imperata cylindrica	*Blady Grass*	✓	1.2m	150mm
Lomandra longifolia	*Spiny-headed Mat-rush*	✓	0.7m	150mm
Microlaena stipoides	*Weeping Grass*	✓	0.7m	150mm
Themeda australis	*Kangaroo Grass*	✓	0.8m	150mm

DESIGN STATEMENT

The landscaping of the proposed rail link connection to the IMT Facility consists of a variety of low-level native grasses and groundcovers. This approach aims to integrate the proposed development into the broader environment by using local species to enhance local habitat values. The planting style is to be informal which will serve to enhance the natural characteristics of the landscape. Where reasonable and feasible plants will be propagated with seeds collected within the local area. This will reinforce the genetic integrity of the region.

Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

DESIGN IMAGES

Ballast Rock

Lomandra longifolia

Native Grasses against Ballast Rock

Dampiera stricta

Austrodanthonia fulva

Hardenbergia violacea

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Architect: REIDCAMPBELL

Project Manager: TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

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Project
MOOREBANK PRECINCT WEST STAGE 2

Project Address
Moorebank Avenue, Moorebank, NSW

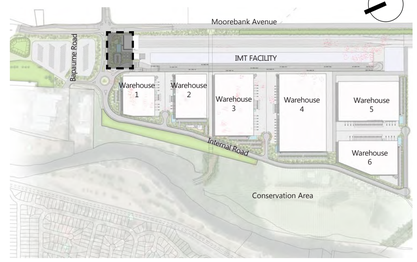
Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-009**

Scale
1:2000 @ A1 (1:4000 @ A3)
0 5 10 20 30 40 50m

North

Drawing Name
RAIL LINK LANDSCAPE PLAN

KEY PLAN



DESIGN STATEMENT

The corner of Moorebank Avenue and the new Internal Road will accommodate an administration building. The intent of the landscaping is to integrate the built works of the proposal with the greater landscape character of the Moorebank area and neighbouring sites.

The landscape for the main entrance aims to provide an easily-orientated pathway for visitors and workers of the site. Vehicular, pedestrian and bicycle entry are all integrated into one cohesive entry for the site. Proposed signage will use geometries and forms that strongly relate to rail transport. Signage will incorporate a natural looking material which has a strong association with bushland landscapes. Planting will provide significant screening from the roadway to the built structures of the site. It will use a range of local species that have been selected for their unique forms, colours and textures. Proposed plant species have been selected for their site-suitability with many species selected from Liverpool City Council's recommended plant list.

PLANT IMAGES

Allocasuarina littoralis

Eucalyptus racemosa

Melaleuca decora

Pittosporum undulatum

Themeda asutralis

Lomandra longifolia

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Architect
REIDCAMPBELL

Project Manager
TACTICAL GROUP

Issue	Date	Description	Drawn	Checked
A	3.8.16	FOR DEVELOPMENT APPLICATION	BH	RL
B	29.5.17	FOR DEVELOPMENT APPLICATION	BH	RL

Landscape Architect
groundink.
landscape architecture + design visuals
ABN 55 163 025 45 ACN 163 025 456
Suite 201, 75 Archer St, Chatswood NSW 2067
Ph (02) 9411 3279 www.groundink.com.au

Project
MOOREBANK PRECINCT WEST STAGE 2

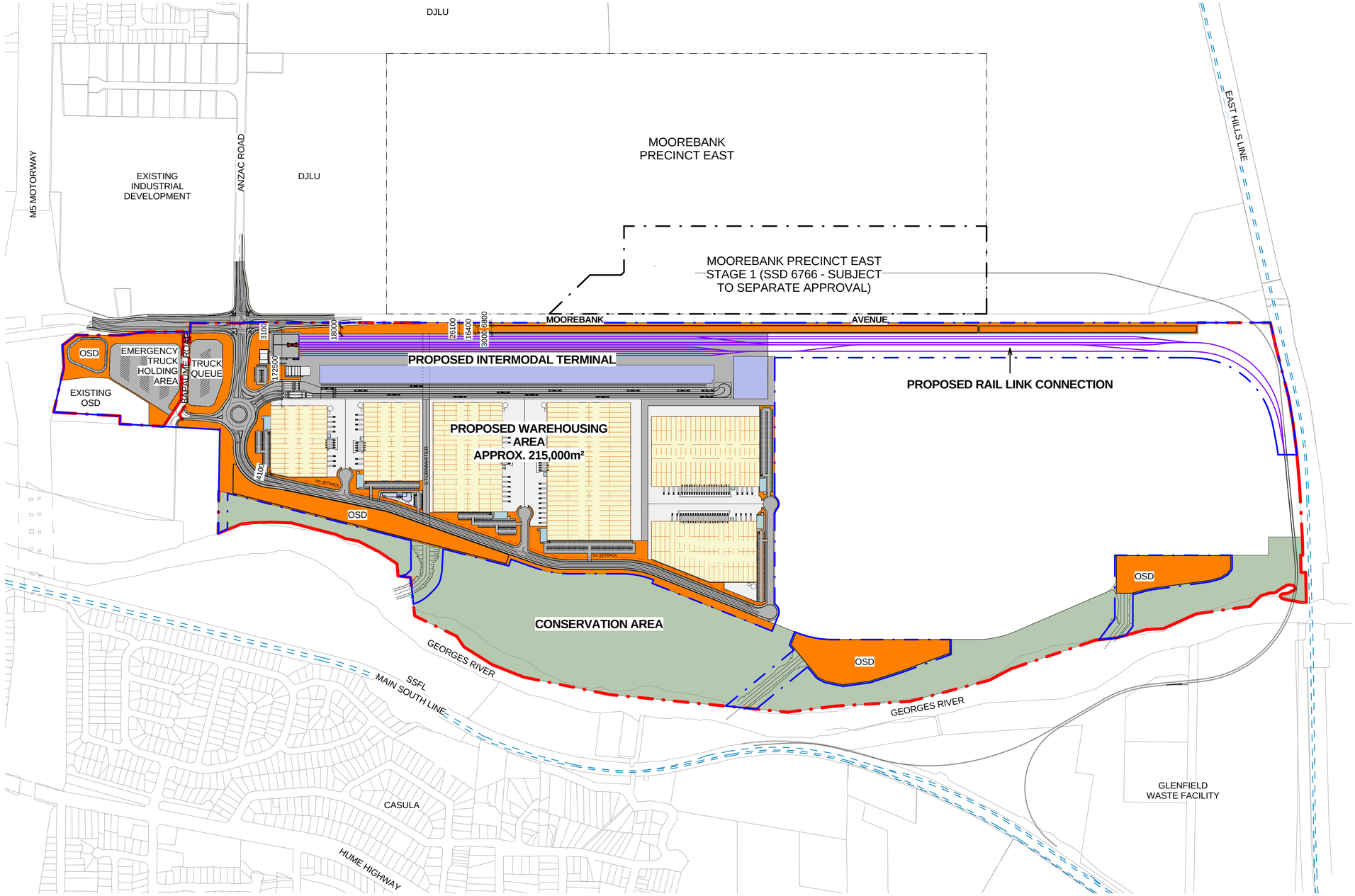
Project Address
Moorebank Avenue, Moorebank, NSW

Date	Revision	Job Number	Drawing Number
29.05.2017	**B**	20150728	**LDA-010**

Scale
1:50 @ A1 (1:100 @ A3)
0 0.5 1 1.5 2 2.5 3

North

Drawing Name
ESTATE ENTRY SIGNAGE LANDSCAPE



ITEM	MEASUREMENT (APPROX.)	PERCENTAGE OF SITE (APPROX.)
Operational area		
Soft landscaping - grass/planted areas and OSDs	188,681	*19.91%
Other areas		
Conservation area	339,776	**17.78%
*based on measuring the operational areas of the MPW Stage 2 site		
** based on the entire site area (operations + conservation area)		
Note: neither measurements include the southern earthworks area which is to be developed as part of a future stage of approval.		

LEGEND:

- OPERATIONAL BOUNDARY
- CONSERVATION AREA

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Issue	Description	Date	Ver	Auth
A	ISSUE FOR INFORMATION	15/03/2018		

North

Notes

ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project

MOOREBANK PRECINCT WEST STAGE 2

Project Address

MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer

SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager

TACTICAL GROUP

Architect

REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title

MPW STAGE 2 LANDSCAPING MEASUREMENTS

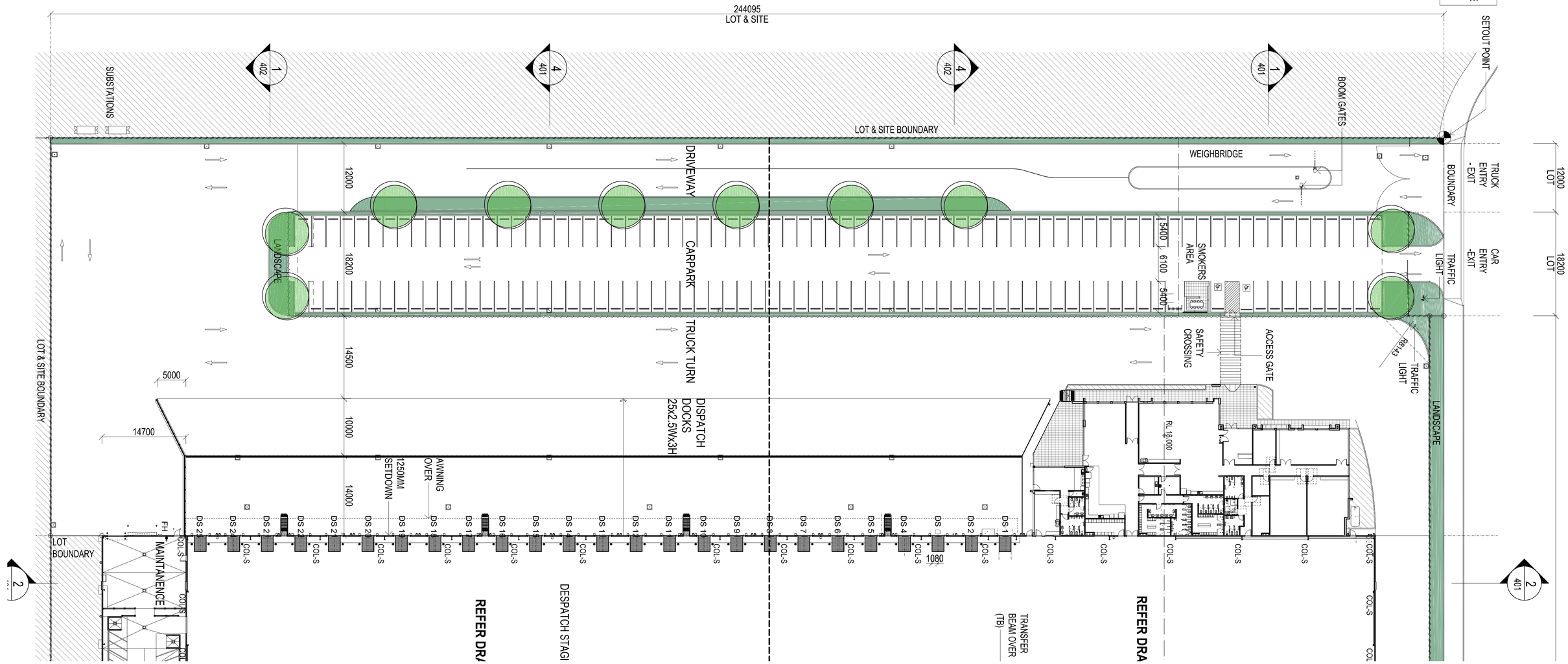
Drawn	Checked	Print Date	Scale @ A1
DH	SK	16/03/2018 9:26:35 AM	As indicated

Project Number: 115123

Issue: A

Drawing Number: ASK-80

NOTE:
ALL FINAL SETOUT ON SITE
TO SURVEYOR DETAILS

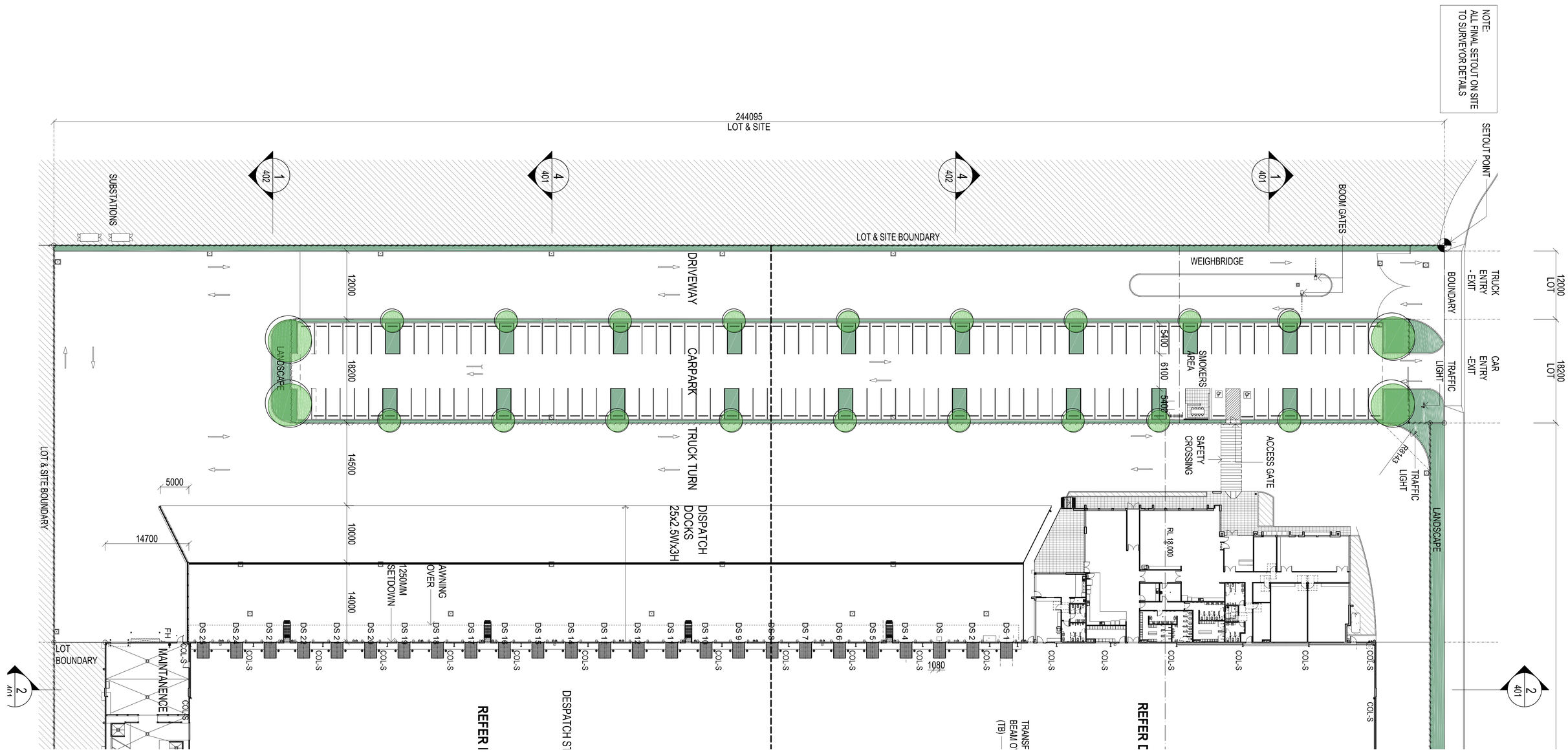


1 / ASK□001 LANDSCAPING STRATEGY 01 □STRIP LANDSCAPING

NTS

REIDCAMPBELL

MOOREBANK LOGISITICS PARK MOOREBANK AVEN□E, MOOREBANK, NSW	**CONCEPT DESIGN**	**DRAWING NAME** LANDSCAPING STRATEGY 01	NORTH POINT	**SCALE** NTS □ **DATE** 22/0□/2018	**SHEET NUMBER** ASK□001	**REV** C



1 ASK□002 LANDSCAPING STRATEGY 02 □T□RF PAVE

NTS

REIDCAMPBELL

MOOREBANK LOGISITICS PARK

MOOREBANK AVEN□E, MOOREBANK, NSW

CONCEPT DESIGN

DRAWING NAME: LANDSCAPING STRATEGY 02

NORTH POINT

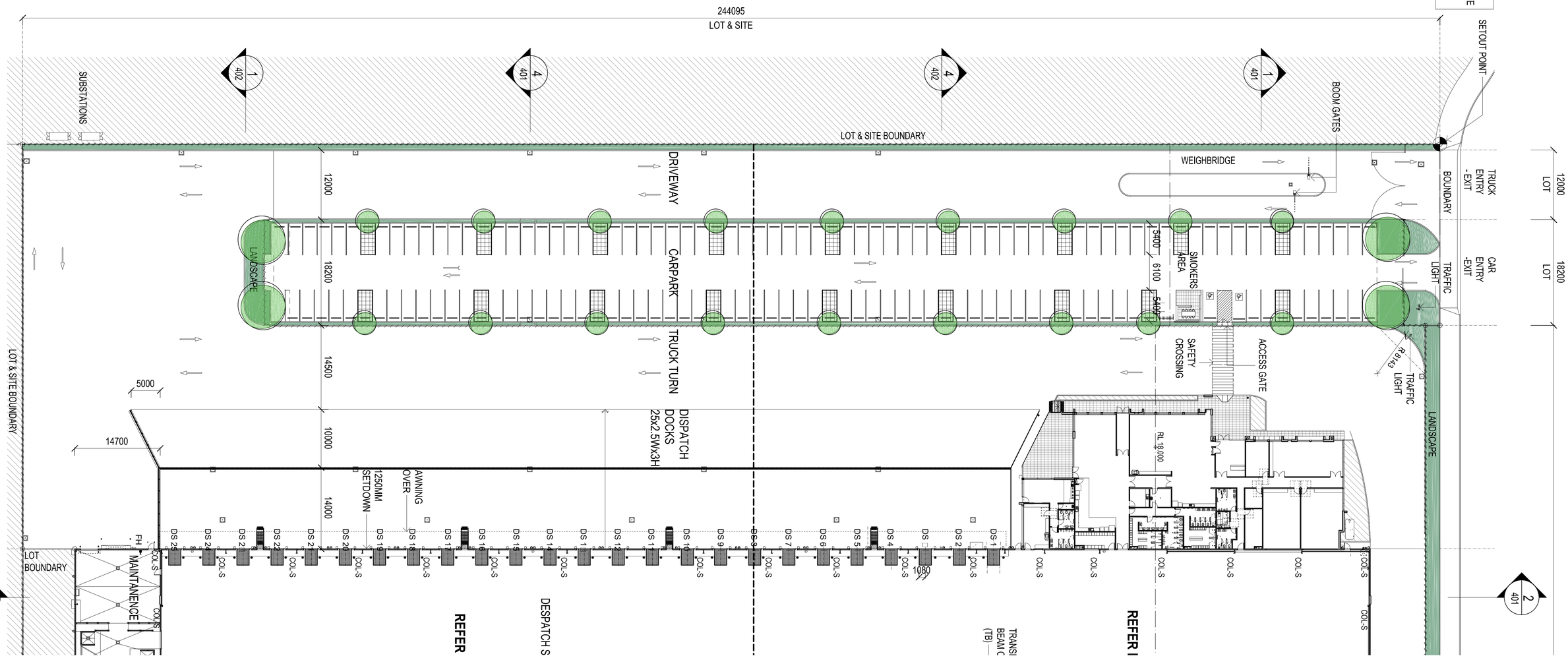
SCALE: NTS □

DATE: 22/0□/2018

SHEET NUMBER: ASK□002

REV: A

NOTE:
ALL FINAL SETOUT ON SITE
TO SURVEYOR DETAILS



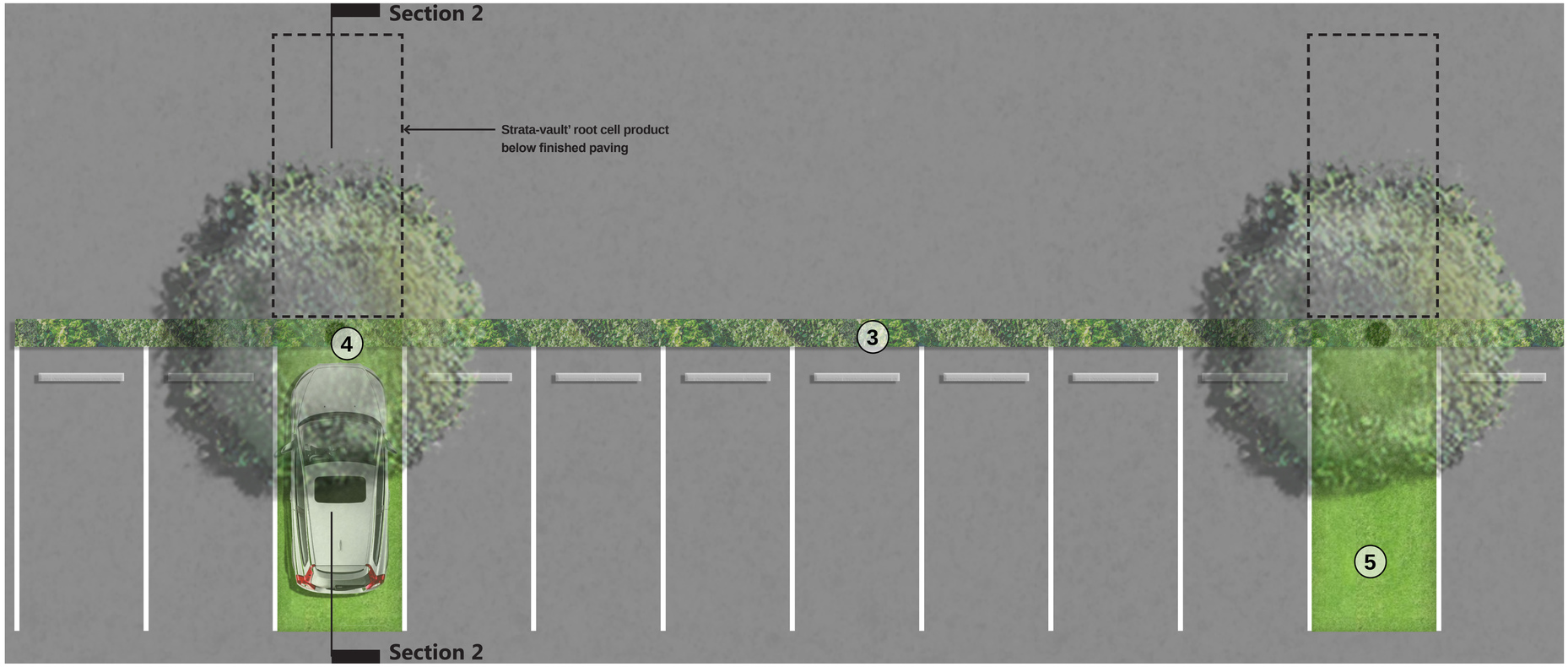
1 ASK□00□

LANDSCAPING STRATEGY 0□ □PERMEABLE PAVING

NTS

REIDCAMPBELL

MOOREBANK LOGISITICS PARK MOOREBANK AVEN□E, MOOREBANK, NSW	**CONCEPT DESIGN**	**DRAWING NAME** LANDSCAPING STRATEGY 03□	NORTH POINT	**SCALE** NTS □ **DATE** 22/0□/2018	**SHEET NUMBER** ASK□00□	**REV** A



1 **CARPARK PLAN**

0 0.5 1 1.5 2 2.5 3m

1: 50 @ A1 (1:100 @ A3)

2 **CARPARK SECTION**

0 0.2 0.4 0.6 0.8 1 1.2m

1: 20 @ A1 (1:40 @ A3)

COUNCIL CONDITION

Urban Design and Landscape Plan
B139. (e) (vi) a 2.5m wide landscaped bay every 6-8 car spaces incorporating compact native *Callistemon (Bottlebrush)* trees for shade.

POTENTIAL STRATEGY

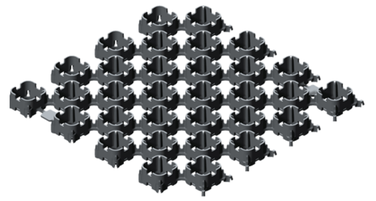
Use of Stratavault tree cell system as supplied by Citygreen to promote the healthy establishment of compact native *Callistemon (Bottlebrush)* trees in accordance with the conditions of consent.

1 STRATA-VAULT

Below-ground plastic cell system that provides both structural integrity to support vehicular paving systems and promotes the healthy establishment of compact native *Callistemon (Bottlebrush)* trees in confined urban environments.

2 TURF-PAVE

Cell system for the installation of trafficable turf as supplied by Elmich.



3 NATIVE GRASS PLANTING

Proposed mix of native, low-water-use grasses and groundcover planting subject to future details.

4 TREE GUARD & COMPACT NATIVE TREE

Proposed tree guard around compact native *Callistemon (Bottlebrush)* tree subject to future selection. Guard is intended to provide protection for the proposed tree planting and act as vehicle barrier.

Callistemon (Bottlebrush)
Species subject to future selection

5 TRAFFICABLE REINFORCED TURF

Proposed turf growing in turf cell product providing landscaped bay every 6-8 car spaces in accordance with the conditions of consent whilst also providing car parking.

6 SOIL MEDIUM

Proposed 600mm deep (minimum) imported soil or salvaged site soil ameliorated in accordance with the fit-for-purpose technical landscape specification requirements as prepared by our office.

GROUND INK
LANDSCAPE ARCHITECTS

Suite 201, 75 Archer St, Chatswood NSW 2067
Ph. (02) 9411 3279 ABN 55 163 025 456
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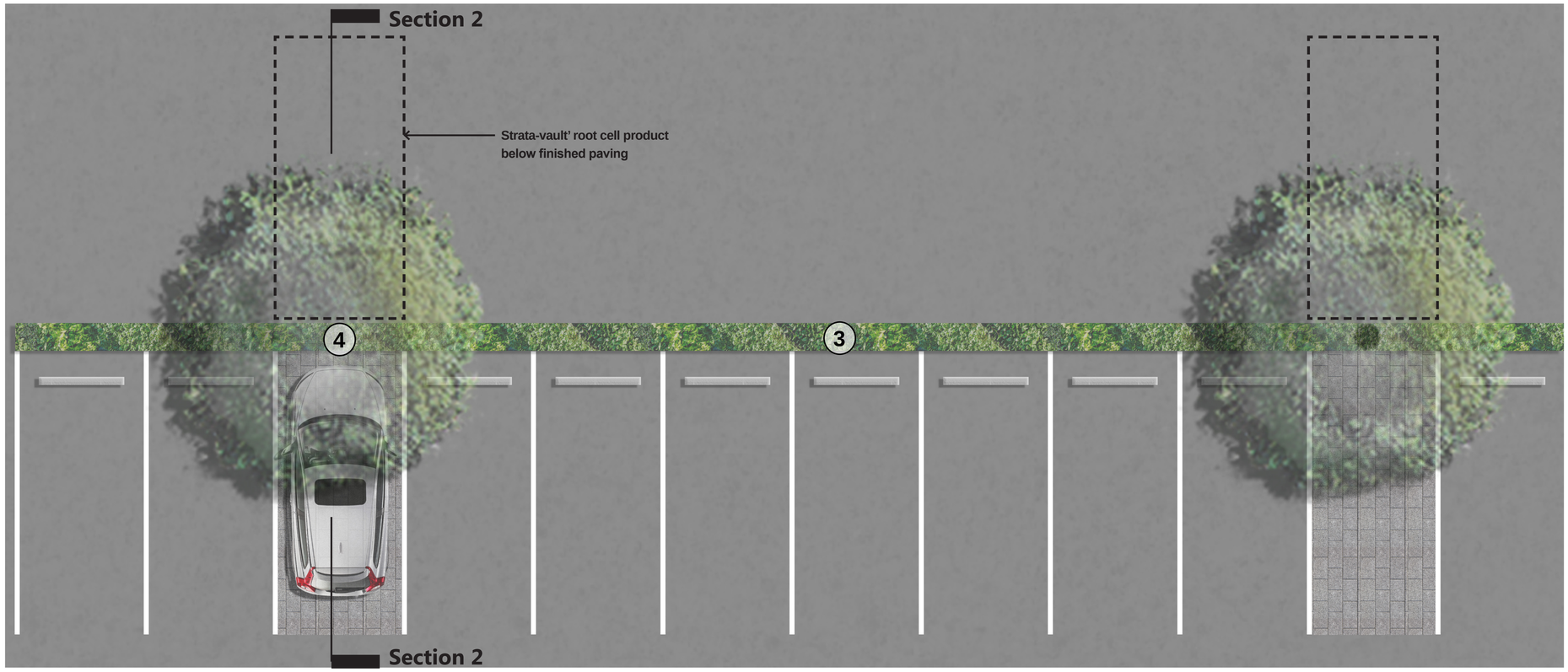
LANDSCAPE CONCEPT DETAIL - TURF PAVE

SIMTA, MOOREBANK, NSW
Date: 22.3.2018
Our reference: 20170610



1 CARPARK PLAN

0 0.5 1 1.5 2 2.5 3m

1: 50 @ A1 (1:100 @ A3)

2 CARPARK SECTION

0 0.2 0.4 0.6 0.8 1 1.2m

1: 20 @ A1 (1:40 @ A3)

COUNCIL CONDITION

Urban Design and Landscape Plan
B139. (e) (vi) a 2.5m wide landscaped bay every 6-8 car spaces incorporating compact native *Callistemon (Bottlebrush)* trees for shade.

POTENTIAL STRATEGY

Use of Stratavault tree cell system as supplied by Citygreen to promote the healthy establishment of compact native *Callistemon (Bottlebrush)* trees in accordance with the conditions of consent.

1 STRATA-VAULT

Below-ground plastic cell system that provides both structural integrity to support vehicular paving systems and promotes the healthy establishment of compact native *Callistemon (Bottlebrush)* trees in confined urban environments.

2 PERMEABLE PAVING

Permeable unit paving to slow stormwater runoff and allow for aeration and irrigation of root zone promoting the healthy establishment of the proposed compact native *Callistemon (Bottlebrush)* trees.

3 NATIVE GRASS PLANTING

Proposed mix of native, low-water-use grasses and groundcover planting subject to future details.

4 TREE GUARD & COMPACT NATIVE

Proposed tree guard around compact native *Callistemon (Bottlebrush)* trees subject to future selection. Guard is intended to provide protection for the proposed tree planting and act as vehicle barrier.

