

Sydney Science Park SSD #1 Sitewide Concept

Civil Design and Earthworks



Prepared for
**Celestino Developments SSP
Pty Limited**

**SYDNEY
SCIENCE
PARK**



Document Information

Prepared by
Enspire Solutions Pty Ltd
Level 7, 54 Miller Street
North Sydney NSW 2060
ABN 71 624 801 690

© Enspire 2025. Copyright in the whole and every part of this document belongs to Enspire and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Enspire.

This document is produced by Enspire solely for the benefit and use by the client in accordance with the terms of the engagement. Enspire does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Document Title	Sydney Science Park SSD #1 Sitewide Concept
Document Subject	Civil Design and Earthworks
Prepared For	Celestino Developments SSP Pty Limited
Project Name	Sydney Science Park
Application Number	SSD-78774218
Enspire Project Number	180001
File Name	rept001-180001-05-enspire-r04-250922-ssp-ssda-sitewideconcept-civildesign&earthworks.docx

Transmittal

Revision	Date	Prepared by	Checked by	Approved by
01	31/01/2025	S. Hotong	A. Dawes	
		Draft Issue		
02	17/04/2025	S. Hotong	A. Dawes	S. Hotong
		Draft Issue		
03	09/09/2025	S. Hotong	A. Dawes	S. Hotong
		Draft Issue		
04	22/09/2025	S. Hotong	A. Dawes	S. Hotong
		Issue for Approval		



Executive Summary

Sydney Science Park (SSP) is located at 565-601 and 601a Luddenham Road, Luddenham NSW 2745 (The Site) and is owned by Celestino Developments SSP Pty Limited (Celestino). The Site is legally defined as:

- Lot 1 DP 1276320
- Lot 2 DP 1276320
- Lot 3 DP 1276320
- Lot 206 DP 1280188

The site is situated within the Western Sydney Aerotropolis and forms part of the Northern Gateway Precinct. The Sydney Science Park development is a 296.89ha (excluding lands recently acquired by Sydney Metro) that includes approximately 86ha of open space and 211ha of mixed use / enterprise zoned land.

The proposal comprises a concept proposal to guide the staged development of the site as well as a detailed proposal for the first stage of development. This report informs the concept proposal that comprises the following:

- A concept urban structure plan based on a site wide approach for the development of urban blocks/super lots, including site-wide open space and riparian corridors and key transport infrastructure links (sub-arterial, collector roads, and associated intersections).
- Staging plan, setting out the development stages, and
- Guidelines for the future stages of development.

The SSDA will seek approval for the following site-wide strategies:

- Connecting with Country Design Response.
- Open Space Strategy that details six (6) different categories of open space areas that are proposed throughout the site as per the below:
 - Key destinations.
 - Local open spaces.
 - Cultural spaces.
 - Wetlands and riparian.
 - Green loops.
 - Streetscape.
- Integrated Water Cycle Management (IWCM) and Flooding Strategy.
- Civil Design and Bulk Earthworks Strategy.
- Biodiversity and Ecology.
- Environmental Site Assessment (Contamination).
- Site Infrastructure and Servicing.

Enspire Solutions Pty Ltd (Enspire) has been engaged to prepare the Civil Design and Bulk Earthworks Strategy component for the concept proposal that conforms with the applicable Planning Framework for the site and informs other site-wide strategies. This report presents the proposed civil design principles adopted for the Sydney Science Park appropriate for mixed use / enterprise development and details site specific constraints influencing the civil design and earthworks strategy including concept Civil Design and Earthworks Strategy drawings provided in **Appendix A**.



The following tables summarise the relevant sections of the Secretary's Environment Assessment Requirements (SEARs) SSD-78774218 received for The Site and how this Civil Design and Earthworks Strategy has addressed these requirements.

SEARs (SSD-78774218)

Section	General / Performance Outcome	Comment
1. Statutory Context	Address the requirements listed in SEARs advice Penrith City Council dated 17 January 2025, prepared by Penrith City Council.	Refer table below for Penrith City Council agency responses.
1. Statutory Context	Address the requirements listed in SEARs advice Sydney Metro dated 23 January 2025, prepared by Sydney Metro.	Refer table below for Sydney Metro agency responses.
1. Statutory Context	Address the requirements listed in SEARs advice Water NSW dated 16 January 2025, prepared by Water NSW.	Refer table below for Water NSW agency responses.
6. Subdivision and Civil Design	Demonstrate consistency with the Western Sydney Aerotropolis Precinct Plan - demonstrate how the proposal (subdivision layout, open space, interface and landuses) addresses and responds to the context, site characteristics and existing and future character of the locality. - include a concept subdivision layout including: - a road network with road hierarchy, including proposed road typologies and typical cross sections - include a concept bulk earthwork plan for the entire development area, including a bulk earthworks strategy identifying the concept grading - include concept civil plans for the development area including typical road cross-sections	Concept Civil Design and Earthworks Strategy drawings are provided in Appendix A. The Civil Design and Earthworks Strategy has been coordinated with the Urban Structure Plan and Open Space Strategy to ensure site grading principles are considerate of topography, land uses, key sites (e.g. Luddenham Station), green links and view corridors. A road hierarchy plan has been provided in Appendix A. Refer separate Open Space Strategy for typical road cross sections. A concept bulk earthworks plan is provided in Appendix A. Concept grading plans are provided in Appendix A, based on typical road cross sections documented separately in the Open Space Strategy.



SEARs Agency Response: Penrith City Council

Section	General / Performance Outcome	Comment
1. b)	The EIS must demonstrate that the overall development ('concept proposal' and 'Stage 1 works') is appropriate at this time and that such constitutes 'orderly development'. It is considered that vegetation removal and earthworks should be informed by development proposals across the overall site. Accordingly the clearing and undertaking of bulk earthworks (with benching) across the broader site, appears to be premature ahead of the meaningful development proposals being produced (and endorsed). Therefore, it may be more appropriate at this time for the extend of the proposal to be limited to a smaller portion of the overall site (i.e. to the 'Stage 1' development extent and the immediate surrounds).	This proposal is not seeking consent for works beyond the Stage 1 scope. This sitewide concept Civil Design and Earthworks Strategy will guide orderly development and future applications.
1. d)	The EIS should demonstrate what has informed the proposed / finished site levels, as well as the resulting interface outcomes and boundary edge treatments. In accordance with Parts 2.17 & 2.18 of the Western Sydney Aerotropolis Development Control Plan 2022, earthworks are to respond to the natural topography of the site and should balance cut and fill (as far as practicable).	Refer Section 5. The Civil Design and Earthworks Strategy has detailed the design constraints and design outcomes based on the Planning Framework controls for the development.
1. h)	The EIS should demonstrate that the overall development (including road network and proposed levels) will provide a seamless transition onto adjoining lands (particularly to the land immediately to the south of the Sydney Science Park). It is recommended that the proposal be supported by concept design drawings (with road design and a balanced cut / fill plan) for the land to the immediately to the south, demonstrating that a subdivision / built form outcome can be satisfactorily delivered, in accordance with the provisions of Western Sydney Aerotropolis Precinct Plan 2024.	Section 5 has detailed the design constraints and design outcomes based on the Planning Framework controls for the development. The indicative road layout has been prepared to consider road connections, levels and post-development overland flow paths from adjoining lands informed by the Precinct Plan and has made design allowances for these connections. Allowances for stormwater pipe connections at minimum grade connecting adjoining development lands to downstream regional basins through SSP have also been considered.



SEARs Agency Response: Sydney Metro

Section	General / Performance Outcome	Comment
Corridor Protection	Sydney Metro requests documentation compliant with the Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines (available from www.sydneymetro.info) to ensure the appropriate management and mitigation of the proposed development's impacts on the Sydney Metro - Western Sydney Airport are acceptable. This includes an engineering impact assessment demonstrating the subject application has no adverse impacts on Sydney Metro infrastructure.	Refer Appendix E for Risks and Hazards Assessment Report. It is noted that the concept component of the consent does not propose physical works. A separate Risk and Hazards Assessment Report has been developed for Stage 1.
Corridor Protection	The Applicant is to provide Sydney Metro with details of any proposed penetrative subsurface investigations (e.g. boreholes) 2m or deeper to be drilled within the first or second protection reserve before the commencement of any such drilling. The Applicant is not to commence drilling without confirmation from Sydney Metro that it has no objection to the proposed boreholes.	No subsurface works are proposed within the first or second protection reserve. Furthermore, it is noted that the concept component of the consent does not propose physical works.
Flooding	The site is on flood-prone land and would require earthworks to change landform and remove the large farm dam currently onsite, thus impacting flood behaviour and potentially changing impacts to surrounding areas including SM-WSA infrastructure. The EIS should include an assessment of flood behaviour during construction and operation for a range of modelled flood events up to the probable maximum flood (taking into account climate change) with the aim of no increase or minimal changes to flood parameters.	Provision for safe overland flow paths across the rail corridor have been provided in the Civil Design and Earthworks Strategy. Refer separate Flood Impact and Risk Assessment for details of post-development flood impacts which demonstrate no adverse impact to Sydney Metro lands or assets.
Integration with Sydney Metro – Western Sydney Airport	The application should demonstrate how the design proposal will respond to existing rail infrastructure including integration with SM-WSA and consideration of current and future access to this infrastructure. Information should be provided about how active transport will be incorporated into the design and integrate with existing, or future planned, active transport networks by Sydney Metro and/or Council, and the future station.	Refer Section 5.1.1 detailing outcomes of recent and ongoing coordination with Sydney Metro.



SEARs Agency Response: Water NSW

Section	General / Performance Outcome	Comment
General	• Demonstrated consideration of Chapter 4 Western Sydney Aerotropolis of the Western Parkland City SEPP (section 4.28) Warragamba Pipelines, including the current WaterNSW 'Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines', noting that Concept Stages G, H & K are located directly adjacent to our Corridor. • An assessment of the impacts of the proposed development on hydrology. • Demonstrate safe and appropriate management and disposal stormwater without negative impacts on downstream or neighbouring allotments. • Any future proposed crossings of the pipeline's corridor, such as utilities or access. It is noted that the draft Concept Plan - Project wide, does not show any crossings/ access over the Warragamba Pipelines corridor. • Consultation with Water NSW.	Refer Section 5.1.6.3 for Civil Design and Earthworks Strategy mitigation measures directly adjacent the pipeline corridor. No physical works are proposed within the pipeline corridor. Refer separate Flood Impact and Risk Assessment Report for details of development impacts and outcomes of mitigation measures across the pipeline corridor.

The Civil Design and Earthworks Strategy presented in this report demonstrates that the proposed development conforms with the applicable Planning Framework controls and has been coordinated with other site investigations for the proposed development.



Contents

Executive Summary	ii
1 Introduction	1
1.1 Purpose of this Report.....	1
1.2 Site Locality.....	2
2 Sydney Science Park	4
2.1 Pre-Development Site Context.....	4
2.2 Proposed Development.....	5
3 Planning Framework.....	7
4 Design Methodology.....	10
5 Civil Design	12
5.1 Site Constraints	12
5.1.1 Sydney Metro – Western Sydney Airport.....	12
5.1.2 Sydney Water Corporation Integrated Water Recycling Hub.....	15
5.1.3 Transgrid Easement	16
5.1.4 Integrated Water Cycle Management Strategy and Flooding	18
5.1.5 Future Luddenham Road Widening.....	19
5.1.6 Other Site Constraints	21
5.2 Civil Design Principles and Outcomes	23
5.2.1 Bulk Earthworks.....	23
5.2.2 Retaining Walls and Interfaces	24
5.3 Erosion and Sediment Control	25
5.4 Development Staging.....	25
6 Planning Framework Compliance	26
6.1 State Environmental Planning Policy (Precincts – Western Parkland City) 2021	26
6.2 Western Sydney Aerotropolis Precinct Plan, September 2024	27
6.3 Western Sydney Aerotropolis Development Control Plan 2022 (September 2024)	29
6.4 Planning Secretary's Environmental Assessment Requirements (SEARs) SSD-78774218 and Agency Responses.....	31
6.5 Design Guidelines and Australian Standards	35
7 Conclusion	36

List of Tables

Table 1 –Future Luddenham Road Design Parameters.....	20
Table 2 – Approximate Earthworks Cut / Fill Volumes	23
Table 3 – State Environmental Planning Policy (Precincts – Western Parkland City) 2021	26
Table 4 – Western Sydney Aerotropolis Precinct Plan, September 2024	27
Table 5 – Western Sydney Aerotropolis Development Control Plan 2022 (September 2024)	29
Table 6 – SEARs.....	31
Table 7 – SEARs Agency Response: Penrith City Council	32



Table 8 – SEARs Agency Response: Sydney Metro.....	33
Table 9 – SEARs Agency Response: Water NSW.....	34

List of Figures

Figure 1 – Site Plan.....	2
Figure 2 – Sydney Science Park Locality.....	3
Figure 3 – Existing Site Conditions	4
Figure 4 – Zoning.....	5
Figure 5 – Sydney Science Park Proposed Concept Plan	6
Figure 6 – Indicative Development Staging.....	6
Figure 7 – Sydney Metro – Western Sydney Airport Sydney Science Park Context.....	13
Figure 8 – Existing Viaduct Street View	13
Figure 9 – Integrated Water Recycling Hub Context.....	15
Figure 10 – Transgrid Easement Context	17
Figure 11 – Future Luddenham Road Widening Context.....	19
Figure 12 – Other Site Constraints Context	21

List of Appendices

Appendix A	Civil Design and Earthworks Strategy Plans
Appendix B	Transgrid 330kV Transition Concept
Appendix C	Sydney Metro Luddenham Road Commentary
Appendix D	Future Luddenham Road Widening Reference Design
Appendix E	Rail Corridor Risks and Hazards Assessment Report



1 Introduction

1.1 Purpose of this Report

The proposal comprises a concept proposal to guide the staged development of the site as well as a detailed proposal for the first stage of development. This report informs the concept proposal that comprises the following:

- A concept urban structure plan based on a site wide approach for the development of urban blocks/super lots, including site-wide open space and riparian corridors and key transport infrastructure links (sub-arterial, collector roads, and associated intersections).
- Staging plan, setting out the development stages, and
- Guidelines for the future stages of development.

The SSDA will seek approval for the following site-wide strategies:

- Connecting with Country Design Response.
- Open Space Strategy that details six (6) different categories of open space areas that are proposed throughout the site as per the below:
 - Key destinations.
 - Local open spaces.
 - Cultural spaces.
 - Wetlands and riparian.
 - Green loops.
 - Streetscape.
- Integrated Water Cycle Management (IWCM) and Flooding Strategy.
- Civil Design and Bulk Earthworks Strategy.
- Biodiversity and Ecology.
- Environmental Site Assessment (Contamination).
- Site Infrastructure and Servicing.

The purpose of this report is to detail the Civil Design and Bulk Earthworks Strategy component of the concept proposal for the Sydney Science Park that demonstrates the proposed development conforms with the applicable Planning Framework for the site. To this effect, this report provides commentary and detail on the following:

- Planning Framework controls informing the Civil Design and Earthworks Strategy.
- Adopted design methodology.
- Site constraints.
- Proposed development levels and earthworks.
- Development staging strategy.
- Erosion and Sediment control strategy.



1.2 Site Locality

Sydney Science Park (SSP) is located at 565-601 and 601a Luddenham Road, Luddenham NSW 2745 (The Site) and is owned by Celestino Developments SSP Pty Limited (Celestino). The Site is situated within the Western Sydney Aerotropolis and forms part of the Northern Gateway Precinct. The Sydney Science Park development is a 296.89ha (excluding lands recently acquired by Sydney Metro) that includes approximately 86ha of open space and 211ha of mixed use / enterprise zoned land.

The Site is legally defined as:

- Lot 1 DP 1276320
- Lot 2 DP 1276320
- Lot 3 DP 1276320
- Lot 206 DP 1280188

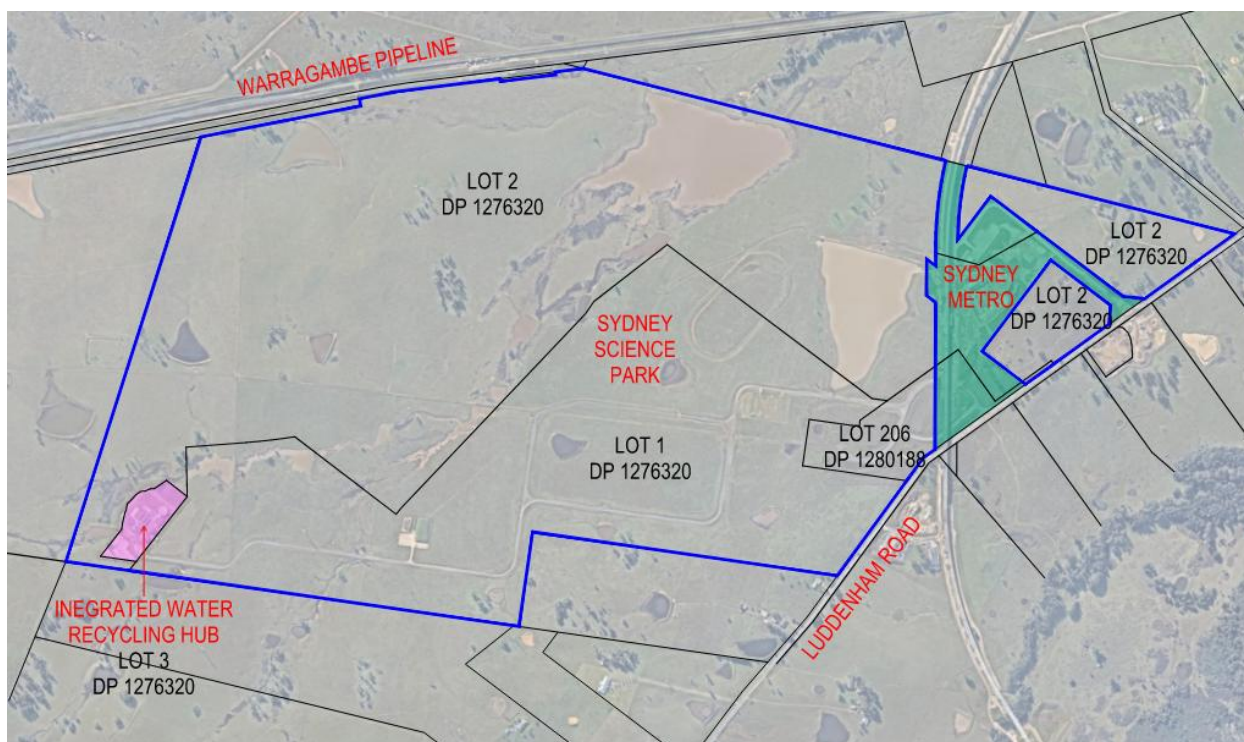


Figure 1 – Site Plan

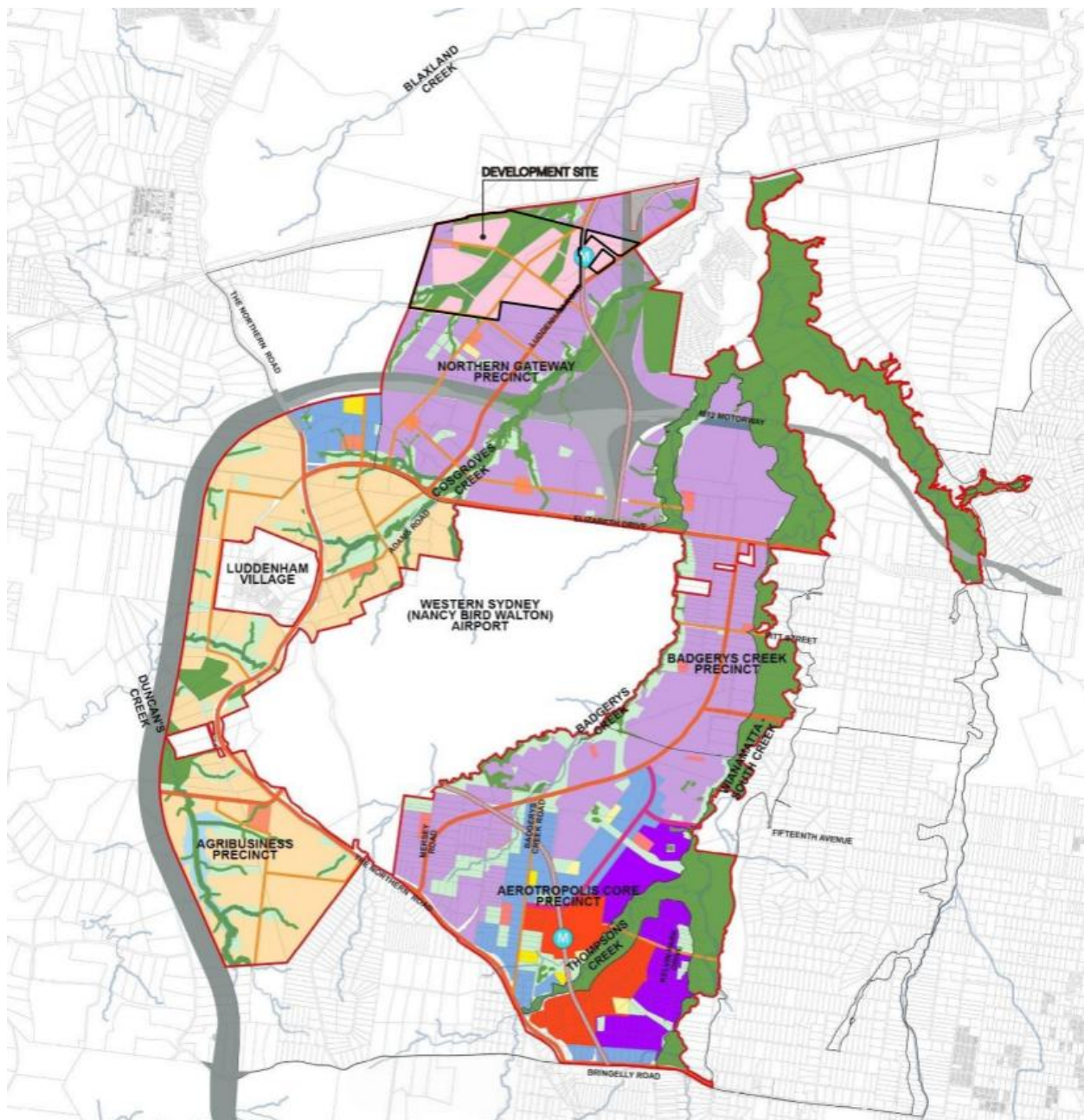


Figure 2 – Sydney Science Park Locality

Source: Western Sydney Aerotropolis Precinct Plan.