Callistemon (Bottlebrush)
Species subject to future selection

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LANDSCAPE ARCHITECTS

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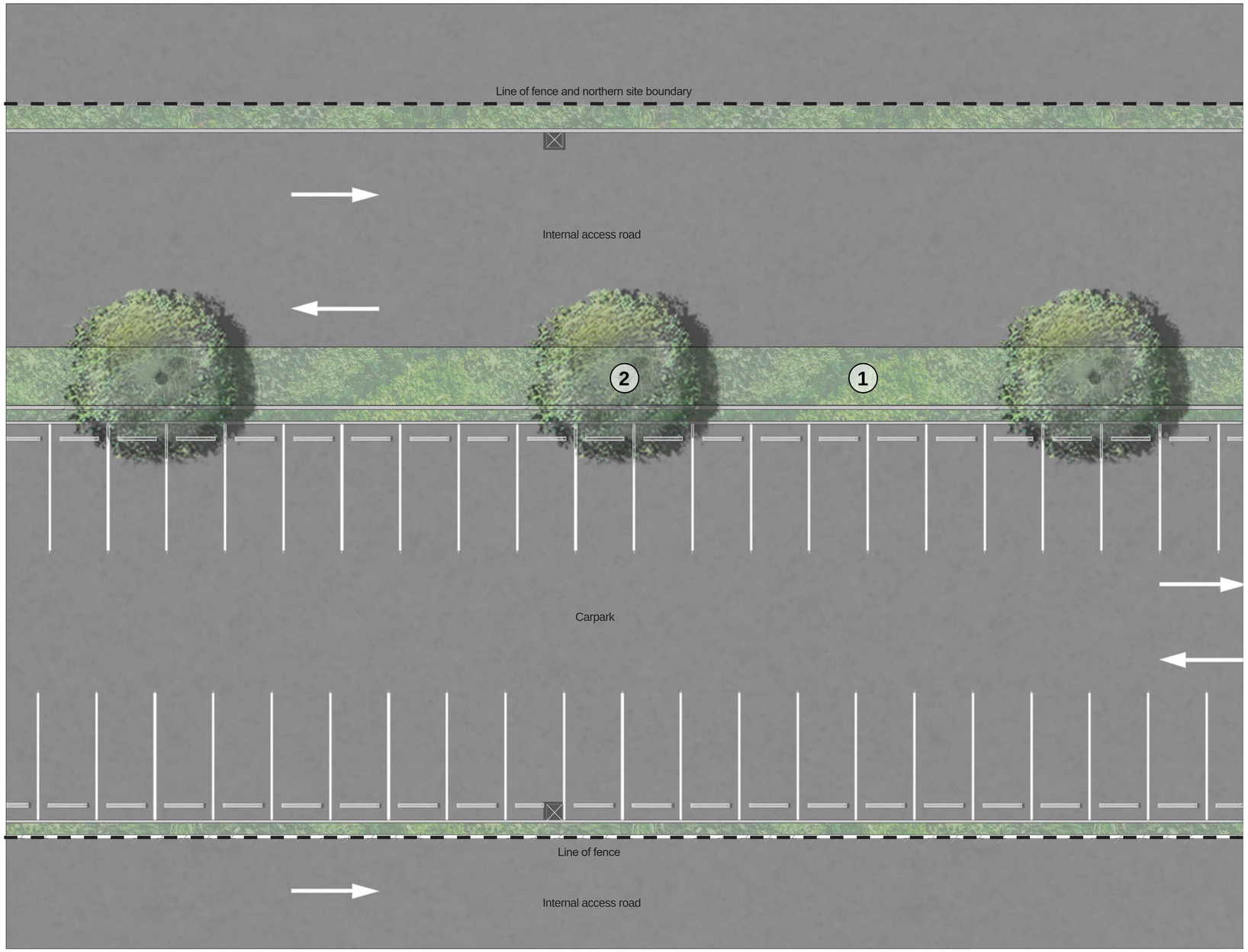
LANDSCAPE CONCEPT DETAIL - PERMEABLE PAVING

SIMTA, MOOREBANK, NSW
Date: 22.3.2018
Our reference: 20170610



1 CARPARK PLAN

0 2 4 6 8 10 12m

1: 100 @ A1 (1:200 @ A3)

COUNCIL CONDITION

Urban Design and Landscape Plan
B139. (e) (vi) a 2.5m wide landscaped bay every 6-8 car spaces incorporating compact native *Callistemon (Bottlebrush)* trees for shade.

POTENTIAL STRATEGY

Use of 3.0m wide planting bed to promote the healthy establishment of compact canopy trees in accordance with the conditions of consent.

1 NATIVE GRASS PLANTING

Proposed mix of native, low-water-use grasses and groundcover planting subject to future details.

2 COMPACT NATIVE TREE

Proposed compact native *Callistemon (Bottlebrush)* trees subject to future selection. Guard is intended to provide protection for the proposed tree planting and act as vehicle barrier.

Callistemon (Bottlebrush)
Species subject to future selection

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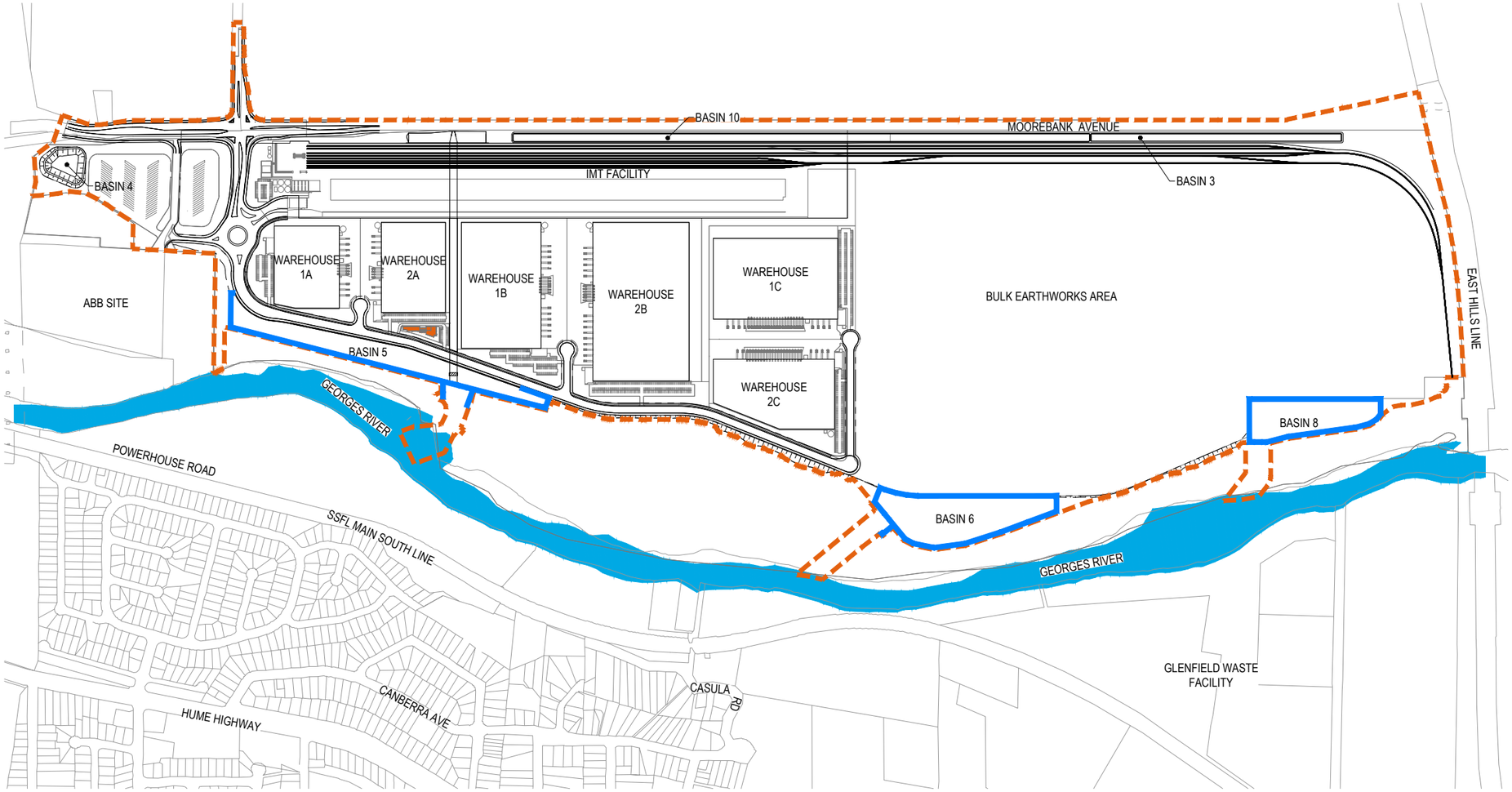
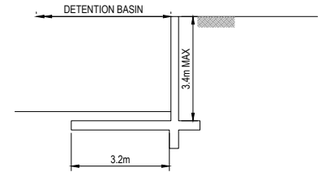
LANDSCAPE CONCEPT DETAIL - VEGETATION STRIP

SIMTA, MOOREBANK, NSW
Date: 22.3.2018
Our reference: 20170610

LEGEND

- PROPOSED RETAINING WALL
- MPW STAGE 2 CONSTRUCTION AREA





TYPICAL RETAINING WALL SECTION
1 : 100

Issue	Description	Date
01	ISSUE FOR INFORMATION	12/03/2018

100 mm on Original

0 50 100 200 300 400 500m
1 : 5000

0 2 4 6 8 10m
1 : 100

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Scales	1 : 5000	Current Issue Signatures	
		Drawn M.O'CALLAGHAN	
Original Size	A1	Designed M.O'CALLAGHAN	
Height Datum	AHD	Checked K.MCAREAVEY	
Grid	MGA	Approved M.KEFFORD	

Filename: C-MIC2-SSD-SK01-AA003760-nsd-RetainingWallLocations.dwg

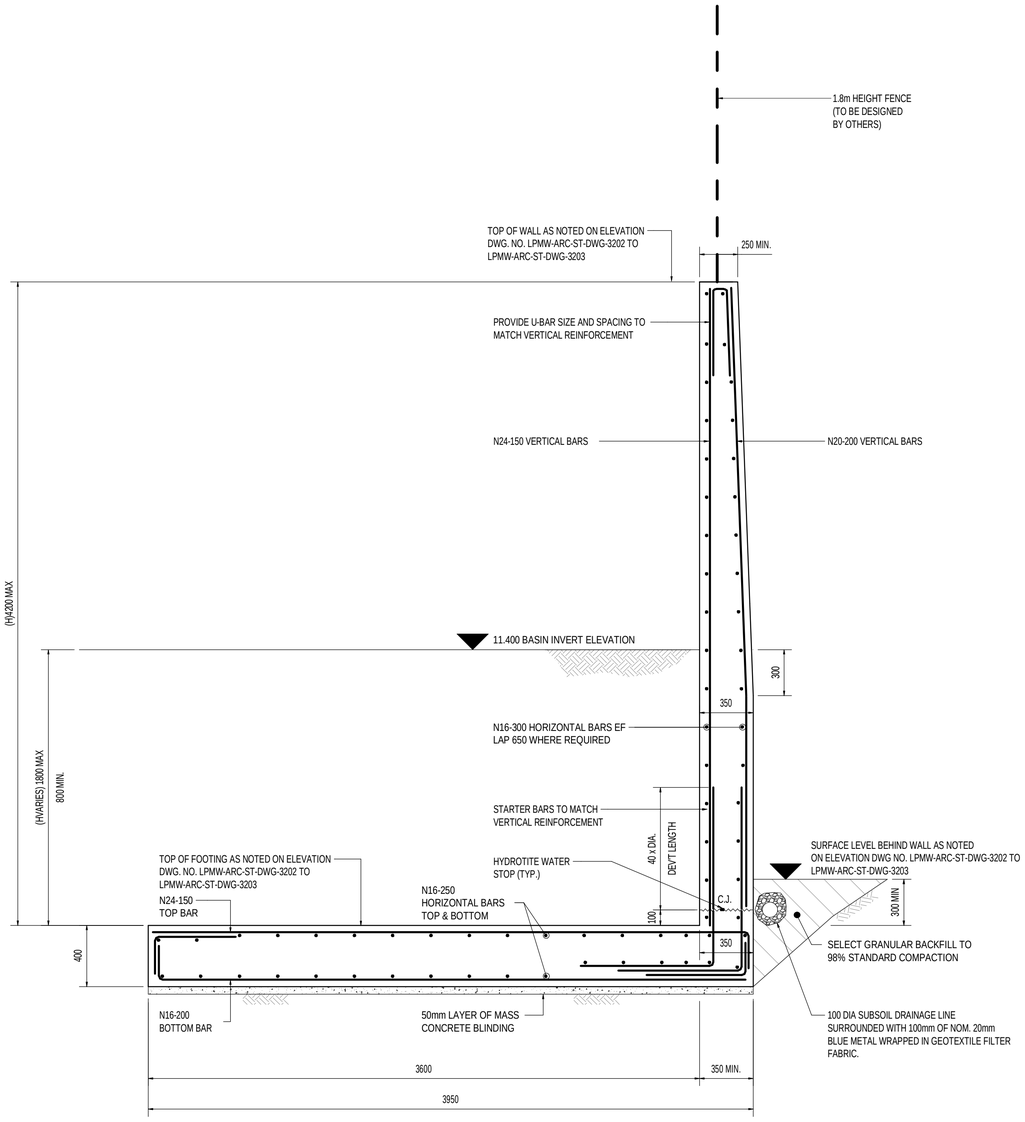
Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: RETAINING WALL LOCATIONS PLAN

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

Drawing No.	Project No.	Issue
C-MIC2-SSD-SK01	AA003760	01

Date Plotted: 12 Mar 2018 - 09:42AM File Name: F:\AA003760\E-CAD\C-Civil\D-Final\C-MIC\B-Stage2\B-SSD\C-MIC2-SSD-SK01-AA003760-nsd-RetainingWallLocations.dwg



RETAINING WALL TYPE '6E'

1 : 20

Issue	Description	Date
04	ISSUE FOR CONSTRUCTION	30/06/2017
03	ISSUE FOR INFORMATION	31/03/2017
02	ISSUE FOR INFORMATION	24/02/2017
01	ISSUE FOR INFORMATION	31/01/2017

0 500 1000 1500 2000mm

1 : 20

100mm on Original

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE — TACTICAL GROUP

Status: **FOR CONSTRUCTION**

		Current Issue Signatures	
Scale	1:20	Drawn A. MANALO	
Original Size	A1	Designed F. LAU	
Height Datum	AHD	Checked J. LEE	
Grid	MGA	Approved J. LEE	

Filename: C:\Arcadis_Revit_Local_Files\Revit 2017\Revit 2017 Local Save\S001-AA001466-SYR17-20170111_MPW_new_emmanuel.alpapara.rvt

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2
LAND PREPARATION
MAIN WORKS (LPMW)

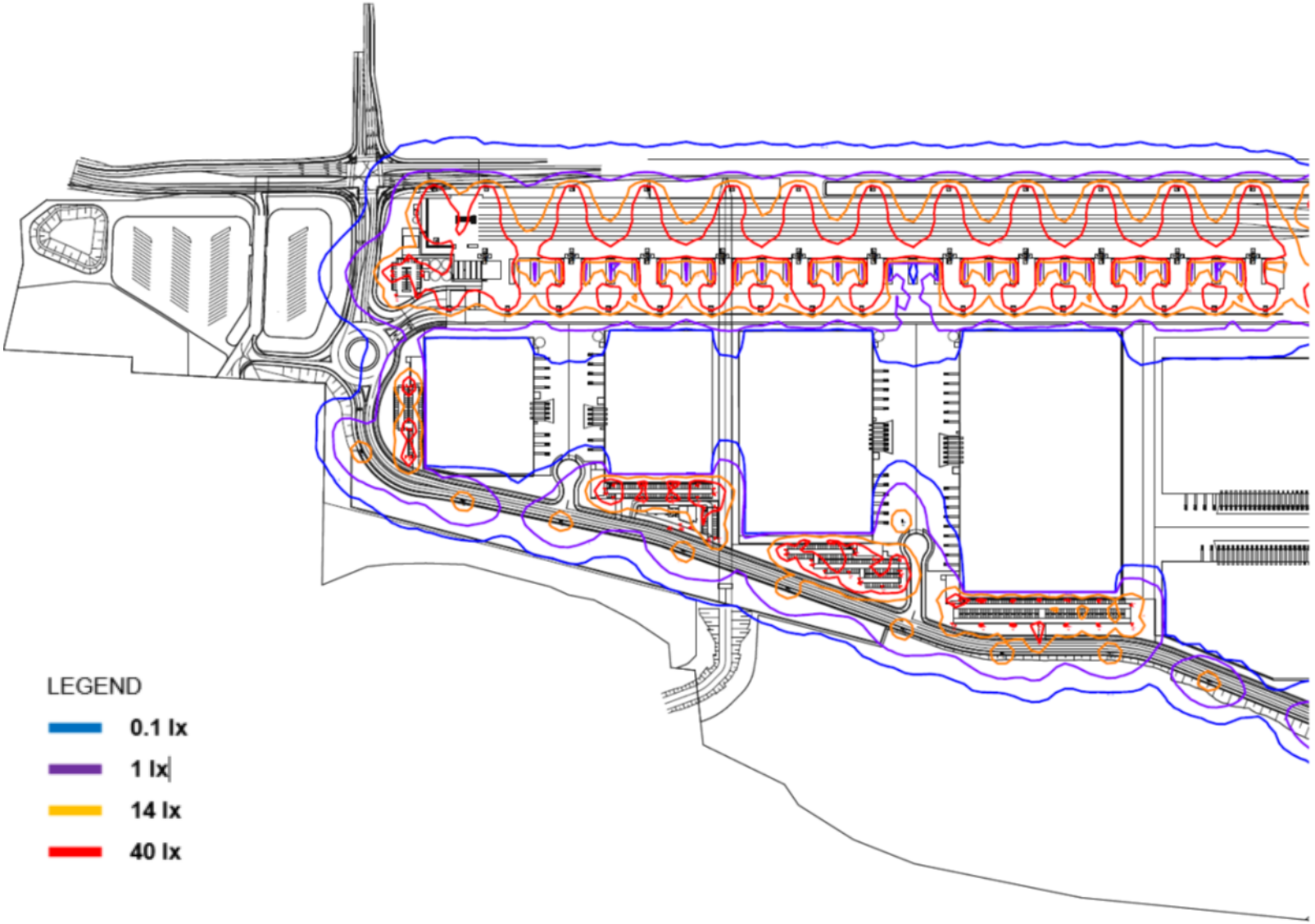
Title: OSD BASIN 6 (MB06)
RETAINING WALL
DETAILS SHEET 3

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker Street
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel: +61 2 8907 9000
Fax: +61 2 8907 9001
arcadis.com

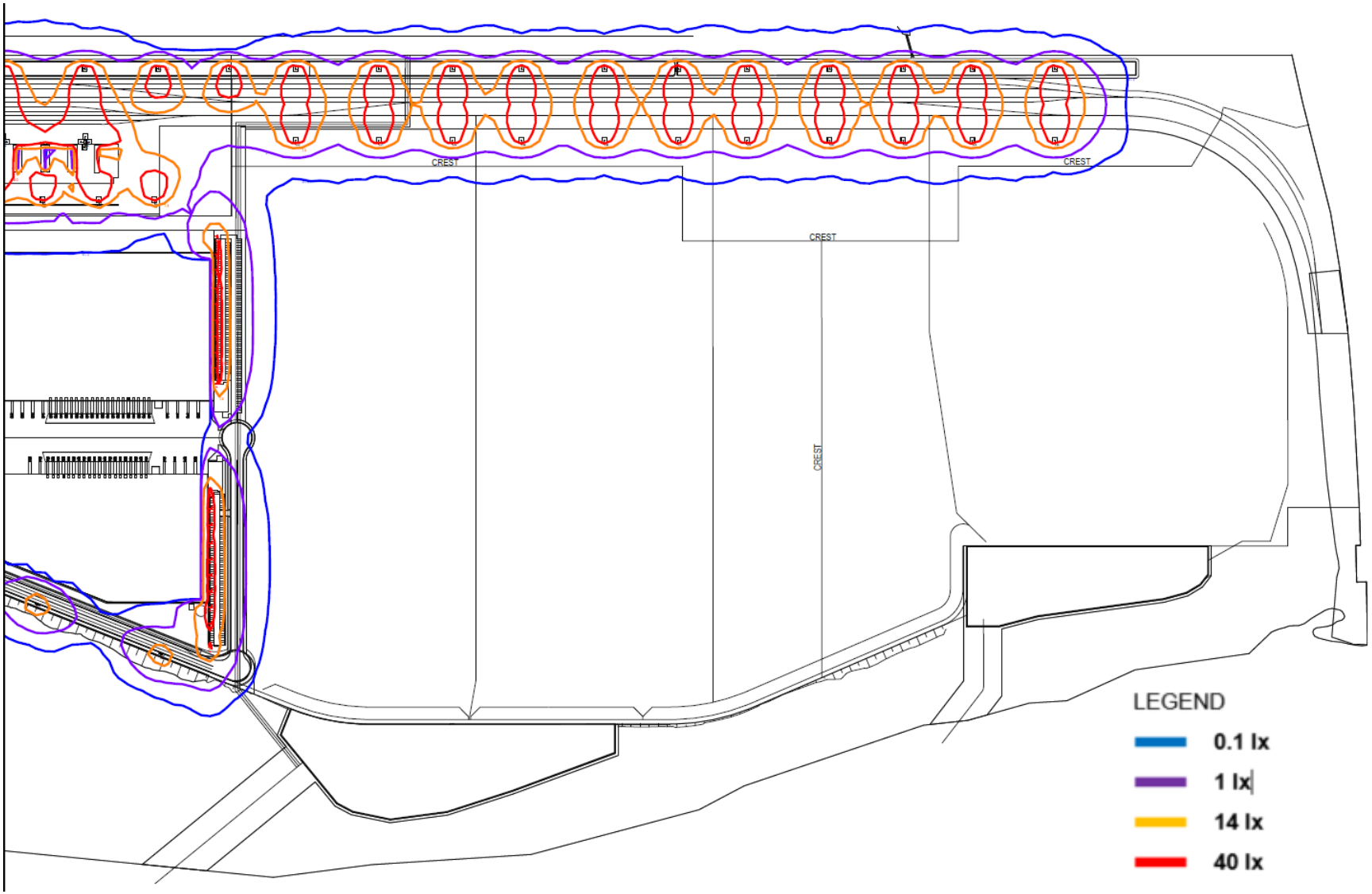
Volume No. 03
Project No. AA009335
Drawing No. LPMW-ARC-ST-DWG-3206
Issue 04

Date Plotted: 6/29/2017 7:19:03 PM

APPENDIX B – LIGHTING PLAN

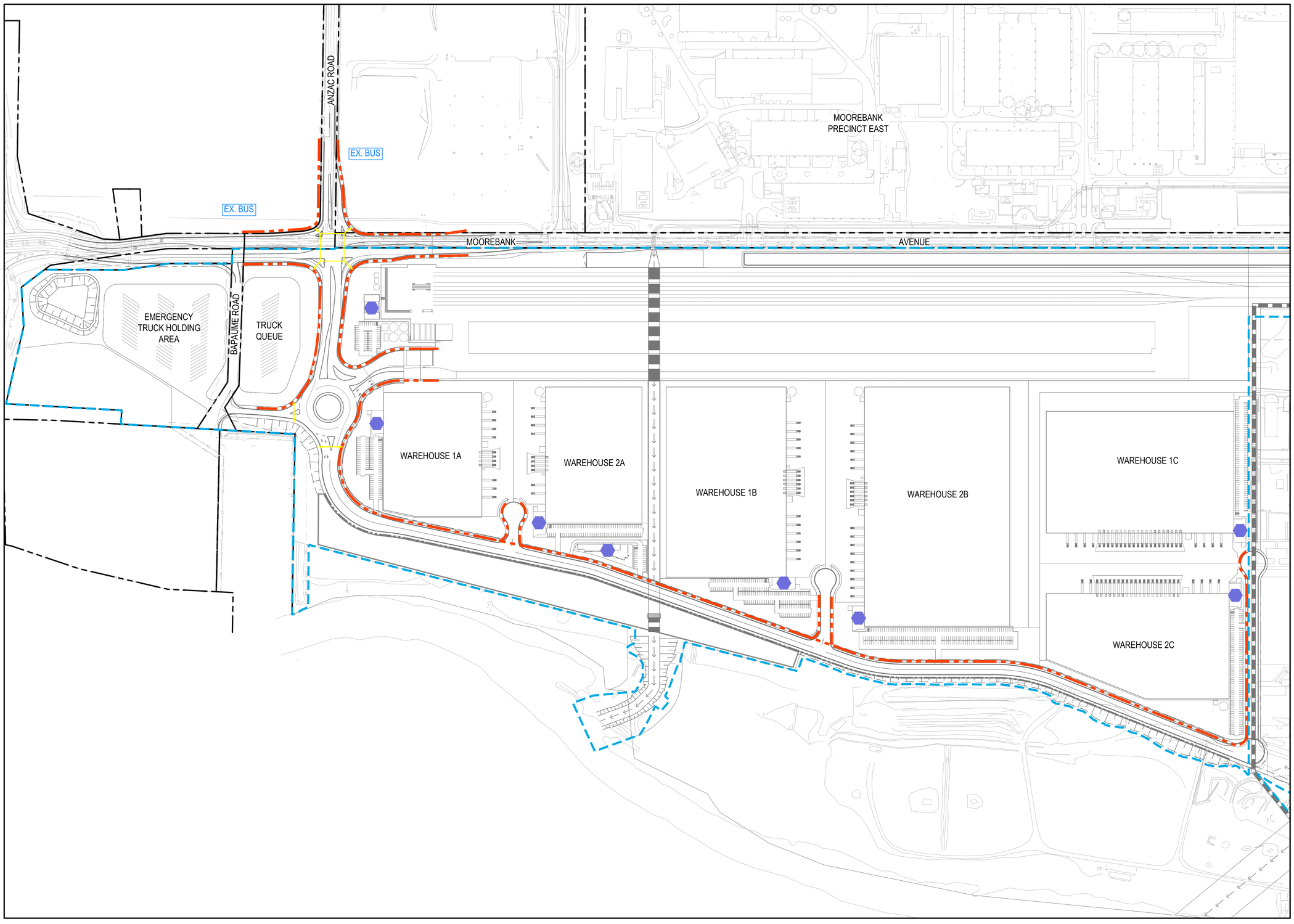


General site layout (north) showing light spill isolux curves



General site layout (north) showing light spill isolux curves

APPENDIX C – CYCLING AND PEDESTRIAN ACCESS PLAN



Issue	Description	Date
02	ISSUE FOR INFORMATION	16/03/2018
01	ISSUE FOR INFORMATION	01/03/2018

0 50 100 150 200 250m

1 : 2500

100mm on Original

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status: FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION

		Current Issue Signatures	
Scales	1 : 2500	Drawn W.SUTERS	
Original Size	A1	Designed M.O'CALLAGHAN	
Height Datum	AHD	Checked K.ALLEN	
Grid	MGA	Approved W.OWERS	

Filename: LPMW-ARC-CV-SKC-0206-CyclistAndPedestrianPlan.dwg

Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 LAND PREPARATION MAIN WORKS

Title: CYCLIST AND PEDESTRIAN PLAN

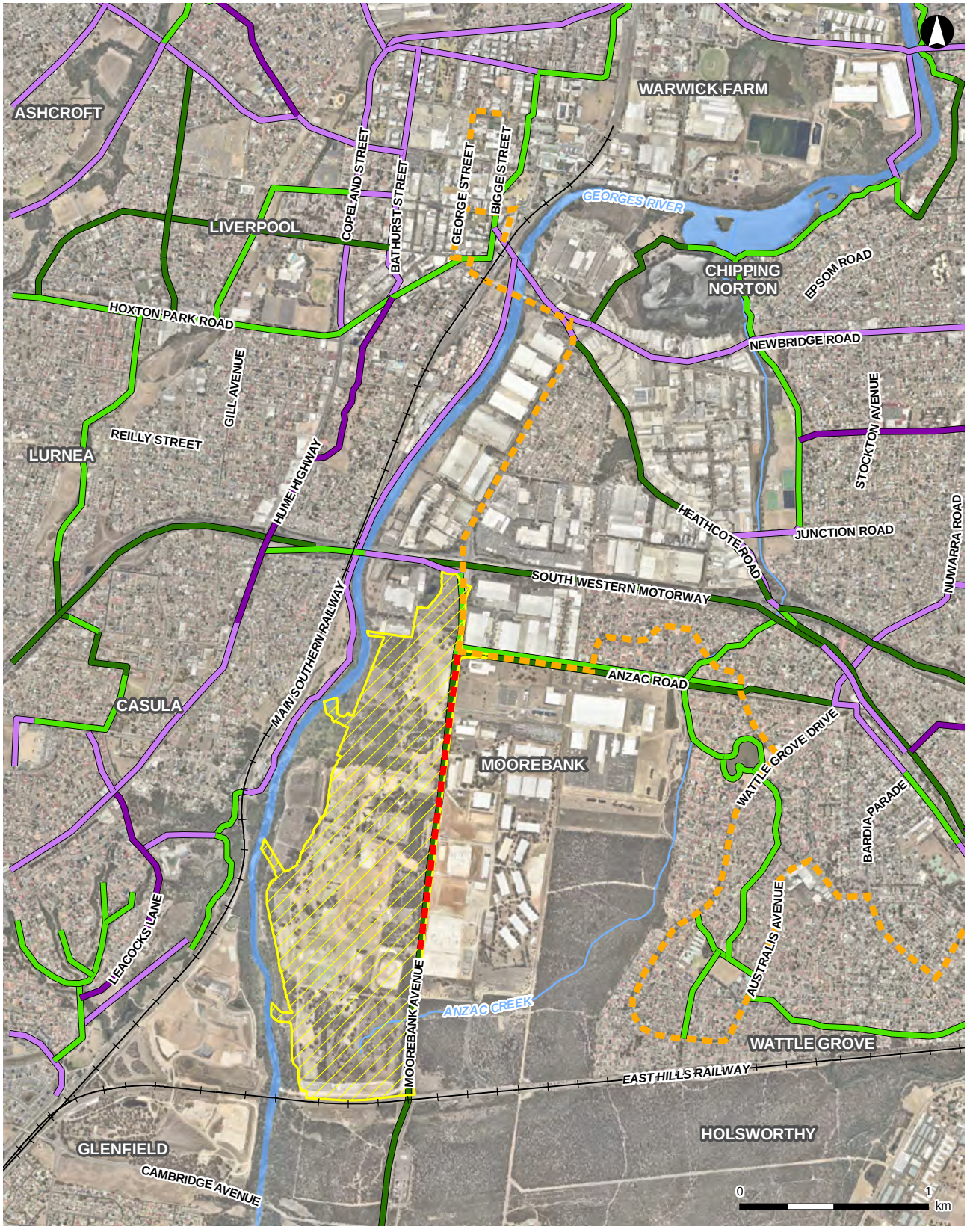
ARCADIS
Arcadis Australia Pacific Pty Limited
Level 16, 580 George St
SYDNEY NSW 2000
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

Project No. AA009335

Drawing No. LPMW-ARC-CV-SKC-0206-

Issue 02

Date Plotted: 16 Mar 2018 - 09:38AM File Name: F:\AA009335\1_LPMW\CV\SKC\LPMW-ARC-CV-SKC-0206-CyclistAndPedestrianPlan.dwg



LEGEND

- MPE Stage 2 construction boundary
- Bus Route 901
- Limited service bus route
- Existing railway
- Watercourse

Liverpool Bike Plan (2009)

- Existing off road cycleway
- Existing on road cycleway
- Proposed off road cycleway
- Proposed on road cycleway

Local public transport and pedestrian/cycleway network

ARCADIS AUSTRALIA PACIFIC PTY LTD
ABN 76 104 485 289
Level 16, 580 George St | Sydney NSW 2000
P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001

Coordinate System: GDA 1994 MGA Zone 56
Aerial imagery supplied by nearmap (January, 2018)

1:30,000 at A4

ARCADIS

SIMTA

APPENDIX D – EXAMPLE STAFF BREAK OUT PLAN

LEGEND

1. Proposed deep soil planting
2. Proposed raised planter boxes
3. Proposed table and seating arrangement
4. Unit tiles to future selection

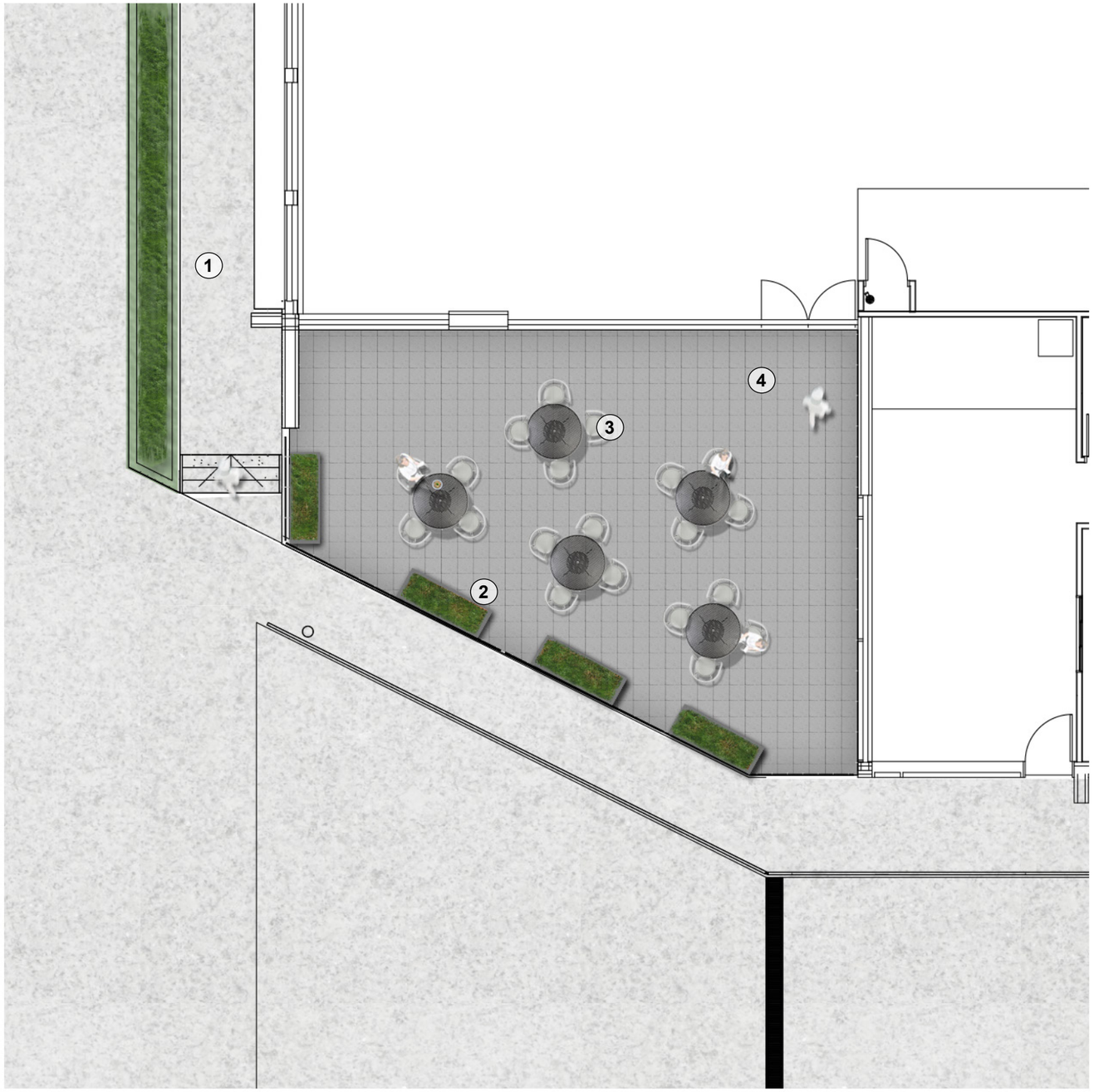
INDICATIVE PLANT PALETTE

Banksia 'Birthday Candles'
Native shrub to 0.5m
Installation size: 150mm pot

Mat-Rush
Lomandra 'Little Con'
Native perennial grass to 0.6m
Installation size: 150mm pot

Dichondra 'Silver falls'
Native groundcover to 0.1m
Installation size: 150mm pot

Myoporum 'Yareena'
Native groundcover to 0.1m
Installation size: 150mm pot



GROUND INK
LANDSCAPE ARCHITECTS

Suite 201, 75 Archer Street
Chatswood, NSW 2067
Ph. (02) 9411 3279

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EXAMPLE STAFF BREAK OUT PLAN

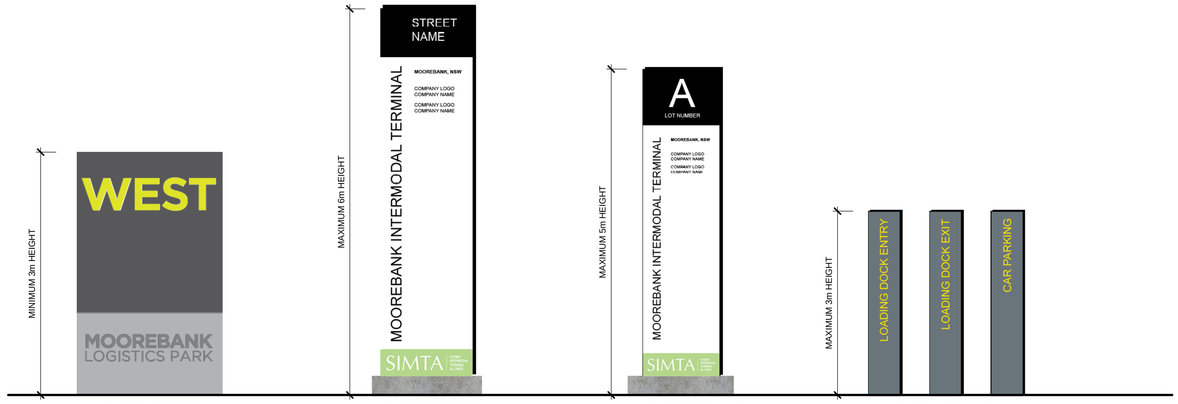
1:200 / **A3**
0 3 6m

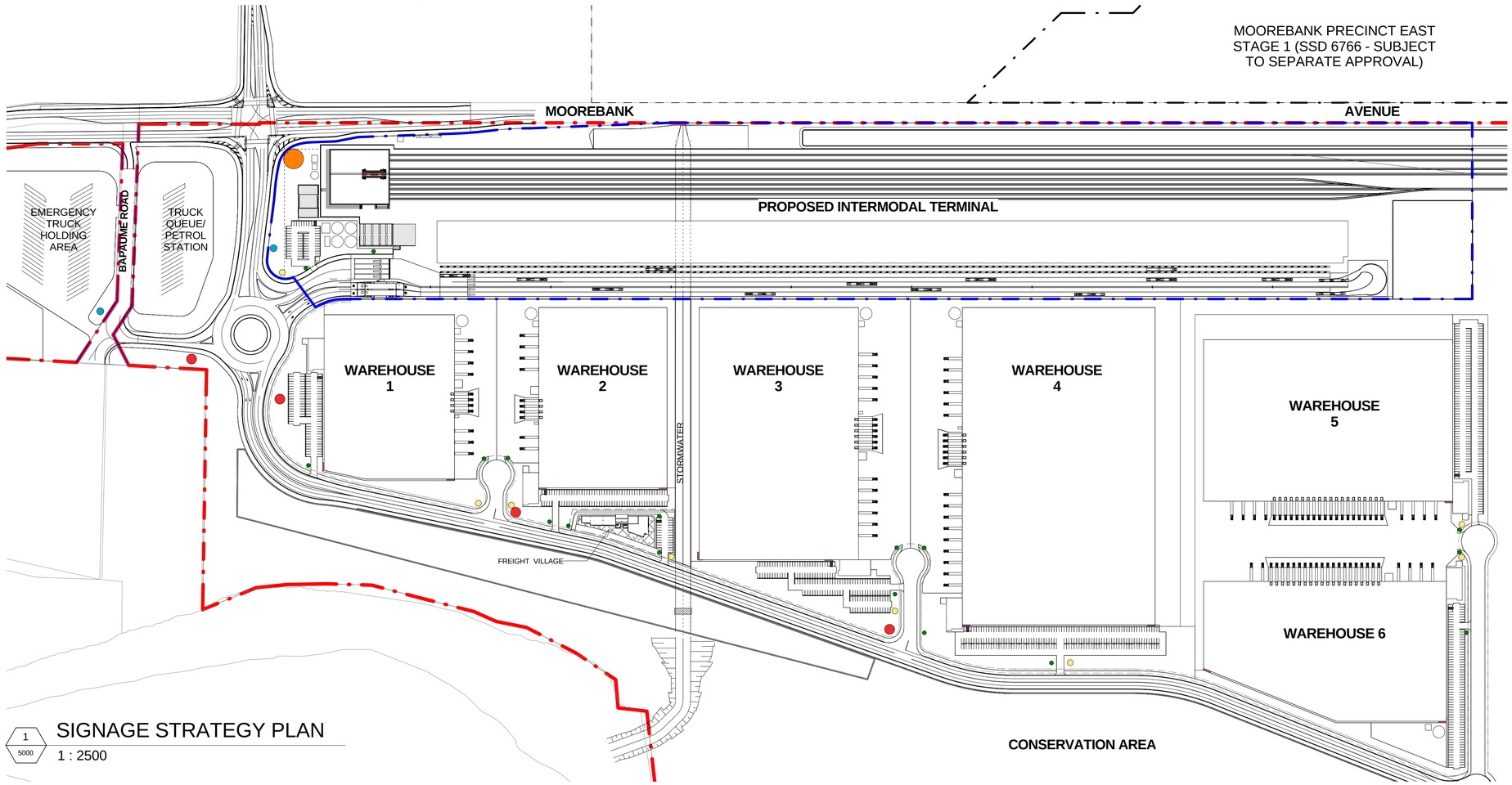
SIMTA, MOOREBANK, NSW
LA-01
Revision **B** 19.3.2018

APPENDIX E – SIGNAGE PLANS

SIGNAGE STRATEGY PLAN

STATE SIGNIFICANT DEVELOPMENT





1 / 5000

SIGNAGE STRATEGY PLAN

1 : 2500

LEGEND:

- TYPE 1 ESTATE SIGNAGE
- TYPE 2 STREET SIGNAGE
- TYPE 3 TENANT IDENTIFICATION SIGNAGE
- TYPE 4 DIRECTION SIGNAGE
- TYPE 5 CORPORATE SIGNAGE
- TYPE 6 VARIABLE SIGNAGE PANEL

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	17/12/2015		
B	PRELIMINARY ISSUE	23/12/2015		
C	PRELIMINARY ISSUE	21/03/2016		
D	PRELIMINARY ISSUE	08/04/2016		
E	PRELIMINARY ISSUE	27/05/2016		
F	DEVELOPMENT APPLICATION	28/06/2016		
G	DEVELOPMENT APPLICATION	18/07/2016		
H	SIGNAGE PLAN UPDATE	26/09/2016		
I	PRELIMINARY ISSUE	22/02/2017		
J	RESPONSE TO SUBMISSIONS	09/06/2017		

North

Notes
ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project
MOOREBANK PRECINCT WEST STAGE 2

Project Address
MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer
SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager
TACTICAL GROUP

Architect
REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

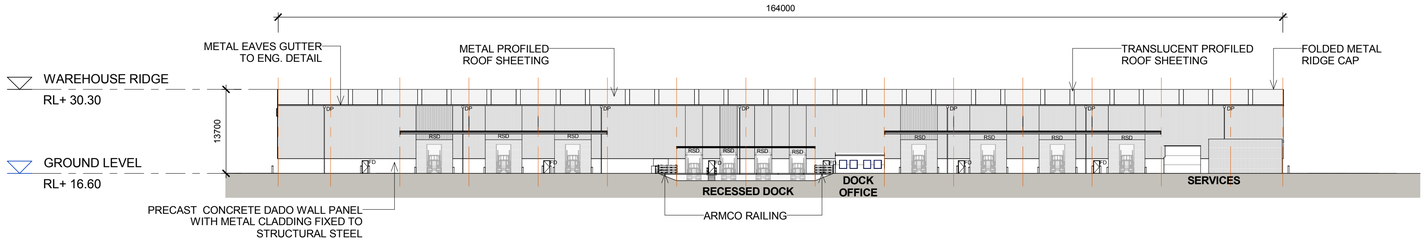
Drawing Title
SIGNAGE STRATEGY PLAN

Drawn	Checked	Print Date	Scale @ A1
MF	SK	14/06/17 2:16:41 PM	As indicated

Project Number: 115123
Issue: J
Drawing Number: 115123_A_SSD_5000

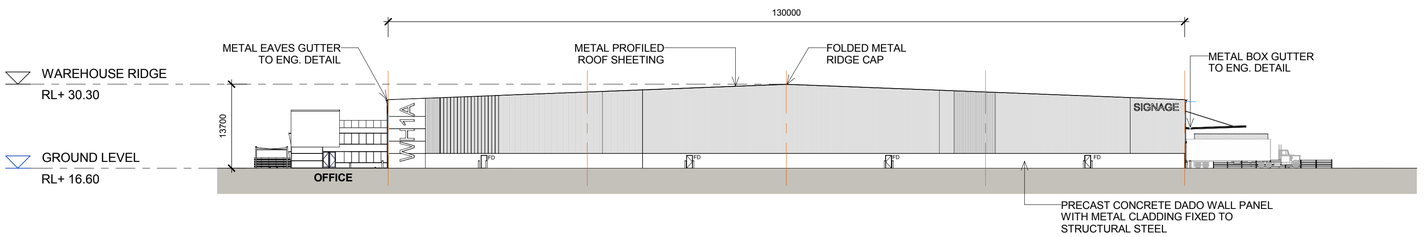
WAREHOUSE 1 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2105 WAREHOUSE 1 - SOUTH ELEVATION

1 : 500



2 / 2105 WAREHOUSE 1 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: **N/A**

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 1 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:10:58 PM	As indicated

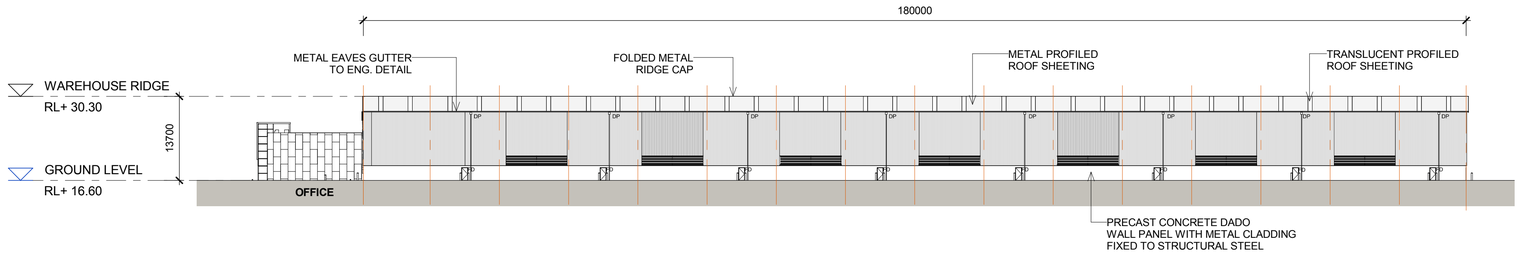
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2105

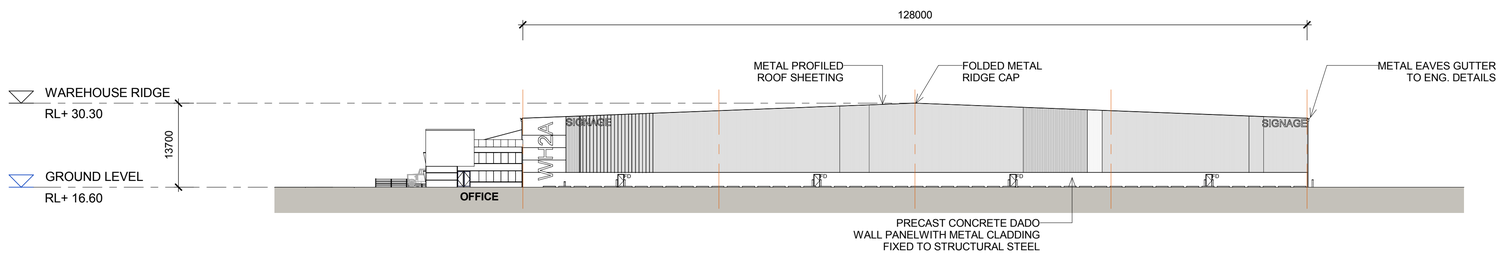
WAREHOUSE 2 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2109 WAREHOUSE 2 - SOUTH ELEVATION

1 : 500



2 / 2109 WAREHOUSE 2 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: **N/A**

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 2 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:12:12 PM	As indicated

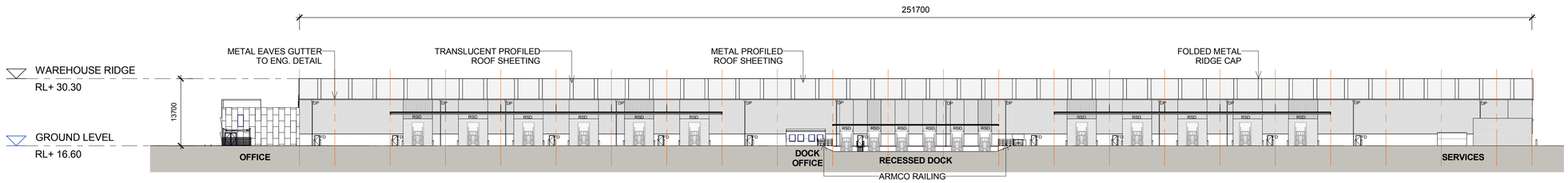
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2109

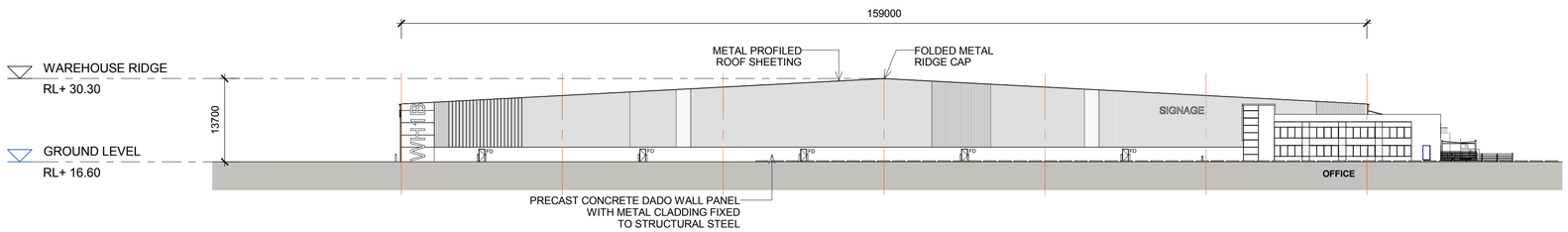
WAREHOUSE 3 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2206 WAREHOUSE 3 - SOUTH ELEVATION

1 : 500



2 / 2206 WAREHOUSE 3 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: **N/A**

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
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Level 15, 124 Walker Street
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Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 3 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:21:08 PM	As indicated

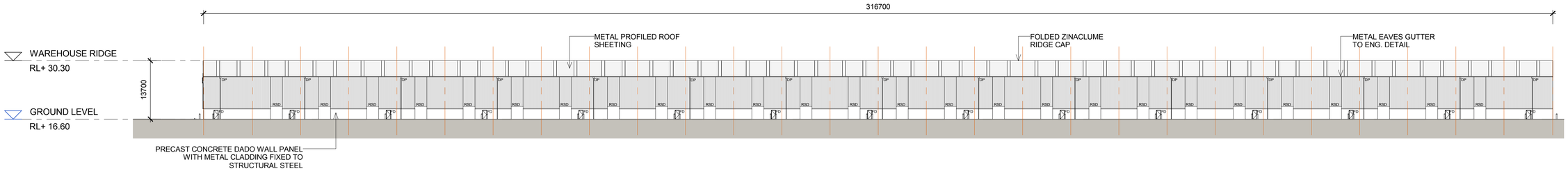
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2206

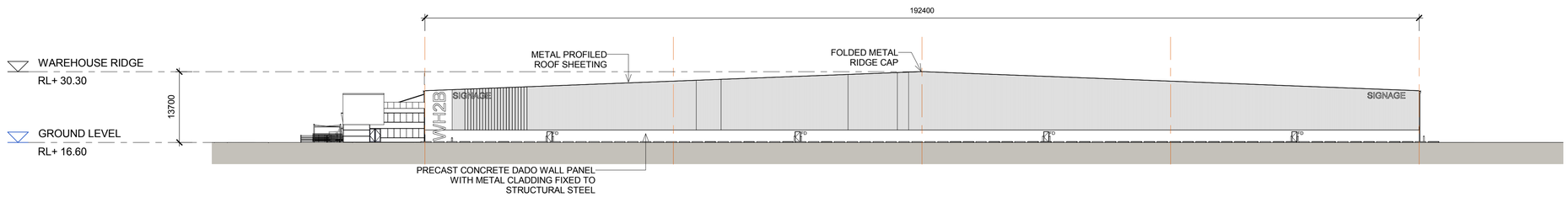
WAREHOUSE 4 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2210 WAREHOUSE 4 - SOUTH ELEVATION

1 : 500



2 / 2210 WAREHOUSE 4 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
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Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 4 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:22:26 PM	As indicated

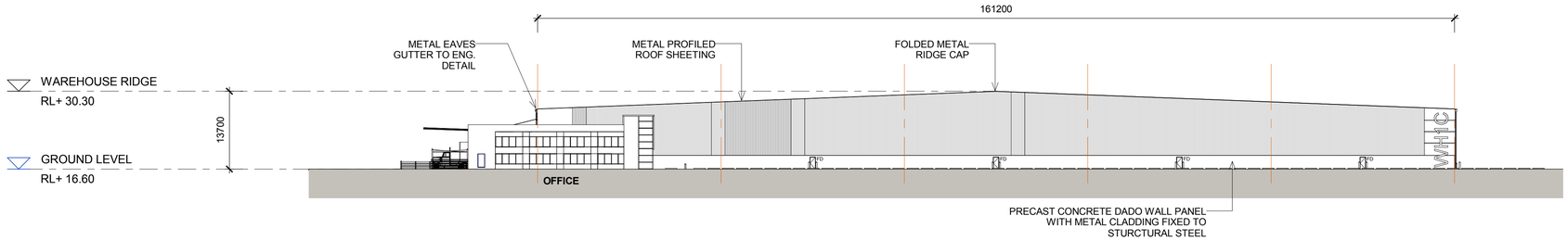
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2210

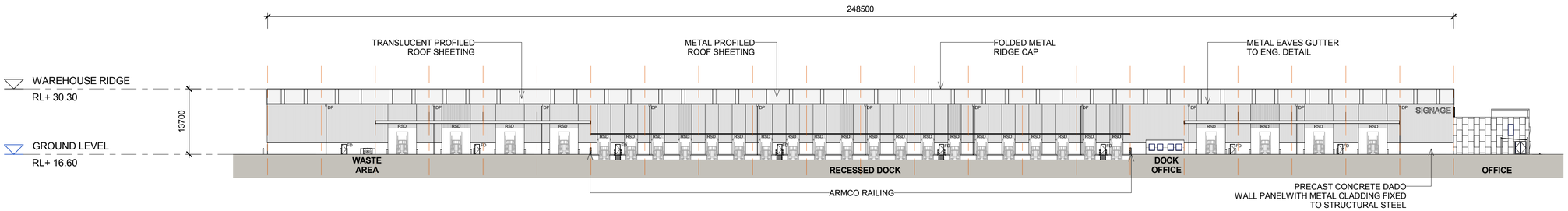
WAREHOUSE 5 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2305 WAREHOUSE 5 - SOUTH ELEVATION

1 : 500



2 / 2305 WAREHOUSE 5 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 5 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:24:50 PM	As indicated

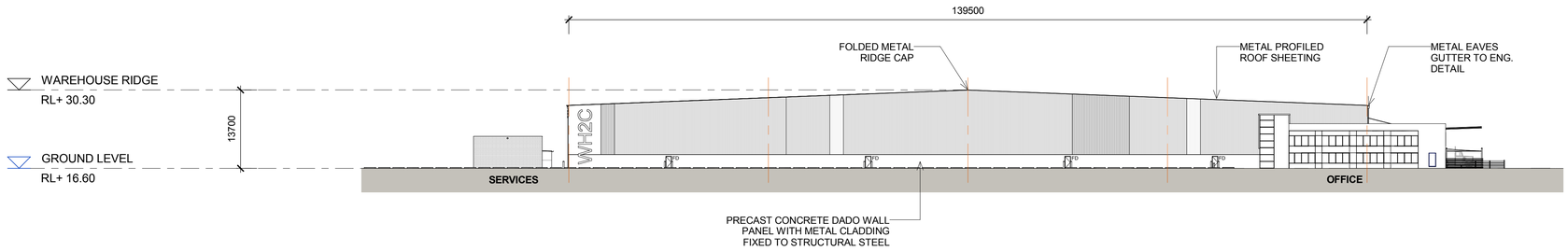
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2305

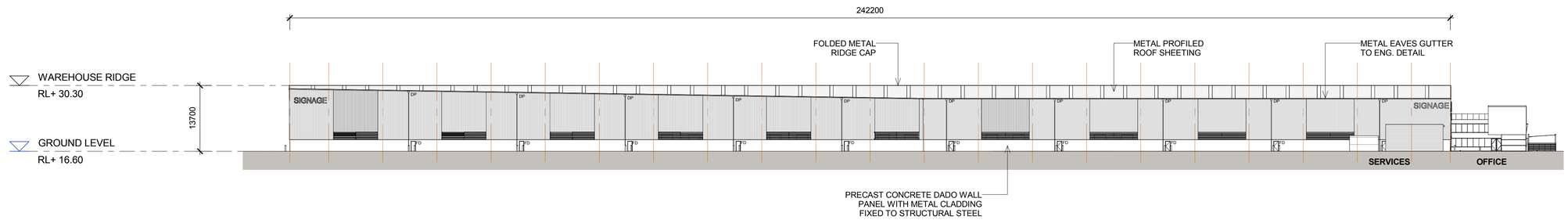
WAREHOUSE 6 ELEVATIONS 2

STATE SIGNIFICANT DEVELOPMENT



1 / 2309 WAREHOUSE 6 - SOUTH ELEVATION

1 : 500



2 / 2309 WAREHOUSE 6 - WEST ELEVATION

1 : 500

LEGEND:

FD	FIRE DOOR
RSD	ROLLER SHUTTER DOOR
DP	DOWN PIPE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: **N/A**

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
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ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
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Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 6 ELEVATIONS 2**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:26:14 PM	As indicated

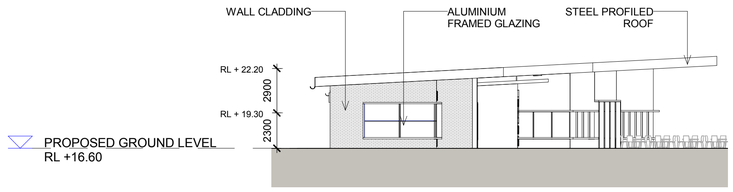
Project Number: 115123

Issue: F

Drawing Number: 115123_A_SSD_2309

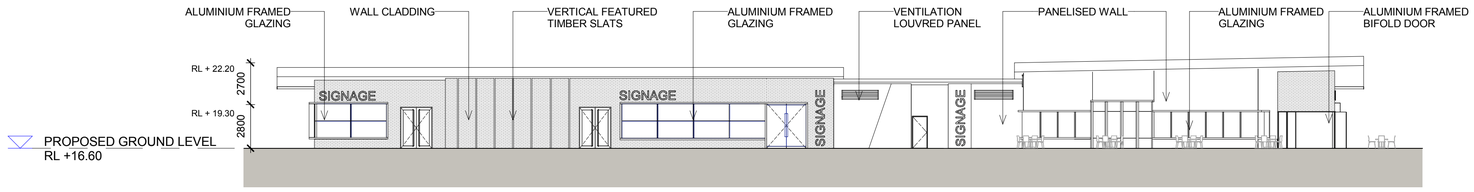
FREIGHT VILLAGE ELEVATIONS & SECTIONS

STATE SIGNIFICANT DEVELOPMENT



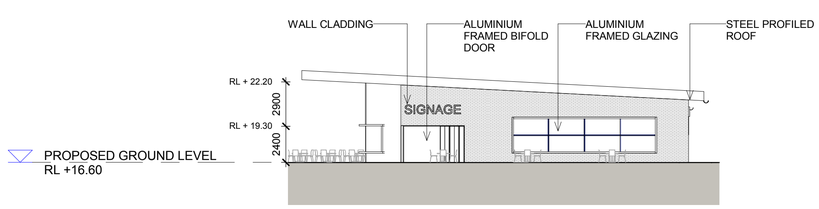
1 / 3002 FREIGHT VILLAGE- NORTH ELEVATION

1 : 200



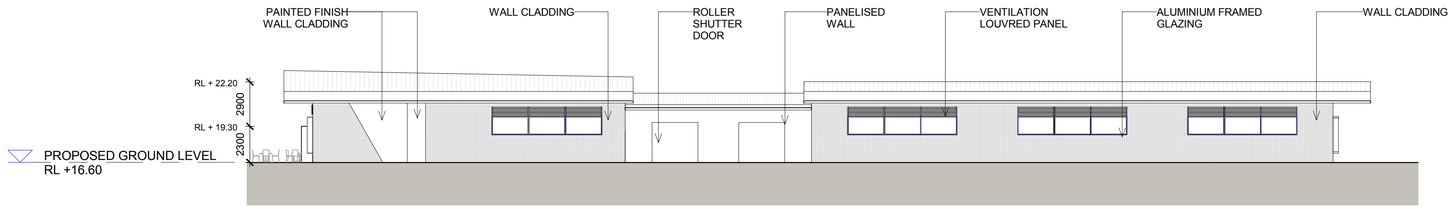
2 / 3002 FREIGHT VILLAGE- WEST ELEVATION