2 Sydney Science Park

2.1 Pre-Development Site Context

Sydney Science Park is currently in use for agricultural purposes and falls from south to north at an average grade of 1%-2%. The eastern portion of the site falls east toward Luddenham Road with the remaining catchment falling north toward the existing Warragamba Pipeline.

There are three existing ridge lines (depicted in orange in **Figure 3**) that define the major catchments for the site which convey stormwater runoff to a system of existing farm dams and watercourses. There are two major farm dams, designated Dam 21, and Dam 28, occupying approximately 10.7ha and 8.4ha respectively, with numerous smaller farm dams dispersed throughout the site. Of the existing watercourses, one is classified as a fourth order stream, two are classified as third order streams and three are classified as second order streams.

There are no contributing external catchments from the north and east of Sydney Science Park. Contributing external catchments approach from the southeast and west, while larger external catchments upstream of Sydney Science Park (greater than 150ha collectively) contribute from the southwest into the fourth order stream. These external catchments form part of the overall Aerotropolis precinct.

An electrical transmission line owned and operated by Transgrid traverses the site from the southwest to the north and generally follows the alignment of the fourth order stream. A 60.96m wide easement is associated with this transmission line. An Integrated Water Recycling Hub (IWRH) to be owned and operated by Sydney Water Corporation is located toward the southwest corner of Sydney Science Park and is currently being commissioned.

In 2022, Sydney Metro acquired land within Sydney Science Park and has since commenced construction of the Sydney Metro - Western Sydney Airport metro railway inclusive of Luddenham Station.

The dominant soil type on the site is clay based on site investigations.

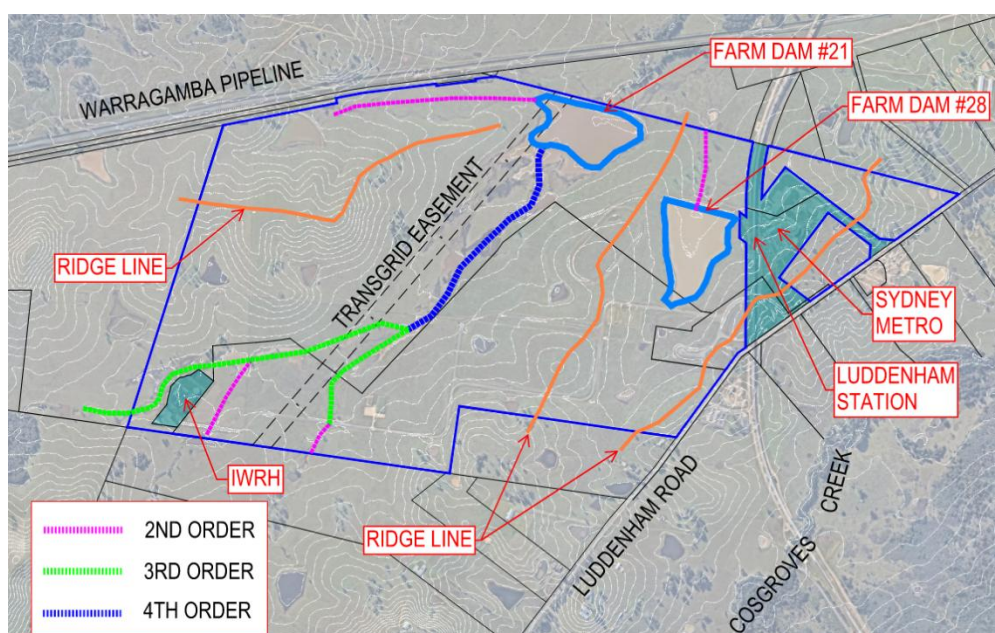


Figure 3 – Existing Site Conditions



2.2 Proposed Development

Sydney Science Park is a mixed use / enterprise development as depicted in **Figure 4** is anticipated to deliver:

- 211ha of mixed use / enterprise developments.
- 86ha of open space and drainage land uses.

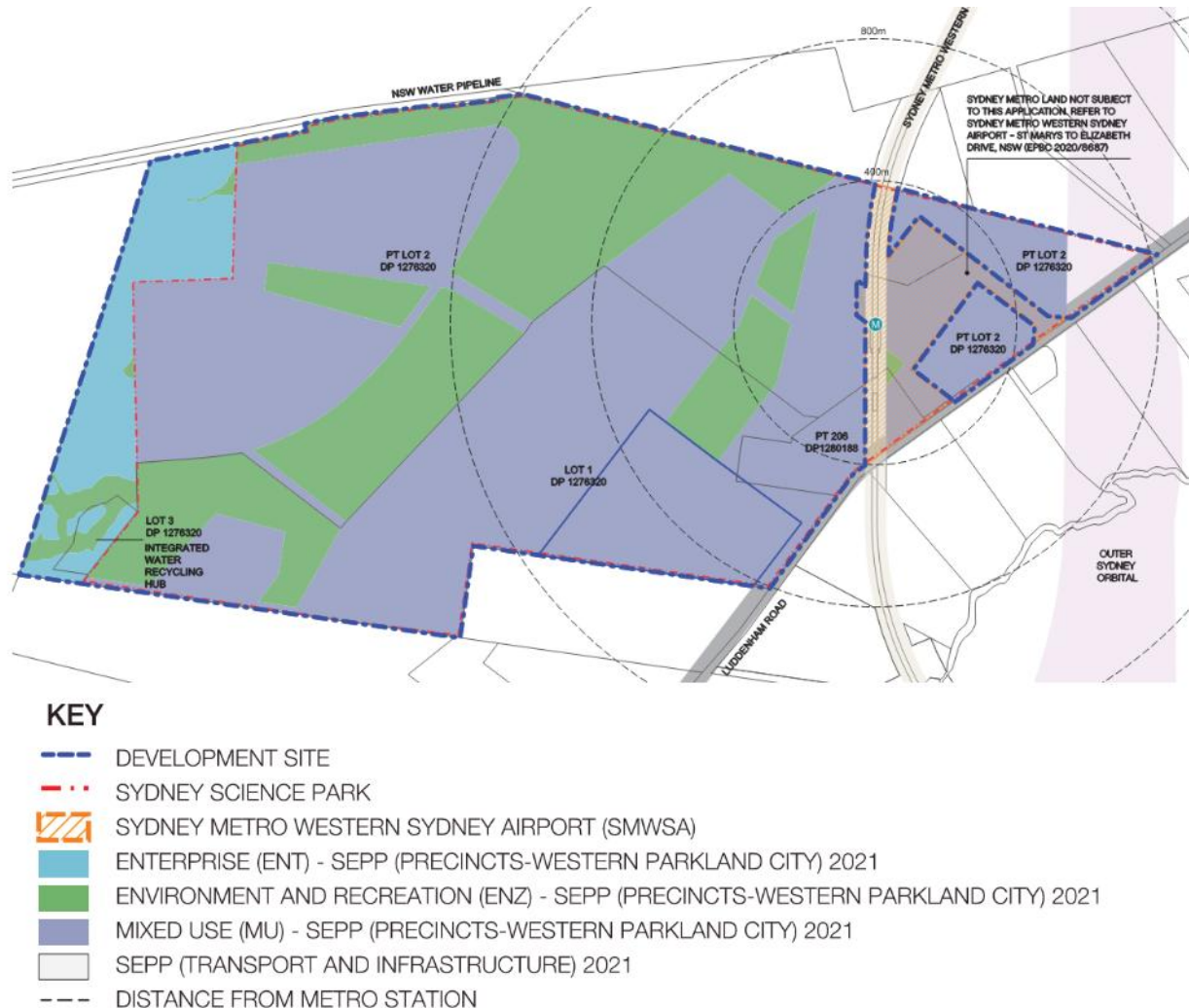


Figure 4 – Zoning

Source: Sydney Science Park Zoning & Cadastral Boundary Plan, SJB.

A concept masterplan based on the zoning and proposed site-wide strategies is depicted in **Figure 5** and forms the basis of this Civil Design and Earthworks Strategy.



Figure 5 – Sydney Science Park Proposed Concept Plan

Source: Sydney Science Park Masterplan, SJB.

Anticipated staging of the development is indicatively illustrated in **Figure 6** noting timing and sequence of delivery may change based on development constraints. Discussion on how this Civil Design and Earthworks Strategy has informed the staging and guides temporary works is provided in **Section 5.4**.

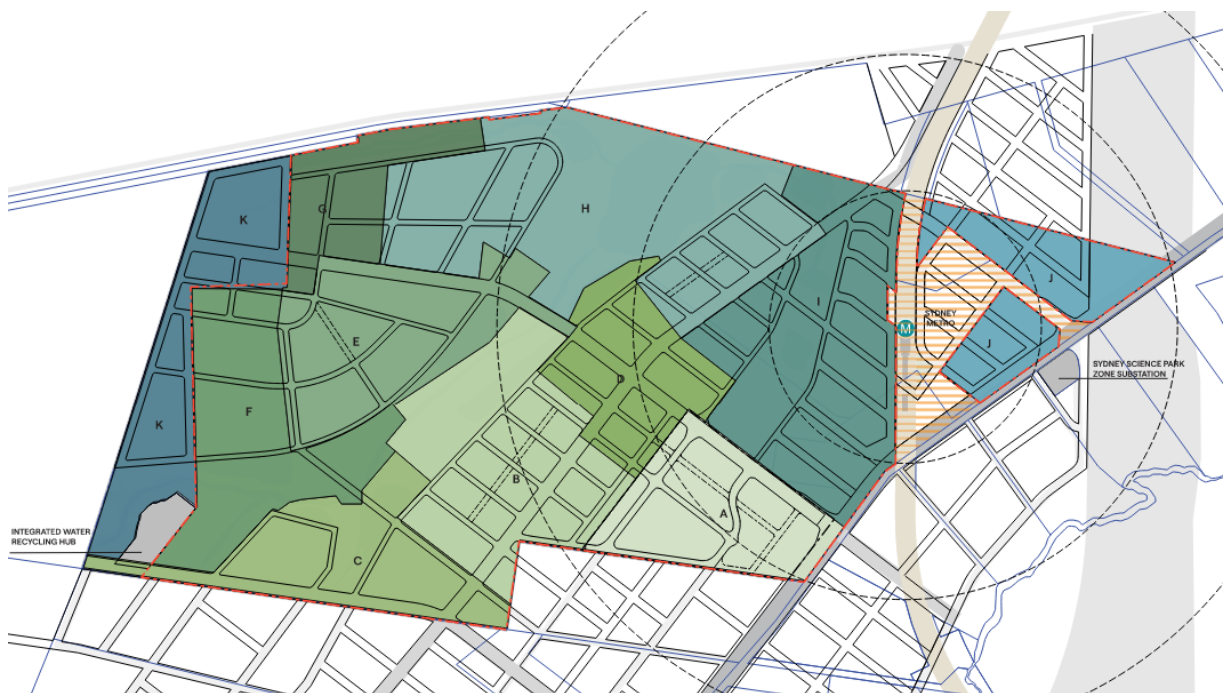


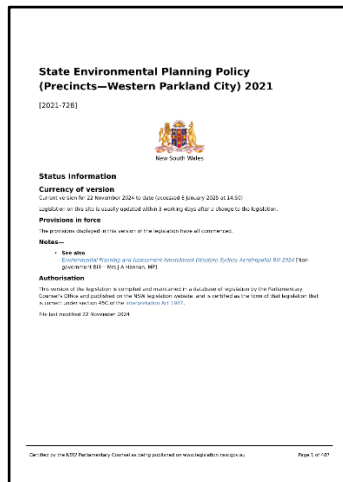
Figure 6 – Indicative Development Staging

Source: Sydney Science Park Concept Staging Plan, SJB.



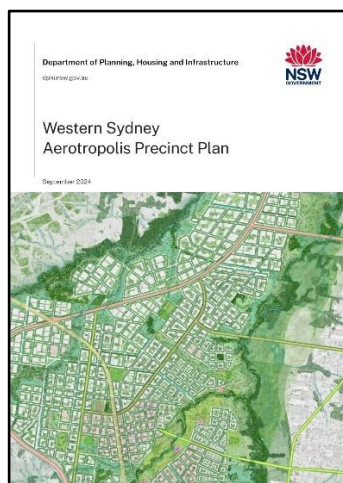
3 Planning Framework

The following policies and guidelines form the Planning Framework for the civil design and earthworks strategy for Sydney Science Park. Assessment of the Sydney Science Park civil design and earthworks strategy against this Planning Framework is provided in **Section 6**.



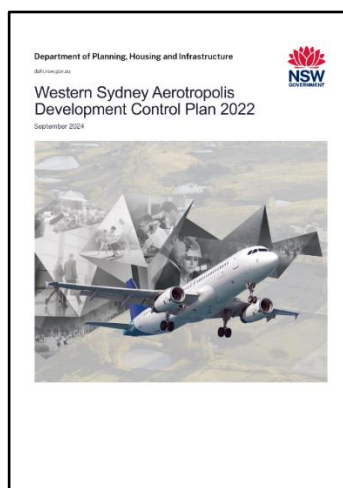
State Environmental Planning Policy (Precincts – Western Parkland City) 2021

The State Environmental Planning Policy (Precincts – Western Parkland City) is the overarching planning instrument facilitating development within the Western Sydney Aerotropolis and is applicable to the Sydney Science Park development.



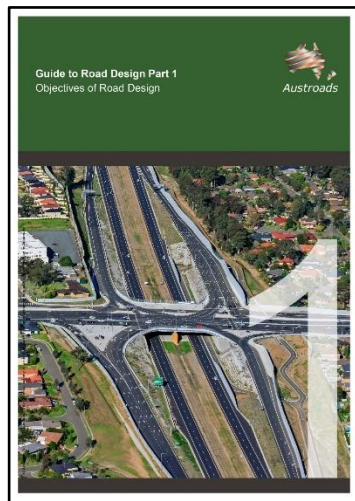
Western Sydney Aerotropolis Precinct Plan, September 2024

The Western Sydney Aerotropolis Precinct Plan is a planning instrument specific to the Western Sydney Aerotropolis and was prepared in accordance with Part 4.7 of the SEPP. The Precinct Plan provides more refined objectives and requirements than the SEPP to guide development planning in the Aerotropolis.



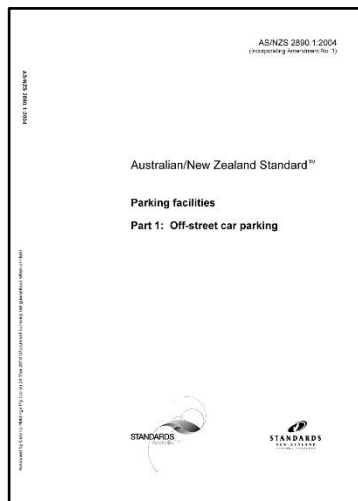
Western Sydney Aerotropolis Development Control Plan 2022 (September 2024)

The Western Sydney Aerotropolis Development Control Plan is a planning instrument prepared to inform the preparation and assessment of Development Applications and Masterplans. The DCP adopts a flexible performance-based approach permitting alternatives to Benchmark Solutions to be proposed on the basis the alternative(s) meet the intent of DCP Objectives and Performance Outcomes.



Austroads Guide to Road Design

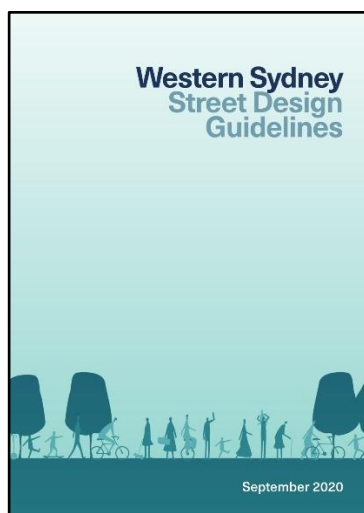
The Austroads Guide to Road Design (AGRD) is an industry guideline adopted by most road authorities (e.g. TfNSW and Councils) and details horizontal and vertical road design principles to improve the operation and safety of roads. All road design for the Sydney Science Park has adopted this guideline including TfNSW supplementary guidelines as a basis.



Australian Standards

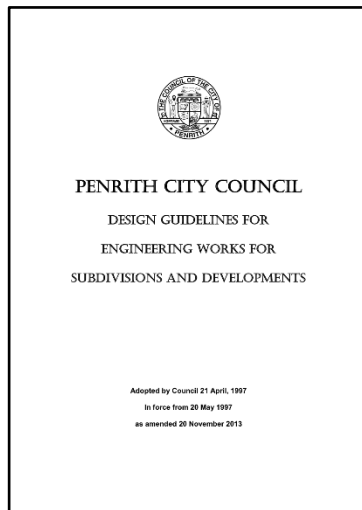
Australian Standards are in some contexts mandatory to conform with, and the Sydney Science Park civil design has incorporated the following Australian Standards. This does not preclude the application of additional Australian Standards as part of future design development and the adopted list is generally suitable for site wide concept design.

- AS5100 Bridge Design
- AS3500 Plumbing and Drainage
- AS2890 Parking Facilities
- AS1428 Design for Access and Mobility



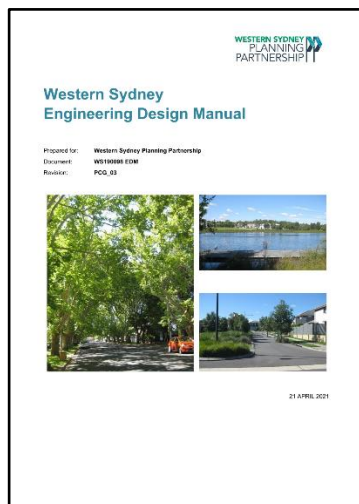
Western Sydney Streets Design Guidelines, September 2020

The Western Sydney Streets Design Guidelines provides guidance on road typologies, road widths, tree canopy etc. and has been used as a reference document to inform road cross sections and intersection treatments in the Sydney Science Park civil design.



Penrith City Council Design Guidelines for Engineering Works for Subdivisions and Developments, November 2013

The Sydney Science Park development is located within the Penrith City Council LGA and this document is the local engineering design guideline. This guideline has been adopted in the Sydney Science Park Civil Design and Earthworks Strategy.



Western Sydney Engineering Design Manual, December 2020

The Western Sydney Engineering Design Manual is a detailed engineering design guideline for Western Sydney and has been used to inform the Sydney Science Park Civil Design and Earthworks Strategy only where other policy and guideline documentation is silent.

In addition, as part of the State Significant Development (SSD) pathway adopted to facilitate development consent for The Site, a request for Secretary's Environment Assessment Requirements (SEARs) was made and SEARs were issued on the 9th February 2025 (Application number SSD-78774218). The SEARs are specific to The Site and form part of the Planning Framework that the Civil Design and Earthworks Strategy has been prepared to conform with. Assessment against the SEARs and relevant agency feedback is provided in **Section 6**.



4 Design Methodology

Preparation of the civil design and earthworks strategy has been informed by an assessment of baseline conditions consisting of:

- Undertaking a desktop review of policies and guidelines to determine the applicable Planning Framework for the development (**Section 3**).
- Preparation of a 3d model of the pre-development site topography and features through detail survey.
- Collecting of 3d Lidar surveys external to the site to supplement the pre-development topographic model.
- Undertaking of a site walk to appreciate qualitative aspects of the site (e.g. view lines and property boundary conditions).
- Coordinating with the Connecting with Country Design Response.
- Engagement with Sydney Metro to coordinate development levels at the rail corridor, future Luddenham Station concourse, and Sydney Metro property boundaries. Refer **Section 5.1.1**.
- Engagement with Sydney Water Corporation to coordinate development levels with the Sydney Water Integrated Water Recycling Hub. Refer **Section 5.1.2**.
- Review of authority guidelines (e.g. Transgrid), geotechnical reports, contamination management reports, and ecology reports to determine other site constraints. Refer **Section 5.1.3 & Section 5.1.6**.

Preparation of the civil design and subsequent earthworks strategy has adopted the following methodology:

- Defining drainage and open space corridor levels, flood planning levels, and subsequent adjacent road levels. Refer **Section 5.1.4**.
 - An Integrated Water Cycle Management (IWCM) Strategy has been prepared which incorporates the Connecting with Country Design Response, Flood Impact and Risk Assessment requirements, Open Space Strategy and Urban Design vision, and Biodiversity and Ecology requirements (refer separate site-wide strategy reports).
- Preparation of a road masterplan based on the Planning Framework and DCP road cross sections.
- Preparation of a reference design for the future widening of Luddenham Road based on the Planning Framework, typical TfNSW design practices, and taking into consideration site constraints such as:
 - Existing viaduct vertical clearances.
 - Approved Penrith City Council DA24/0009 for a signalised intersection along Luddenham Road (LUD3).
 - Design levels nominated by Sydney Metro at an existing roundabout (LUD2).
 - Endeavour Energy zone substation levels (REF E220571).



- Civil works associated with Sydney Metro Western Sydney Airport – Stations, Systems, Trains, Operations and Maintenance (Design Package Number LDNCV0300).

The Luddenham Road widening reference design has informed probable development levels along the Luddenham Road widening corridor that influence adjacent development within Sydney Science Park. Refer **Section 5.1.5**.

- Preparation of a post-development 3d model connecting fixed level constraints (e.g. Luddenham Station concourse and existing vegetation to be retained) to downstream levels defined by the IWCM Strategy and Luddenham Road widening reference design, in accordance with Planning Framework controls.
- Optimisation of post-development levels to maintain as close as practical pre-development catchment delineation, minimise level changes, and minimise earthworks movements whilst maintaining safe vertical road design geometry and safe overland flow paths for stormwater.
- Optimisation of post-development levels considering riparian corridor road crossings, specifically potential bridge/culvert levels relative to drainage channel stormwater levels and vertical clearances for cycle paths under bridge structures.
- Optimisation of design levels at adjoining land interfaces to minimise/eliminate the need for permanent retaining walls.

The outcomes of the design methodology are considered appropriate for concept design purposes noting the following:

- The proposed development levels allow for adjustment in internal local road locations and orientation without meaningfully impacting the concept design.
- Development lot levels do not consider detail lot benching or basement excavations. Detail earthworks for individual lots will be subject to future development applications and will not impact the concept design.
- Continued coordination at interfaces with Sydney Metro and Sydney Water Corporation lands as part of future development applications as works as executed information becomes available, noting preparation of this strategy has adopted For Construction design information.
- The reference design for the future widening of Luddenham Road has been prepared to inform the design due to the absence of an Authority concept design. The Aerotropolis Sector Plan (February 2025) indicates a business case for the upgrade to occur circa 2040. Given the existing infrastructure within Luddenham Road it is unlikely that the ultimate design will vary in comparison to the reference design. Notwithstanding, further coordination with TfNSW is to occur as part of future development applications.