1 : 200



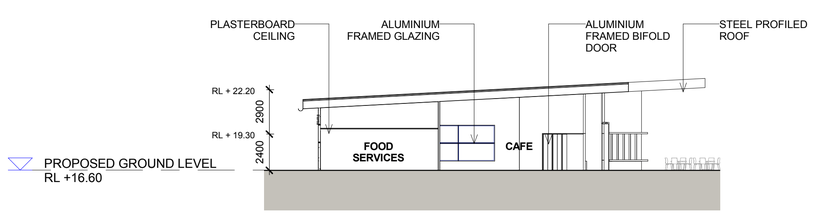
3 / 3002 FREIGHT VILLAGE- SOUTH ELEVATION

1 : 200



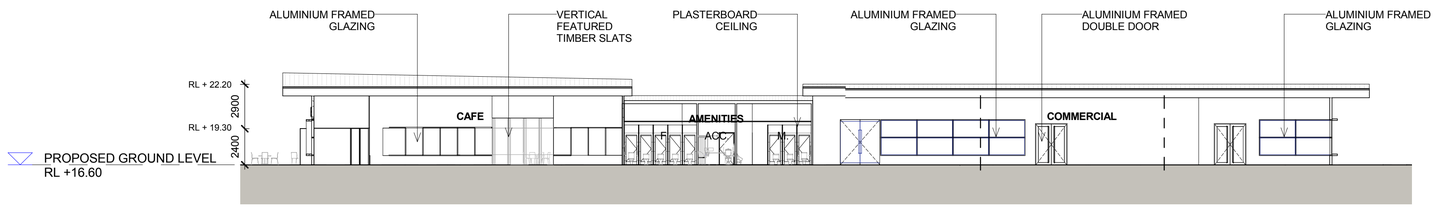
4 / 3002 FREIGHT VILLAGE- EAST ELEVATION

1 : 200



5 / 3002 FREIGHT VILLAGE- SECTION A

1 : 200



6 / 3002 FREIGHT VILLAGE- SECTION B

1 : 200

LEGEND:

DP	DOWN PIPE
F.	FEMALE TOILET
A.	ACCESS TOILET
M.	MALE TOILET

NOTES:
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2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	ISSUE FOR INFORMATION	29/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	28/06/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **FREIGHT VILLAGE ELEVATIONS & SECTIONS**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:27:32 PM	As indicated

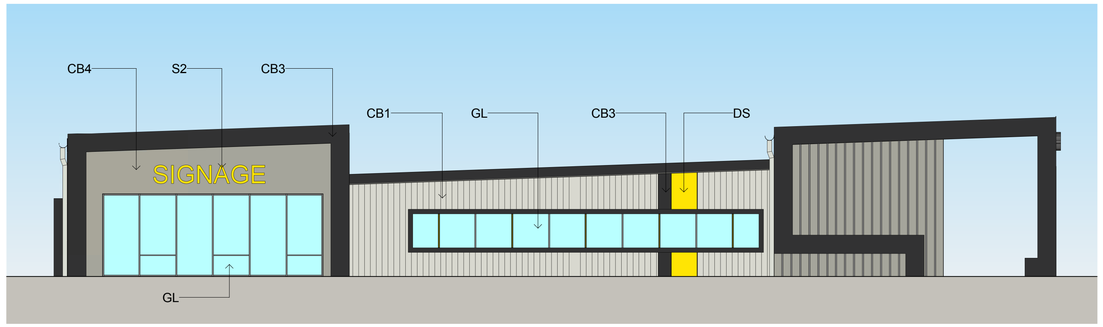
Project Number: 115123

Issue: F

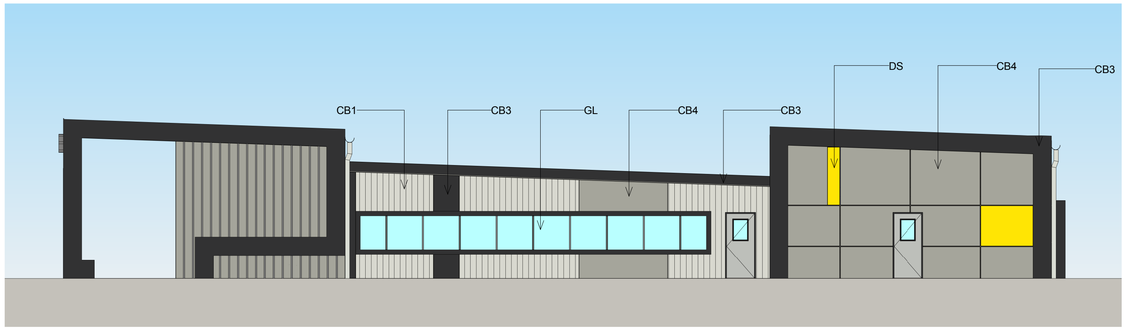
Drawing Number: 115123_A_SSD_3002

TERMINAL - OFFICE FINISHES

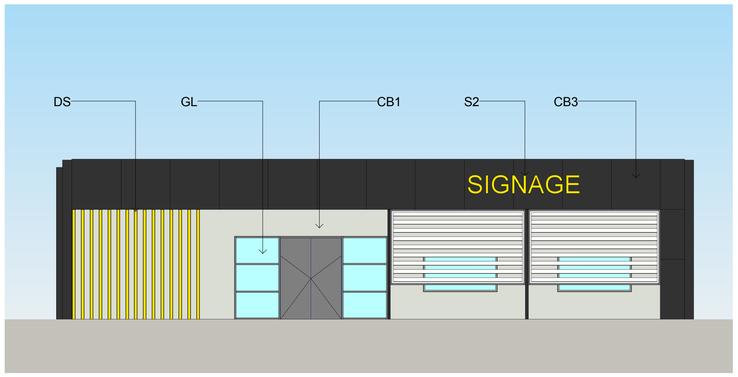
STATE SIGNIFICANT DEVELOPMENT



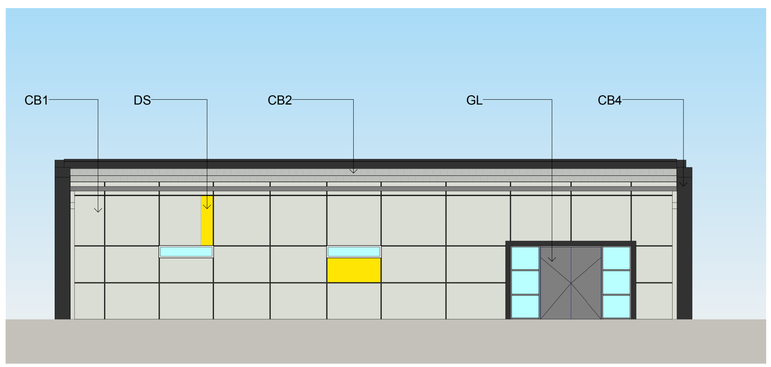
01 / 1330 OFFICE - NORTH ELEVATION (FINISHES)
1 : 100



02 / 1330 OFFICE - SOUTH ELEVATION (FINISHES)
1 : 100



03 / 1330 OFFICE - WEST ELEVATION (FINISHES)
1 : 100



04 / 1330 OFFICE - EAST ELEVATION (FINISHES)
1 : 100

CB1 METAL SHEETING "SURFMIST"

CB2 METAL SHEETING "SHALE GREY"

CB3 METAL SHEETING "MONUMENT"

CB4 METAL SHEETING "DUNE"

CB5 METAL SHEETING "WOODLAND GREY"

GL VISION GLASS PANELS

DS "SULPHUR"

S2 TENANT SIGNAGE
BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	23/12/2015		
B	PRELIMINARY ISSUE	21/03/2016		
C	PRELIMINARY ISSUE	08/04/2016		
D	PRELIMINARY ISSUE	27/05/2016		
E	DEVELOPMENT APPLICATION	19/07/2016		
F	PRELIMINARY ISSUE	22/02/2017		
G	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: MOOREBANK PRECINCT WEST STAGE 2

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

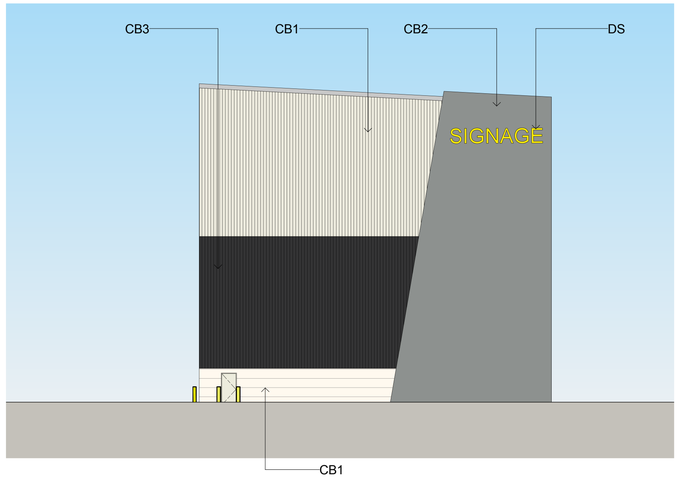
Drawing Title: TERMINAL - OFFICE FINISHES

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 4:59:05 PM	As indicated

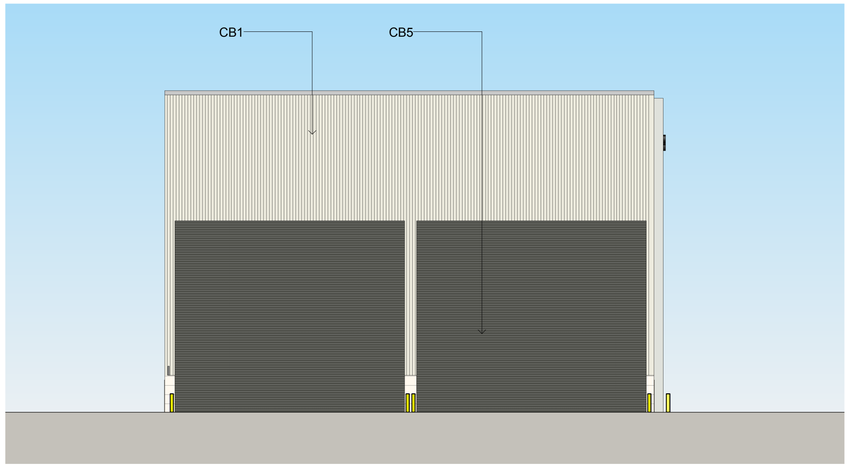
Project Number: 115123
Issue: G
Drawing Number: 115123_A_SSD_1330

TERMINAL - WORKSHOP FINISHES

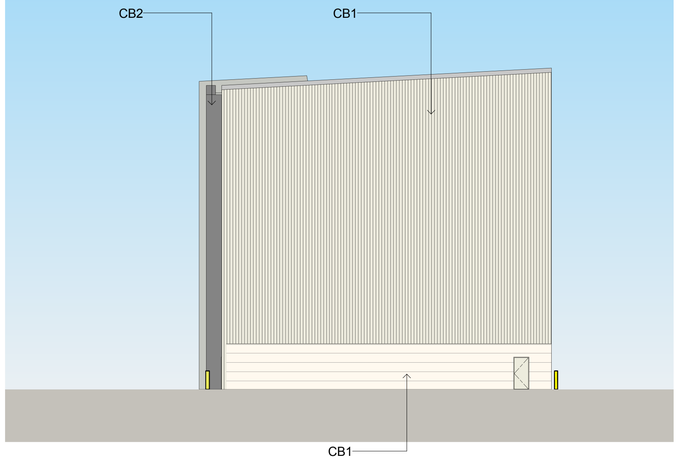
STATE SIGNIFICANT DEVELOPMENT



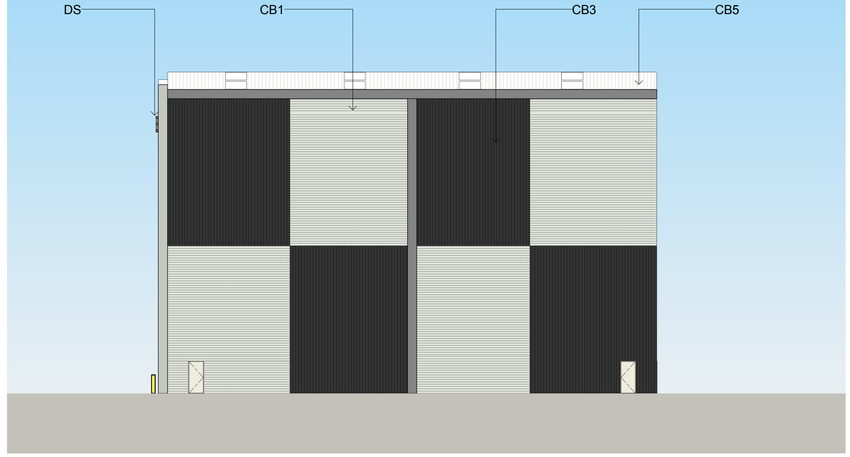
01 / 1430 WORKSHOP - NORTH ELEVATION (FINISHES)
1 : 200



02 / 1430 WORKSHOP - EAST ELEVATION (FINISHES)
1 : 200



03 / 1430 WORKSHOP - SOUTH ELEVATION (FINISHES)
1 : 200



04 / 1430 WORKSHOP WEST ELEVATION (FINISHES)
1 : 200

CB1 METAL SHEETING "SURFMIST"

CB2 METAL SHEETING "SHALE GREY"

CB3 METAL SHEETING "MONUMENT"

CB4 METAL SHEETING "DUNE"

CB5 METAL SHEETING "WOODLAND GREY"

GL VISION GLASS PANELS

DS "SULPHUR"

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	21/03/2016		
B	PRELIMINARY ISSUE	08/04/2016		
C	PRELIMINARY ISSUE	27/05/2016		
D	DEVELOPMENT APPLICATION	18/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

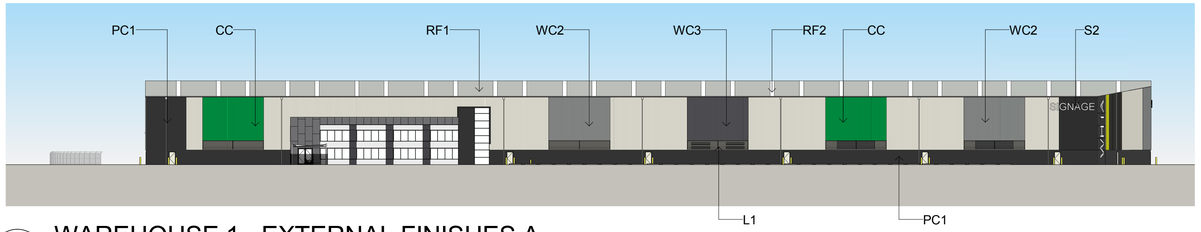
Drawing Title: **TERMINAL - WORKSHOP FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 4:59:34 PM	As indicated

Project Number: 115123
Issue: F
Drawing Number: 115123_A_SSD_1430

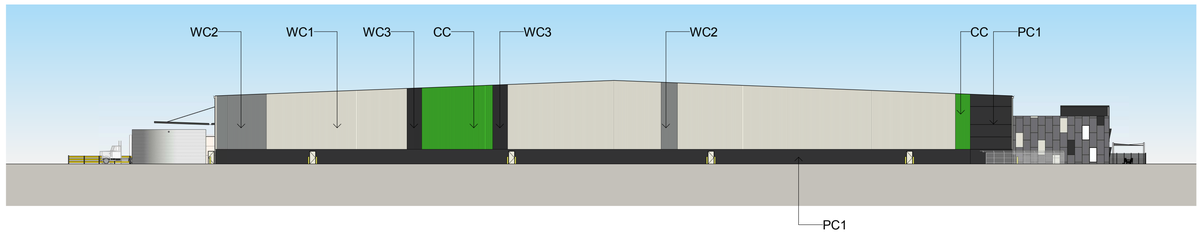
WAREHOUSE 1 EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT



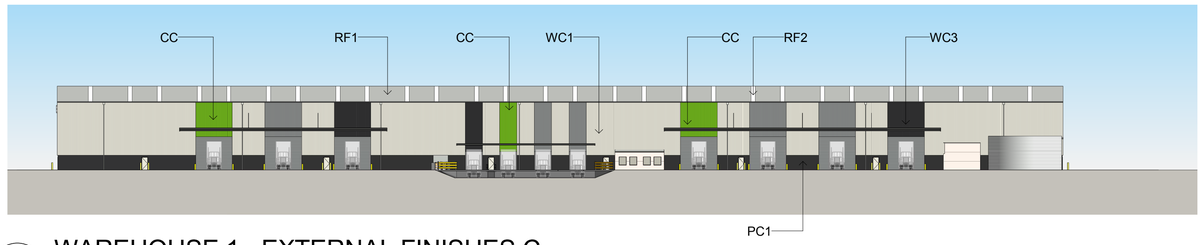
1 / 2107 WAREHOUSE 1 - EXTERNAL FINISHES A

1 : 500



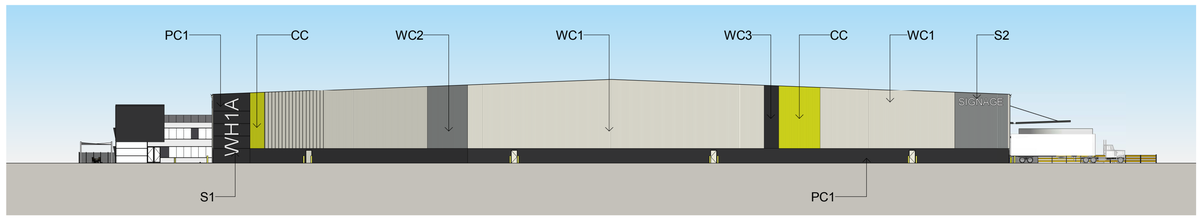
2 / 2107 WAREHOUSE 1 - EXTERNAL FINISHES B

1 : 500



3 / 2107 WAREHOUSE 1 - EXTERNAL FINISHES C

1 : 500



4 / 2107 WAREHOUSE 1 - EXTERNAL FINISHES D

1 : 500

1 2 3 4 C1 DARK GREEN, C2 MID GREEN, C3 LIGHT GREEN, C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 — VERTICAL METAL SHEETING "SURFMIST"

WC2 — VERTICAL METAL SHEETING "WINDSPRAY"

WC3 — VERTICAL METAL SHEETING "MONUMENT"

RF1 — METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 — TRANSLUCENT SHEETING

L1 — METAL FRAMED LOUVRES

PC1 — PRECAST PANEL "MONUMENT"

S1 — WAREHOUSE ID NUMBER

S2 — TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 1 EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:11:32 PM	As indicated

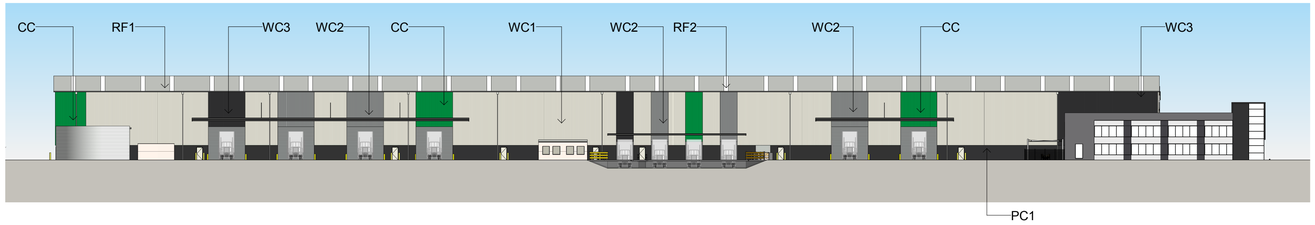
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2107

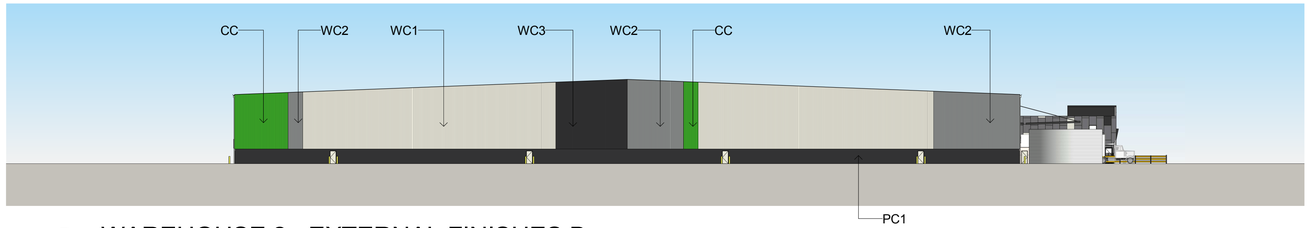
WAREHOUSE 2 - EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT



1 / 2111 WAREHOUSE 2 - EXTERNAL FINISHES A

1 : 500

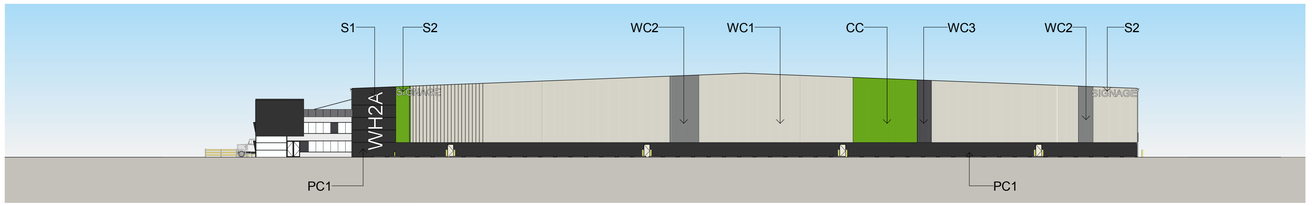


2 / 2111 WAREHOUSE 2 - EXTERNAL FINISHES B

1 : 500

3 / 2111 WAREHOUSE 2 - EXTERNAL FINISHES C

1 : 500



4 / 2111 WAREHOUSE 2 - EXTERNAL FINISHES D

1 : 500

1 2 3 4 C1 DARK GREEN, C2 MID GREEN, C3 LIGHT GREEN, C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 — VERTICAL METAL SHEETING "SURFMIST"

WC2 — VERTICAL METAL SHEETING "WINDSPRAY"

WC3 — VERTICAL METAL SHEETING "MONUMENT"

RF1 — METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 — TRANSLUCENT SHEETING

L1 — METAL FRAMED LOUVRES

PC1 — PRECAST PANEL "MONUMENT"

S1 — WAREHOUSE ID NUMBER

S2 — TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 2 - EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:12:57 PM	As indicated

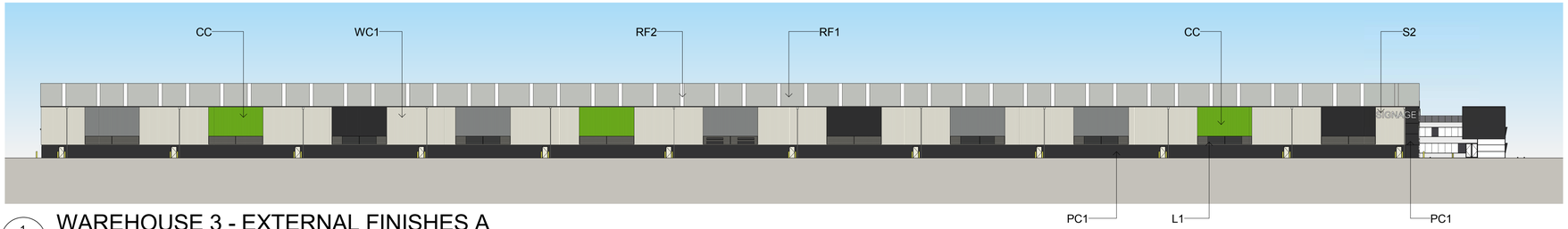
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2111

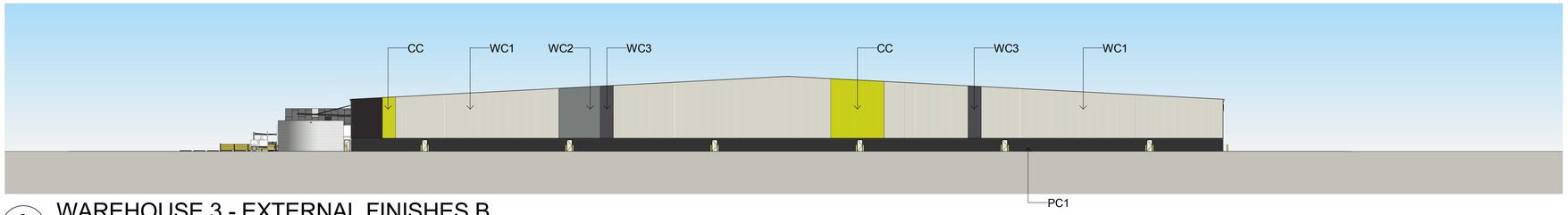
WAREHOUSE 3 EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT



1 / 2208 WAREHOUSE 3 - EXTERNAL FINISHES A

1 : 500

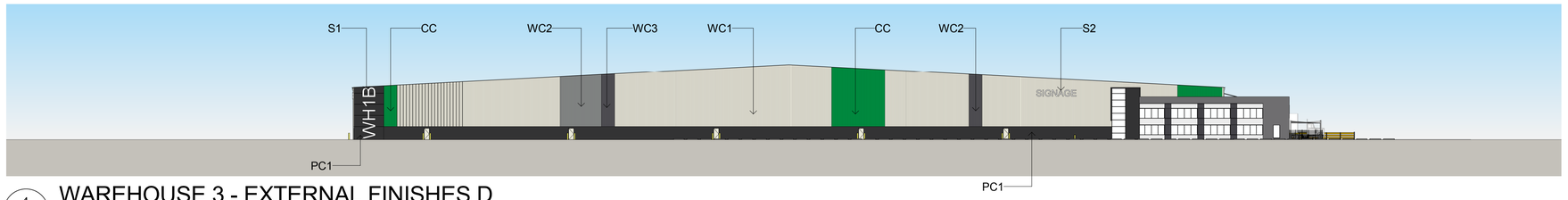


2 / 2208 WAREHOUSE 3 - EXTERNAL FINISHES B

1 : 500

3 / 2208 WAREHOUSE 3 - EXTERNAL FINISHES C

1 : 500



4 / 2208 WAREHOUSE 3 - EXTERNAL FINISHES D

1 : 500

1 2 3 4

C1 DARK GREEN
C2 MID GREEN
C3 LIGHT GREEN
C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 — VERTICAL METAL SHEETING "SURFMIST"

WC2 — VERTICAL METAL SHEETING "WINDSPRAY"

WC3 — VERTICAL METAL SHEETING "MONUMENT"

RF1 — METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 — TRANSLUCENT SHEETING

L1 — METAL FRAMED LOUVRES

PC1 — PRECAST PANEL "MONUMENT"

S1 — WAREHOUSE ID NUMBER

S2 — TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 3 EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:21:47 PM	As indicated

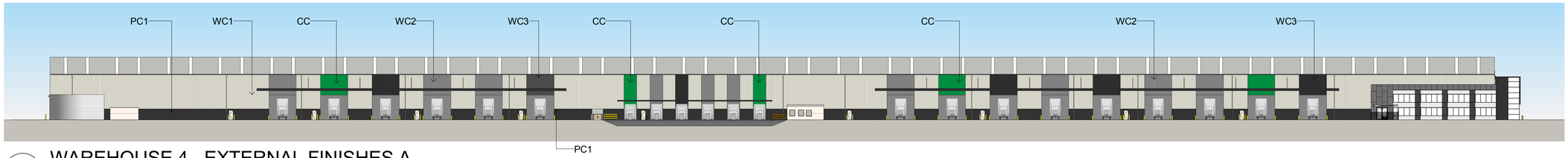
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2208

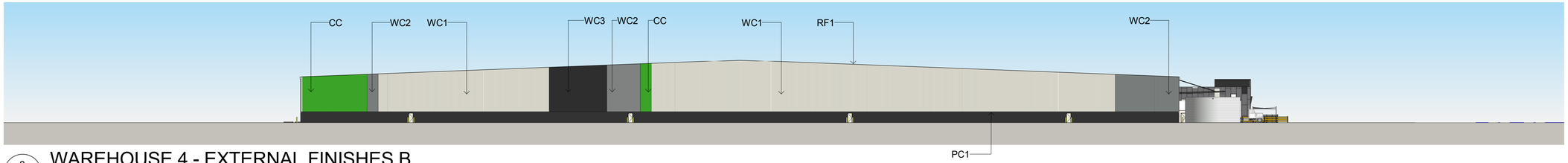
WAREHOUSE 4 EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT



1 / 2212 WAREHOUSE 4 - EXTERNAL FINISHES A

1 : 500

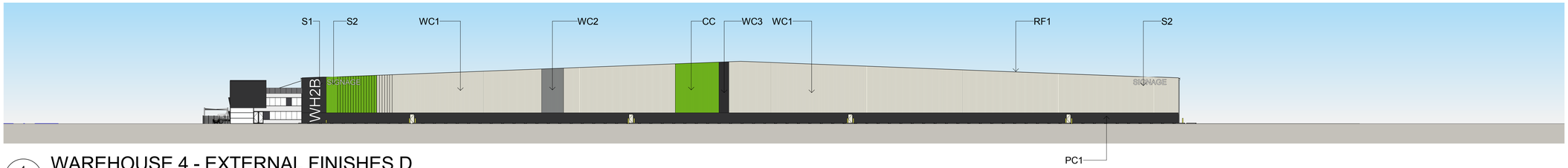


2 / 2212 WAREHOUSE 4 - EXTERNAL FINISHES B

1 : 500

3 / 2212 WAREHOUSE 4 - EXTERNAL FINISHES C

1 : 500



4 / 2212 WAREHOUSE 4 - EXTERNAL FINISHES D

1 : 500

1 2 3 4

C1 DARK GREEN
C2 MID GREEN
C3 LIGHT GREEN
C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 — VERTICAL METAL SHEETING "SURFMIST"

WC2 — VERTICAL METAL SHEETING "WINDSPRAY"

WC3 — VERTICAL METAL SHEETING "MONUMENT"

RF1 — METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 — TRANSLUCENT SHEETING

L1 — METAL FRAMED LOUVRES

PC1 — PRECAST PANEL "MONUMENT"

S1 — WAREHOUSE ID NUMBER

S2 — TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 4 EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:23:00 PM	As indicated

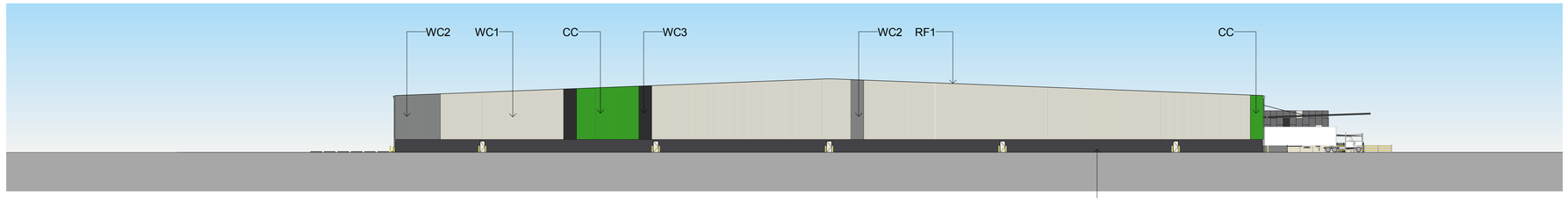
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2212

WAREHOUSE 5 EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT



1 / 2307 WAREHOUSE 5 - EXTERNAL FINISHES A

1 : 500

2 / 2307 WAREHOUSE 5 - EXTERNAL FINISHES B

1 : 500

3 / 2307 WAREHOUSE 5 - EXTERNAL FINISHES C

1 : 500

4 / 2307 WAREHOUSE 5 - EXTERNAL FINISHES D

1 : 500

1 C1 DARK GREEN
2 C2 MID GREEN
3 C3 LIGHT GREEN
4 C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 VERTICAL METAL SHEETING "SURFMIST"

WC2 VERTICAL METAL SHEETING "WINDSPRAY"

WC3 VERTICAL METAL SHEETING "MONUMENT"

RF1 METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 TRANSLUCENT SHEETING

L1 METAL FRAMED LOUVRES

PC1 PRECAST PANEL "MONUMENT"

S1 WAREHOUSE ID NUMBER

S2 TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	28/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
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Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 5 EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:25:51 PM	As indicated

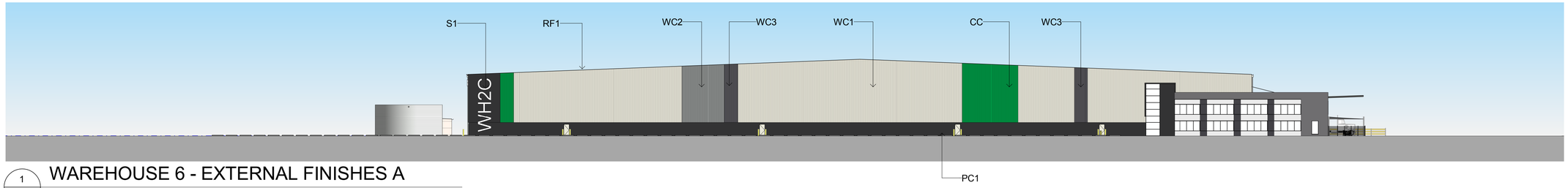
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2307

WAREHOUSE 6 EXTERNAL FINISHES

STATE SIGNIFICANT DEVELOPMENT

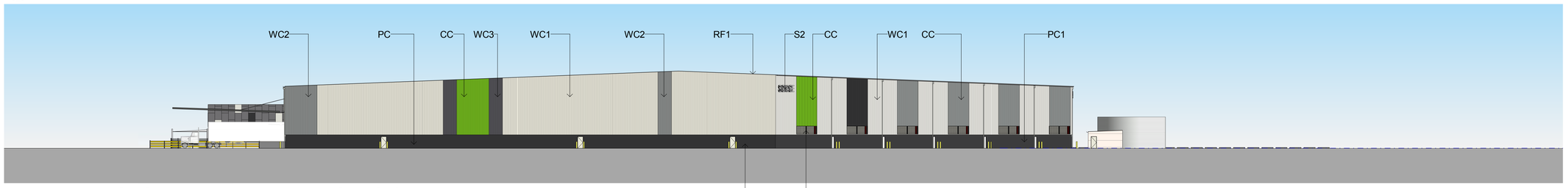


1 / 2311 WAREHOUSE 6 - EXTERNAL FINISHES A

1 : 400

2 / 2311 WAREHOUSE 6 - EXTERNAL FINISHES B

1 : 400



3 / 2311 WAREHOUSE 6 - EXTERNAL FINISHES C

1 : 400

4 / 2311 WAREHOUSE 6 - EXTERNAL FINISHES D

1 : 400

1 C1 DARK GREEN
2 C2 MID GREEN
3 C3 LIGHT GREEN
4 C4 YELLOW

CORPORATE COLOUR SCHEME

WC1 VERTICAL METAL SHEETING "SURFMIST"

WC2 VERTICAL METAL SHEETING "WINDSPRAY"

WC3 VERTICAL METAL SHEETING "MONUMENT"

RF1 METAL PROFILED ROOF SHEETING "SHALE GREY"

RF2 TRANSLUCENT SHEETING

L1 METAL FRAMED LOUVRES

PC1 PRECAST PANEL "MONUMENT"

S1 WAREHOUSE ID NUMBER

S2 TENANT SIGNAGE

BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

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Issue	Description	Date	Ver	Auth
A	PRELIMINARY ISSUE	08/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	18/07/2016		
D	PRELIMINARY ISSUE	22/02/2017		
E	RESPONSE TO SUBMISSIONS	29/02/2017		

North: N/A

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **WAREHOUSE 6 EXTERNAL FINISHES**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:27:13 PM	As indicated

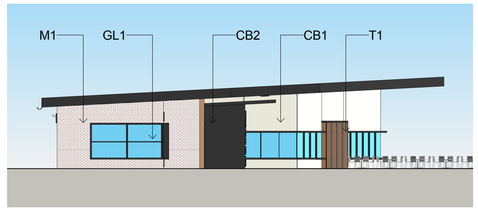
Project Number: 115123

Issue: E

Drawing Number: 115123_A_SSD_2311

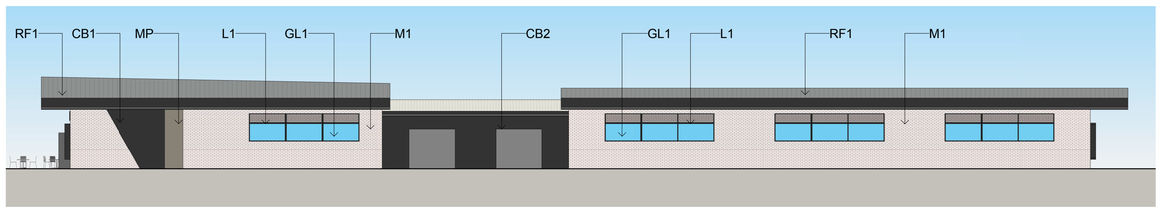
FREIGHT VILLAGE FINISHES & PERSPECTIVE

STATE SIGNIFICANT DEVELOPMENT



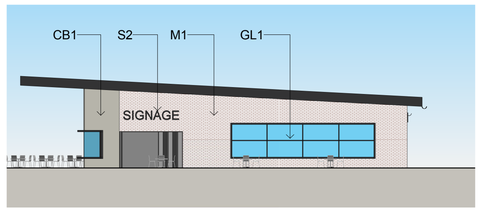
1 / 3003 FREIGHT VILLAGE - NORTH FINISHES

1 : 200



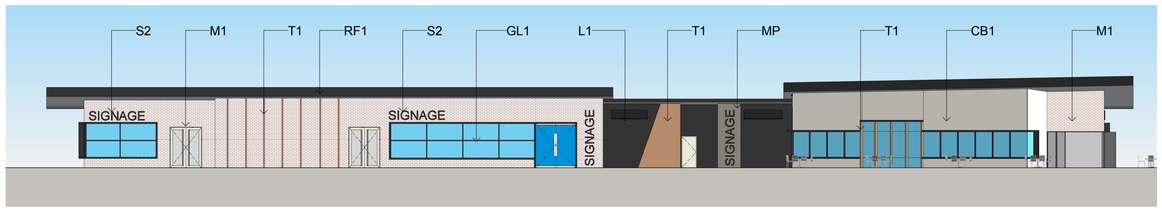
2 / 3003 FREIGHT VILLAGE - EAST FINISHES

1 : 200



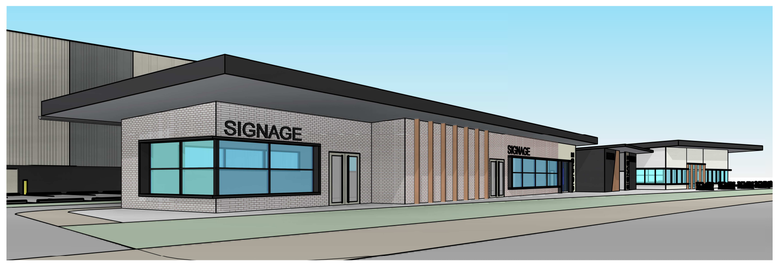
3 / 3003 FREIGHT VILLAGE - SOUTH FINISHES

1 : 200



4 / 3003 FREIGHT VILLAGE - WEST FINISHES

1 : 200



CB1 PANELISED WALL "SURFMIST"

CB2 PANELISED WALL "MONUMENT"

M1 WALL CLADDING

T1 TIMBER CLADDING

RF1 STEEL ROOF SHEETING "WINDSPRAY"

GL VISION GLASS PANELS

MP METAL PANEL "GULLY"

L1 METAL FRAMED LOUVRES

S2 TENANT SIGNAGE
BACKLIT ILLUMINATED SIGNAGE

NOTES:
1. ALL LEVELS AND EXTENTS ARE INDICATIVE & SHOULD BE READ IN CONJUNCTION WITH CIVIL ENG. DWGS FOR FINAL LEVELS OF ALL EARTH WORKS AND EXCAVATION.
2. ALL SERVICES RELOCATION TO BE CONFIRMED BY ENG.

This drawing and design is subject to Reid Campbell (NSW) Pty Ltd copyright and may not be reproduced without prior written consent. Contractor to verify all dimensions on site before commencing work. Report all discrepancies to project manager prior to construction. Figured dimensions to be taken in preference to scaled drawings. All work is to conform to relevant Australian Standards and other Codes as applicable, together with other Authorities' requirements and regulations.

Issue	Description	Date	Ver	Auth
A	ISSUE FOR INFORMATION	29/04/2016		
B	PRELIMINARY ISSUE	27/05/2016		
C	DEVELOPMENT APPLICATION	28/06/2016		
D	DEVELOPMENT APPLICATION	19/07/2016		
E	PRELIMINARY ISSUE	22/02/2017		
F	RESPONSE TO SUBMISSIONS	28/02/2017		

North: **N/A**

Notes: ALL DIMENSIONS ARE APPROXIMATE AND ARE TO BE VERIFIED BY A REGISTERED LAND SURVEYOR.

Project: **MOOREBANK PRECINCT WEST STAGE 2**

Project Address: MOOREBANK AVENUE, MOOREBANK, NSW

Owner / Developer: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Project Manager: TACTICAL GROUP

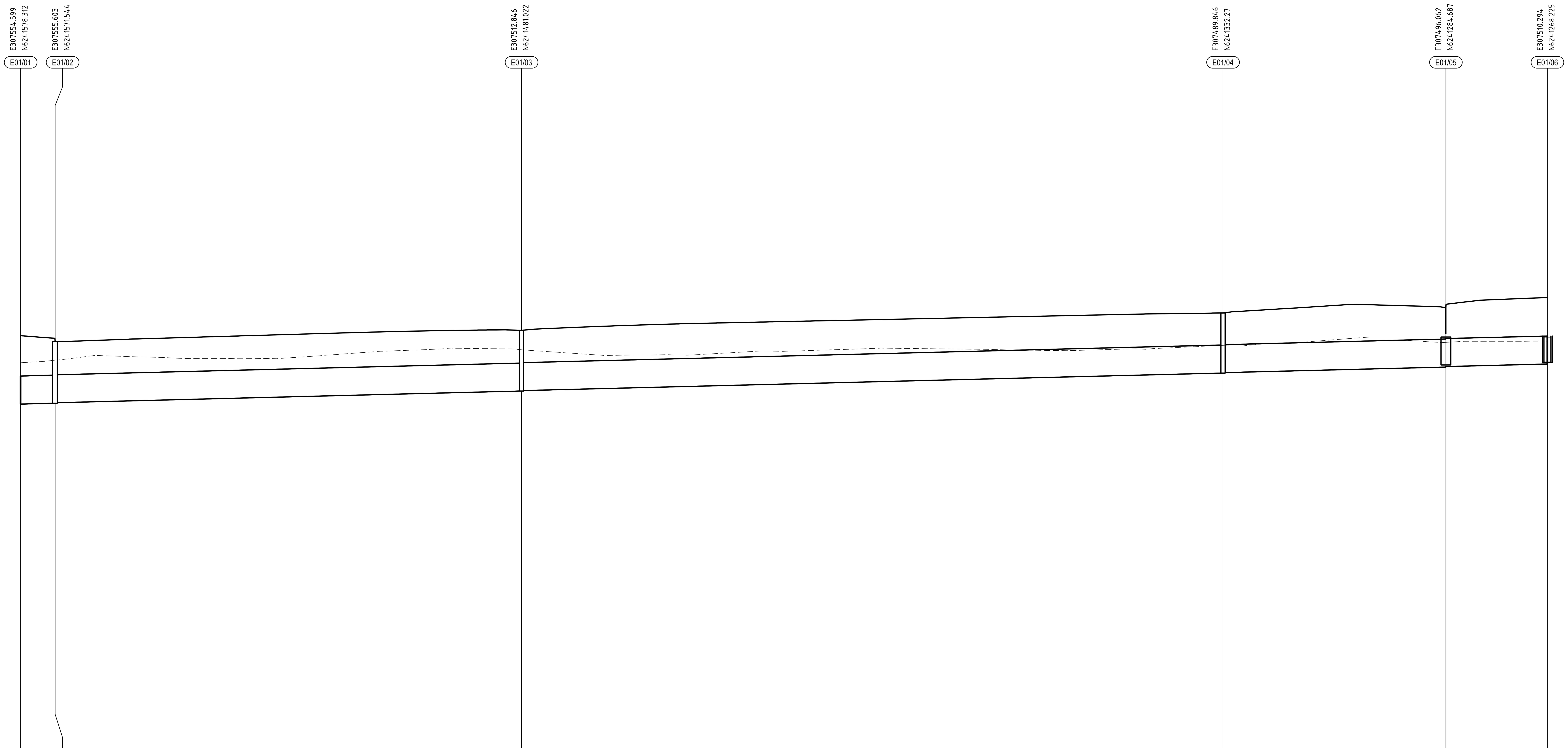
Architect: REIDCAMPBELL
Architecture, Interiors, Planning
ACN 002 033 801 ABN 28 317 605 875
Level 15, 124 Walker Street
North Sydney NSW 2060 Australia
Tel: 61 02 9954 5011 Email: sydney@reidcampbell.com
Fax: 61 02 9954 4946 Web: www.reidcampbell.com

Drawing Title: **FREIGHT VILLAGE FINISHES & PERSPECTIVE**

Drawn	Checked	Print Date	Scale @ A1
MF	SK	08/03/17 5:28:58 PM	As indicated

Project Number: 115123
Issue: F
Drawing Number: 115123_A_SSD_3003

APPENDIX F – GEORGES RIVER OUTLET PLANS

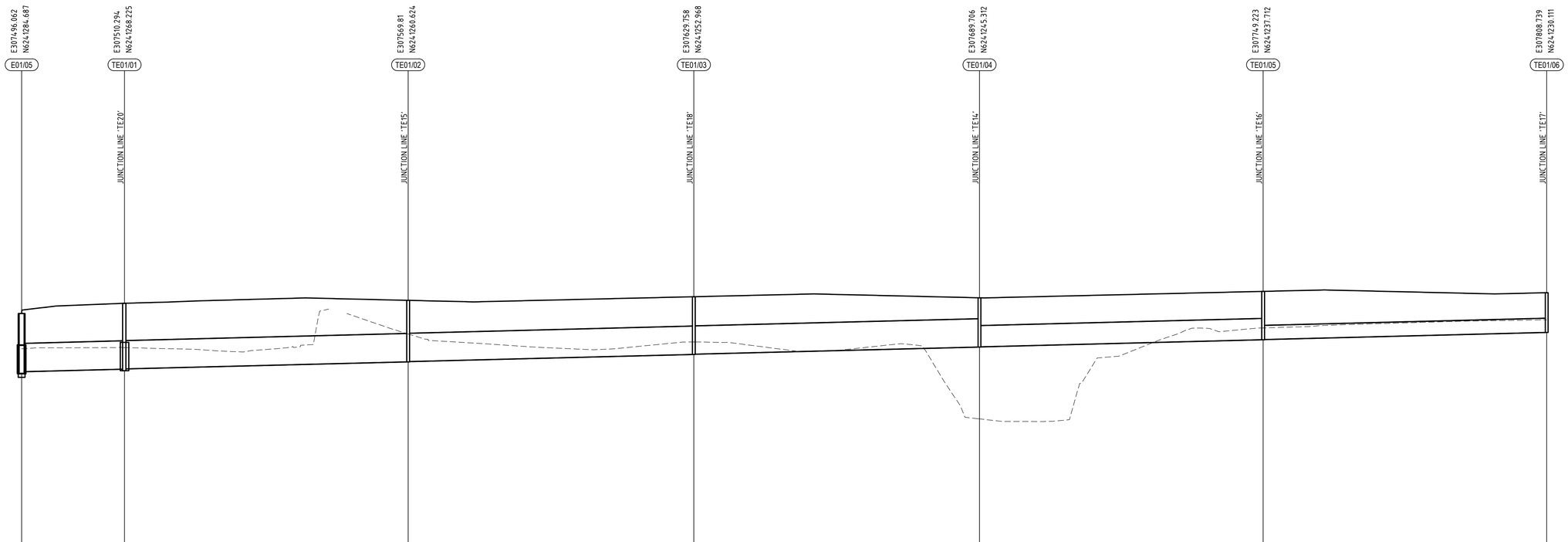


	E01/01 – E01/02	E01/02 – E01/03	E01/03 – E01/04	E01/04 – E01/05	E01/05 – E01/06
FLOW (m³/s)	3.989	3.982	3.94	3.92	3.921
VELOCITY (m/s)	3.42	3.3	3.42	3.71	2.84
PIPE SIZE & CLASS	Ø2100x1200 Box Culverts	Ø2100x1200 Box Culverts	Ø2100x1200 Box Culverts	Ø1800x1200 Box Culverts	Ø1800x1200 Box Culverts
GRADE (%)	0.5%	0.5%	0.5%	0.5%	0.5%
Datum R.L	-8.00				
Length	L=7.398	L=99.966	L=150.355	L=47.767	L=21.761

	E01/01	E01/02	E01/03	E01/04	E01/05	E01/06
DEPTH TO INVERT	1.200 / 1.200	2.636 / 2.616	2.603 / 2.583	2.577 / 2.557	2.548 / 1.111 / 2.528	1.200
10YR ARI H.G.L LEVEL						
INVERT LEVEL	11.300 / 11.300	11.337 / 11.357	11.857 / 11.877	12.629 / 12.649	12.887 / 14.324 / 12.907	13.016
PROPOSED LEVEL	12.500	13.973	14.460	15.206	15.435	14.216
EXISTING LEVEL	13.071	13.182	13.628	13.817	13.945	13.994
CHAINAGE	0.000	7.398	107.364	257.719	305.486	327.247

LINE E01

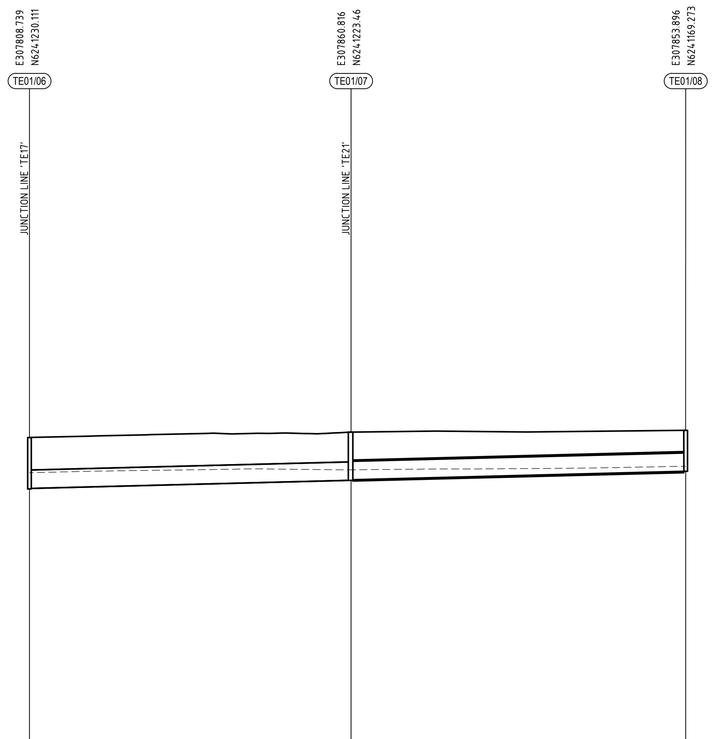
NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN



FLOW (m³/s)																							
VELOCITY (m/s)																							
PIPE SIZE & CLASS		Ø2100x1200 Box Culverts			Ø1500x1200 Box Culverts			Ø1500x1200 Box Culverts			Ø1500x1200 Box Culverts			Ø1500x900 Box Culverts			Ø1500x600 Box Culverts					
GRADE (%)		0.5%			0.5%			0.5%			0.5%			0.5%			0.5%					
Datum R.L	-8.00																						
DEPTH TO INVERT	2.548	2.463		2.787	2.852 2.777		2.601	2.591		2.441	2.431		2.084	2.074		2.045	2.035		1.679				
10YR ARI H.G.L LEVEL	13.474																						
INVERT LEVEL	12.887	12.973		13.081	13.016 13.091		13.391	13.401		13.703	13.713		14.016	14.026		14.326	14.336		14.636				
PROPOSED LEVEL	15.435			15.868			15.992			16.145			16.100			16.371			16.315			
EXISTING LEVEL	13.945			13.994			14.571			14.232			10.979			14.826			15.169			
CHAINAGE	0.000	L=21.761		21.761	L=59.999		81.761	L=60.435		142.195	L=60.435		202.630	L=60.000		262.631	L=59.999		322.630			

NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

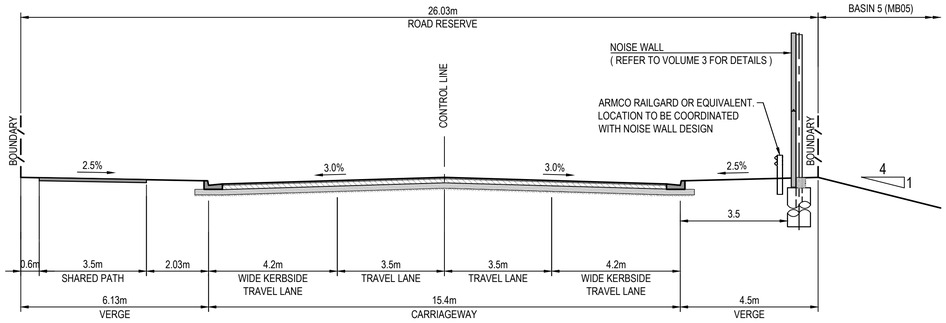
LINE TE01



FLOW (m³/s)				
VELOCITY (m/s)				
PIPE SIZE & CLASS		Ø600 RCP Class 2		Ø600 RCP Class 2
GRADE (%)		0.5%		0.5%
Datum R.L		-6.00		
DEPTH TO INVERT	1.679	1.659	1.572	1.562	1.220
10YR ARI H.G.L LEVEL					
INVERT LEVEL	14.636	14.656	14.918	14.938	15.211
PROPOSED LEVEL	16.315		16.490		16.500
EXISTING LEVEL	15.169		15.257		15.378
CHAINAGE	322.630	L=52.500	375.130	L=54.627	429.757

LINE TE01

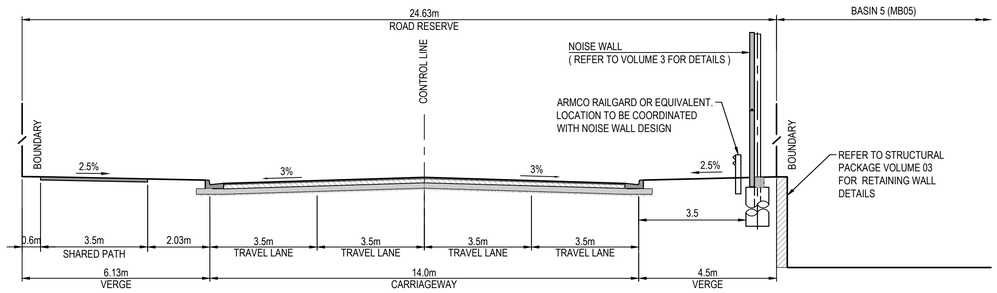
NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN



ROAD MC01 (WIDE KERBSIDE TRAVEL LANE) ADJACENT TO BASIN 5 (MB05)
TYPICAL CROSS SECTION

SCALE 1 : 100

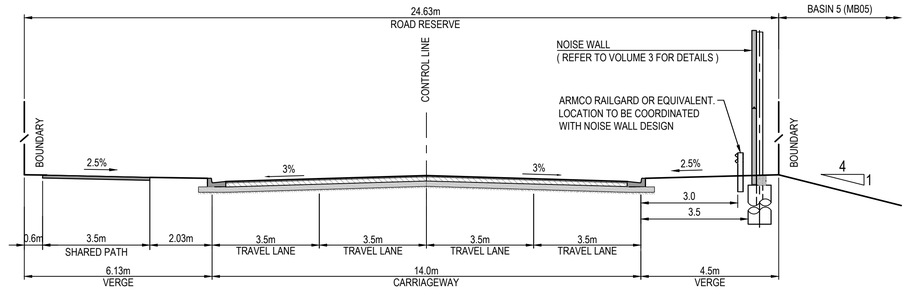
CH 225 - CH 340



ROAD MC01 WITH RETAINING WALL
TYPICAL CROSS SECTION

SCALE 1 : 100

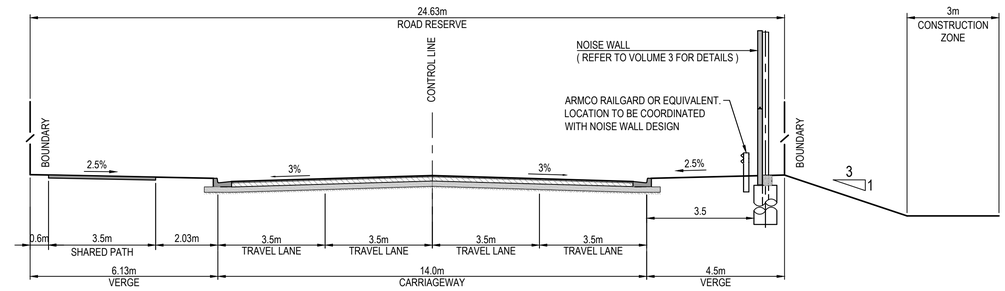
CH 735 - CH 765



ROAD MC01 ADJACENT TO BASIN 5 (MB05)
TYPICAL CROSS SECTION

SCALE 1 : 100

CH 420 - CH 735



ROAD MC01 WITH BATTER
TYPICAL CROSS SECTION

SCALE 1 : 100

CH 765 - CH 1330

NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

0 2 4 6 8 10m

1 : 100

Client

SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 100	Current Issue Signatures	
		Drawn D.WALL	
Original Size	A1	Designed M.O'CALLGHAN	
Height Datum	AHD	Checked M.KURTZ	
Grid	MGA	Approved M.KEFFORD	

Filename LPMW-ARC-CV-DWG-2003-TypicalRoadCrossSection-COPY.dwg

Project
MOOREBANK PRECINCT WEST (MPW) - STAGE 2
LAND PREPARATION

Title
TYPICAL ROAD CROSS SECTIONS

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

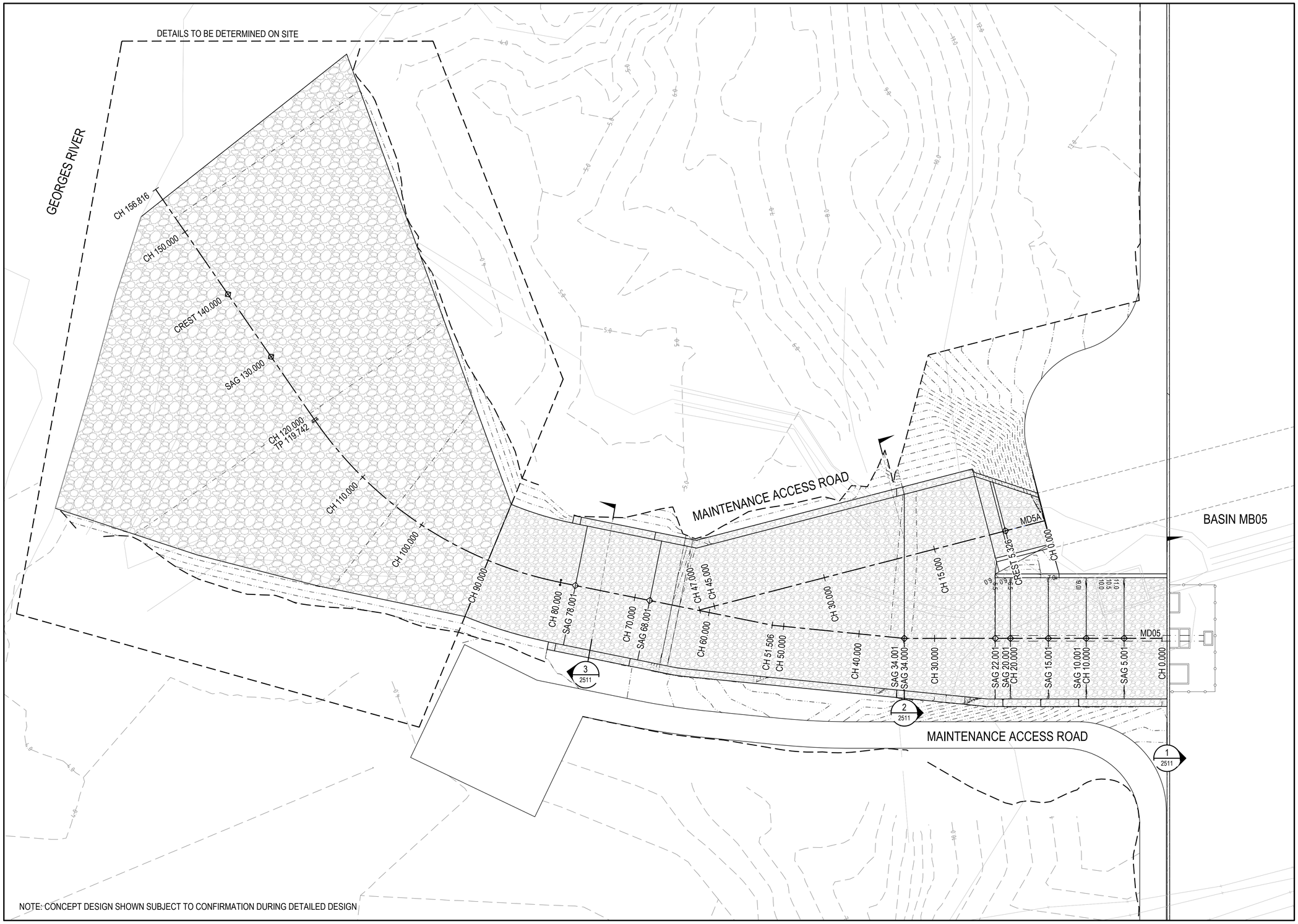
Volume No. 02

Project No. AA009335

Drawing No. LPMW-ARC-CV-DWG-2003 - Issue -

100mm on Original

Date Plotted: 25 Oct 2017 - 03:26PM File Name: \\IHC-AUS-NS-FS-01\jobs\AA009335\I-Issued\DWG\17-10-24 - DPE Response\Drawings - NOT ISSUED\LPMW-ARC-CV-DWG-2003-TypicalRoadCrossSection-COPY.dwg

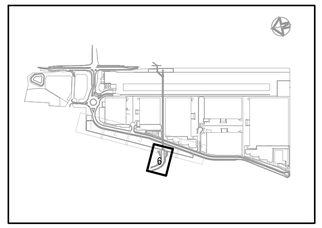


LEGEND

- BASIN WALL (REFER TO VOLUME 3 FOR DETAILS)
- GABION / RENO MATTRESS
- RIP RAP ROCK ARMOUR

NOTES

1. REFER TO THE DESIGN REPORT ASSOCIATED WITH THE CONSTRUCTION PACKAGE FOR GABION / RENO MATTRESS DETAILS. THE DETAILS HAVE BEEN DEVELOPED UPON CONSULTATION OF GEOFABRICS AUSTRALIA
2. REFER TO MACCAFERRI TECHNICAL NOTE, "SPECIFICATION FOR GABION AND MATTRESS ROCK" FOR ROCK FILLING SPECIFICATION.