5 Civil Design

5.1 Site Constraints

5.1.1 Sydney Metro – Western Sydney Airport

To facilitate the Sydney Metro – Western Sydney Airport (SMWSA) works, Sydney Metro acquired land within Sydney Science Park in 2022 consisting of the rail corridor, access roads, and residue development parcels. As part of ongoing collaboration between Celestino and Sydney Metro, Sydney Metro have provided For Construction design data such as Luddenham Station levels, corridor earthworks levels, viaduct soffit levels, Precinct Road corridor levels, and commuter carpark levels which have informed the proposed Civil Design and Earthworks Strategy.

The SMWSA is currently under construction which traverses a portion of Sydney Science Park and includes construction of Luddenham Station. The SMWSA is forecast to be complete in late 2026 / early 2027. The portion of the SMWSA that traverses through Sydney Science Park is an elevated viaduct with minimum vertical clearance to the soffit of the viaduct of 5.4m forming a constraint on maximum road elevations within the rail corridor and concurrently influencing design of safe overland flow paths for stormwater management across the corridor.

Sydney Metro is also constructing Precinct roads for access between Luddenham Road and Luddenham Station and a commuter carpark which have been coordinated with Celestino as part of ongoing discussions. For Construction design data for the roads and carpark from Sydney Metro has been adopted in defining property boundary interfaces for the proposed design.

In addition, the Sydney Metro – Technical Services, Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines, September 2018 have been considered in the civil design with respect to proposed works adjacent to the rail corridor (refer **Appendix E**).

The drawing set provided in **Appendix A** incorporates the latest design data received from the SMWSA development team demonstrating adequate coordination with Sydney Metro has informed this Civil Design and Earthworks Strategy.



Figure 7 – Sydney Metro – Western Sydney Airport Sydney Science Park Context

Rail corridor highlighted in red. Sydney Metro lands for access roads and residue development highlighted in orange.



Figure 8 – Existing Viaduct Street View

Source: Google Maps Street View. Luddenham Road facing north.



Reference document(s) and/or data:

- The following draft electronic data and model files provided by SMWSA development team, dated 9th July 2025:

Civil Design 2d Alignments

SMWSASSM-PLD-LDN-SN250-GN-DRG-051001.00.AA.00.01

Civil Design 3d Surface

SMWSASSM-PLD-LDN-SN250-RW-M3D-900103.00.AA.00.01

Stormwater Layout

SMWSASSM-PLD-LDN-SN250-GN-DRG-051001.00.AA.00.01

- Sydney Metro – Technical Services, Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines, September 2018.



5.1.2 Sydney Water Corporation Integrated Water Recycling Hub

Planning for a water reuse facility at Sydney Science Park predates release of the Planning Framework, with construction of an Integrated Water Recycling Hub (IWRH) having commenced in 2021. Design data as listed below has been considered in the Civil Design and Earthworks Strategy noting the IWRH has minor impact on the concept design except for requiring flood free access.

The drawing set provided in **Appendix A** incorporates the latest design data received from the Sydney Water Corporation IWRH development team demonstrating adequate coordination with Sydney Water Corporation with respect to the IWRH only has informed this Civil Design and Earthworks Strategy.



Figure 9 – Integrated Water Recycling Hub Context

Integrated Water Recycling Hub highlighted in pink.

Reference document(s) and/or data:

- The following electronic data and model files have been adopted:

Civil Design 2d Alignments

X_C_Design (Sydney Water Corporation, dated 28th March 2022).

Civil Design 3d Surface

Construction Certificate documentation associated with Penrith City Council DA18/0569



5.1.3 Transgrid Easement

A 330kV electrical transmission line owned and operated by Transgrid traverses the site from the southwest to the north as depicted in **Figure 10**. A 60.96m wide easement is associated with this transmission line and consists of overhead transmission cables connected between four existing towers on the site. The sitewide concept for Sydney Science Park proposes to underground the overhead transmission cables within the Sydney Science Park extent and remove most of the overhead transmission infrastructure (refer Utilities Infrastructure Assessment, Sydney Science Park, prepared by Orion for details). The scope of the undergrounding is being developed in collaboration with Transgrid and generally involves:

- Construction of two terminal stations, one at the north extremity of the site and one at the south extremity of the site.
- Construction of deviation poles to direct approaching overhead transmission cables from the south and north of the site into the terminal stations.
- Construction of an underground bank of conduits between terminal stations parallel to the existing overhead transmission easement and at an appropriate depth from the invert of basins, channels, and open space as per this site-wide concept design.
- Creation of a new 20m wide easement central to the underground conduits, removal of redundant overhead transmission infrastructure, and extinguishing of the existing 60.96m wide overhead transmission easement.

As part of the proposed undergrounding, the portion of overhead transmission cables bisecting the proposed road running parallel to the south boundary of Sydney Science Park is to be retained and supported by the proposed deviation poles. Vertical clearance to the cables from the new road levels is to conform with Transgrid Easement Guidelines and has been considered in the civil design and earthworks strategy.

The drawing set in **Appendix A** demonstrates how the scope of the undergrounding has been coordinated in preparation of the Civil Design and Earthworks Strategy.



Figure 10 – Transgrid Easement Context

Existing Transgrid easement highlighted in purple. Proposed undergrounding highlighted in pink.

Reference document(s) and/or data:

- Utilities Infrastructure Assessment, Sydney Science Park, prepared by Orion Group.
- Sydney Science Park Transition - Site 330kV Transition Site - Site Layout, prepared by Transgrid, dated 25 November 2019.
- Transgrid Easement Guidelines – Living and working with electricity transmission lines, June 2024.



5.1.4 Integrated Water Cycle Management Strategy and Flooding

The separate Sydney Science Park SSD #1 – Sitewide Concept Integrated Water Cycle Management Strategy, September 2025 report details the proposed trunk stormwater management strategy for the development and has been prepared in parallel to the civil design for Sydney Science Park. The IWCM Strategy includes details of potential post-development stormwater and open space corridor levels that has informed the Flood Impact and Risk Assessment defining post-development flood planning levels and minimum adjacent road levels.

The IWCM Strategy incorporates a blue-green grid consisting of permanent sediment control basins, bio-filtration basins, wetlands, retention ponds, naturalised riparian corridors, and feature lake and has been prepared in accordance with the Planning Framework.

Reference document(s) and/or data:

- The Sydney Science Park SSD #1 – Sitewide Concept Integrated Water Cycle Management Strategy, September 2025, E2D and Enspire Solutions.



5.1.5 Future Luddenham Road Widening

As part of the Planning Framework, a transport corridor has been established along the eastern frontage of Sydney Science Park for future widening of Luddenham Road from a two-lane, two-way rural road to a six-lane (including bus lanes) dual carriageway arterial road (60m wide reserve). The reserve encroaches into Sydney Science Park by up to 40m. Existing Luddenham Road is currently owned and maintained by Penrith City Council with anticipated ownership of the future widened arterial road to be by TfNSW. The sign posted speed for Luddenham Road is 80km/hr and is anticipated to be maintained for the future Luddenham Road widening based on road upgrades of a similar order in Western Sydney.

In developing the civil design for Sydney Science Park and as part of design development for Penrith City Council approved DA 24/0009 (development application for a signalised intersection along Luddenham Road) a concept reference design for the future widening of Luddenham Road was prepared to inform adjacent Sydney Science Park development levels. The reference design was prepared in the absence of an Authority prepared design for the future upgrade and that a business case for the ultimate upgrade is anticipated by 2040 in accordance with the Aerotropolis Sector Plan (February 2025). This reference design includes concept design of two planned signalised intersections as depicted in **Figure 12** for a design speed of 90km/hr (signposted speed + 10km/hr) in accordance with Austroads Guide to Road Design guidelines. As part of design development, it has been identified that the existing Luddenham Road whilst signposted at 80km/hr consists of horizontal and vertical geometry conforming to a 60km/hr design speed under current design guidelines. In addition, with the SMWSA viaduct constructed over Luddenham Road (including support columns), approved DA24/0009 intersection levels at LUD3, a recently completed roundabout being constructed at future signalised intersection LUD2 by Sydney Metro, and construction of an Endeavour Energy zone substation adjacent Luddenham Road (REF E220571), the possible future Luddenham Road widening design options is constrained. As such the adopted civil design for Sydney Science Park based on the reference design for the future Luddenham Road widening which incorporates the preceding mentioned constraints is unlikely to fundamentally differ between the design options for the future Luddenham Road widening.



Figure 11 – Future Luddenham Road Widening Context

Future Luddenham Road widening corridor highlighted in yellow.



It is noted that approval of the Luddenham Road widening reference design does not form part of this site-wide concept proposal and has been prepared to demonstrate that the Civil Design and Earthworks Strategy does not preclude the upgrade of Luddenham Road in future.

Table 1 summarises the design parameters adopted in developing the reference design of the future Luddenham Road widening. Design of the two signalised intersections was prepared first and from these two points in the reference design the midblock section was developed conforming to similar design parameters and constraints, incorporating draft ultimate Luddenham Road design commentary from Sydney Metro for approximately 455m of the Sydney Science Park frontage at LUD2 (refer **Appendix C**). The assumed cross section for the future Luddenham Road widening is consistent with the WSA DCP Figure 6 Primary Arterial Road – Typical Arrangement for a 60m wide arterial road corridor.

Refer **Appendix D** for Luddenham Road widening reference design assumed for the proposed civil design and earthworks strategy.

Table 1 –Future Luddenham Road Design Parameters

Design Element	Design Parameter
Luddenham Road (Major Road)	
Operating Speed	80km/hr
Design Speed	90km/hr
Reaction Time	1.5 seconds ¹
Observation Time	3.0 seconds
Design Vehicle	20.0m ARV
Check Vehicle	26.0m B-Double
Approach Sight Distance (ASD) ²	126m (cars) – to a 0m object height
Stopping Sight Distance (SSD)	126m (cars) – to a 0.2m object height
Safe Intersection Sight Distance (SISD)	201m (cars)
Minor Intersecting Roads	
Operating Speed	60km/hr
Design Speed	70km/hr
Reaction Time	1.5 seconds
Observation Time	3.0 seconds
Approach Sight Distance (ASD)	83m (cars) – to a 0m object height
Stopping Sight Distance (SSD)	83m (cars) – to a 0.2m object height

1. Reaction time based on alert driving conditions due to presence of traffic signals. Additionally, TfNSW Supplement to Austroads Guide to Road Design nominates a 1.5 second reaction time for road speeds up to 90km/hr.

2. ASD cannot be achieved for the Major Road hence SSD has been adopted as per Section 3.2.1 of Austroads Guide to Road Design Part 4A.

Reference document(s) and/or data:

- Sydney Metro Western Sydney Airport Luddenham Station Civil Design Road Works Luddenham Road Upgrade – Sheet 1 (Draft), prepared by Sydney Metro, dated 14th October 2022.
- Aerotropolis Sector Plan, prepared by Infrastructure NSW, dated February 2025.



5.1.6 Other Site Constraints

5.1.6.1 Salinity and Acid Sulphate Soils

In preparation of the site-wide concept proposal, a geotechnical investigation has been undertaken to inform existing salinity and aggressivity of soils at Sydney Science Park. The recommendations of this investigation have been incorporated into the Civil Design and Earthworks Strategy via:

- Minimisation of cut/fill within the constraints imposed by the Planning Framework.
- Grading of overland flow routes (channels and roads) to facilitate natural flow of water through surface and sub-surface drainage.
- Grading of superlots to allow adequate surface runoff and prevent water ponding, waterlogging and infiltration.

Additional soil management plan(s) are to be prepared as part of future development applications based on similar principles.

Reference document(s) and/or data:

- Sydney Science Park (SSP) 565-601 and 601a Luddenham Road, Luddenham, Geotechnical Investigation & Salinity Assessment, prepared by Geotechnique.

5.1.6.2 Biodiversity

As part of biodiversity site investigations an existing grove of Coastal Valleys Swamp Oak Riparian Forest has been identified for retention. The Civil Design and Earthworks Strategy has been prepared to maintain existing levels and soils in this region and ensure a free draining overland flow path can be provided to prevent permanent ponding of water.



Figure 12 – Other Site Constraints Context

Existing grove of Coastal Valleys Swamp Oak Riparian Forest highlighted in green.

Reference document(s) and/or data:

- Biodiversity Development Assessment Report, prepared by Ecological.



5.1.6.3 WaterNSW Pipeline

The existing Warragamba to Prospect pipeline corridor is located adjacent the Sydney Science Park boundary for a portion of the northern extent. The existing topography of the lands adjacent the pipeline corridor falls from the corridor into Sydney Science Park. As such the Civil Design and Earthworks Strategy proposes no works into the pipeline corridor or works that may impede the free draining of surface flows from the corridor into Sydney Science Park. Proposed levels adjacent the pipeline corridor are provided in **Appendix A**.

5.1.6.4 Connecting With Country Design Response

The Civil Design and Earthworks Strategy has been prepared in conjunction with the Integrated Water Cycle Management Strategy to promote the adoption of water within streetscapes and landscape. The proposed grading of the site generally follows the existing topography with respect to location of ridge lines, valleys and catchment delineation with chains of filtration basins, wetlands and ponds positioned at development outlets to mitigate development impacts on stormwater runoff prior to discharge into adjacent naturalised creeks.

Reference document(s) and/or data:

- Sydney Science Park, Connecting with Country Design Report, prepared by Yerrabingin.



5.2 Civil Design Principles and Outcomes

The Civil Design and Earthworks Strategy for Sydney Science Park is depicted in **Appendix A** inclusive of:

- General Arrangement Plan.
- Road Structure Plan.
- Site Grading Plans.
- Earthworks Cut and Fill Plan.
- Earthworks Sections.
- Erosion and Sediment Control Plan.

The Civil Design and Earthworks Strategy proposed incorporates the site constraints detailed in **Section 5.1** and conforms with Planning Framework controls such as but not limited to Austroads Guide to Road Design, Western Sydney Streets Design Guideline, and Penrith City Council Design Guidelines for Engineering Works for Subdivisions and Developments. An assessment of compliance is provided in **Section 6**.

5.2.1 Bulk Earthworks

A summary of approximate earthworks volumes per stage (**Figure 6**) is provided in **Table 2**. The volumes depicted exclude road pavement boxing allowances, topsoil management and blending, bulking factors, services trenching and detail lot grading (e.g. benching or basement excavation). As such the volumes depicted are subject to change as the civil design is refined as part of future development applications.

Table 2 – Approximate Earthworks Cut / Fill Volumes

Stage	Cut (m ³)	Fill (m ³)	Balance (m ³)	Import / Export
A	53,900	186,800	132,900	Import
B	72,000	454,800	382,800	Import
C	51,600	218,900	167,300	Import
D	53,300	217,900	164,600	Import
E	234,900	265,700	30,800	Import
F	321,800	108,200	213,600	Export
G	36,800	178,700	141,900	Import
H	290,600	541,800	251,200	Import
I	79,300	628,600	549,300	Import
J	127,100	109,400	17,700	Export
K	213,400	118,200	95,200	Export
Total	1,534,700	3,029,000	1,494,300	Import

Net import is anticipated for the Sydney Science Park development and is dictated predominantly by the Planning Framework that specify minimum elevation requirements for sediment basins, bio-filtration basins, wetlands, ponds, and flood planning level. Applying these requirements of the Planning Framework results in development edge roads being elevated above existing levels and due to the relatively shallow existing topography across Sydney Science Park, transitioning from these elevated edge levels to existing levels further up into the development may only occur over large distances. Minimising import further would require the Civil Design and Earthworks Strategy to adopt non-conformances with the Planning Framework controls (e.g. below minimum road grade, below minimum pipe/utilities cover, charged drainage outlets).



5.2.2 Retaining Walls and Interfaces

Most interfaces with adjoining property boundaries are to match existing or coordinated design levels (e.g. Sydney Metro interfaces). Exceptions are to the north-west and south of the site where temporary retaining walls are proposed. Indicative locations of temporary retaining walls are identified in **Appendix A**.

The north-west site grading is constrained by the adopted Precinct Plan road layout and there is opportunity to either minimise or eliminate this temporary wall through additional local road connections or superlot design. These optimisations are to be determined as part of future applications.

Design levels toward the south are constrained by Planning Framework controls that specify minimum elevation requirements for sediment basins, bio-filtration basins, wetlands, ponds, flood planning level, road grades and stormwater pipe grades. Adopting minimum design criteria for the development results in design levels at the southern boundary generally being elevated compared to existing levels and it is proposed to adopt temporary retaining walls typically 1.0m to 2.0m in height where development occurs prior to adjacent south developments. Minimising southern design levels further would require the Civil Design and Earthworks Strategy to adopt non-conformances with the Planning Framework controls such as below minimum road grade, below minimum pipe/utilities cover, charged drainage outlets, or holistic changes in post-development catchment delineation compared to existing topography. The relevant sections of the south boundary interface are further detailed in the Stage 1 documentation.



5.3 Erosion and Sediment Control

An erosion and sediment control plan has been provided in the drawing set in **Appendix A** detailing an erosion and sediment control strategy conforming with the Planning Framework and has been prepared by a CPESC (EnviroCert International CPESC No. 14757).

In addition, a Construction Environment Management Plan, prepared by SLR has been prepared identifying site management principles during construction including soils and stormwater management to further supplement the erosion and sediment control strategy.

The erosion and sediment control strategy provided is preliminary only and provides guidance for future development applications. Detailed erosion and sediment control plans are to be prepared as part of future development applications.

5.4 Development Staging

The proposed development staging plan has been developed in consideration of other site-wide strategies such as the Integrated Water Cycle Management Strategy and Open Space Strategy to promote orderly development. The following general principles have been adopted in defining staging boundaries based on this Civil Design and Earthworks Strategy:

- Delineating stage boundaries where practical along bulk catchment boundaries based on the post-development grading. This aims to minimise temporary basin construction.
- Utilising the site-wide concept strategy to identify areas of The Site where on-site material may be won to support earthworks operations for early development stages.
- Defining boundaries that minimise the need for temporary turn heads or temporary circulation roads.
- Considering tail out conditions per stage to minimise or eliminate the need to unnecessarily modify temporarily existing site conditions beyond stage boundaries.

Ultimately this Civil Design and Earthworks Strategy for the concept component of the consent has been prepared to support approval agency reviews for future development applications by providing uniformly agreed context for The Site and confidence in levels and earthworks as staged development progresses.



6 Planning Framework Compliance

The following report sections provide an assessment of the proposed Civil Design and Earthworks Strategy for Sydney Science Park against the Planning Framework illustrated in **Section 3**. It is noted that the assessment tables do not include all controls and only includes relevant controls that inform the proposed civil design.

6.1 State Environmental Planning Policy (Precincts – Western Parkland City) 2021

The State Environmental Planning Policy (Precincts – Western Parkland City) is the overarching planning instrument facilitating development within the Western Sydney Aerotropolis and is applicable to the Sydney Science Park development.

The following applicable sections of the SEPP have been considered in the Civil Design and Earthworks Strategy for Sydney Science Park:

Table 3 – State Environmental Planning Policy (Precincts – Western Parkland City) 2021

Section	Comment
4.24 Flood planning	Refer separate Flood Impact and Risk Assessment detailing potential flood impacts based on the proposed Civil Design and Earthworks Strategy.
4.25 Preservation of trees and vegetation in Environment and Recreation Zone and Cumberland Plain	Refer Section 5.1.6.2 . The Civil Design and Earthworks Strategy has incorporated the recommendations of the Biodiversity Development Assessment Report with vegetation retention considered in the design.
4.27 Transport corridors	The Civil Design and Earthworks Strategy has considered design information provided by Sydney Metro for Luddenham Station and requirements for proposed development adjacent rail corridors. A future Luddenham Road widening reference design has been considered as part of this application and provided as information as part of approved Penrith City Council Development Application DA24/0009. The reference design has been prepared in the absence of an Authority generated concept design and that the Aerotropolis Sector Plan indicates a business case for the Luddenham Road upgrade to occur only by 2040. The reference design is consistent with the design assumptions that informed DA24/0009, Austroads Guide to Road Design guidelines, Transport for NSW road design guidelines, and incorporates comments from Sydney Metro on a portion of the reference design at a recently constructed roundabout (LUD2) constructed by TfNSW. The reference design also considers existing site constraints such as viaduct vertical clearances, natural topography, and levels of an adjacent Endeavour Energy zone substation site currently under construction. Approval for the reference design of the future Luddenham Road widening does not form part of this development proposal, and the reference design has been provided to demonstrate that the proposed Civil Design and Earthworks Strategy does not preclude the upgrade of Luddenham Road in future.



Section	Comment
4.28 Warragamba Pipelines	Refer Section 5.1.6.3. The proposed Civil Design and Earthworks Strategy transitions to existing levels prior to the Warragamba Pipeline lands as per SEPP_WSA_WPL_001_060_20200901 and does not impede overland flow paths from the pipeline corridor into Sydney Science Park. Refer separate Flood Impact and Risk Assessment detailing potential flood impacts on Warragamba Pipeline lands based on the proposed Civil Design and Earthworks Strategy.
4.28A Sydney Science Park	No additional civil design or earthworks provisions stated in this Section.

6.2 Western Sydney Aerotropolis Precinct Plan, September 2024

The Western Sydney Aerotropolis Precinct Plan is a planning instrument specific to the Western Sydney Aerotropolis and was prepared in accordance with Part 4.7 of the SEPP. The Precinct Plan provides more refined objectives and requirements than the SEPP to guide development in the Aerotropolis.