Issue	Description	Date

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Client: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 250	Current Issue Signatures	
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Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2501-OSDBasinOutletMD05Plan-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 5 (MD05) PLAN

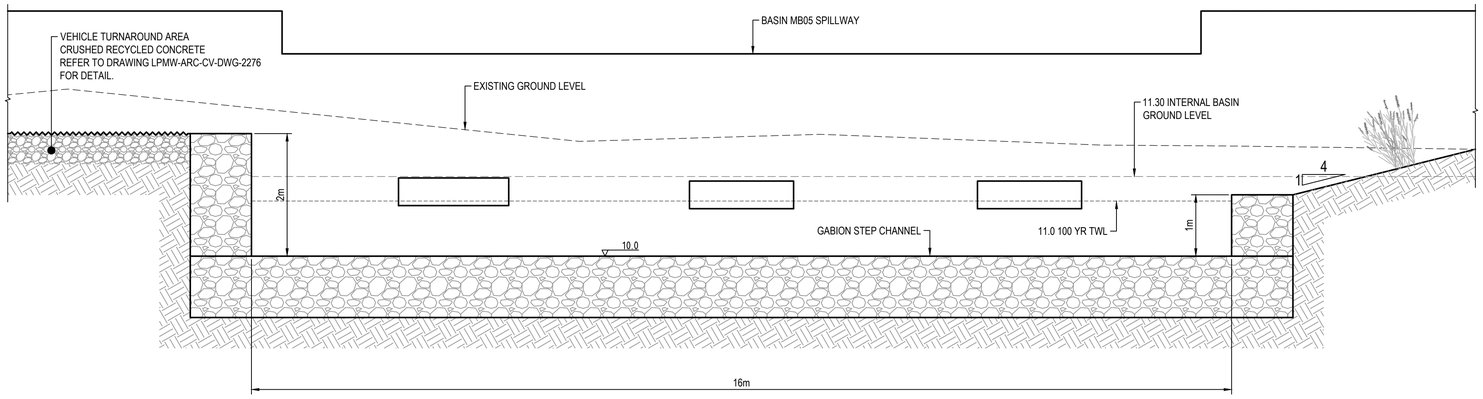
ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

Volume No. 02

Project No. AA009335

Drawing No. LPMW-ARC-CV-DWG-2501 - Issue -

100mm on Original



SECTION 1 / 2501
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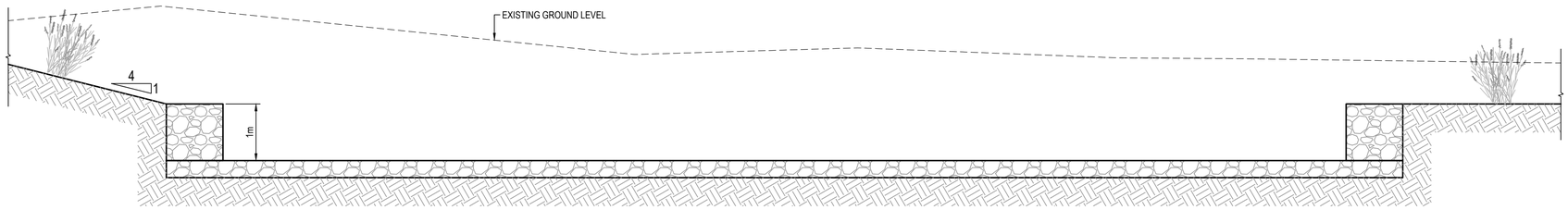

SECTION 2 / 2501
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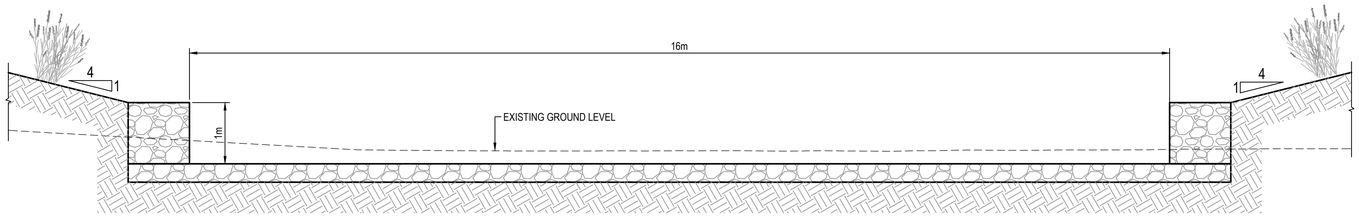

SECTION 3 / 2501
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NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

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Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 50	Current Issue Signatures	
		Drawn D.WALL	
Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2511-OSDBasinOutletMD05Details-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

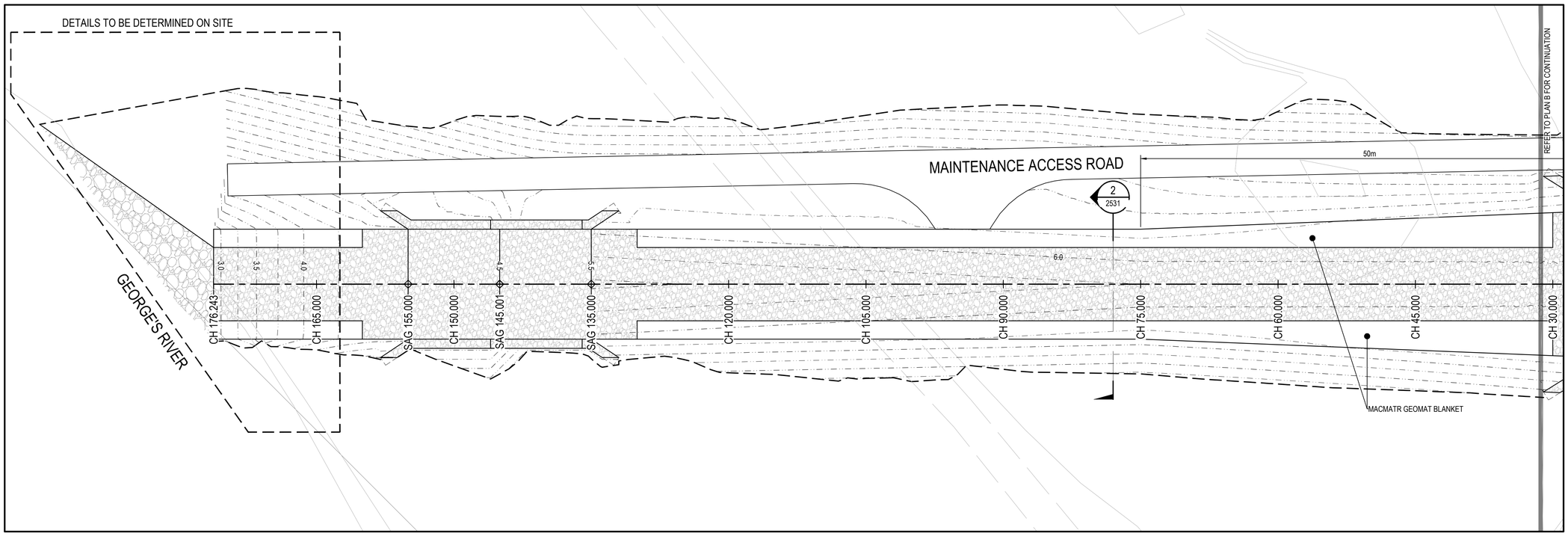
Title: OSD BASIN OUTLET 5 (MD05) DETAILS

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

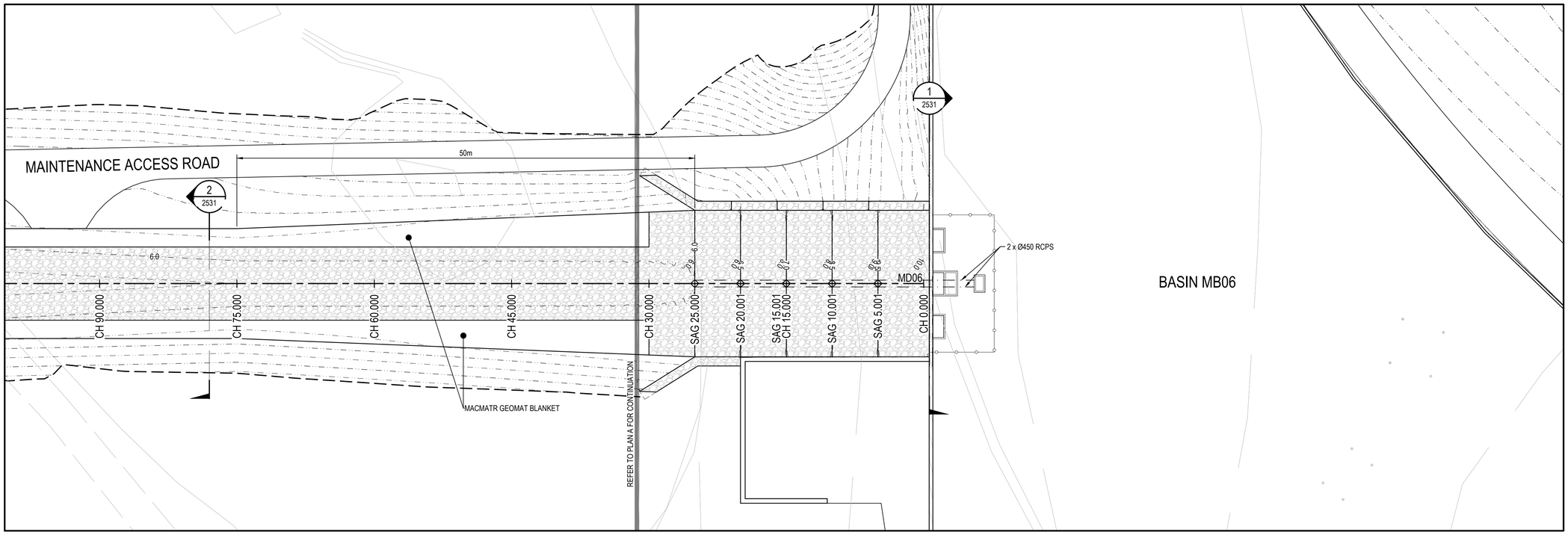
Volume No. 02
Project No. AA009335
Drawing No. LPMW-ARC-CV-DWG-2511-
Issue -

100mm on Original

Date Plotted: 25 Oct 2017 - 03:28PM File Name: F:\AA009335\I-Issued\DWG\17-10-24 - DPE Response\Drawings - NOT ISSUED\LPMW-ARC-CV-DWG-2511-OSDBasinOutletMD05Details-COPY.dwg V1



PLAN A



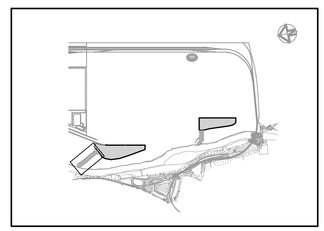
PLAN B

LEGEND

- BASIN WALL (REFER TO VOLUME 3 FOR DETAILS)
- GABION / RENO MATTRESS
- RIP RAP ROCK ARMOUR

NOTES

1. REFER TO THE DESIGN REPORT ASSOCIATED WITH THE CONSTRUCTION PACKAGE FOR GABION / RENO MATTRESS DETAILS. THE DETAILS HAVE BEEN DEVELOPED UPON CONSULTATION OF GEOFABRICS AUSTRALIA
2. REFER TO MACCAFERRI TECHNICAL NOTE, "SPECIFICATION FOR GABION AND MATTRESS ROCK" FOR ROCK FILLING SPECIFICATION.
3. REFER TO MACCAFERRI TECHNICAL DETAILS FOR MACMATR PRODUCT INFORMATION.



NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

0 5 10 15 20 25m

1 : 250

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 250	Current Issue Signatures	
		Drawn D.WALL	
Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2521-OSDBasinOutletMD06Plan-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 6 (MD06) PLAN

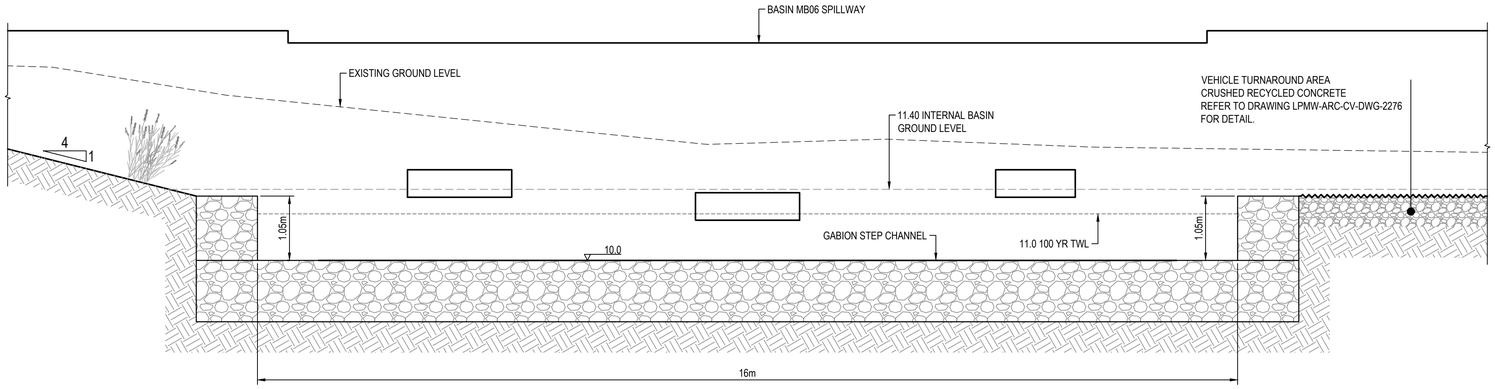
ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
NORTH SYDNEY NSW 2060
ABN 76 104 485 289
Tel No: +61 2 8907 9000
Fax No: +61 2 8907 9001
arcadis.com

Volume No. 02

Project No. AA009335

Drawing No. LPMW-ARC-CV-DWG-2521 - Issue -

100mm on Original



SECTION 1 / 2521
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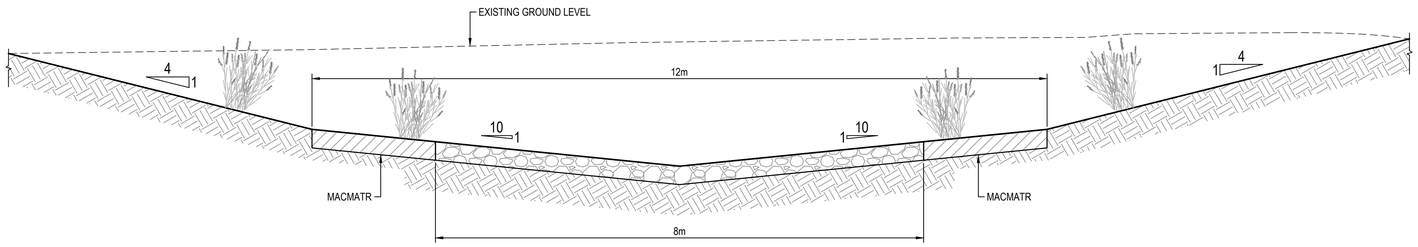

SECTION 2 / 2521
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NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

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1 : 50

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 50	Current Issue Signatures	
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Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	
Filename	LPMW-ARC-CV-DWG-2531-OSDBasinOutletMD06Details-COPY.dwg		

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 6 (MD06) DETAILS

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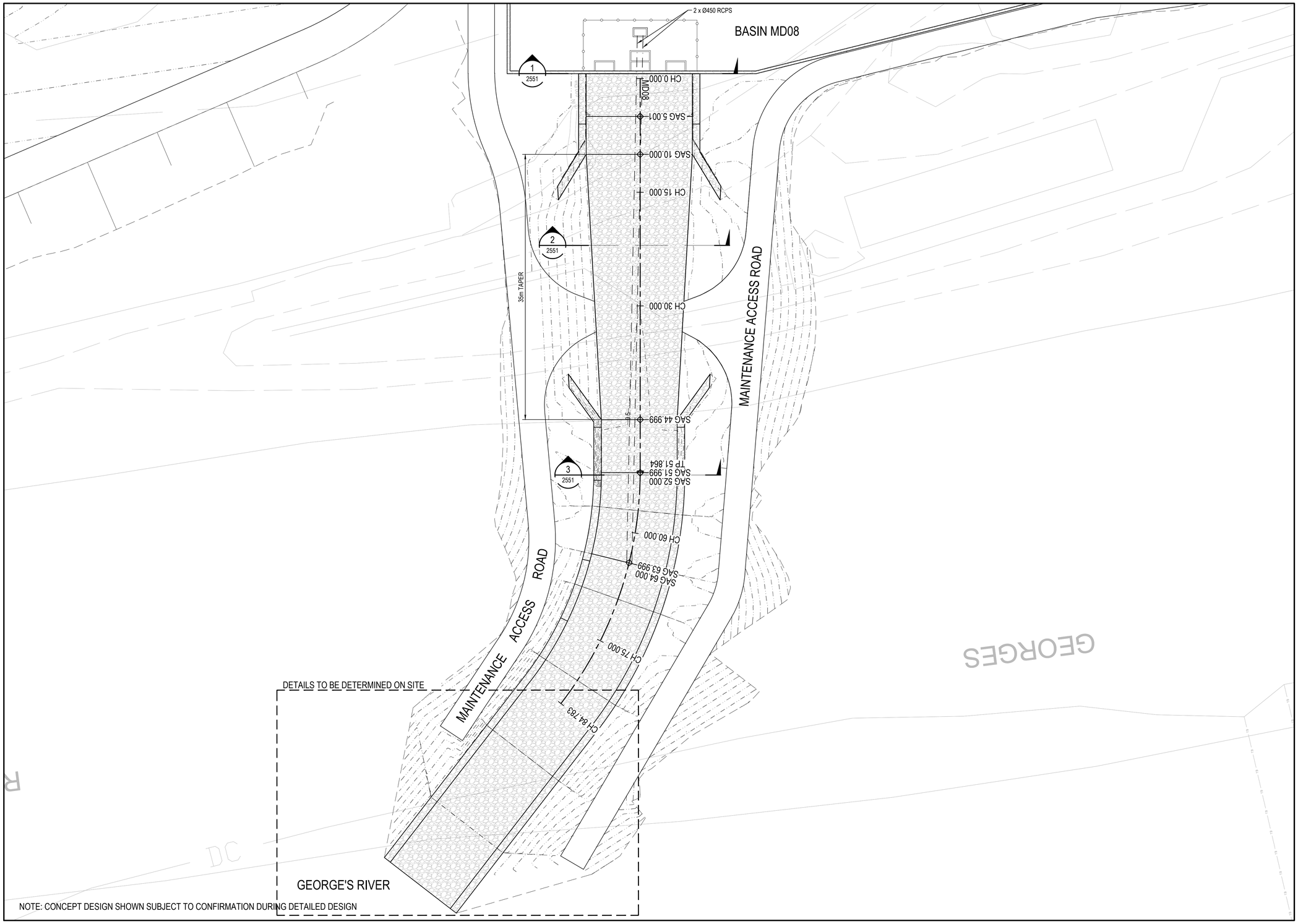
arcadis.com

Volume No. 02
Project No. AA009335
Drawing No. LPMW-ARC-CV-DWG-2531
Issue -

100mm on Original



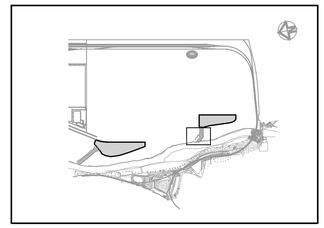
LEGEND

BASIN WALL
(REFER TO VOLUME 3 FOR DETAILS)

GABION / RENO MATTRESS

NOTES

1. REFER TO THE DESIGN REPORT ASSOCIATED WITH THE CONSTRUCTION PACKAGE FOR GABION / RENO MATTRESS DETAILS. THE DETAILS HAVE BEEN DEVELOPED UPON CONSULTATION OF GEOFABRICS AUSTRALIA
2. REFER TO MACCAFERRI TECHNICAL NOTE, "SPECIFICATION FOR GABION AND MATTRESS ROCK" FOR ROCK FILLING SPECIFICATION.



Issue	Description	Date

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Client: SIMTA — SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

		Current Issue Signatures	
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Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2541-OSDBasinOutletMD08Plan-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 8 (MD08) PLAN

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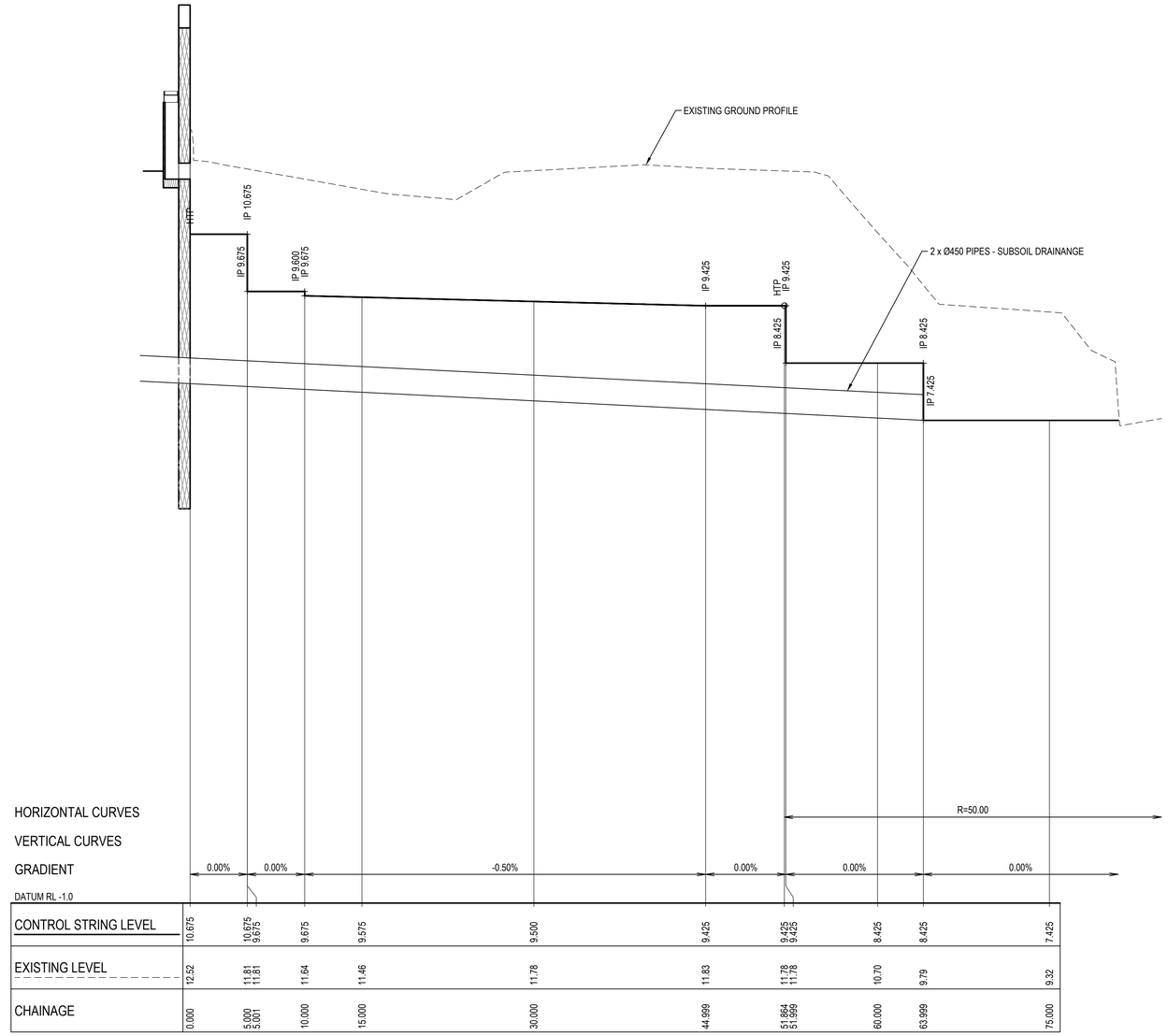
Volume No. 02

Project No. AA009335

Drawing No. LPMW-ARC-CV-DWG-2541- Issue -

100mm on Original

Date Plotted: 25 Oct 2017 - 03:30PM File Name: F:\AA009335\Issued\DWG\17-10-24 - DPE Response\Drawings - NOT ISSUED\LPMW-ARC-CV-DWG-2541-OSDBasinOutletMD08Plan-COPY.dwg V1



MD08 LONGITUDINAL SECTION

SCALE 1:250 HORI.
1:50 VERT.

NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

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1 : 250 HORIZONTAL

0 1 2 3 4 5m
1 : 50 VERTICAL

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	AS SHOWN	Current Issue Signatures	
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Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2546-OSDBasinOutletMD08LongSection-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 8 (MD08) LONGITUDINAL SECTION

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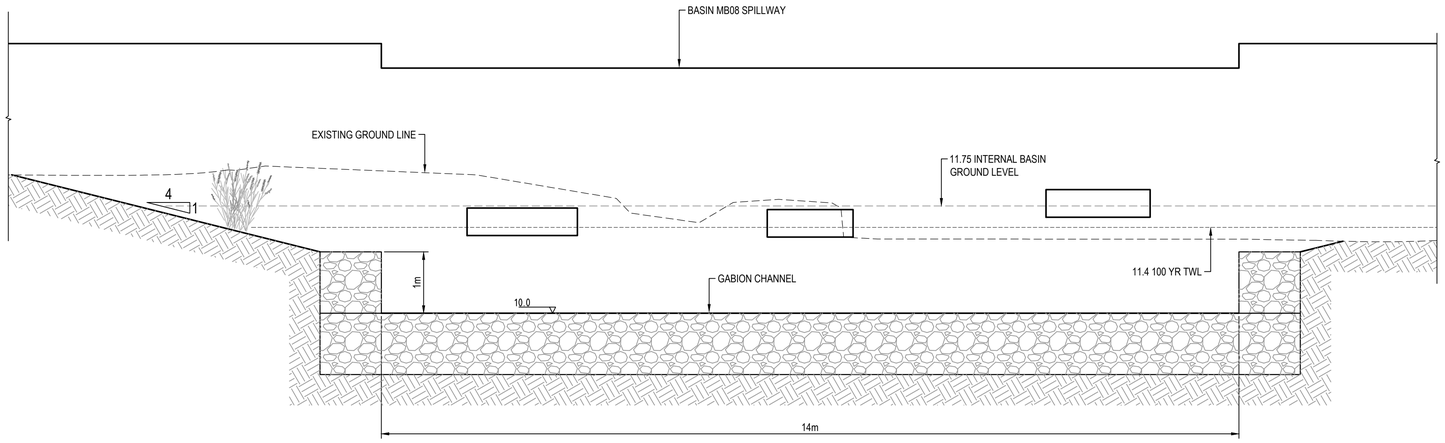
Volume No. 02
Project No. AA009335
Drawing No. LPMW-ARC-CV-DWG-2546 - Issue -

100mm on Original

Date Plotted: 25 Oct 2017 - 03:30PM File Name: F:\AA009335\I-Issued\DWG\17-10-24 - DPE Response\Drawings - NOT ISSUED\LPMW-ARC-CV-DWG-2546-OSDBasinOutletMD08LongSection-COPY.dwg V1



SECTION 1 (25461)
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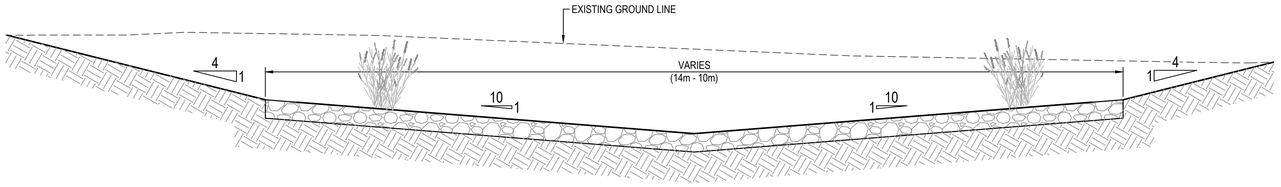
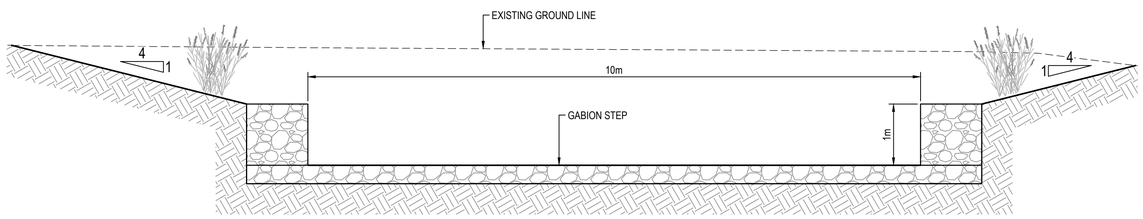


SECTION 2 (2541)
1 : 50



SECTION 3 (2541)
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NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

0 1 2 3 4 5m
1 : 50

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

Status

Scales	1 : 50	Current Issue Signatures	
		Drawn D.WALL	
Original Size	A1	Designed G.DUNSTAN	
Height Datum	AHD	Checked B.CALDWELL	
Grid	MGA	Approved M.KEFFORD	

Filename: LPMW-ARC-CV-DWG-2551-OSDBasinOutletMD08Details-COPY.dwg

Project: MOOREBANK PRECINCT WEST (MPW) - STAGE 2

Title: OSD BASIN OUTLET 8 (MD08) DETAILS

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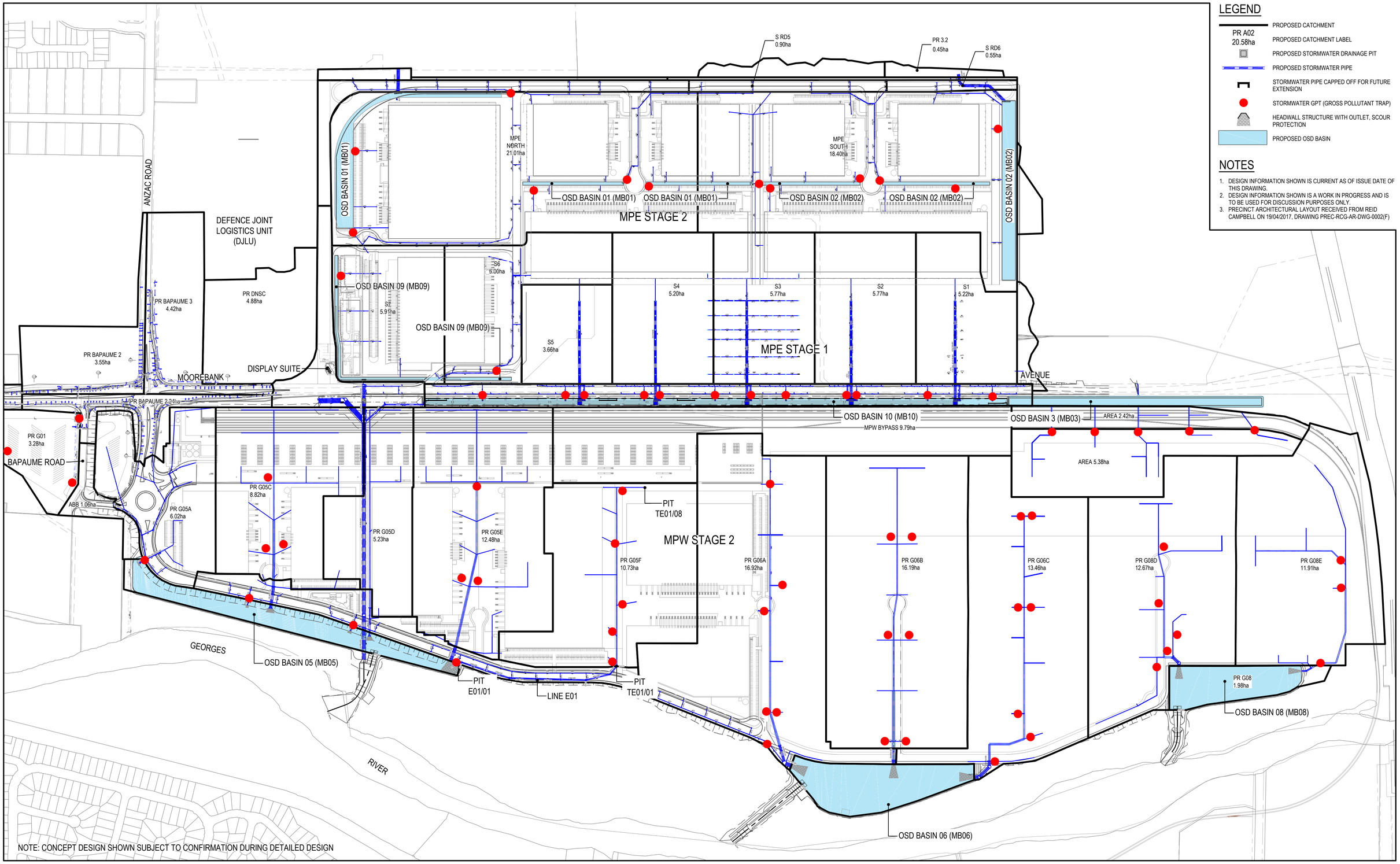
Volume No. 02
Project No. AA009335
Drawing No. LPMW-ARC-CV-DWG-2551 - Issue -

100mm on Original



LEGEND

- PR A02 20.58ha — PROPOSED CATCHMENT LABEL
- PROPOSED CATCHMENT
- PROPOSED STORMWATER DRAINAGE PIT
- PROPOSED STORMWATER PIPE
- STORMWATER PIPE CAPPED OFF FOR FUTURE EXTENSION
- STORMWATER GPT (GROSS POLLUTANT TRAP)
- HEADWALL STRUCTURE WITH OUTLET, SCOUR PROTECTION
- PROPOSED OSD BASIN

NOTES

1. DESIGN INFORMATION SHOWN IS CURRENT AS OF ISSUE DATE OF THIS DRAWING.
2. DESIGN INFORMATION SHOWN IS A WORK IN PROGRESS AND IS TO BE USED FOR DISCUSSION PURPOSES ONLY.
3. PRECINCT ARCHITECTURAL LAYOUT RECEIVED FROM REID CAMPBELL ON 19/04/2017, DRAWING PREC-RCG-AR-DWG-0002(F)

NOTE: CONCEPT DESIGN SHOWN SUBJECT TO CONFIRMATION DURING DETAILED DESIGN

Issue	Description	Date

0 70 140 210 280 350m

1 : 3500

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status

Scales	1 : 3500	Current Issue Signatures	
		Drawn J.RAMOS	
Original Size	A1	Designed -	
Height Datum	AHD	Checked G.DUNSTAN	
Grid	MGA	Approved M.KEFFORD	

Filename: PREC-ARC-CV-SKC-0156-OverallStormwaterPlan-COPY.dwg

Project: MOOREBANK INTERMODAL OVERALL PRECINCT

Title: OVERALL STORMWATER DRAINAGE PLAN

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arcadis.com

Project No. AA009335

Drawing No. PREC-ARC-CV-SKC-0156- Issue -

100mm on Original

Date Plotted: 25 Oct 2017 - 06:36PM File Name: F:\AA009335\I-Issued\DWG\17-10-24 - DPE Response\Drawings - NOT ISSUED\PREC-ARC-CV-SKC-0156-OverallStormwaterPlan-COPY.dwg V1

APPENDIX G – SUPPLEMENTARY CONTAMINATION INFORMATION

ADVICE: DPE for MPW Stage

Management of contamination and remediation works

Remediation works have been completed on the MPW site in accordance the Land Preparation Works Stage 1 and Stage 2 – Remediation Action Plan (RAP, Golder 2016a[1]) to make the site suitable for the proposed commercial/industrial land use.

Contaminated soils have been managed as follows, based on guidance from the RAP (Golder 2016a) and Asbestos in Soils Management Plan (Golder 2016b[2]):

1) Excavation in the area of identified contamination;
2) Transfer of soils to a designated contamination assessment and treatment area (CATA) for characterisation;
3) Treatment of soils via hand picking and screening (if appropriate), or classification of soils for off-site disposal;
4) Validation of the excavation and treated materials; and
5) Off-site disposal or onsite internment of treatment waste stream (if required).

As part of the remediation, the verification of the suitability of imported soils required to backfill remediation excavations is based on:

- A review of site use, history and material properties of the source of the material in order to assess potential for the presence of contaminants;
- Depending on the outcome of the review, soil samples are collected if it cannot be established that the materials satisfy the definition of VENM, and the results screened against the adopted site suitability criteria; and
- An inspection of the material at source, and on arrival at the site, is undertaken to ensure that the material is consistent with information provided.

Completed RAP Remediation Works

Remediation completed as part of MPW Early Works (Stage 1) includes the removal of asbestos and anthropogenic fill in soils, fuel infrastructure, and hotspot contamination. The following areas specified in the RAP have been remediated and validated.

- Chatham Village (anthropogenic fill);
- Crane Training Yard (anthropogenic fill and asbestos);
- Dry Gap (anthropogenic fill, asbestos, and hotspot hydrocarbon impacts);
- Grit Blast Facility (hotspot lead impacts);
- Northwest Parade Ground (anthropogenic fill);
- Parade Ground West (hotspot asbestos impacts);
- Lake Sisinyak (anthropogenic fill, asbestos, and hotspot hydrocarbon impacts);
- Viet Cong Village (suspected anthropogenic fill);
- Drainage Channel (suspected anthropogenic fill);
- UST44467 (potential hydrocarbon impacts);

[1] Land Preparation Works Stage 1 and 2 – Remediation Action Plan (RAP). Golder Associates. 9 August 2016. Ref: 1651776-005-R-Rev0 (Golder 2016a)

[2] Asbestos in Soils Management Plan. Moorebank Intermodal Terminal. Golder Associates. 16 August 2016. Ref. 1416224-035-R-Rev1 (Golder 2016b)

- UST_001 (potential hydrocarbon impacts); and
- UST_004 (potential hydrocarbon impacts).

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor (Site Auditor), to conduct a Site Audit in relation to the land to be developed for the Moorebank Intermodal Terminal located at Moorebank Avenue, Moorebank, NSW, in accordance with the Contaminated Land Management Act 1997 and relevant guidelines made or approved under s.105 of that Act.

The Site Auditor has provided progressive reviews of Interim Validation Reports in relation to the remediated and validated areas. His role will continue during the onsite works until such time that he is satisfied that all site contamination has been remediated entirely, or to the extent that it does not pose a risk to human health and the environment, and that any residual contamination is able to be appropriately managed under a Long Term Environmental Management Plan (LTEMP), see below.

Data Gaps

The following data gaps were identified in the RAP (Golder 2016a), and have been addressed during Stage 1 remediation works.

- Materials beneath buildings suspected of housing PCBs or containing OCP impacted subgrade materials.
    - All potential PCB and OCP buildings were investigated, and no impacted soils were identified.
- Underground utilities suspected to be constructed of hazardous materials or contain contaminated materials.
    - During the removal of underground utilities by Liberty, a total of 149 unexpected finds (generally associated with asbestos pipeline infrastructure), as well as three additional underground storage tanks, and four anthropogenic fill/asbestos impacted areas were identified and remediated to the extent practicable. Some impacts have been identified as extending into Endangered Ecological Community (EEC) areas, and will be addressed as part of MPW Stage 2.
- Management of LNAPL on the eastern portion of the site, sourced from the former DNSDC refuelling facility.
    - Groundwater will be assessed on a site-wide basis, to verify that groundwater within the site does not present an unacceptable risk to future site users. No further investigation works are proposed near the former refuelling facility due to the availability of previous investigation reports.

All data gaps and unexpected finds will be addressed within the final Stage 1 validation report. The following unexpected finds, anthropogenic fill/asbestos areas, and USTs will be addressed in interim validation reports:

- UF02 (hotspot hydrocarbon impacted soils);
- UF05 (asbestos pipeline network/asbestos impacts in soils);
- UF08 (asbestos pipeline network/asbestos impacts in soils);
- UF10 (asbestos pipeline network/asbestos impacts in soils);
- UF22 (hotspot heavy metals and batteries in soils);
- UF26 (asbestos pipeline network);
- UF28 (asbestos pipeline/asbestos impacts in soils);
- UF30 (asbestos impacts in soils);

- UF39 (asbestos pipeline network/asbestos impacts in soils);
- UF40-42 and UF100 (asbestos pipeline network/asbestos impacts in soils);
- UF47 (asbestos pipeline network);
- UF50 (asbestos, heavy metals and anthropogenic fill);
- UF51 (asbestos pipeline network);
- UF60 (asbestos and anthropogenic fill);
- UF61 (asbestos impacts in soils);
- UF64-68 (asbestos pipeline network/asbestos impacts in soils);
- UF77 (asbestos pipeline network/asbestos impacts in soils);
- UF79 (asbestos pipeline network/asbestos impacts in soils);
- UF134-135 (asbestos pipeline network/asbestos impacts in soils);
- B0099_2 (asbestos pipeline network/asbestos impacts in soils, and hotspot hydrocarbon and lead impacted soils);
- ANTHRO-1 (asbestos and anthropogenic fill);
- ANTHRO-2 (asbestos, heavy metals and anthropogenic fill);
- UFT01 (UST); and
- UFT02 (UST and associated hydrocarbon impacts).

Environmental management of temporary stockpiles (34000m^3 of asbestos contaminated material and 40000m^3 of concrete and bitumen)

Currently on the Moorebank LPWDR site are soil stockpiles impacted with asbestos containing materials (ACM) excavated during the Early Works (Stage 1) remediation of the site. The materials are stored in CATAs, specifically CATA A, B, E and F (see **Attachment 1**), occupying an area of approximately 5 hectares (ha) of the 200 ha site.

Temporary stockpiles are managed under the *LPWDR Construction Soil and Water Management Plan* (Liberty, January 2018[3]).

General requirements of the Plan in relation to stockpiles include:

- Stockpiles are located in areas where there is minimal risk of sedimentation of land or surface water, where the movement of fauna is not impeded, and where they do not impede surface drainage channels;
- Stockpiles are located in approved works zones;
- Contaminated material is stockpiled separately from other material to avoid cross contamination;
- The surface of stockpiles is shaped in order to minimise infiltration and minimise erosion;
- For stockpiles that are in place longer than 10 days after completion, a surface run off co efficient of C <0.1 is achieved either by vegetation or other means (e.g. polymer application);
- All stockpiles are regularly monitored for erosion and weeds, with appropriate controls implemented when required;
- The locations of all stockpiles are identified in the Site Layout Plan (**Attachment 1**); and
- A stockpile register records the location and material type within stockpiled materials.

Long term options to manage the 34000m^3 of geotechnically unsuitable asbestos contaminated material

[3] Moorebank Intermodal Terminal, LPWDR Construction Soil and Water Management Plan, Liberty Industrial Pty Ltd for SIMTA (currently Rev P, 25 January 2018)

While geotechnically unsuitable materials stockpiled on-site may be treated by blending with other materials, there are risks in blending materials impacted by asbestos. It is likely that blending (specified as pug mill or equivalent) will distribute ACM throughout a larger volume of soil, and more importantly potentially lead to bonded ACM being crushed to generate fibrous asbestos and asbestos fines, as well as liberating free asbestos fibres. The other options for geotechnically unsuitable materials is on- or off-site disposal (Golder 2017[4]). Options for asbestos impacted materials are provided in the *Asbestos in Soils Management Plan* (Golder 2016b), and both on- and off-site disposal are assessed as acceptable.

The detailed layout and design for the Intermodal Terminal has not been finalised. Nevertheless, on-site interment of stockpiles which are geotechnically unsuitable as general fill, and are asbestos impacted, requires an area which is:

- Within the designated commercial/industrial area of the site (excluding conservation zone);
- Compatible with materials not meeting general fill geotechnical requirements;
- Unlikely to be disturbed during future operations; and
- Topographically favourable to placing materials at depth.

Until a suitable internment area is identified (if any), the stockpiled ACM impacted materials are being managed in accordance with the *Construction Soil and Water Management Plan* (Liberty 2018).

Long term management plans

A site wide LTEMP is under development for addressing unexpected finds during the Intermodal Terminal construction. The nature of any residual hazards which may be present at the site will generally be detectable through visual or olfactory means, and may include:

- ACM in or on soils (visible, with exception of free asbestos fibres and asbestos fines);
- Containers / drums of chemicals (visible);
- Construction / demolition waste (visible);
- Ash and/or slag contaminated soils / fill materials (visible);
- Petroleum contaminated soils (staining / discolouration visible and/or odorous); and
- Volatile organic compound contaminated soils (odorous).

An Unexpected Finds Protocol in the LTEMP with provide a process for recording, assessing and managing residual hazards, including reporting.

Also as part of the LTEMP is anticipated to be a groundwater monitoring plan (GMP). The implementation of the RAP (Golder 2016a) requires assessments be undertaken to verify that groundwater within the site does not present an unacceptable risk to future site users. Groundwater assessment are to include the collection of samples from the existing groundwater monitoring wells available at each of the former underground tanks, hotspots and anthropogenic fill locations.

Generally, where groundwater sample results confirm that concentrations of residual contamination are below the adopted criteria, the groundwater will be considered to have been validated and no further remediation works will be required (Golder, 2016b).

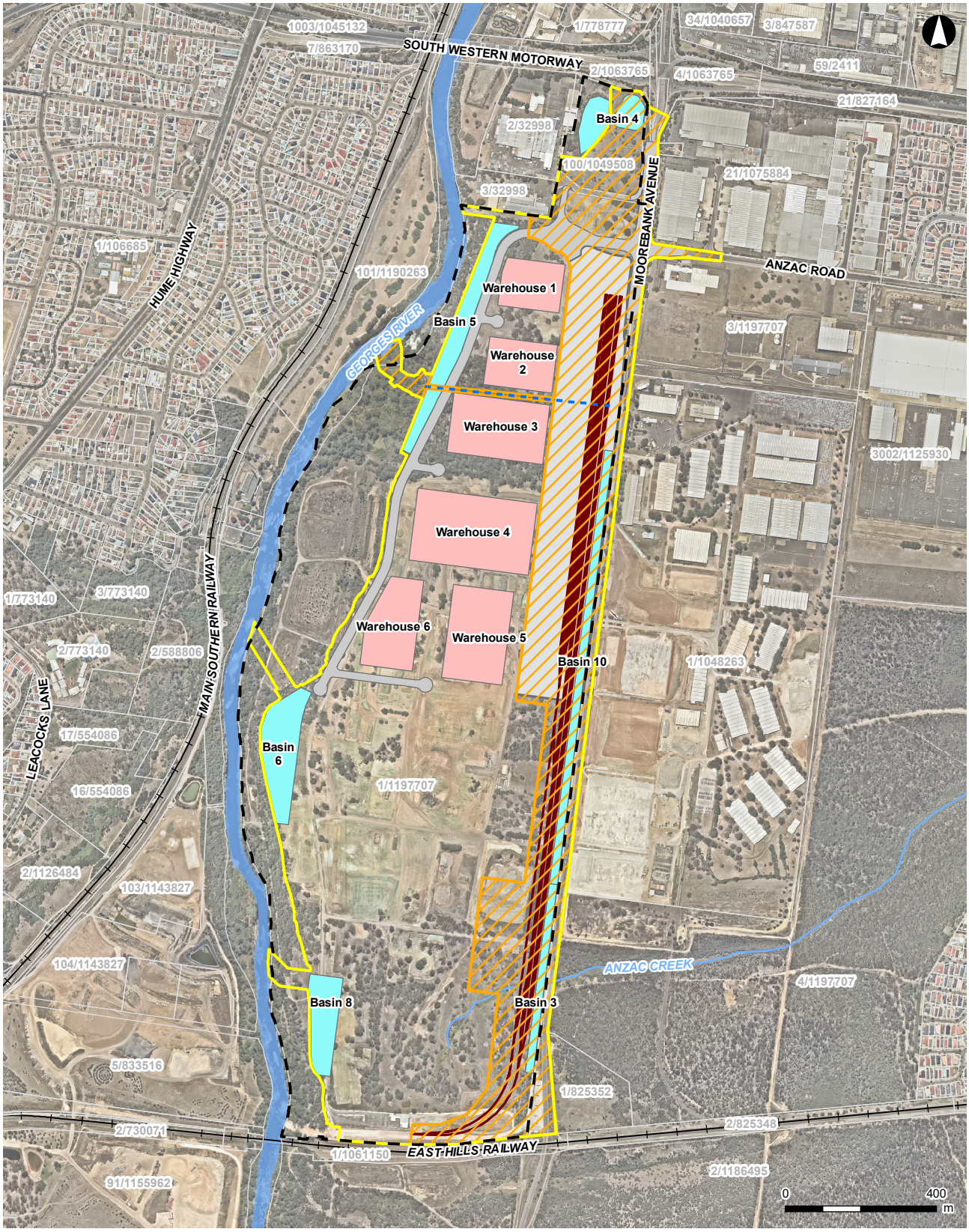
Where residual groundwater contamination is identified ongoing groundwater monitoring/ management would be implemented on the site, and this would be incorporated into a LTEMP and

[4] Technical Memo: Potential Reuse of Stockpiled Materials, 25 September 2017. Golder Associates (2017).

documented as a GMP. During the importation of fill onto the site, the groundwater monitoring well network would need to be protected, and if a well were damaged a replacement well would be installed.

Currently investigations of the use and distribution of PFAS chemicals on the site are being investigated and remediation/management plans developed. The Site Auditor is reviewing identified PFAS contamination as required for the Stage 1 approval, with the additional overlay of the requirements for consultation with the EPA and other considerations as outlined in the *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme* (EPA 2017). As contemplated by the RAP (Golder, 2016b), a routine PFAS monitoring regime may be required as part of LTEMP.

APPENDIX H – STAGING PLANS



LEGEND

- Intermodal and Rail Link Phase
- MPW site
- MPW Stage 2 construction area
- Cadastre (NSW DFSI, 2017)
- IMT facility area
- OSD
- Road
- Warehouse
- Rail link connection
- East-West drainage channel
- Watercourse
- Existing railway

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Coordinate System: GDA 1994 MGA Zone 56
Aerial imagery supplied by nearmap (January, 2018)

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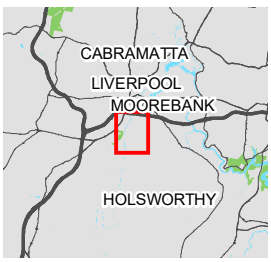

MPW Stage 2 SSD-7709 - Intermodal and Rail Link Phase

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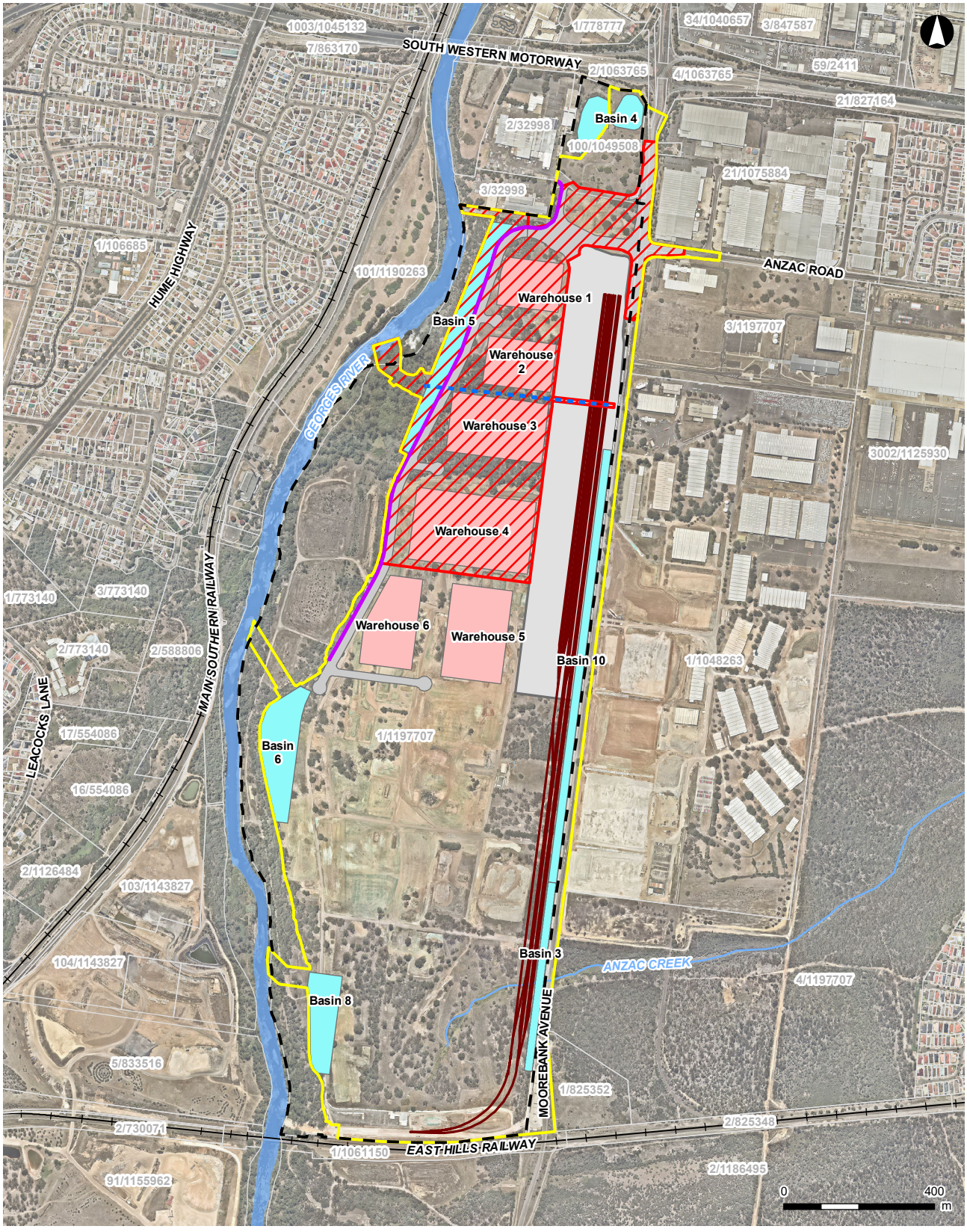
QA by : GC



LEGEND

- Warehousing North area
- MPW site
- MPW Stage 2 construction area
- Cadastre (NSW DFSI, 2017)
- East-West drainage channel
- IMT facility area
- OSD
- Road
- Warehouse
- Rail link connection
- Noise wall
- Watercourse
- Existing railway

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Coordinate System: GDA 1994 MGA Zone 56
Aerial imagery supplied by nearmap (January, 2018)

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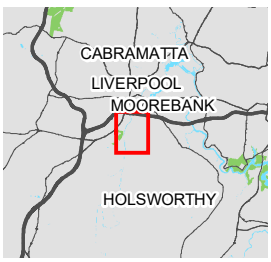

MPW Stage 2 SSD-7709 - Warehousing North area

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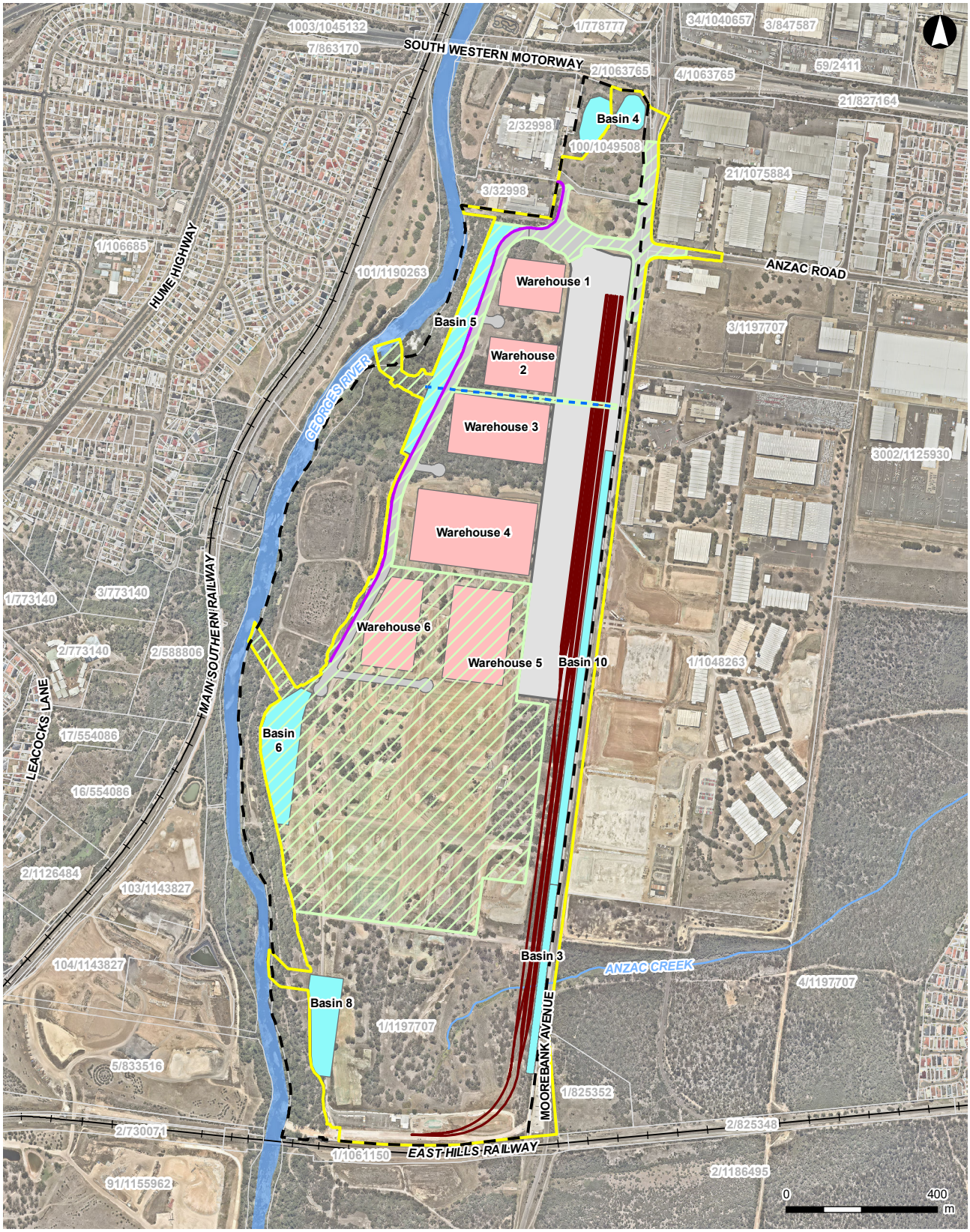

LEGEND

- Central Warehousing and Earthworks Phase
- East-West drainage channel
- Cadastre (NSW DFSI, 2017)
- MPW Stage 2 construction area
- IMT facility area
- OSD
- Road
- Warehouse
- Rail link connection
- MPW site
- Noise wall
- Watercourse
- Existing railway

MPW Stage 2 SSD-7709 - Central Warehousing and Earthworks Phase

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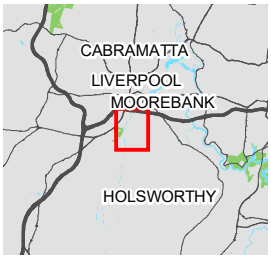
Coordinate System: GDA 1994 MGA Zone 56
Aerial imagery supplied by nearmap (January, 2018)