The following sections of the Precinct Plan have been considered in the Civil Design and Earthworks Strategy for Sydney Science Park:

Table 4 – Western Sydney Aerotropolis Precinct Plan, September 2024

Section	Objective / Requirement	Comment
2.1	O1 'Start with Country' by promoting access to Country and designing the Aerotropolis through a process that includes Aboriginal people.	Refer separate Connecting with Country Design Response illustrating the current and ongoing influence on the Civil Design and Earthworks Strategy.
2.1	O7 Implement a landscape-led approach to designing the Aerotropolis utilising the blue-green grid and natural topography of the Aerotropolis as the defining elements.	The Civil Design and Earthworks Strategy adopts similar ridge line and valley locations to the natural topography and considers a blue-green grid consistent with the proposed Sydney Science Park Landscape Masterplan and Sydney Science Park Integrated Water Cycle Management Strategy. Streets have been designed to follow natural drainage pathways (e.g. perpendicular to natural contours).
2.4	O1 Prioritise the restoration and protection of the Wianamatta-South Creek Corridor System (including its tributaries) through integrated and naturalised water management, restoration of vegetation and protection and rehabilitation of watercourses and riparian zones.	The Civil Design and Earthworks Strategy has been informed by a separate Integrated Water Cycle Management Strategy for Sydney Science Park that incorporates naturalised basins and watercourses in accordance with the applicable legislation, policies and guidelines.
4.1	LU2 Subdivision and civil works are to be consistent with the road network shown in the Transport Network Plan (Figure 8). Local streets, laneways and active transport routes are designed to integrate with the Transport Network Plan and to: a. Ensure connectivity b. Encourage sustainable transport choices by providing direct routes that prioritise	The major road network adopted in the Civil Design and Earthworks Strategy is consistent with Figure 8 of the Precinct Plan and ensures connectivity, prioritises efficient bus and cycle routes, allows for appropriate design vehicles for the land use zoning, considers staged development, allows for water management within landscape, and minimises the extent and depth of earthworks and retaining walls.



Section	Objective / Requirement	Comment
	active transport and public transport for workers c. Appropriately cater for heavy vehicles including freight movements and public transport vehicles d. Facilitate coordinated development of parcels in different ownerships or at different times e. Assist with managing water in the landscape f. Minimise the extent and depth of earthworks and the need for retaining walls.	
4.6.2	SH1 The Road Network within the Transport Network is to be generally consistent with the alignment and connections of roads shown in Figures 8-10. Major roads (Sub-arterial and Arterial and Rapid Bus Routes) are to be designed to: a. Respond to topography; b. Enable the efficient movement of water, replicating natural flow patterns as closely as possible; c. Intersect with arterial or classified roads at locations and using intersection treatments nominated or agreed by the road authority; d. Accommodate buses generally consistent with the alignments and connections shown in Figure 8; e. Accommodate separated cycleways generally consistent with the alignment and connections of cycleways shown in Figure 9; and f. Connect with centres and metro stations.	The major road network adopted in the Civil Design and Earthworks Strategy is consistent with Figures 8-10 of the Precinct Plan and considers existing topography, existing stormwater flow paths, arterial and classified road locations and intersections, potential bus routes, alignment of separated cycleways, and Luddenham Station ingress/egress locations.



6.3 Western Sydney Aerotropolis Development Control Plan 2022 (September 2024)

The Western Sydney Aerotropolis Development Control Plan is a planning instrument developed to inform the preparation and assessment of Development Applications and Masterplans within the Western Sydney Aerotropolis.

The following sections of the WSA DCP have been considered in the Civil Design and Earthworks Strategy for Sydney Science Park:

Table 5 – Western Sydney Aerotropolis Development Control Plan 2022 (September 2024)

Section	General / Performance Outcome	Comment
2.1.2 P01	The cultural values and heritage, waterways and landscapes of Country form a key structuring element of development. Development retains and connects and provides access to landscape elements including ridgelines, waterways and native vegetation.	Refer separate Connecting with Country Design Response illustrating the current and ongoing influence on the Civil Design and Earthworks Strategy.
2.4.3 P01	Existing trees and vegetation and retained, protected, enhanced, and incorporated in the development, wherever possible.	The Civil Design and Earthworks Strategy has incorporated the recommendations of the Biodiversity Development Assessment Report with vegetation retention considered in the design.
2.5.3	Salinity Management	Refer Section 5.1.6.1 . Preliminary investigations have been considered in the Civil Design and Earthworks Strategy.
2.5.4	Acid Sulphate Soils Management	Refer Section 5.1.6.1 . Preliminary investigations have been considered in the Civil Design and Earthworks Strategy.
2.5.5	Erosion and Sediment Control	Refer Section 5.4 . A preliminary erosion and sediment control plan informed by the proposed civil design and indicative staging has been prepared by a CPSEC to demonstrate the concept design can achieve erosion and sediment management controls.
2.6	Road design for Arterial and Sub-Arterial Roads	Appendix A provides a road structure plan that has informed this Civil Design and Earthworks Strategy demonstrating conformance with the cross sections and controls of this section of the DCP.
2.17	Subdivision design	Refer Section 4 and Section 5 . This report has demonstrated conformance with the Performance Outcomes and Benchmark Solutions of this section of the DCP.



Section	General / Performance Outcome	Comment
2.18	Earthworks and retaining walls	The Civil Design and Earthworks Strategy plans in Appendix A nominate locations and height of potential temporary retaining walls at external interfaces. Temporary retaining walls are proposed predominantly toward the south of SSP and a relatively small portion toward the north-west. The location and height of temporary retaining walls toward the south is based on a development grading at minimum grade starting from downstream basin levels as detailed in Section 5.2. It is anticipated that future development toward the south will match Sydney Science Park design levels at the boundary. The location and height of temporary retaining walls toward the north-west is based on the orientation and positioning of the Precinct Plan road layout. There is opportunity as part of future development applications to reduce or eliminate temporary retaining walls in this portion of the site through local road or superlot design optimisations.
5.1	Residential Development Road network and design	The Civil Design and Earthworks Strategy adopts a road network and road cross sections consistent with the controls of this section of the DCP.



6.4 Planning Secretary's Environmental Assessment Requirements (SEARs) SSD-78774218 and Agency Responses

Planning Secretary's Environmental Assessment Requirements (SEARs) for The Site was issued on 9 February 2025. The document outlines the key issues and documentation requirements that need to be addressed.

The following relevant sections of the SEARs have been considered in the Civil Design and Earthworks Strategy for Sydney Science Park:

Table 6 – SEARs

Section	General / Performance Outcome	Comment
1. Statutory Context	Address the requirements listed in SEARs advice Penrith City Council dated 17 January 2025, prepared by Penrith City Council.	Refer Table 7 for Penrith City Council agency responses.
1. Statutory Context	Address the requirements listed in SEARs advice Sydney Metro dated 23 January 2025, prepared by Sydney Metro.	Refer Table 8 for Sydney Metro agency responses.
1. Statutory Context	Address the requirements listed in SEARs advice Water NSW dated 16 January 2025, prepared by Water NSW.	Refer Table 9 for Water NSW agency responses.
6. Subdivision and Civil Design	Demonstrate consistency with the Western Sydney Aerotropolis Precinct Plan - demonstrate how the proposal (subdivision layout, open space, interface and landuses) addresses and responds to the context, site characteristics and existing and future character of the locality. - include a concept subdivision layout including: - a road network with road hierarchy, including proposed road typologies and typical cross sections - include a concept bulk earthwork plan for the entire development area, including a bulk earthworks strategy identifying the concept grading - include concept civil plans for the development area including typical road cross-sections	Concept Civil Design and Earthworks Strategy drawings are provided in Appendix A. The Civil Design and Earthworks Strategy has been coordinated with the Urban Structure Plan and Open Space Strategy to ensure site grading principles are considerate of topography, land uses, key sites (e.g. Luddenham Station), green links and view corridors. A road hierarchy plan has been provided in Appendix A. Refer separate Open Space Strategy for typical road cross sections. A concept bulk earthworks plan is provided in Appendix A. Concept grading plans are provided in Appendix A, based on typical road cross sections documented separately in the Open Space Strategy.



Table 7 – SEARs Agency Response: Penrith City Council

Section	General / Performance Outcome	Comment
1. b)	The EIS must demonstrate that the overall development ('concept proposal' and 'Stage 1 works') is appropriate at this time and that such constitutes 'orderly development'. It is considered that vegetation removal and earthworks should be informed by development proposals across the overall site. Accordingly the clearing and undertaking of bulk earthworks (with benching) across the broader site, appears to be premature ahead of the meaningful development proposals being produced (and endorsed). Therefore, it may be more appropriate at this time for the extend of the proposal to be limited to a smaller portion of the overall site (i.e. to the 'Stage 1' development extent and the immediate surrounds).	This proposal is not seeking consent for works beyond the Stage 1 scope. This sitewide concept Civil Design and Earthworks Strategy will guide orderly development and future applications.
1. d)	The EIS should demonstrate what has informed the proposed / finished site levels, as well as the resulting interface outcomes and boundary edge treatments. In accordance with Parts 2.17 & 2.18 of the Western Sydney Aerotropolis Development Control Plan 2022, earthworks are to respond to the natural topography of the site and should balance cut and fill (as far as practicable).	Refer Section 5. The Civil Design and Earthworks Strategy has detailed the design constraints and design outcomes based on the Planning Framework controls for the development.
1. h)	The EIS should demonstrate that the overall development (including road network and proposed levels) will provide a seamless transition onto adjoining lands (particularly to the land immediately to the south of the Sydney Science Park). It is recommended that the proposal be supported by concept design drawings (with road design and a balanced cut / fill plan) for the land to the immediately to the south, demonstrating that a subdivision / built form outcome can be satisfactorily delivered, in accordance with the provisions of Western Sydney Aerotropolis Precinct Plan 2024.	Section 5 has detailed the design constraints and design outcomes based on the Planning Framework controls for the development. The indicative road layout has been prepared to consider road connections, levels and post-development overland flow paths from adjoining lands informed by the Precinct Plan and has made design allowances for these connections. Allowances for stormwater pipe connections at minimum grade connecting adjoining development lands to downstream regional basins through SSP have also been considered.



Table 8 – SEARs Agency Response: Sydney Metro

Section	General / Performance Outcome	Comment
Corridor Protection	Sydney Metro requests documentation compliant with the Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines (available from www.sydneymetro.info) to ensure the appropriate management and mitigation of the proposed development's impacts on the Sydney Metro - Western Sydney Airport are acceptable. This includes an engineering impact assessment demonstrating the subject application has no adverse impacts on Sydney Metro infrastructure.	Refer Appendix E for Risks and Hazards Assessment Report. It is noted that the concept component of the consent does not propose physical works. A separate Risk and Hazards Assessment Report has been developed for Stage 1.
Corridor Protection	The Applicant is to provide Sydney Metro with details of any proposed penetrative subsurface investigations (e.g. boreholes) 2m or deeper to be drilled within the first or second protection reserve before the commencement of any such drilling. The Applicant is not to commence drilling without confirmation from Sydney Metro that it has no objection to the proposed boreholes.	No subsurface works are proposed within the first or second protection reserve. Furthermore, it is noted that the concept component of the consent does not propose physical works.
Flooding	The site is on flood-prone land and would require earthworks to change landform and remove the large farm dam currently onsite, thus impacting flood behaviour and potentially changing impacts to surrounding areas including SM-WSA infrastructure. The EIS should include an assessment of flood behaviour during construction and operation for a range of modelled flood events up to the probable maximum flood (taking into account climate change) with the aim of no increase or minimal changes to flood parameters.	Provision for safe overland flow paths across the rail corridor have been provided in the Civil Design and Earthworks Strategy. Refer separate Flood Impact and Risk Assessment for details of post-development flood impacts which demonstrate no adverse impact to Sydney Metro lands or assets.
Integration with Sydney Metro – Western Sydney Airport	The application should demonstrate how the design proposal will respond to existing rail infrastructure including integration with SM-WSA and consideration of current and future access to this infrastructure. Information should be provided about how active transport will be incorporated into the design and integrate with existing, or future planned, active transport networks by Sydney Metro and/or Council, and the future station.	Refer Section 5.1.1 detailing outcomes of recent and ongoing coordination with Sydney Metro.



Table 9 – SEARs Agency Response: Water NSW

Section	General / Performance Outcome	Comment
General	- Demonstrated consideration of Chapter 4 Western Sydney Aerotropolis of the Western Parkland City SEPP (section 4.28) Warragamba Pipelines, including the current WaterNSW 'Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines', noting that Concept Stages G, H & K are located directly adjacent to our Corridor. - An assessment of the impacts of the proposed development on hydrology. - Demonstrate safe and appropriate management and disposal stormwater without negative impacts on downstream or neighbouring allotments. - Any future proposed crossings of the pipeline's corridor, such as utilities or access. It is noted that the draft Concept Plan - Project wide, does not show any crossings/ access over the Warragamba Pipelines corridor. - Consultation with Water NSW.	Refer Section 5.1.6.3 for Civil Design and Earthworks Strategy mitigation measures directly adjacent the pipeline corridor. No physical works are proposed within the pipeline corridor. Refer separate Flood Impact and Risk Assessment Report for details of development impacts and outcomes of mitigation measures across the pipeline corridor.



6.5 Design Guidelines and Australian Standards

The Civil Design and Earthworks Strategy generally conforms with the design guidelines and Australian Standards specified in **Section 3**. Detailed assessment against these documents is to form part of future development applications and any refinements are unlikely to fundamentally alter the proposed sitewide concept design.

The following are core design parameters that have influenced the Civil Design and Earthworks Strategy from the applicable guidelines and Australian Standards as depicted in the design drawings in **Appendix A**:

- Development lots elevated 500mm above 1% AEP flood levels.
- Providing safe overland flow paths (avoiding trapped low points in the design topography).
- Desirable minimum road grade of 1.0% and absolute minimum road grade of 0.7%.
- Desirable minimum reinforced concrete pipe grade of 0.7%.
- Desirable minimum reinforced concrete box culvert grade of 0.5%.
- Minimum pit drop between inlet and outlet pipe of 50mm.
- Design speed of 50km/hr generally across The Site except along sub-arterial roads.
- Bridge overhead clearance approximately 2.5m for cyclists.
- Horizontal and vertical road geometry in accordance with Austroads Guide to Road Design.
- Intersection design generally in accordance with Austroads Guide to Road Design and Penrith City Council Design Guidelines for Engineering Works for Subdivisions and Developments.
- Minimum cover to stormwater pipes under road pavements of generally 700mm.
- Minimum cover to stormwater pipes crossing road verges (electrical crossings) of generally 1200mm to avoid conflicts with utility reticulation.
- Design/Minor Storm = 5% AEP.
- Major Storm = 1% AEP.



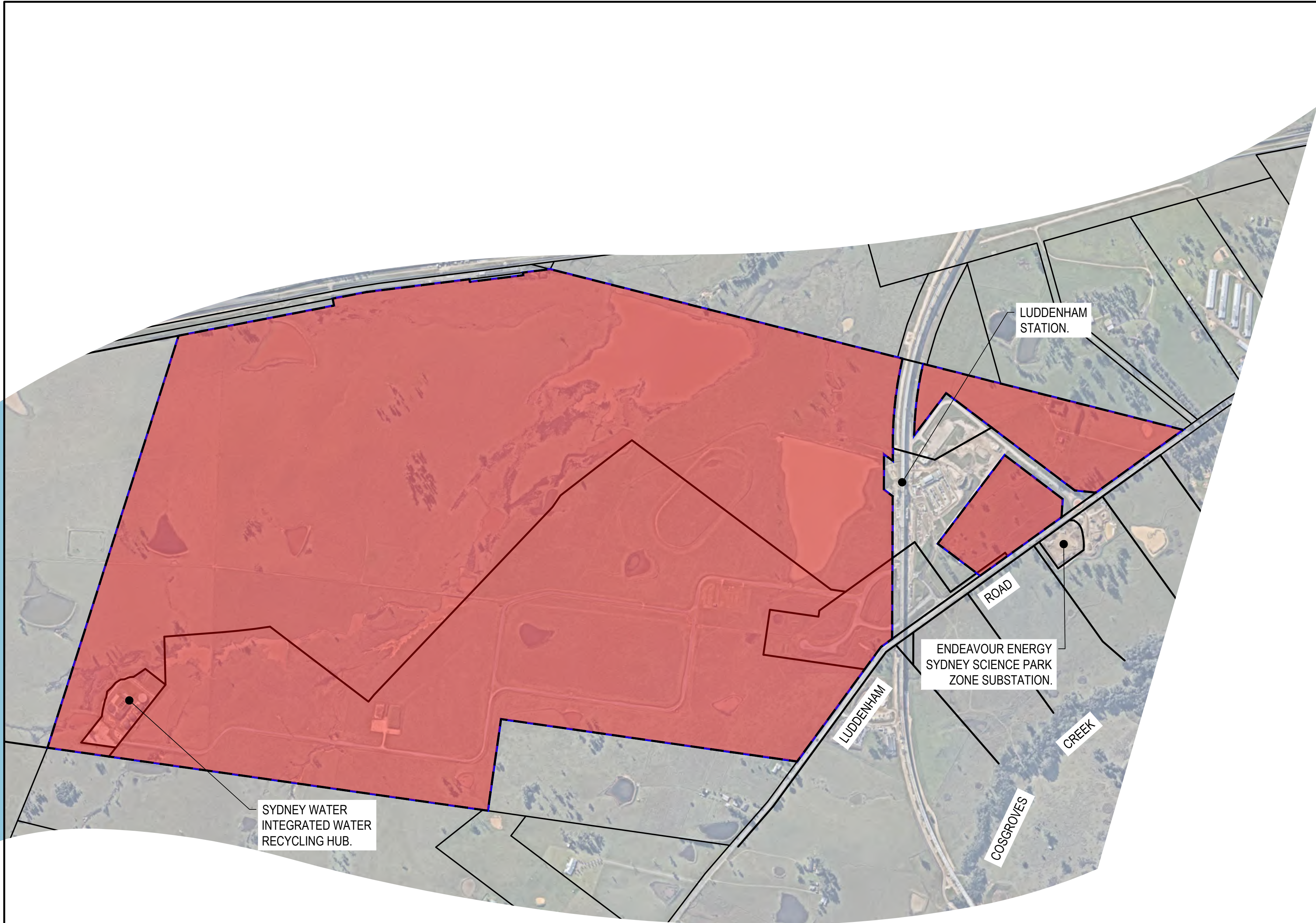
7 Conclusion

The civil design and earthworks strategy presented in this report demonstrates that the proposed development conforms with the applicable Planning Framework controls and has been coordinated with design information received by Sydney Metro and Sydney Water Corporation for the rail corridor and Integrated Water Recycled Hub respectively, and other site investigations for the proposed development.

The outcomes of the civil design and earthworks strategy assessment are considered appropriate for concept design purposes noting the following:

- Local road connections are to be included as part of future development applications.
- Development lot levels are to consider detail lot levels and basement excavations as part of future development applications.
- Continued coordination at interfaces with Sydney Metro and Sydney Water Corporation lands as part of future development applications as works as executed information becomes available.

Appendix A Civil Design and Earthworks Strategy Plans



CELESTINO DEVELOPMENTS SSP PTY LIMITED

SYDNEY SCIENCE PARK

SSD#1 SITE WIDE CONCEPT

CIVIL DESIGN AND EARTHWORKS STRATEGY

DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION
180001-05A-SSD1-C01.01	COVER SHEET AND DRAWING SCHEDULE
180001-05A-SSD1-C01.41	GENERAL ARRANGEMENT PLAN
180001-05A-SSD1-C01.61	ROAD STRUCTURE PLAN
180001-05A-SSD1-C03.01	EROSION AND SEDIMENTATION CONTROL PLAN
180001-05A-SSD1-C03.21	GRADING PLAN SHEET 01
180001-05A-SSD1-C03.22	GRADING PLAN SHEET 02
180001-05A-SSD1-C03.23	GRADING PLAN SHEET 03
180001-05A-SSD1-C03.24	GRADING PLAN SHEET 04
180001-05A-SSD1-C04.01	CUT AND FILL PLAN
180001-05A-SSD1-C04.21	CUT AND FILL SECTIONS SHEET 01
180001-05A-SSD1-C04.22	CUT AND FILL SECTIONS SHEET 02
180001-05A-SSD1-C04.23	CUT AND FILL SECTIONS SHEET 03
180001-05A-SSD1-C04.24	CUT AND FILL SECTIONS SHEET 04
180001-05A-SSD1-C04.25	CUT AND FILL SECTIONS SHEET 05
180001-05A-SSD1-C04.26	CUT AND FILL SECTIONS SHEET 06
180001-05A-SSD1-C04.27	CUT AND FILL SECTIONS SHEET 07
180001-05A-SSD1-C04.28	CUT AND FILL SECTIONS SHEET 08
180001-05A-SSD1-C04.29	CUT AND FILL SECTIONS SHEET 09
180001-05A-SSD1-C04.30	CUT AND FILL SECTIONS SHEET 10
180001-05A-SSD1-C04.31	CUT AND FILL SECTIONS SHEET 11
180001-05A-SSD1-C04.32	CUT AND FILL SECTIONS SHEET 12
180001-05A-SSD1-C04.33	CUT AND FILL SECTIONS SHEET 13
180001-05A-SSD1-C04.34	CUT AND FILL SECTIONS SHEET 14
180001-05A-SSD1-C04.35	CUT AND FILL SECTIONS SHEET 15
180001-05A-SSD1-C04.36	CUT AND FILL SECTIONS SHEET 16
180001-05A-SSD1-C04.37	CUT AND FILL SECTIONS SHEET 17
180001-05A-SSD1-C04.38	CUT AND FILL SECTIONS SHEET 18

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI		SHH
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI		SHH
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI		SHH