1:15,000 at A4

ARCADIS

SIMTA



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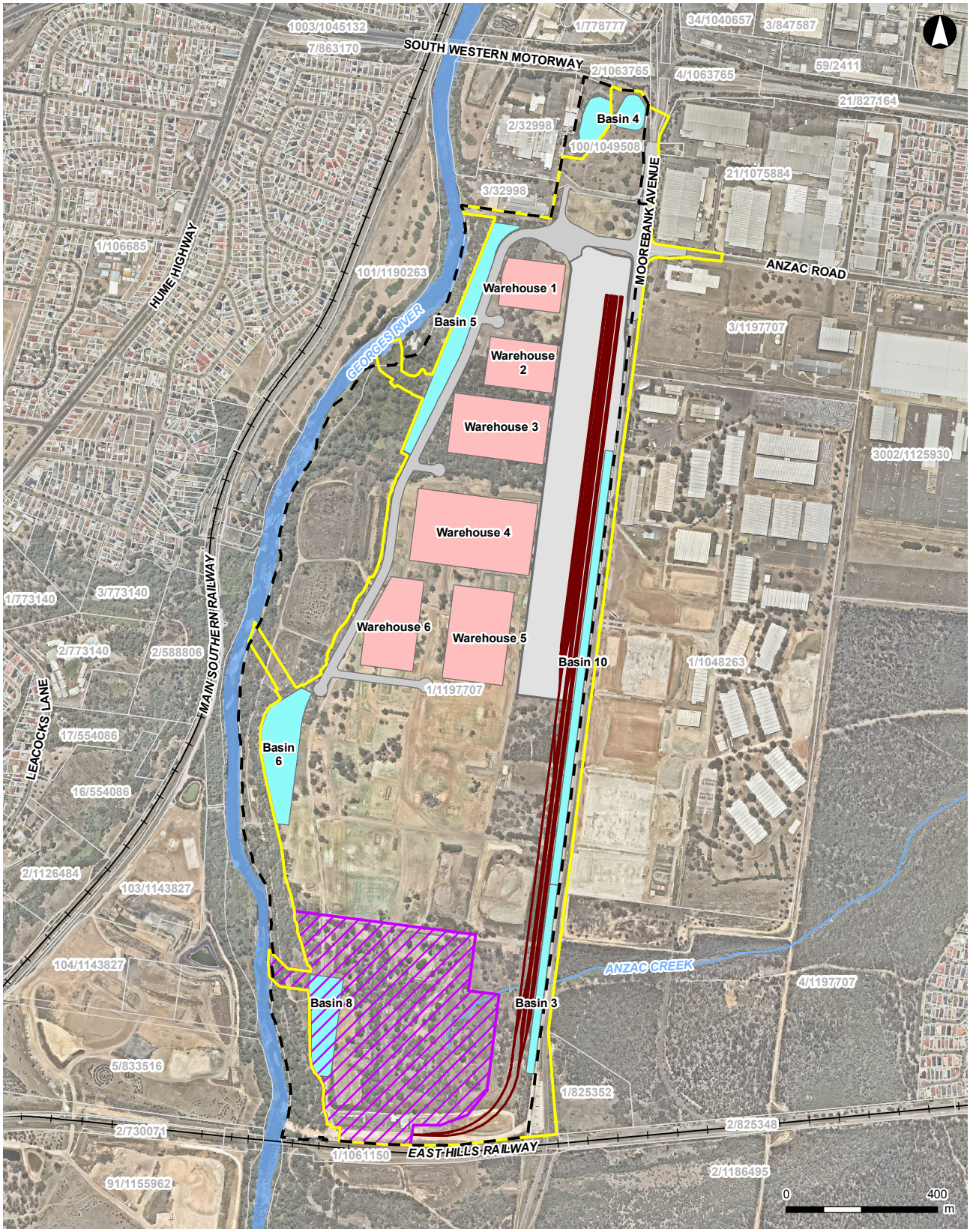

LEGEND

- Southern Earthworks and OSD phase
- MPW site
- MPW Stage 2 construction area
- IMT facility area
- OSD
- Road
- Warehouse
- Rail link connection
- Watercourse
- Existing railway
- Cadastre (NSW DFSI, 2017)

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Coordinate System: GDA 1994 MGA Zone 56
Aerial imagery supplied by nearmap (January, 2018)

1:15,000 at A4

MPW Stage 2 SSD-7709 - Southern Earthworks and OSD Phase

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QA by : GC

APPENDIX I – SUPPLEMENTARY CONCRETE BATCHING INFORMATION

MPW Stage 2
Concrete batching operations – supplementary information

1. Description

A temporary batch plant for construction of the Intermodal Terminal (IMT) facility is proposed. Two locations for the plant have been identified, one at the northern extent of the IMT facility and the other at the southern extent. The sites for the plant would be cleared and levelled and hardstand established. The silos for the plant would be up to 25 metres in height from final site levels and it is estimated that the plant would be operational on site for a period of about 18 months.

1.1. Plant location

The two location options for the temporary batching plant are shown by Figure 1.

Option 1 would be located in the northern portion of the site, directly south of the new site access off Moorebank Avenue. The plant would have an area of approximately 8,000 m^2 and would support the construction works on the Proposal site. The plant (Option 1) would be accessed and egressed via the new site access off Moorebank Avenue. Following construction, this site would provide parking for the IMT facility.

Option 2 is located in the southern portion of the site, near the site entrance off Moorebank Avenue onto Chatham Avenue. Option 2 would have an area of approximately 8,000 m^2 and would be accessed and egressed via the existing site access off Moorebank Avenue onto Chatham Avenue.

The Option 1 and Option 2 locations would not support batching operations concurrently (i.e. they would operate at separate times and are likely to be operating within separate works periods of the construction phase).

Figure 1 Location options for concrete batch plant

1.2. Plant layout and key features

The specific layout of the temporary batching plant would be determined during detailed constriction planning.

The plant would indicatively include the following elements:

- Aggregate storage bins — to store aggregate for use as part of the batching process. The storage bins would have concrete dividing barriers and would be open to one side to allow a loader to access the materials.
- Cement silos (elevated and water tight) with a filter bag system — to store cement powder for use as part of the batching process. The plant would include up to six cement silos each up to 25 metres high (to the top of the structure). Each silo will be fitted with an overfill protection system including a high-level alarm and automatic cut-off to prevent over-filling.
- Drum mixer — to mix raw materials to create concrete.
- Aggregate weigh bins — to accurately measure quantities of sand and aggregates reducing wastage.
- Dust extraction system — to extract airborne cement powder around the inlet to the drum mixer.
- Water settlement and storage pits— to manage the cementitous water runoff around the cement loading point and mixer areas.
- Water holding tanks — to provide a buffer of required water and to manage recycled water for use within the batching of concrete.
- Silo ladders and platform — for access to service cement filters and operate the plant.
- Aggregate conveyor with cover — to transport aggregate to the drum mixer with a cover to reduce windblown dust from conveyor.
- Batch office — to operate the plant and ensure appropriate supervision of plant and stockpile areas.
- Electrical switchboard container — to house electrical components as per legislative requirements.
- Admixture tanks and bunds (steel) — to ensure any leaks are contained.
- Areas for the delivery of aggregates and cement
- Areas for manoeuvring and loading of concrete trucks.

The batching plant site(s) may also include provision for the production of asphaltic concrete. The asphalt plant would include the following elements
Aggregate hoppers

- Up to four bitumen tanks
- Conveyer
- Mixer / batcher
- Silo containing filler (e.g. lime)
- Dryer drum
- Filters (baghouse)
- Boiler (to heat bitumen)

1.3. Concrete batching process

The basic function of the concrete batching plant is to mix water, cement, fine and coarse aggregates, and admixtures to form wet mix concrete for exclusive supply to MPW Stage 2. The plant would have the capacity to produce approximately 500 m3 of pre-mixed concrete per day, although actual production would be variable, and will depend on the on-site demand for pre-mixed concrete.

The batching process involves loading the aggregates, cement, water and admixtures at a pre-determined rate into a batch mixer before mixing and direct pumping to the construction site. In some cases, vehicle transport within the site may be required and the mixing would occur within the concrete mixing truck. Additional water would be added to the mixer after a final inspection of the concrete at the slump stand before the concrete truck leaves the loading area to deliver the concrete to the designated construction area within the site.

Asphalt production would involve mixing bitumen, aggregate, sand and other material, together and loading the asphalt into trucks for transport to the areas of the site where the asphalt is required.

1.4. Water management

For the purposes of water management, it is expected that the concrete batching site would be divided into three main areas:

- Cementitious material catchment area
- Aggregate/sediment catchment area
- First flush system

1.4.1. Cementitious material catchment area

There would be three sources of cementitious water generated within the cementitious material catchment area:

- Concrete agitator washout
- Concrete mixer washout
- Pavement surface water draining from areas of exposed contamination

Concrete agitator washout would be discharged into the above ground washout pits where solids are then allowed to settle and surface water spills into the adjacent sediment basin for reuse within the batching process.

Concrete mixer washout would be generated as a result of cleaning the mixer with high pressure water at the end of each day. Water from this process contains concrete residue and would be directed into the sediment pit for later re-use within the batching process.

The pavements within cementitious material catchment area potentially contain cement residues, causing an increase in the water's pH. These areas include the batch plant loading bay, cement tanker delivery area and around the concrete hoppers and pumps. Water from this area would be directed into the sediment pit for harvesting back into the batching process.

In addition to the above, the bunded admixture storage area is located within the cementitious material catchment area and includes poly tanks containing admixture liquids. In the event of tanks failure, liquids from the poly tanks would be contained within the bund prior to clean up using the on-site spill kits.

1.4.2. Aggregate/sediment catchment area

The main source of turbid or sediment laden water generated on site is the aggregate stockpile area. During rainfall events, all water within the aggregate/sediment catchment area drains to a sediment pit, then to an adjacent water storage pit. When the capacity of the storage tank is exceeded, flows would be directed to the adjacent MPW Stage 2 construction site and managed in accordance with the Soil and Water Management Plan.

1.4.3. First flush system

A first flush system would operate to capture the first 20 mm of a rainfall event. During the first flush, all pavements in the cementitious material catchment area would be directed to sediment pits to capture suspended solids, water then flows into a storage pit which has a dual role as a first flush pit. A pump float switch system would maintain the level in the pit such that a suitable first flush capacity is always maintained ready for a rainfall event. Flows exceeding the first flush capacity would be directed to the adjacent MPW Stage 2 construction site and managed in accordance with the Soil and Water Management Plan.

For asphalt batching operations, a triple interceptor or similar pollution control device would be utilised as a "first flush" for the potential hydrocarbon contaminated areas on the site.

1.5. Water sources

The main source of water for the concrete batching plant is mains water. A mains water tank would be filled via trickle top-up determined by high/low level float switches. Additional tanks would be used to store recycled water pumped from the water storage basins. The recycled water tanks would allow for immediate reinstatement of the first flush capacity following a rain event.

The production of concrete is expected to require all recycled water generated on the batching plant site being used for the production of concrete and related purposes (washout, pavement hose down, dust control). Only in the event of sustained rainfall and minimal or no production would the recycled water holding capacity of the batch plant be reached. If this occurs, excess water would be directed to the adjacent MPW Stage 2 construction site and managed in accordance with the MPW Stage 2 Soil and Water Management Plan.

1.6. Waste management

The following waste streams have been identified for the operation of the temporary concrete batching plant:

- Rejected (non-compliant) concrete
- Alkaline cementitious water
- Silt from water settlement basins
- Domestic wastes.

Rejected concrete would be transferred directly into plastic lined skip bins and periodically removed by an appropriately licensed contractor to a concrete recycling facility. The dried concrete is then crushed, screened and re-sold as recycled concrete aggregate.

Cementitious waste water would be recycled within the batching process.

Silt from settlement basins would be extracted using a vacuum truck and dewatered onsite in an above ground 'washout' basin. The material would be periodically removed by an appropriately licensed contractor to a recycling facility where it is blended with other materials to create road base and other resalable products.

Domestic wastes would be collected for off-site reuse, recycling or disposal consistent with the MPW Stage 2 Construction Waste and Resources Management Plan.

1.7. Traffic and access

Delivery of materials to the concrete batching plant would occur consistent with the requirements Section 4.3.6 of the MPW Stage 2 EIS and post-approval MPW Stage 2 Construction Traffic and Access Management Plan.

2. Objectives and targets

The following high level objectives and targets are set for the management of concrete batching operations.

Table 1 Objectives and performance indicators

Objectives	**Performance indicators**
Minimise impacts to offsite water quality	Ensure discharges are in accordance with appropriate discharge requirements (pH 6.5-8.5, TSS 50 mg/L, no visible oil and grease)

Minimise the use of potable water	Provide 100kL recycled water storage capacity (which equates to 100% of typical daily plant water usage demand)
Maximise recycling and use of recycled concrete materials	Use of minimum 35% Portland cement replacement (such as pulverised fuel ash (PFA) and ground granulated blast furnace slag (GGBS)) in concrete. Send all rejected concrete and cementitious for recycling.
Minimise dust impacts from the plant for the nearest sensitive receptors	No community complaints, written warnings or infringement notices regarding excessive dust arising from batch plant operation Compliance with dust deposition criteria (increase of 2g/m^2/month and maximum 4g/m^2/month)
Minimise construction noise and vibration impacts on community, commercial stakeholders and structures	100% compliance with approved hours of work and out of hours work protocol. No exceedances of noise or vibration criteria No structural or cosmetic damage to nearby buildings or structures due to vibration relating to works. No validated complaints from the community regarding noise or vibration

3. Environmental impacts

The main potential impacts directly related to establishment and operation of the temporary concrete batching plant are described in Table 2. Management measures to address these identified risks are included in Section **Error! Reference source not found.**.

Table 2 Potential construction impacts - concrete batching plant establishment and operation

Construction Activity	**Description of Potential Impact**
Concrete batch plant establishment	Noise associated with site preparation and plant establishment. These activities were included in the NVIA conducted for the MPW Stage 2 EIS. Noise levels are predicted to comply with NMLs at the nearest sensitive receivers.
Concrete batch plant establishment	Mobilisation of dust prior to the placement of hardstand. Consistent with the assessment conducted for the MPW Stage 2 EIS, potential impacts on nearby receivers would be minor when compared against existing background conditions.
Concrete batch plant establishment	Increased mobilisation and transport of sediment prior to the placement of hardstand, potentially resulting in: • Sedimentation of waterways and degradation of water quality • Soil loss • Damage to surrounding flora and fauna habitat. These potential impacts would be managed by the construction site by controls implemented in accordance with the Soil and Water Management Plan.

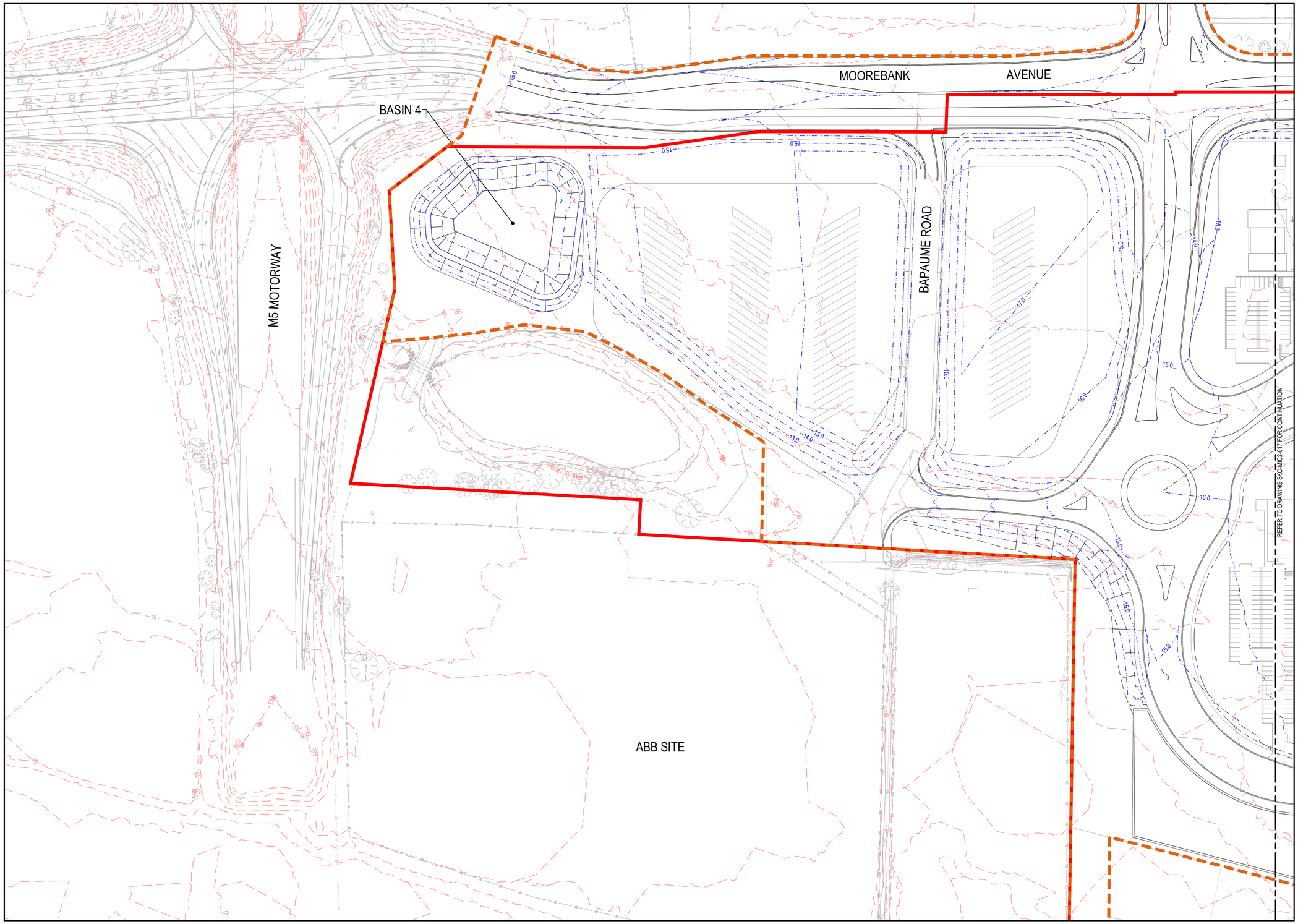
Construction Activity	Description of Potential Impact
Concrete batching operations	Noise associated with batching operations including the operation of the mixer, the movement of loaders and concrete agitator trucks. These activities were included in the NVIA conducted for the MPE Stage 2 EIS and a sound power level of 113 dBA was assumed for the concrete batching plant. Noise levels are predicted to comply with NMLs at the nearest sensitive receivers during construction stages in which the concrete batching would be operating.
Concrete batching operations	Potential air pollutants associated with concrete batching operations are particulate matter (PM10), total suspended particulates (TSP), and oxides of nitrogen – as nitrogen dioxide (NO_2). Emissions potentially arise from vehicle emissions and handling of materials such as sand, aggregates and cement. The primary sources of emissions relate to dust from the storage and handling of material. The development of the construction stage emissions inventory for the MPW Stage 2 EIS included material handling. This adequately covers batching operations because with the implementation of filters on the cement silos and covers for aggregate conveyors, the aggregate storage areas are expected to be the only source of discernible dust. As noted in the Air Quality Impact Assessment conducted for the MPW Stage 2 EIS, predicted construction phase emissions will comply with all relevant impact assessment criteria. The maximum predicted increase in annual average PM10 (1.5 µg/m³), PM2.5 (0.5 µg/m³), TSP (2.0 µg/m³) and dust deposition (0.5 g/m^2/month) were identified as minor when compared against existing background conditions.
Concrete batching operations	Potential impacts on water quality associated with the discharge of sediment laden water and/or alkaline cementitious water from the batching plant site. With the implementation of the proposed management measures, impacts would be minor. It is expected that the first flush capacity for the cementitious material catchment area would be exceeded on an infrequent basis and that there would be stormwater discharges from the concrete batching plant site during a limited number of rain events. Runoff from the aggregate/sediment catchment area would be diverted via a sediment basins and on being discharged from the concrete batching plant site would be managed by the construction site by controls implemented in accordance with the Soil and Water Management Plan.

4. Management measures

Management measures identified for the MPW Stage 2 proposal would apply to concrete batching plant establishment and operation as relevant. Management measures specific to the operation of the temporary concrete batching plant have been identified as follows:

- The stockpiles within the concrete batching plant site will be actively maintained at a height of less than 3m height at all times to reduce the potential generation of windblown dust.
- Each individual stockpile for the concrete batching plant will be fitted with a dust suppression system to prevent windblown dust affecting the local environment and sensitive receivers. The system will incorporate individual water sprays to wet down the stockpiles as needed.
- Cement powder will be transferred from tankers to plant silos via pneumatic methods to minimise the potential for cement dust release.
- The concrete batching plant will be fitted with a dust extraction system and filter bag system to minimise release of dust associated with the transfer of cement and aggregates. The filter system will be regularly serviced in accordance with manufacturer's recommendations.
- Cement silos will be fitted with high level sensor alarms and visible beacon to prevent overfilling. The alarm point would be set having regard to silo profile, maximum fill rate, response time of the shut down system and volume of delivery vehicles.
- The aggregate conveyor will be covered to prevent windblown dust.
- Bitumen products are to be maintained at the minimum temperature possible to minimise odorous emissions.
- Maximise the separation of 'clean' (offsite) run-on water from 'dirty' (onsite) early works area runoff as much as possible to prevent offsite water from migrating onto concrete batching plant catchments. Implement site boundary controls (e.g. sediment fencing, earth banks, swales and table/diversion drains) around the perimeter of the concrete batching plant site, as early in the works process as possible.
- The cementitious material and aggregate/sediment catchment areas will be clearly delineated on site and runoff from these areas will be managed as part of the water management system
- Captured water within the concrete batching plant site will be recycled in the concrete batching process.
- Concrete waste will be reused on-site or sent off site for recycling as building and demolition waste.

APPENDIX J – DETAILED PLANS



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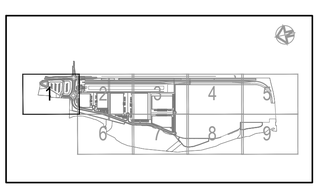
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- 2.0 INDICATIVE PROPOSED CONTOUR *
- 2.0 EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN



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Grid	MGA	Approved M.KEFFORD	

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Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 1

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MOOREBANK AVENUE

BASIN 10

IMT FACILITY
RL 16.60

WAREHOUSE 1A
RL 16.60

WAREHOUSE 2A
RL 16.60

WAREHOUSE 1B
RL 16.60

BASIN 5
RL 11.30

INTERNAL ROAD

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REFER TO DRAWING SKC-MIC2-018 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-021 FOR CONTINUATION

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- INDICATIVE PROPOSED CONTOUR *
- EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN

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Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2
STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 2

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MOOREBANK AVENUE

BASIN 10

IMT FACILITY
RL 16.60

WAREHOUSE 2B
RL 16.60

WAREHOUSE 1C
RL 16.60

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REFER TO DRAWING SKC-MIC2-019 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-022 FOR CONTINUATION

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- INDICATIVE PROPOSED CONTOUR *
- EXISTING CONTOUR

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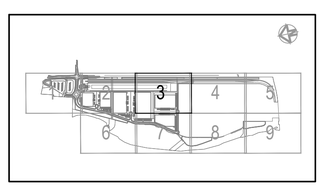

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STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 3

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MOOREBANK AVENUE

BASIN 10

BASIN 3

CREST

CREST

CREST

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REFER TO DRAWING SKC-MIC2-020 FOR CONTINUATION

BULK EARTHWORKS AREA
(GRASS SEEDED OR BITUMEN BASED
EMULSION UPON COMPLETION OF WORKS)

REFER TO DRAWING SKC-MIC2-023 FOR CONTINUATION

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
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- EXISTING CONTOUR

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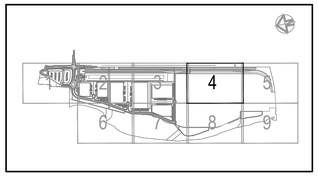

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TACTICAL GROUP

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Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 4

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MOOREBANK AVENUE

BASIN 3

EAST HILLS LINE

RAILWAY LINE

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REFER TO DRAWING SKC-MIC2-024 FOR CONTINUATION

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
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- 20 EXISTING CONTOUR

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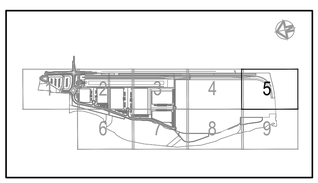

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TACTICAL GROUP

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STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 5

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BASIN 5
RL 11.30

INTERNAL ROAD

GEORGES RIVER

SSFL MAIN SOUTH LINE

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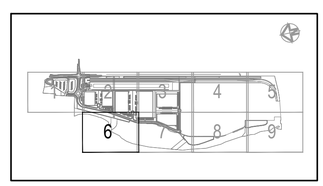
LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- 2.0 INDICATIVE PROPOSED CONTOUR *
- 2.0 EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN



Issue	Description	Date
01	ISSUE FOR INFORMATION	07/09/2017

0 20 40 60 80 100m

1 : 1000

100 mm on Original

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status: SKETCH
NOT TO BE USED FOR CONSTRUCTION

Scales	1:1000	Current Issue Signatures	
		Drawn A.ZHAO	
Original Size	A1	Designed M. O'CALLAGHAN	
Height Datum	AHD	Checked K.MCAREAVEY	
Grid	MGA	Approved M.KEFFORD	

Filename: Skc-mic2-021-ExistingAndProposedContourPlanSheet6.dwg

Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 6

ARCADIS
Arcadis Australia Pacific Pty Limited
Level 5, 141 Walker St
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arcadis.com

Drawing No.	Project No.	Issue
SKC-MIC2-021	AA003760	01

Date Plotted: 7 Sep 2017 - 05:48PM File Name: F:\AA003760\E-CAD\C-Civil\B-Sketches\skc-mic2-021-ExistingAndProposedContourPlanSheet6.dwg V1

REFER TO DRAWING SKC-MIC2-018 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-021 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-023 FOR CONTINUATION

WAREHOUSE 2C
RL 16.60

WAREHOUSE 2C
RL 16.60

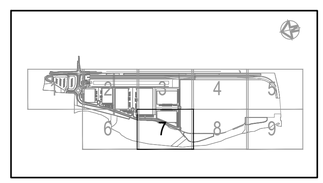
BASIN 6
RL 11.60

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- 2.0 INDICATIVE PROPOSED CONTOUR *
- 2.0 EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN



Issue	Description	Date
01	ISSUE FOR INFORMATION	07/09/2017

100 mm on Original

0 20 40 60 80 100m

1 : 1000

Client

SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE

TACTICAL GROUP

Status
SKETCH
NOT TO BE USED FOR CONSTRUCTION

		Current Issue Signatures	
Scales	1:1000	Drawn A.ZHAO	
Original Size	A1	Designed M. O'CALLAGHAN	
Height Datum	AHD	Checked K.MCAREAVEY	
Grid	MGA	Approved M.KEFFORD	

Filename: Skc-mic2-022-ExistingAndProposedContourPlanSheet7.dwg

Project
MPW INTERMODAL TERMINAL FACILITY - STAGE 2
STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title
EXISTING AND PROPOSED CONTOUR PLAN
SHEET 7

ARCADIS
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Drawing No.	Project No.	Issue
SKC-MIC2-022	AA003760	01

Date Plotted: 7 Sep 2017 - 05:46PM File Name: F:\AA003760\E-CAD\C-Civil\B-Sketches\skc-mic2-022-ExistingAndProposedContourPlanSheet7.dwg V1

REFER TO DRAWING SKC-MIC2-019 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-022 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-024 FOR CONTINUATION

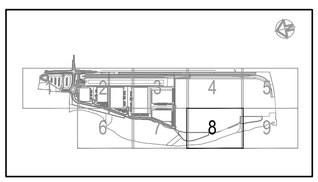
BASIN 6
RL 11.60

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- 2.0 INDICATIVE PROPOSED CONTOUR *
- 2.0 EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN



Issue	Description	Date
01	ISSUE FOR INFORMATION	17/09/2017

0 20 40 60 80 100m

1 : 1000

100 mm on Original

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status: SKETCH
NOT TO BE USED FOR CONSTRUCTION

Scales	1:1000	Current Issue Signatures	
		Drawn A.ZHAO	
Original Size	A1	Designed M. O'CALLAGHAN	
Height Datum	AHD	Checked K.MCAREAVEY	
Grid	MGA	Approved M.KEFFORD	

Filename: Skc-mic2-023-ExistingAndProposedContourPlanSheet8.dwg

Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 8

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Drawing No.	Project No.	Issue
SKC-MIC2-023	—AA003760—	01

Date Plotted: 7 Sep 2017 - 05:44PM File Name: F:\AA003760\E-CAD\C-Civil\B-Sketches\skc-mic2-023-ExistingAndProposedContourPlanSheet8.dwg V1

REFER TO DRAWING SKC-MIC2-020 FOR CONTINUATION

REFER TO DRAWING SKC-MIC2-023 FOR CONTINUATION

BASIN 8
RL 11.80

GEORGES RIVER

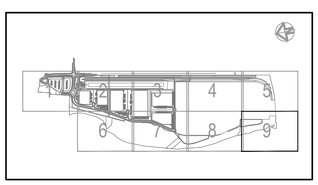
HILLS EAST LINE

LEGEND

- MPW SITE BOUNDARY
- MPW STAGE 2 CONSTRUCTION AREA
- SUBJECT TO MPE STAGE 1 PROPOSAL (SSD 14 - 6766)
- 20 INDICATIVE PROPOSED CONTOUR *
- 20 EXISTING CONTOUR

NOTE

* SUBJECT TO DETAIL DESIGN



Issue	Description	Date
01	ISSUE FOR INFORMATION	07/09/2017

0 20 40 60 80 100m

1 : 1000

Client: SIMTA SYDNEY INTERMODAL TERMINAL ALLIANCE; TACTICAL GROUP

Status: SKETCH
NOT TO BE USED FOR CONSTRUCTION

Scales	1:1000	Current Issue Signatures	
		Drawn A.ZHAO	
Original Size	A1	Designed M. O'CALLAGHAN	
Height Datum	AHD	Checked K.MCAREAVEY	
Grid	MGA	Approved M.KEFFORD	

Filename: Skc-mic2-024-ExistingAndProposedContourPlanSheet9.dwg

Project: MPW INTERMODAL TERMINAL FACILITY - STAGE 2 STATE SIGNIFICANT DEVELOPMENT APPLICATION

Title: EXISTING AND PROPOSED CONTOUR PLAN SHEET 9

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Drawing No.	Project No.	Issue
SKC-MIC2-024	AA003760	01

100 mm on Original

Date Plotted: 7 Sep 2017 - 05:42PM File Name: F:\AA003760\E-CAD\C-Civil\B-Sketches\skc-mic2-024-ExistingAndProposedContourPlanSheet9.dwg V1