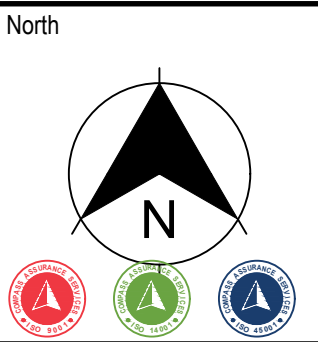


Scale

0 150 300 450 600 750m

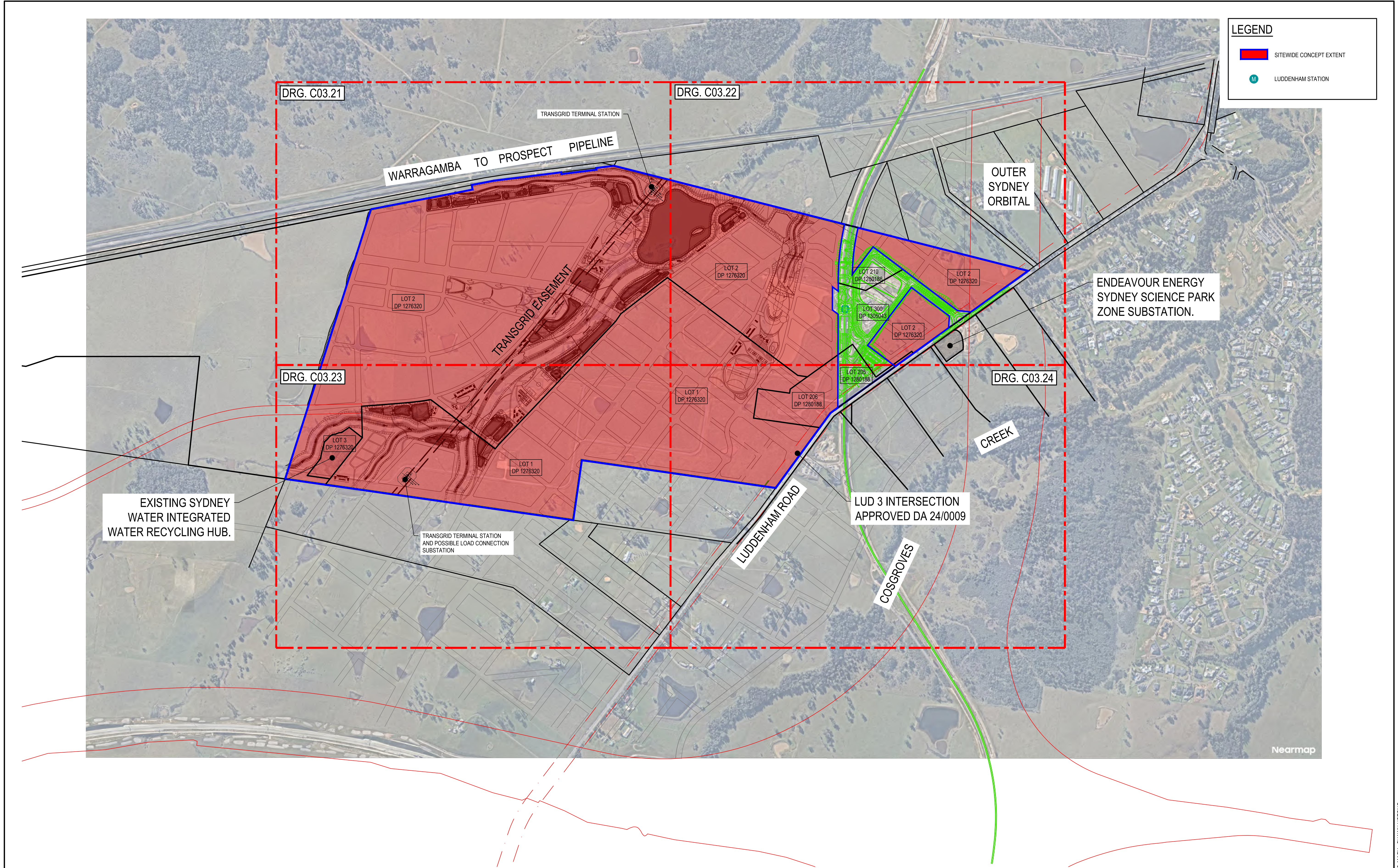
SCALE 1:7500 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Scale 1:7500	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION
First Issue Date 31/01/2025	Project Number/Drawing Number 180001-05A-SSD1-C01.01
Size A1	Revision 3
Datum MGA2020	



REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

CELESTINO

Scale

0 150 300 450 600 750m

SCALE 1:7500 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

North

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
GENERAL ARRANGEMENT PLAN

Scale
1:7500

Date
01/02/2025

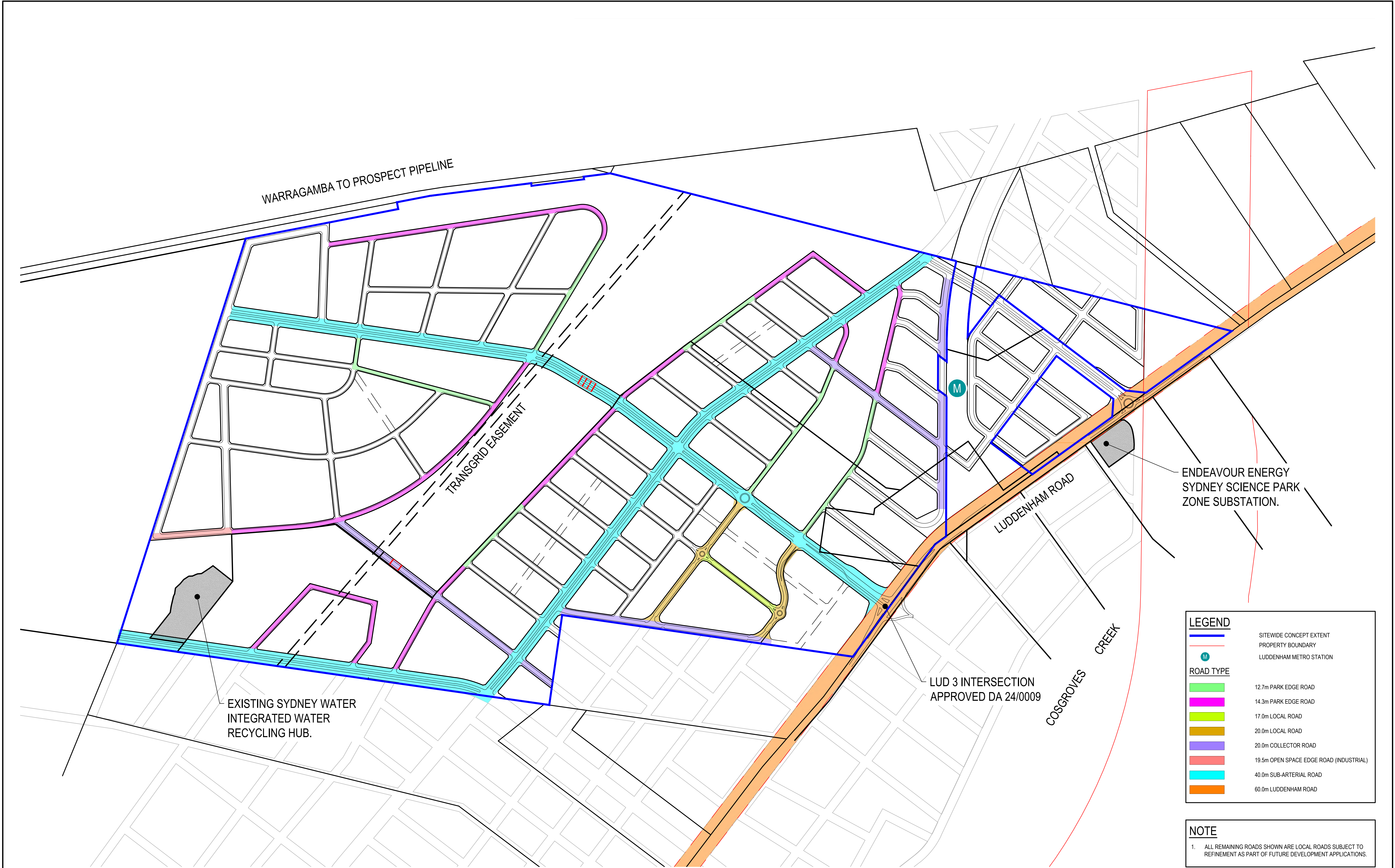
Size
A1

Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C01.41

Revision
3



LEGEND

M

ROAD TYPE

12.7m PARK EDGE ROAD

14.3m PARK EDGE ROAD

17.0m LOCAL ROAD

20.0m LOCAL ROAD

20.0m COLLECTOR ROAD

19.5m OPEN SPACE EDGE ROAD (INDUSTRIAL)

40.0m SUB-ARTERIAL ROAD

60.0m LUDDENHAM ROAD

SITEWIDE CONCEPT EXTENT

PROPERTY BOUNDARY

LUDDENHAM METRO STATION

NOTE

1. ALL REMAINING ROADS SHOWN ARE LOCAL ROADS SUBJECT TO REFINEMENT AS PART OF FUTURE DEVELOPMENT APPLICATIONS.

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

Scale

0

100

200

300

400

500m

SCALE 1:5000 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

Project

SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title

ROAD STRUCTURE PLAN

Scale

1:5000

Date

03/02/2025

Size

A1

Datum

MGA2020

Status

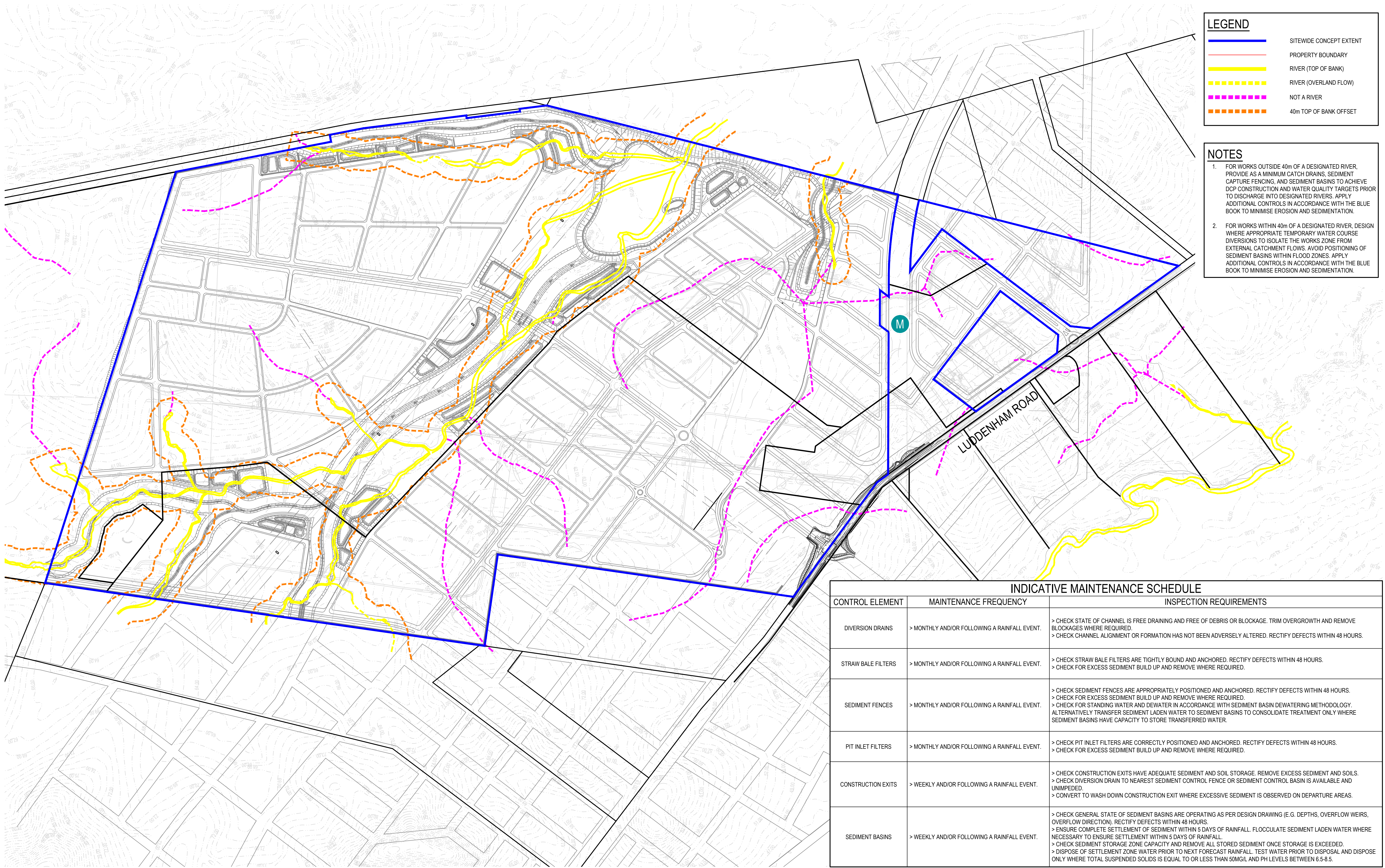
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number

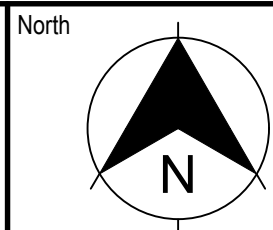
180001-05A-SSD1-C01.61

Revision

3



REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	



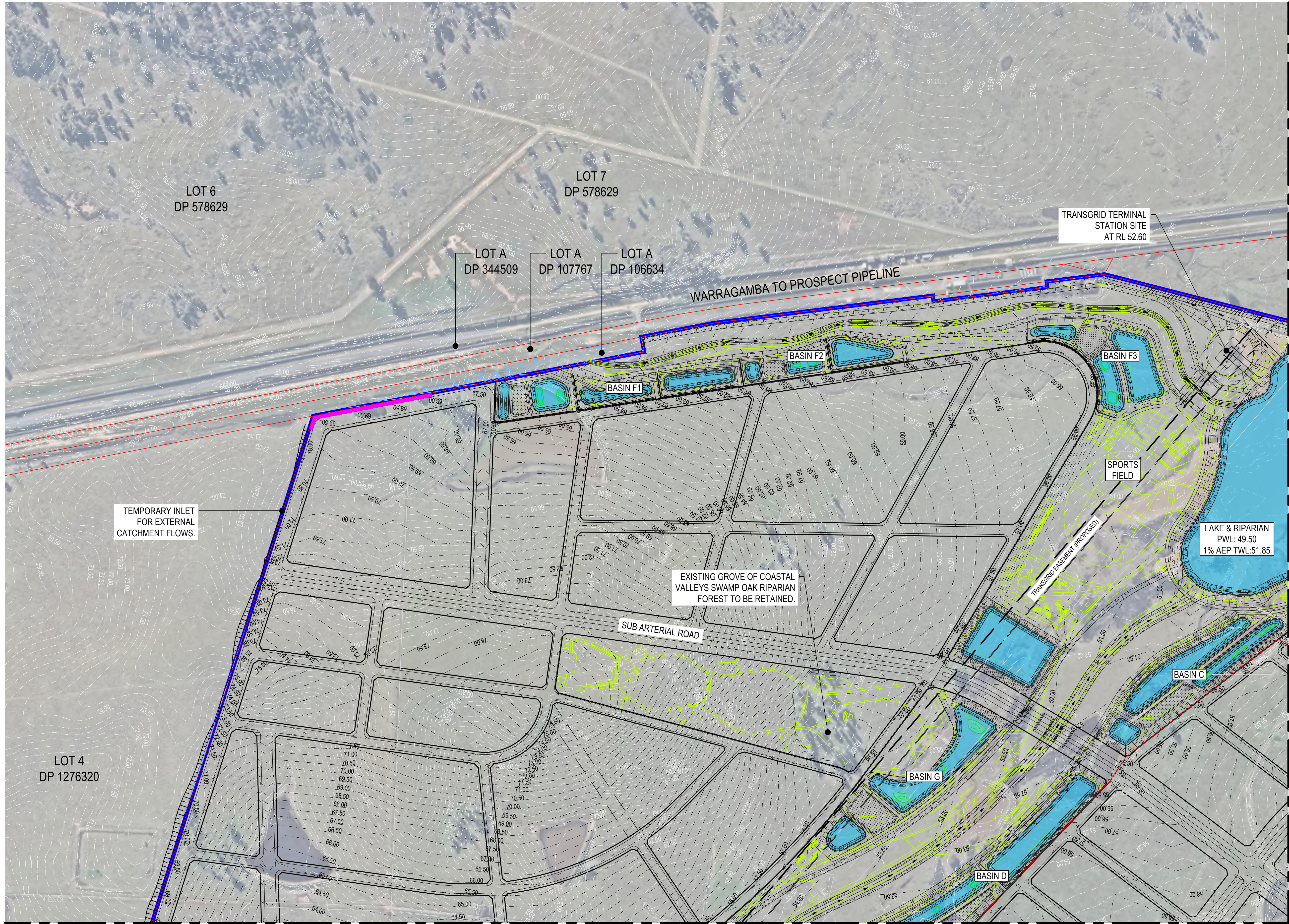
Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
EROSION AND SEDIMENTATION CONTROL PLAN

Scale
1:5000
First Issue Date
05/02/2025
Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C03.01
Revision
3



LEGEND

- SITEWIDE CONCEPT EXTENT
- EXISTING BOUNDARY
- EXISTING CONTOUR (0.5m INCREMENT)
- DESIGN CONTOUR (0.5m INCREMENT)
- ADJACENT DEVELOPMENT DESIGN CONTOUR (0.5m INCREMENT)
- TRANSPORT CORRIDOR (SEPP_WPC_AER_TRC_001_20220218)
- CONCURRENT DEVELOPMENT (SMWSA / LUD3 SIGNALS / IWRH)
- OPEN SPACE STRATEGY
- IWCM STRATEGY PERMANENT WATER BODY
- TEMPORARY RETAINING WALL
- BATTER
- SYDNEY METRO LANDS

NOTES

- DESIGN CONTOURS SHOWN ACROSS SYDNEY METRO LANDS AND THE INTEGRATED WATER RECYCLING HUB ARE FOR CONTEXT ONLY TO DEMONSTRATE LEVELS PROVIDED BY SYDNEY METRO AND SYDNEY WATER CORPORATION RESPECTIVELY HAVE BEEN INCORPORATED INTO THE CONCEPT DESIGN.
- ADJACENT DEVELOPMENT DESIGN CONTOURS INDICATE ASSUMED KEY FUTURE DEVELOPMENT INTERFACES AS DETAILED IN THE CIVIL DESIGN AND EARTHWORKS STRATEGY REPORT (E.G. ULTIMATE LUDDENHAM ROAD WIDENING AND SOUTH BOUNDARY INTERFACES).

FOR CONTINUATION REFER DRG.C05.02

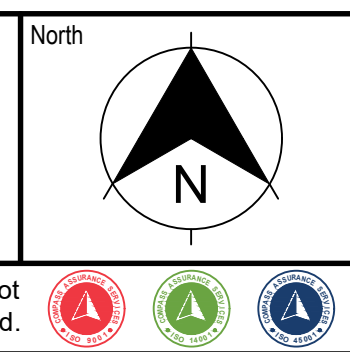
FOR CONTINUATION REFER DRG.C05.03

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	



Scale
0 50 100 150 200 250m
SCALE 1:2500
@A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
GRADING PLAN
SHEET 01

Scale
1:2500
First Issue Date
07/02/2025

Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C03.21

Revision
3

FOR CONTINUATION REFER DRG:C05.01



LEGEND

- SITEWIDE CONCEPT EXTENT
- EXISTING BOUNDARY
- EXISTING CONTOUR (0.5m INCREMENT)
- DESIGN CONTOUR (0.5m INCREMENT)
- ADJACENT DEVELOPMENT DESIGN CONTOUR (0.5m INCREMENT)
- TRANSPORT CORRIDOR (SEPP_WPC_AER_TRC_001_20220218)
- CONCURRENT DEVELOPMENT (SMWSA / LUD3 SIGNALS / IWRH)
- OPEN SPACE STRATEGY
- IWCM STRATEGY PERMANENT WATER BODY
- TEMPORARY RETAINING WALL
- BATTER
- SYDNEY METRO LANDS

NOTES

- DESIGN CONTOURS SHOWN ACROSS SYDNEY METRO LANDS AND THE INTEGRATED WATER RECYCLING HUB ARE FOR CONTEXT ONLY TO DEMONSTRATE LEVELS PROVIDED BY SYDNEY METRO AND SYDNEY WATER CORPORATION RESPECTIVELY HAVE BEEN INCORPORATED INTO THE CONCEPT DESIGN.
- ADJACENT DEVELOPMENT DESIGN CONTOURS INDICATE ASSUMED KEY FUTURE DEVELOPMENT INTERFACES AS DETAILED IN THE CIVIL DESIGN AND EARTHWORKS STRATEGY REPORT (E.G. ULTIMATE LUDDENHAM ROAD WIDENING AND SOUTH BOUNDARY INTERFACES).

FOR CONTINUATION REFER DRG:C05.04

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

CELESTINO

Scale

0 50 100 150 200 250m

SCALE 1:2500 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

North

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
GRADING PLAN
SHEET 02

Scale
1:2500
First Issue Date
08/02/2025

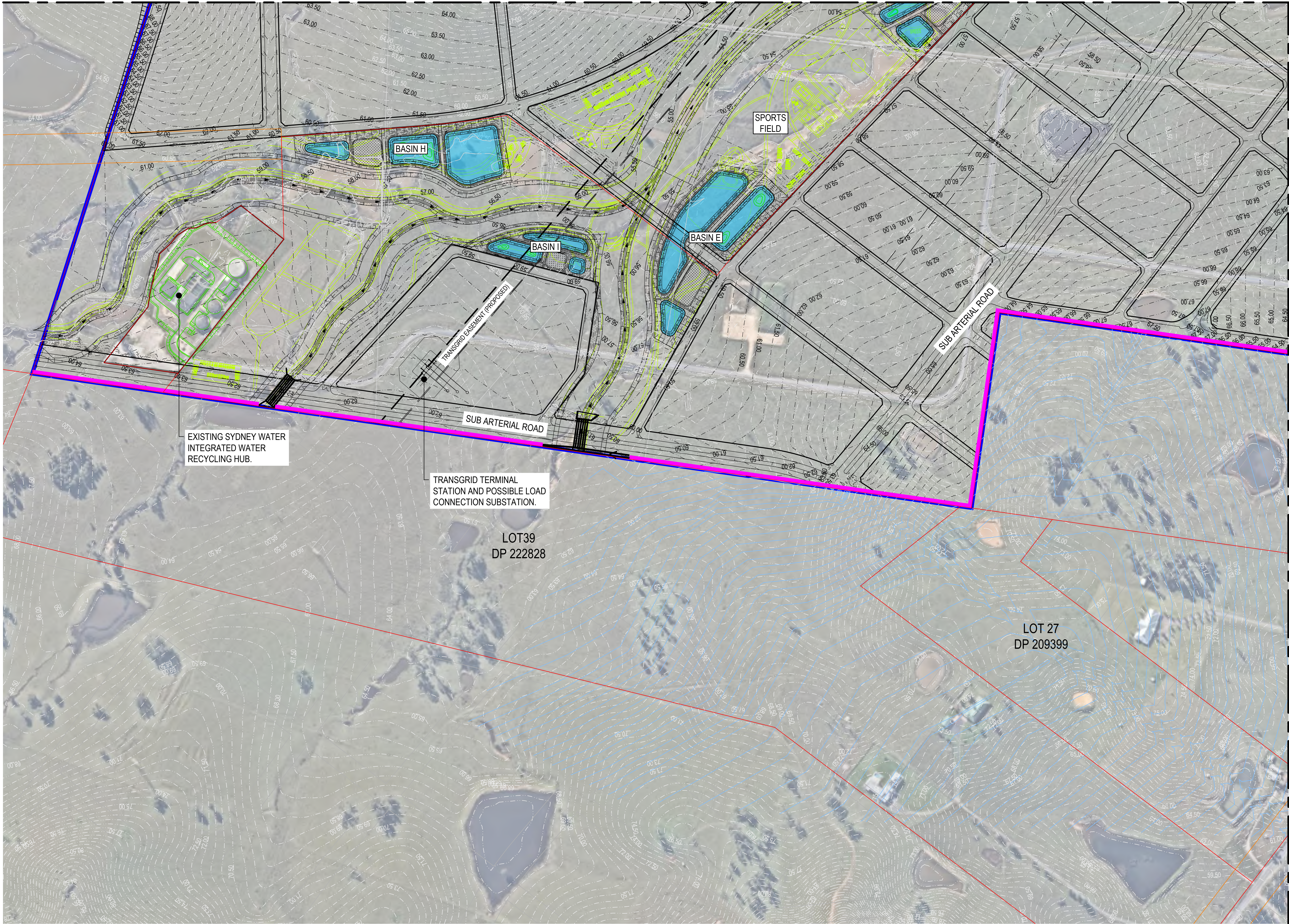
Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C03.22

Revision
3

FOR CONTINUATION REFER DRG:C05.01



LEGEND

- SITEWIDE CONCEPT EXTENT
- EXISTING BOUNDARY
- EXISTING CONTOUR (0.5m INCREMENT)
- DESIGN CONTOUR (0.5m INCREMENT)
- ADJACENT DEVELOPMENT DESIGN CONTOUR (0.5m INCREMENT)
- TRANSPORT CORRIDOR (SEPP_WPC_AER_TRC_001_20220218)
- CONCURRENT DEVELOPMENT (SMWSA / LUD3 SIGNALS / IWRH)
- OPEN SPACE STRATEGY
- IWCM STRATEGY PERMANENT WATER BODY
- TEMPORARY RETAINING WALL
- BATTER
- SYDNEY METRO LANDS

NOTES

- DESIGN CONTOURS SHOWN ACROSS SYDNEY METRO LANDS AND THE INTEGRATED WATER RECYCLING HUB ARE FOR CONTEXT ONLY TO DEMONSTRATE LEVELS PROVIDED BY SYDNEY METRO AND SYDNEY WATER CORPORATION RESPECTIVELY HAVE BEEN INCORPORATED INTO THE CONCEPT DESIGN.
- ADJACENT DEVELOPMENT DESIGN CONTOURS INDICATE ASSUMED KEY FUTURE DEVELOPMENT INTERFACES AS DETAILED IN THE CIVIL DESIGN AND EARTHWORKS STRATEGY REPORT (E.G. ULTIMATE LUDDENHAM ROAD WIDENING AND SOUTH BOUNDARY INTERFACES).

FOR CONTINUATION REFER DRG:C05.04

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

CELESTINO

Scale

0 50 100 150 200 250m

SCALE 1:2500 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

North

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
GRADING PLAN
SHEET 03

Scale
1:2500

First Issue Date
09/02/2025

Size
A1

Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C03.23

Revision
3

FOR CONTINUATION REFER DRG:C05.02



LEGEND

- SITEWIDE CONCEPT EXTENT
- EXISTING BOUNDARY
- EXISTING CONTOUR (0.5m INCREMENT)
- DESIGN CONTOUR (0.5m INCREMENT)
- ADJACENT DEVELOPMENT DESIGN CONTOUR (0.5m INCREMENT)
- TRANSPORT CORRIDOR (SEPP_WPC_AER_TRC_001_20220218)
- CONCURRENT DEVELOPMENT (SMWSA / LUD3 SIGNALS / IWRH)
- OPEN SPACE STRATEGY
- IWCM STRATEGY PERMANENT WATER BODY
- TEMPORARY RETAINING WALL
- BATTER
- SYDNEY METRO LANDS

NOTES

- DESIGN CONTOURS SHOWN ACROSS SYDNEY METRO LANDS AND THE INTEGRATED WATER RECYCLING HUB ARE FOR CONTEXT ONLY TO DEMONSTRATE LEVELS PROVIDED BY SYDNEY METRO AND SYDNEY WATER CORPORATION RESPECTIVELY HAVE BEEN INCORPORATED INTO THE CONCEPT DESIGN.
- ADJACENT DEVELOPMENT DESIGN CONTOURS INDICATE ASSUMED KEY FUTURE DEVELOPMENT INTERFACES AS DETAILED IN THE CIVIL DESIGN AND EARTHWORKS STRATEGY REPORT (E.G. ULTIMATE LUDDENHAM ROAD WIDENING AND SOUTH BOUNDARY INTERFACES).

FOR CONTINUATION REFER DRG:C05.03

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

CELESTINO

Scale

0 50 100 150 200 250m

SCALE 1:2500 @A1

The copyright of this drawing remains with Ensfire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Ensfire Solutions Pty Ltd.

North

ensfire

Ensfire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
ensfiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

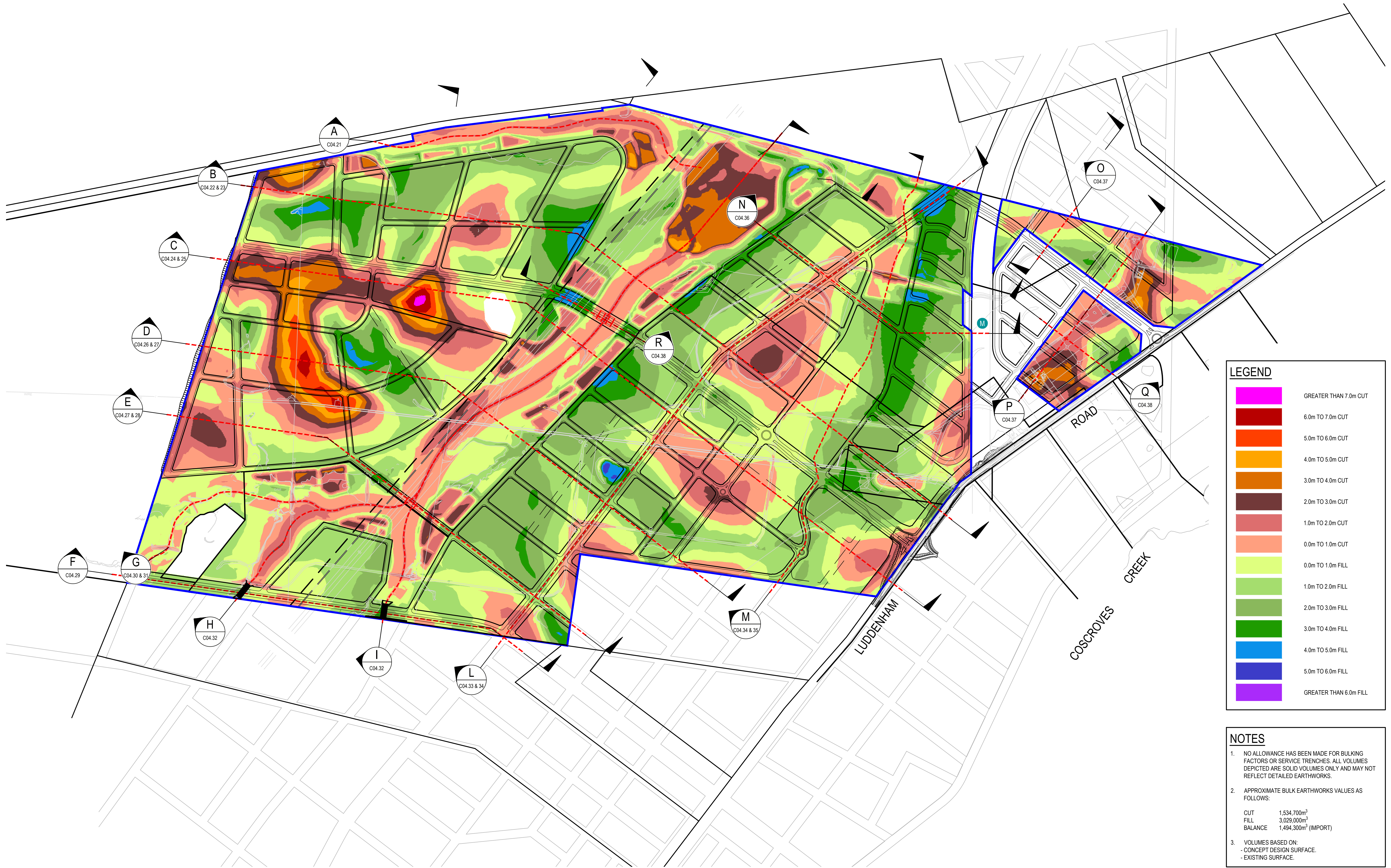
Title
GRADING PLAN
SHEET 04

Scale
1:2500
First Issue Date
10/02/2025

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C03.24

Revision
3



LEGEND

[Pink]	GREATER THAN 7.0m CUT
[Red]	6.0m TO 7.0m CUT
[Orange]	5.0m TO 6.0m CUT
[Yellow]	4.0m TO 5.0m CUT
[Light Orange]	3.0m TO 4.0m CUT
[Light Brown]	2.0m TO 3.0m CUT
[Light Red]	1.0m TO 2.0m CUT
[Light Orange]	0.0m TO 1.0m CUT
[Light Green]	0.0m TO 1.0m FILL
[Light Green]	1.0m TO 2.0m FILL
[Light Green]	2.0m TO 3.0m FILL
[Green]	3.0m TO 4.0m FILL
[Blue]	4.0m TO 5.0m FILL
[Dark Blue]	5.0m TO 6.0m FILL
[Purple]	GREATER THAN 6.0m FILL

NOTES

- NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS OR SERVICE TRENCHES. ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
- APPROXIMATE BULK EARTHWORKS VALUES AS FOLLOWS:

CUT	1,534,700m ³
FILL	3,029,000m ³
BALANCE	1,494,300m ³ (IMPORT)
- VOLUMES BASED ON:
- CONCEPT DESIGN SURFACE.
- EXISTING SURFACE.

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI	SHH	
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI	SHH	
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI	SHH	

Client

CELESTINO

Scale

0 100 200 300 400 500m

SCALE 1:5000 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

North

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
CUT AND FILL PLAN

Scale
1:5000

First Issue Date
11/02/2025

Size
A1

Datum
MGA2020

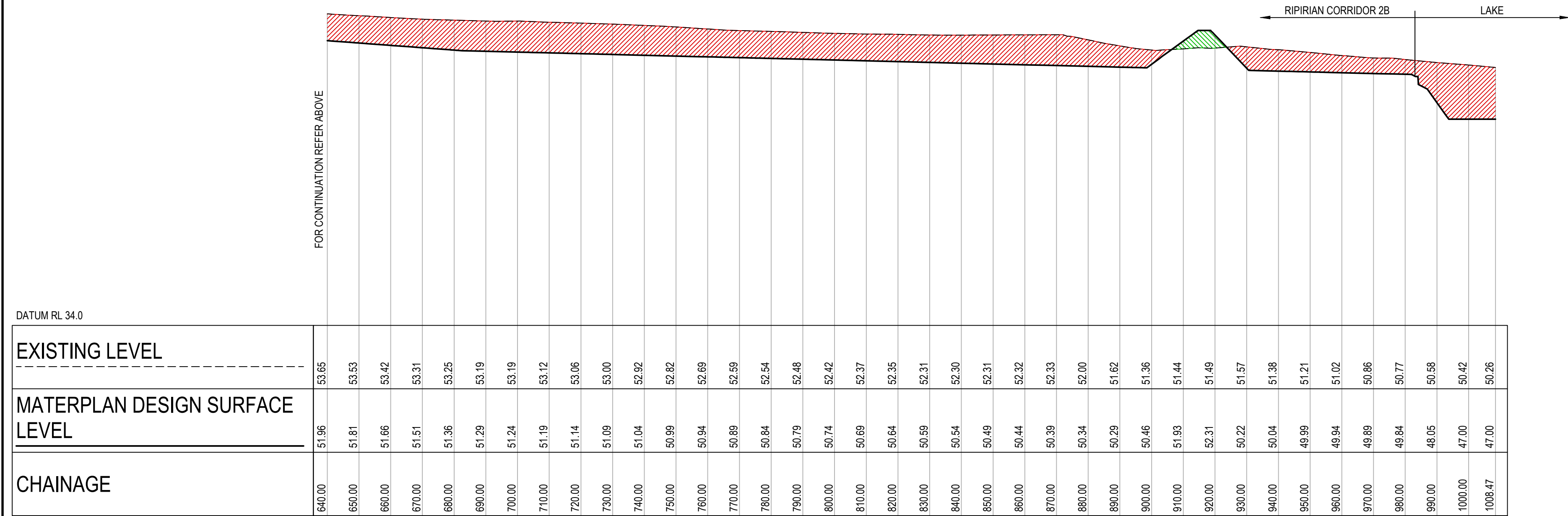
Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C04.01

Revision
3



SECTION A C04.01
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



SECTION A C04.01
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI		SHH
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI		SHH
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI		SHH

Client

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

0 5 10 15 20m

SCALE 1:200 @A1

North

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Scale
AS SHOWN
First Issue Date
12/02/2025

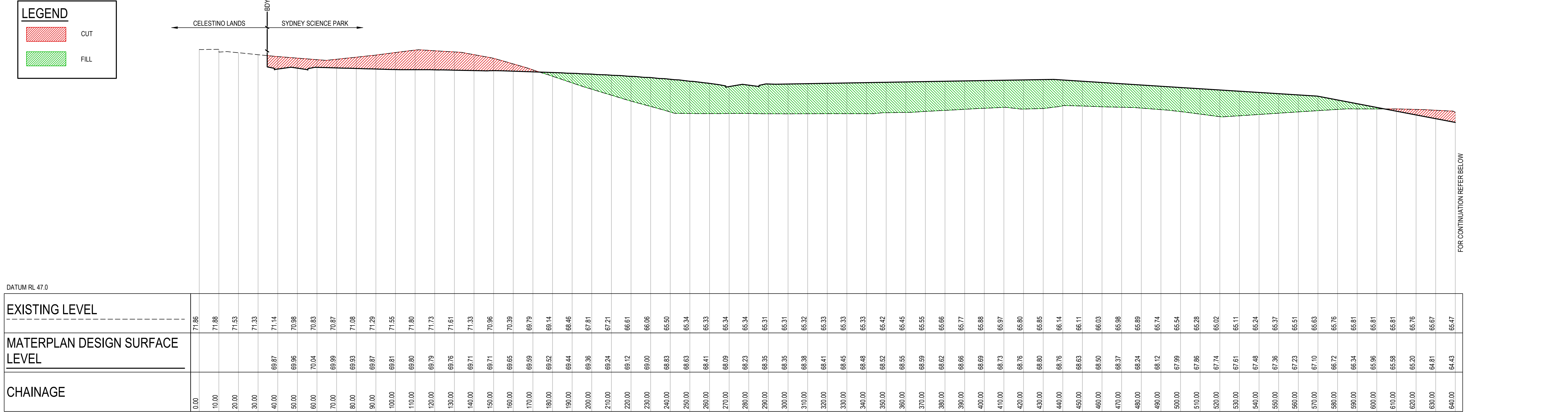
Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Title
CUT AND FILL SECTIONS
SHEET 01

Size
A1
Datum
MGA2020

Project Number/Drawing Number
180001-05A-SSD1-C04.21

Revision
3

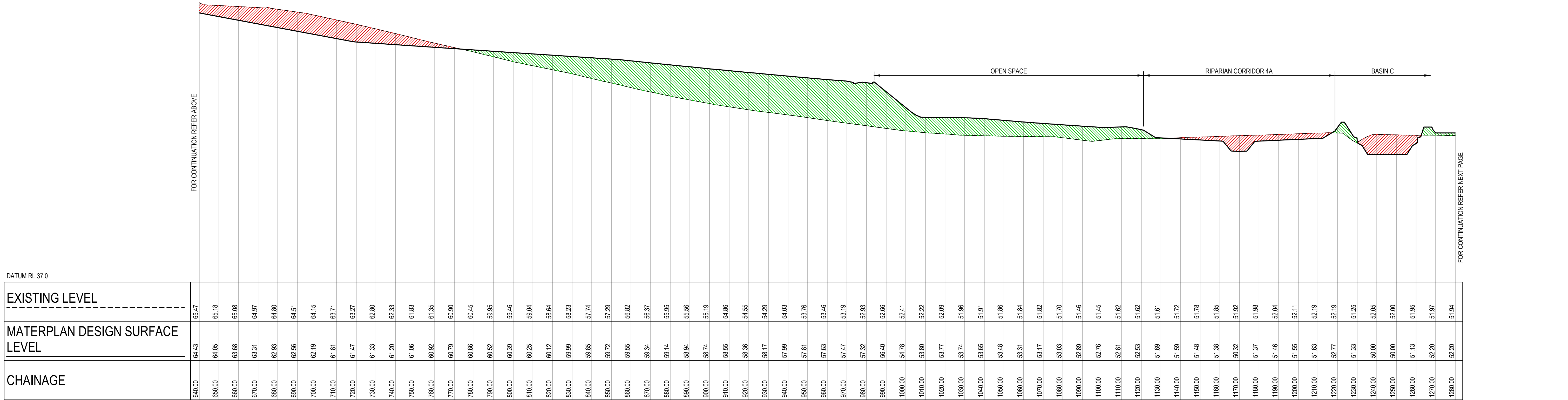


SECTION B

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

C04.01



SECTION B

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

C04.01

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI		SHH
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI		SHH
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI		SHH

Client

CELESTINO

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

0 5 10 15 20m

SCALE 1:200 @A1

North

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Scale
AS SHOWN
First Issue Date
13/02/2025

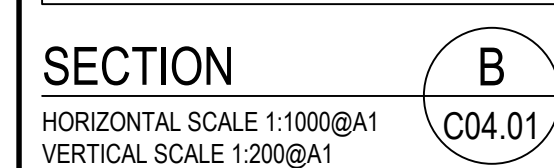
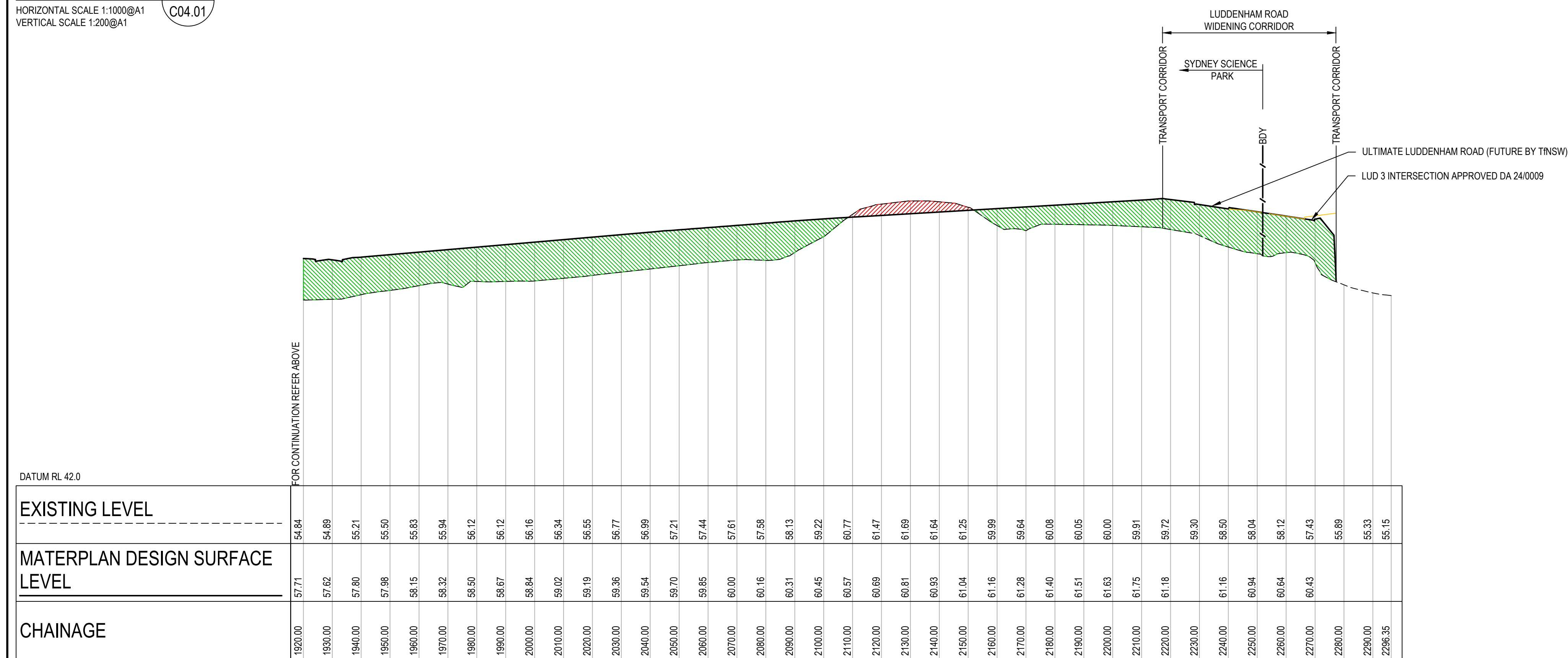
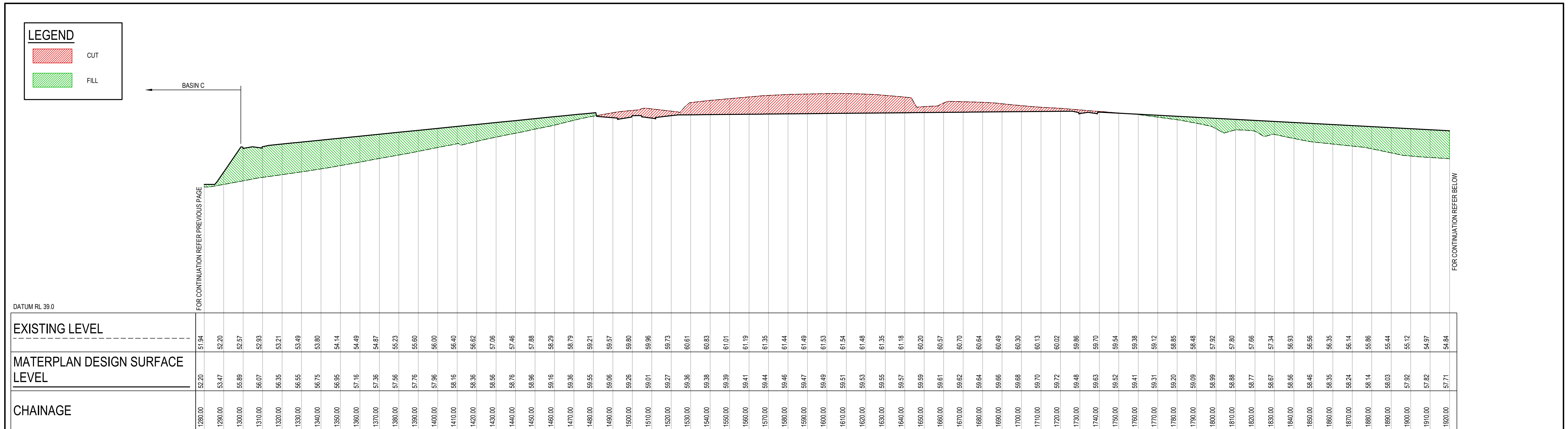
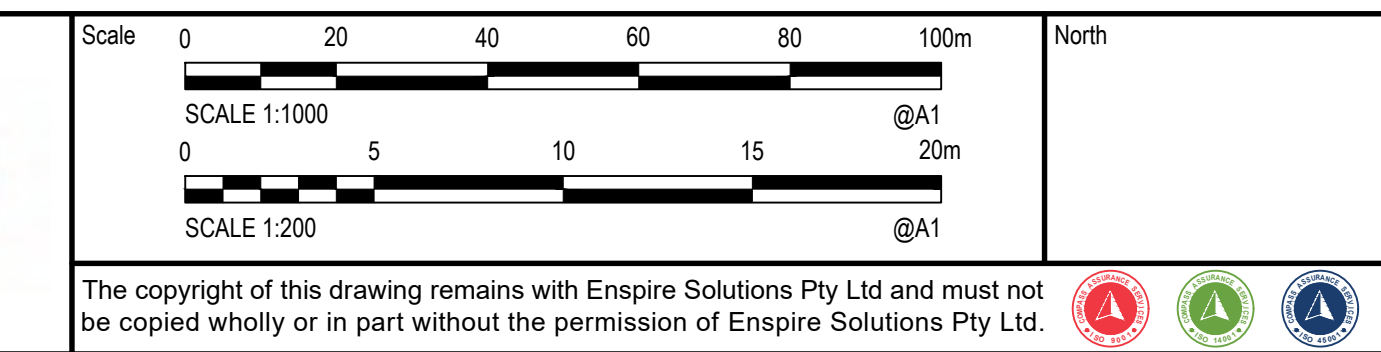
Title
CUT AND FILL SECTIONS
SHEET 02

Size
A1
Datum
MGA2020

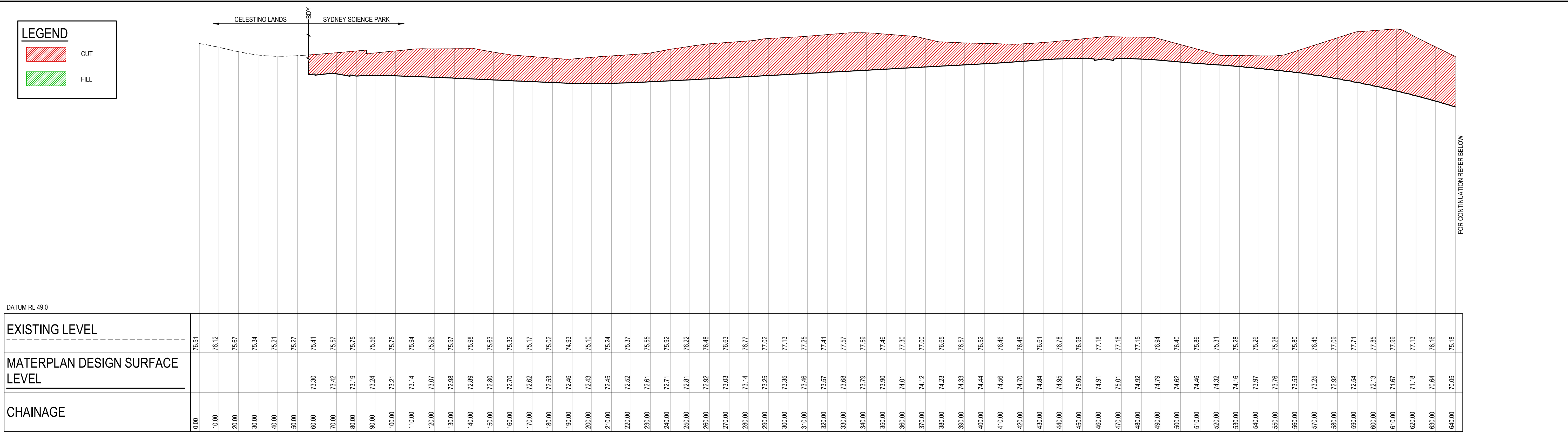
Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C04.22

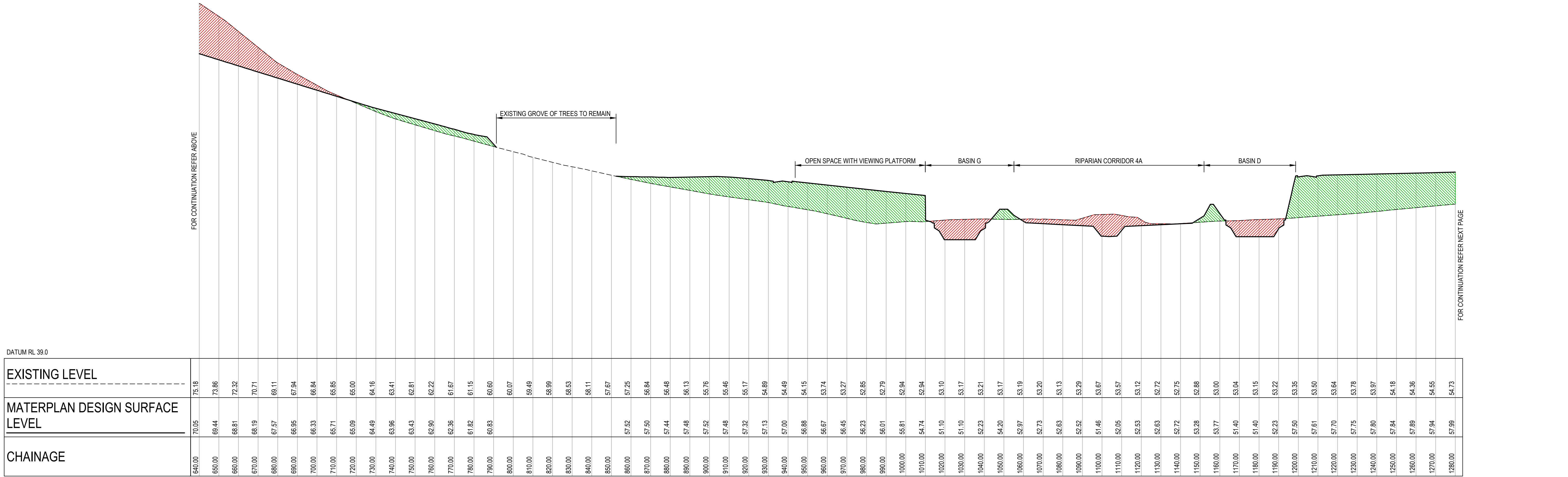
Revision
3

[illegible]

Project SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS	Scale AS SHOWN First Issue Date 14/02/2025	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION	
Title CUT AND FILL SECTIONS SHEET 03	Size A1 Datum MGA2020	Project Number/Drawing Number 180001-05A-SSD1-C04.23	Revision 3

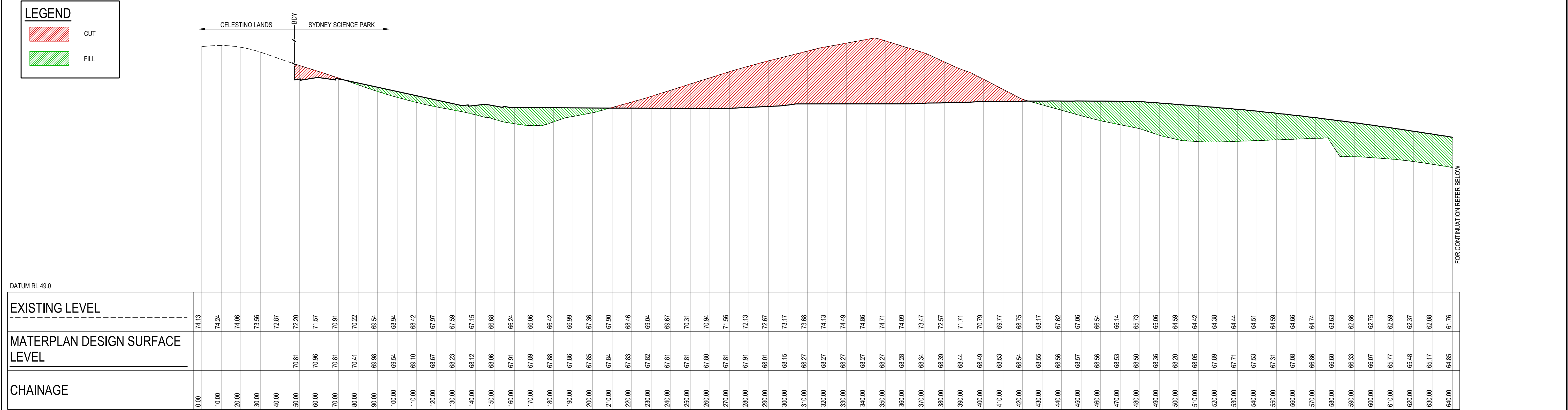


SECTION C
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



SECTION C
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

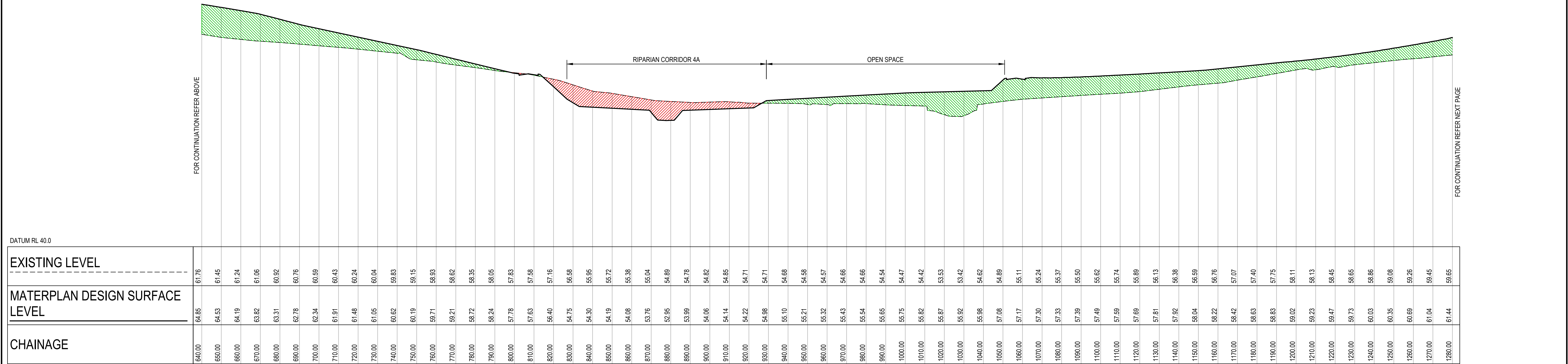
Client						Scale 0 20 40 60 80 100m SCALE 1:1000 @A1 0 5 10 15 20m SCALE 1:200 @A1		North		enspire Enspire Solutions Pty Ltd Level 7, 54 Miller Street, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135 enspiresolutions.com.au		Project SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS		Scale AS SHOWN First Issue Date 15/02/2025		Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION			
3 22/09/2025 ISSUED FOR APPROVAL SS HJI SHH												Title CUT AND FILL SECTIONS SHEET 04		Size A1		Project Number/Drawing Number 180001-05A-SSD1-C04.24		Revision 3	
2 17/04/2025 90% ISSUE FOR INFORMATION RNA HJI SHH														Datum MGA2020					
1 31/01/2025 60% ISSUE FOR INFORMATION RAD HJI SHH																			
REV. DATE DESCRIPTION DRN. DES. VERIF. APPD.																			



SECTION D C04.01

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1



SECTION D C04.01

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

322/09/2025ISSUED FOR APPROVALSSHJ

217/04/202590% ISSUE FOR INFORMATIONRNAHJSHH

131/01/202560% ISSUE FOR INFORMATIONRADHJSHH

Client

CELESTINO

Scale 0 20 40 60 80 100m SCALE 1:1000 @A1 0 5 10 15 20m SCALE 1:200 @A1

North

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
CUT AND FILL SECTIONS
SHEET 06

Scale
AS SHOWN
First Issue Date
17/02/2025

Size
A1
Datum
MGA2020

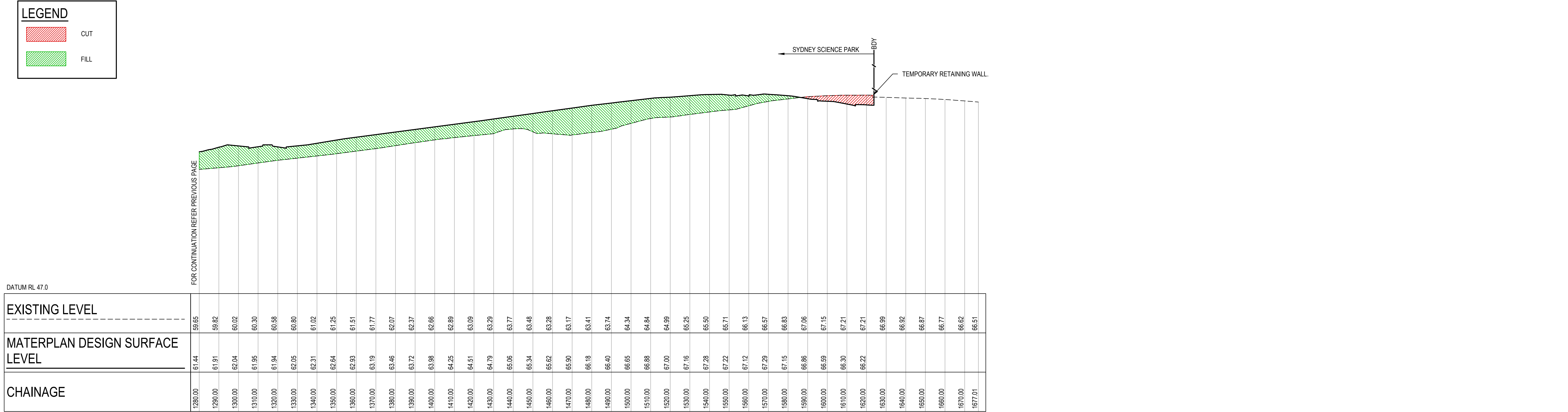
Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C04.26

Revision
3

DATE PLOTTED: 22 September 2025 11:27 AM BY: SHAWN HOTONG

CAD File: P:\180001 SSPID-Civil\05-SSDA Sitedwide ConceptDrawings\6-DACC\01-Civil Design and Earthworks\180001-05A-SSDA-C04.21-C04.38 CUT AND FILL SECTIONS.dwg



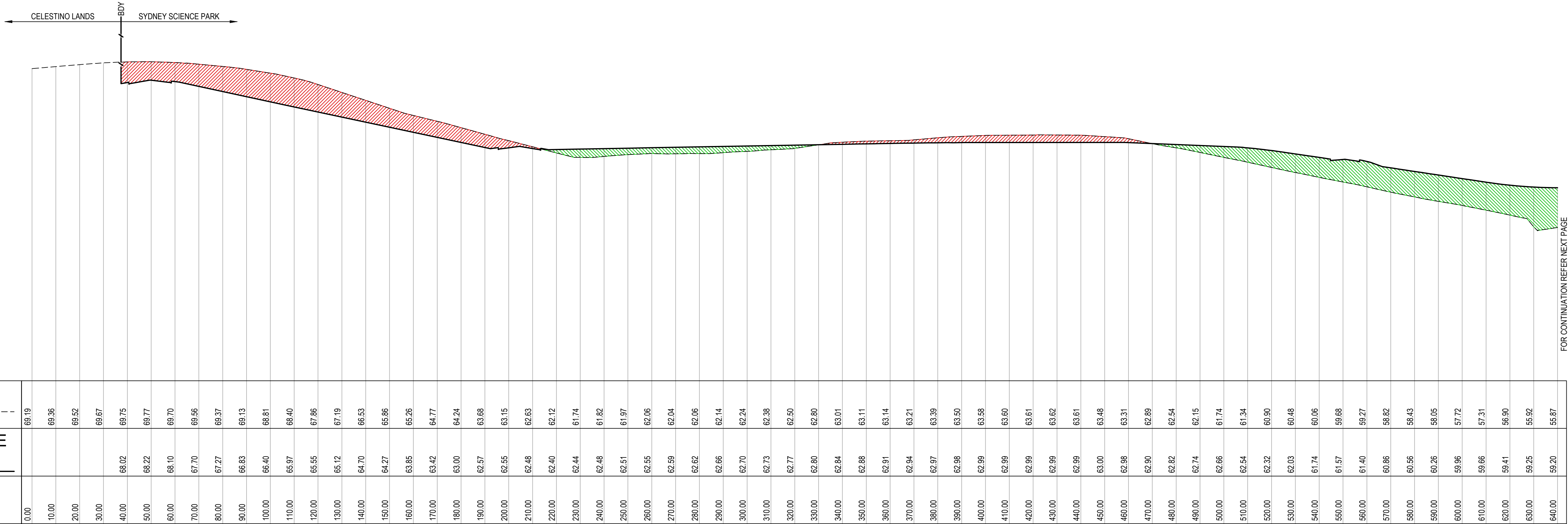
SECTION

D

C04.01

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1



SECTION

E

C04.01

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

REV

DATE

DESCRIPTION

DRN

DES

VERIF

APPD

3

22/09/2025

ISSUED FOR APPROVAL

SS

HJI

SHH

2

17/04/2025

90% ISSUE FOR INFORMATION

RNA

HJI

SHH

1

31/01/2025

60% ISSUE FOR INFORMATION

RAD

HJI

SHH

Client

CELESTINO

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

0 5 10 15 20m

SCALE 1:200 @A1

North

Enspire Solutions Pty Ltd

Level 7, 54 Miller Street, North Sydney NSW 2060

ABN: 71 624 801 690

Phone: 02 9922 6135

enspiresolutions.com.au

Project

SYDNEY SCIENCE PARK

SSD#1 SITE WIDE CONCEPT

CIVIL DESIGN AND EARTHWORKS

Title

CUT AND FILL SECTIONS

SHEET 07

Scale

AS SHOWN

First Issue Date

18/02/2025

Status

FOR INFORMATION ONLY

NOT TO BE USED FOR CONSTRUCTION

Size

A1

Datum

MGA2020

Project Number/Drawing Number

180001-05A-SSD1-C04.27

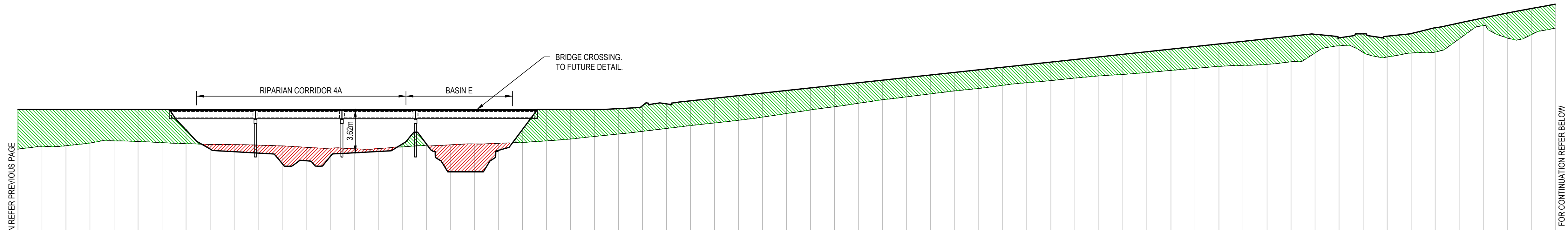
Revision

3

DATE PLOTTED: 22 September 2025 11:27 AM BY: SHAWN HOTONG

LEGEND

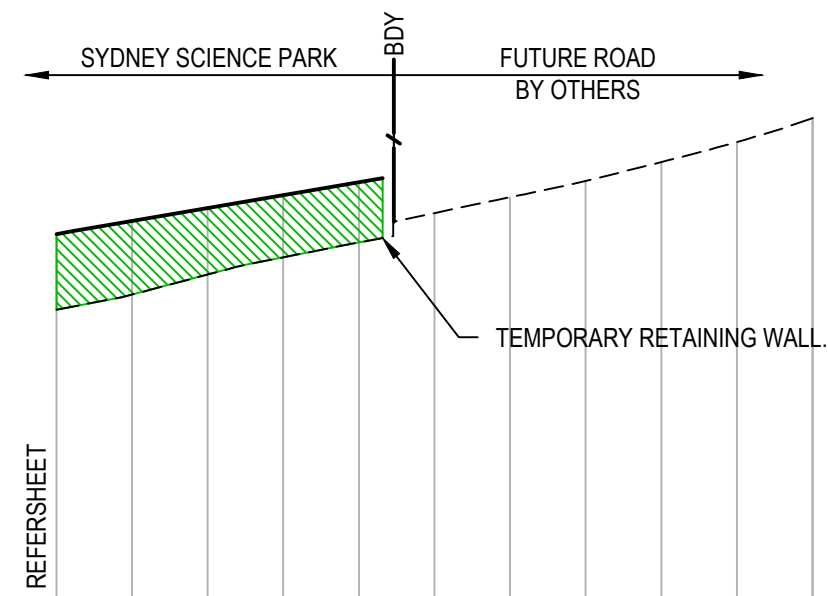
	CUT
	FILL



EXISTING LEVEL									
MATERPLAN DESIGN SURFACE LEVEL									
CHAINAGE									

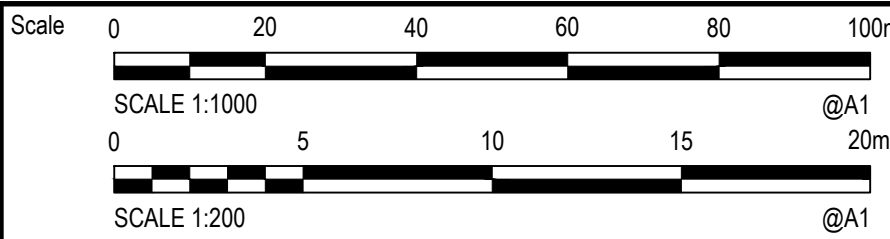
SECTION

HORIZONTAL SCALE 1:1000@A1
 VERTICAL SCALE 1:200@A1

[illegible]

SECTION

HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

[illegible]

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135 enspiresolutions.com.au

Project SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS	Scale	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION
	AS SHOWN	
Title CUT AND FILL SECTIONS SHEET 08	First Issue Date 19/02/2025	
	Size A1	Project Number/Drawing Number 180001-05A-SSD1-C04.28
	Datum MGA2020	Revision 3

CHAINAGE	MATERPLAN DESIGN SURFACE LEVEL	EXISTING LEVEL
0.00		61.67
10.00		61.50
20.00		61.18
30.00		61.39
40.00		61.93
50.00	64.33	62.15
60.00	64.53	62.40
70.00	64.46	62.64
80.00	64.38	62.66
90.00	64.31	62.66
100.00	64.23	62.65
110.00	64.16	62.66
120.00	64.08	62.57
130.00	64.01	62.47
140.00	63.94	62.40
150.00	63.86	62.34
160.00	63.79	62.28
170.00	63.71	62.22
180.00	63.64	62.12
190.00	63.56	62.08
200.00	63.49	62.03
210.00	63.42	61.98
220.00	63.34	61.91
230.00	63.27	61.84
240.00	63.19	61.80
250.00	63.12	61.70
260.00	63.04	61.68
270.00	62.97	61.69
280.00	62.89	61.64
290.00	62.82	61.54
300.00	62.72	61.43
310.00	62.65	61.35
320.00	62.58	61.27
330.00	62.51	61.07
340.00	62.44	60.01
350.00	62.37	59.81
360.00	62.30	59.77
370.00	62.23	60.00
380.00	62.16	61.22
390.00	62.09	61.21
400.00	62.02	61.31
410.00	61.95	61.38
420.00	61.89	61.48
430.00	61.88	61.45
440.00	61.92	61.61
450.00	61.99	61.84
460.00	62.06	62.12
470.00	62.13	62.36
480.00	62.20	62.59
490.00	62.27	62.66
500.00	62.34	62.69
510.00	62.41	62.67
520.00	62.46	62.63
530.00	62.46	62.54
540.00	62.43	62.40
550.00	62.36	62.26
560.00	62.29	62.12
570.00	62.22	61.94
580.00	62.15	61.76
590.00	62.08	61.58
600.00	62.01	61.40
610.00	61.94	61.22
620.00	61.87	60.98
630.00	61.80	60.74
640.00	61.73	60.51

LEGEND

CUT

FILL

FOR CONTINUATION REFER BELOW

SECTION

HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

F
C04.01

CHAINAGE	MATERPLAN DESIGN SURFACE LEVEL	EXISTING LEVEL
640.00	61.73	60.51
650.00	61.66	60.28
660.00	61.59	60.00
670.00	61.52	59.85
680.00	61.45	59.64
690.00	61.38	59.33
700.00	61.31	59.07
710.00	61.24	58.82
720.00	61.18	58.64
730.00	61.17	59.14
740.00	61.22	59.07
750.00	61.29	58.93
760.00	61.34	57.82
770.00	61.33	57.77
780.00	61.26	58.68
790.00	61.13	58.83
800.00	60.98	58.85
810.00	60.83	58.87
820.00	60.68	58.92
830.00	60.53	58.98
840.00	60.38	59.24
850.00	60.24	59.53
860.00	60.18	59.83
870.00	60.22	60.09
880.00	60.31	60.30
890.00	60.41	60.47
900.00	60.51	60.51
910.00	60.61	60.55
920.00	60.71	60.49
930.00	60.81	60.39
940.00	60.91	60.20
950.00	61.01	60.07
960.00	61.11	59.99
970.00	61.21	59.95
980.00	61.31	59.94
990.00	61.41	60.00
1000.00	61.51	60.10
1010.00	61.61	60.35
1020.00	61.71	60.54
1030.00	61.81	60.50
1040.00	61.92	61.03
1050.00	62.16	61.34
1060.00	62.28	61.73
1070.00	62.38	62.12
1080.00	62.56	62.53
1090.00	62.66	62.89
1100.00	63.53	63.20
1110.00	63.56	63.56
1120.00	63.97	63.99
1130.00		64.92
1140.00		65.51
1150.00		66.15
1160.00		66.84
1170.00		67.57
1180.00		68.30
1190.00		69.06
1194.80		69.47

DATUM RL 45.0

FOR CONTINUATION REFER ABOVE

SYDNEY SCIENCE PARK

FUTURE ROAD BY OTHERS

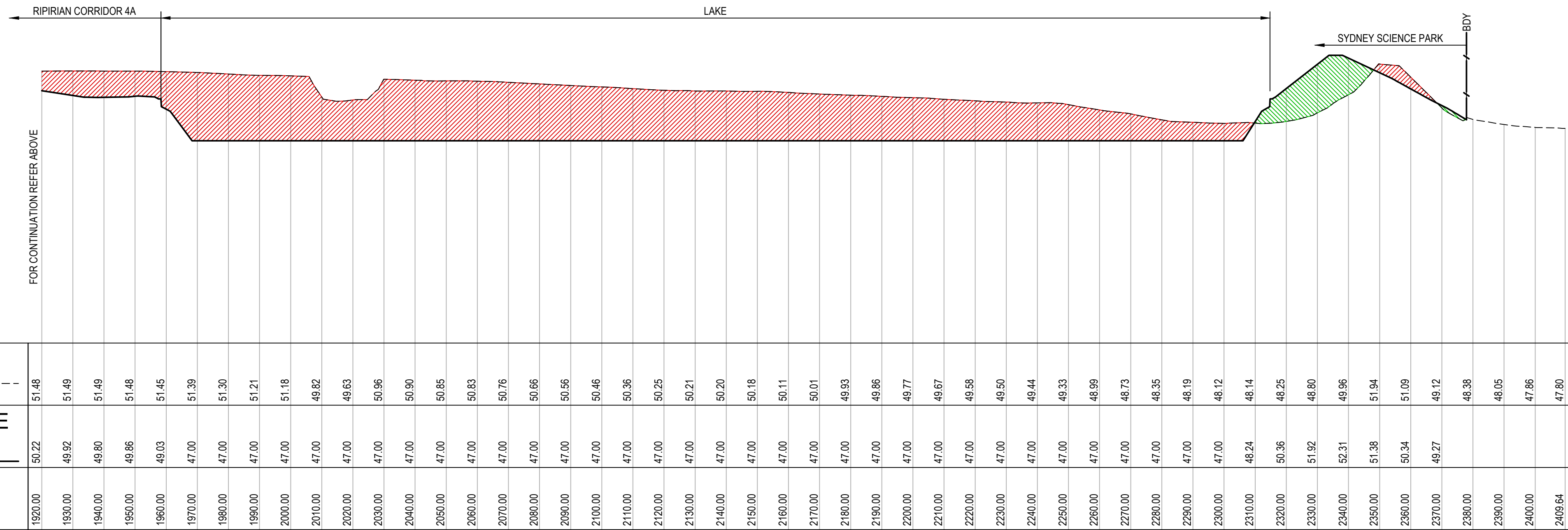
BDY

[illegible]

CAD File: P:\180001 SSPID-Civil\05-SSDA Sitewide Concept\Drawings\6-DACC\01-Civil Design and Earthworks\180001-05A-SSDA-C04.21-C04.38 CUT AND FILL SECTIONS.dwg

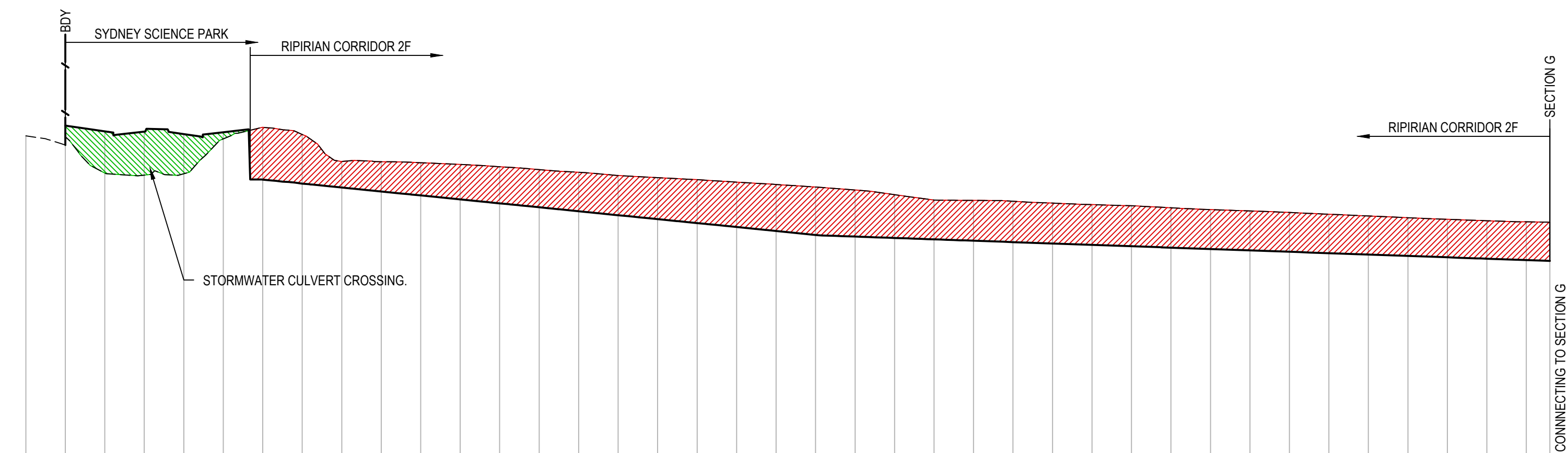
CHAINAGE	WATERPLAN DESIGN SURFACE ELEV	EXISTING LEVEL
1280.00	52.75	54.57
1290.00	52.70	54.56
1300.00	52.66	54.46
1310.00	52.61	54.38
1320.00	52.57	54.32
1330.00	52.52	54.28
1340.00	52.48	54.25
1350.00	52.43	54.17
1360.00	52.39	54.10
1370.00	52.34	54.04
1380.00	52.30	53.98
1390.00	52.25	53.93
1400.00	52.21	53.88
1410.00	52.16	53.84
1420.00	52.12	53.80
1430.00	52.07	53.75
1440.00	52.03	53.69
1450.00	51.98	53.64
1460.00	51.94	53.57
1470.00	51.89	53.45
1480.00	51.85	53.34
1490.00	51.80	53.24
1500.00	51.76	52.84
1510.00	51.71	52.45
1520.00	51.67	52.37
1530.00	51.62	52.30
1540.00	51.58	52.15
1550.00	51.53	52.24
1560.00	51.49	52.66
1570.00	51.44	54.04
1580.00	51.40	52.87
1590.00	51.35	52.62
1600.00	51.31	52.54
1610.00	51.26	52.50
1620.00	51.22	52.58
1630.00	51.17	52.67
1640.00	51.13	52.50
1650.00	51.08	52.56
1660.00	51.04	52.66
1670.00	50.99	52.63
1680.00	50.95	52.61
1690.00	50.90	52.59
1700.00	50.86	52.55
1710.00	50.81	52.51
1720.00	50.77	52.46
1730.00	50.72	52.41
1740.00	50.68	52.35
1750.00	50.63	52.30
1760.00	50.59	52.24
1770.00	50.54	52.19
1780.00	50.50	52.14
1790.00	50.45	52.09
1800.00	50.41	52.05
1810.00	50.36	51.98
1820.00	50.32	51.93
1830.00	50.27	51.84
1840.00	50.23	51.74
1850.00	50.18	51.67
1860.00	50.14	51.63
1870.00	50.09	51.62
1880.00	50.05	51.68
1890.00	50.00	51.65
1900.00	49.97	51.62
1910.00	49.96	51.56
1920.00	50.22	51.48

G
C04.01



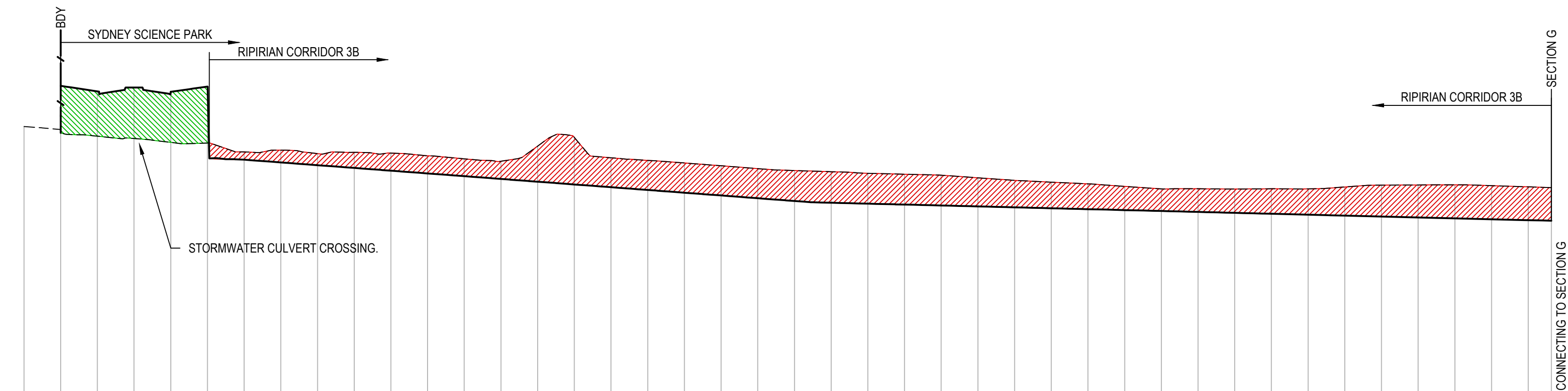
G
C04.01

Scale AS SHOWN	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION
First Issue Date 22/02/2025	
Size A1	Project Number/Drawing Number 180001-05A-SSD1-C04.31
Date MGA2020	Revision 3



SECTION

HORIZONTAL SCALE 1:1000@A1
 VERTICAL SCALE 1:200@A1



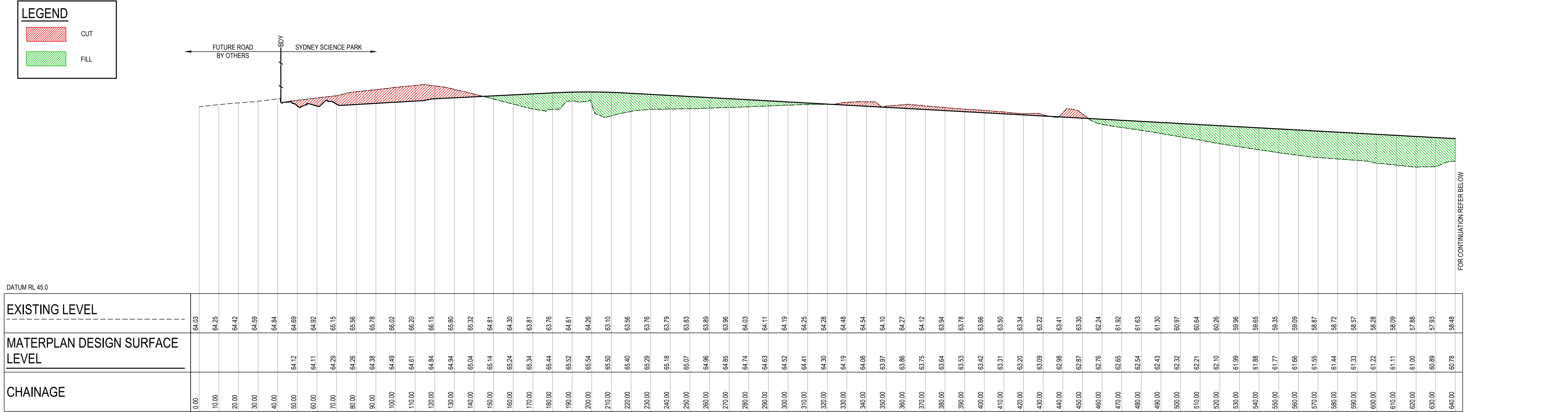
SECTION
 HORIZONTAL SCALE 1:1000@A1
 VERTICAL SCALE 1:200@A1

Client

 CELESTINO



Project SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS	Scale AS SHOWN	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION	
	First Issue Date 23/02/2025		
Title CUT AND FILL SECTIONS SHEET 12	Size A1	Project Number/Drawing Number 180001-05A-SSD1-C04.32	Revision 3
	Datum MGA2020		



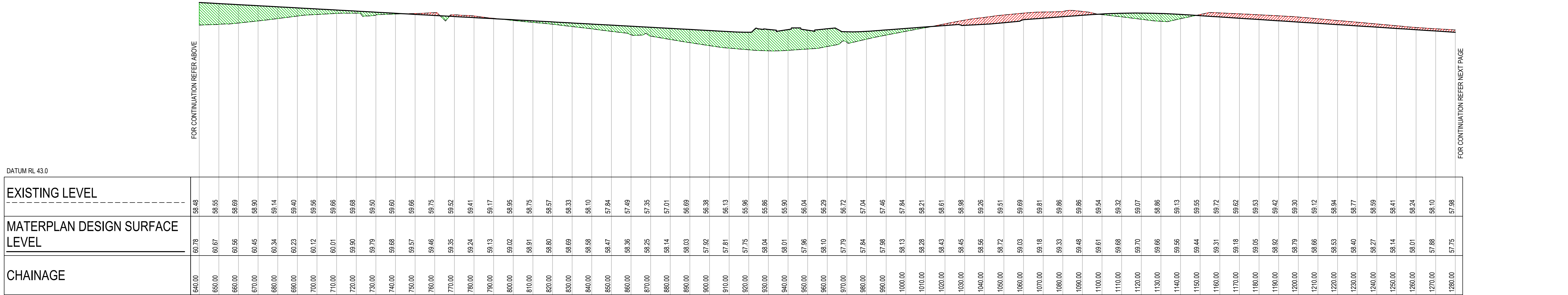
SECTION

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

L

C04.01



FOR CONTINUATION REFER NEXT PAGE

SECTION

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

L

C04.01

3

22/09/2025

ISSUED FOR APPROVAL

SS

HJI

SHH

2

17/04/2025

90% ISSUE FOR INFORMATION

RNA

HJI

SHH

1

31/01/2025

60% ISSUE FOR INFORMATION

RAD

HJI

SHH

REV

DATE

DESCRIPTION

DRN

DES

VERIF

APPD

Client

CELESTINO

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

0 5 10 15 20m

SCALE 1:200 @A1

North

Enspire Solutions Pty Ltd

Level 7, 54 Miller Street, North Sydney NSW 2060

ABN: 71 624 801 690

Phone: 02 9922 6135

enspiresolutions.com.au

Project

SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title

CUT AND FILL SECTIONS
SHEET 13

Scale

AS SHOWN

First Issue Date

24/02/2025

Size

A1

Datum

MGA2020

Status

FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number

180001-05A-SSD1-C04.33

Revision

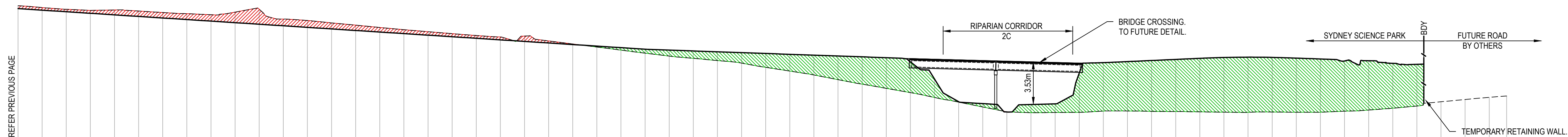
3

CAD File: P:\180001 SSPID-Civil\05-SSDA Sitedwide Concept\Drawings\16-DACC\01-Civil Design and Earthworks\180001-05A-SSDA-C04.21-C04.38 CUT AND FILL SECTIONS.dwg

DATE PLOTTED: 22 September 2025 11:27 AM BY: SHAWN HOTONG

LEGEND

	CUT
	FILL

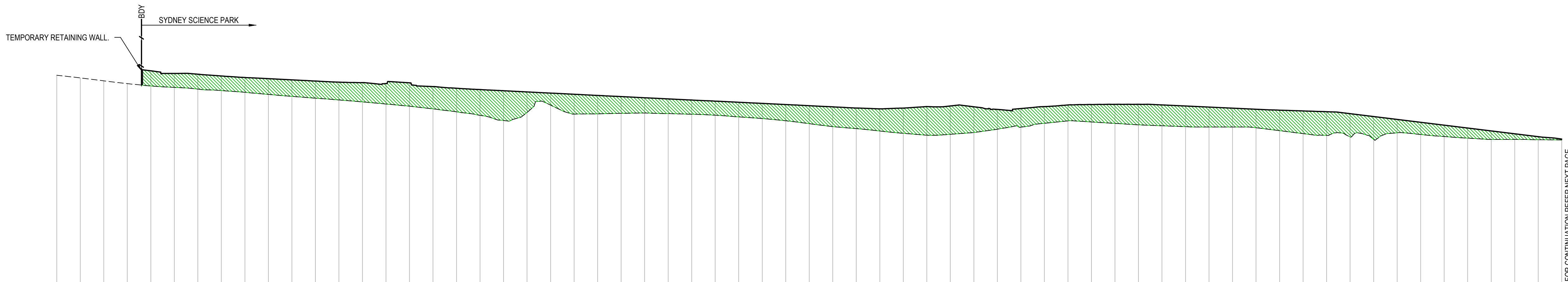


EXISTING LEVEL		
	57.98	
	57.83	
	57.69	
	57.60	
	57.63	
	57.54	
	57.42	
	57.32	
	57.24	
	57.45	
	57.70	
	56.87	
	56.76	
	56.56	
	56.37	
	56.17	
	56.87	
	56.76	
	56.56	
	56.37	
	56.17	
	56.97	
	56.84	
	56.71	
	56.58	
	56.45	
	56.32	
	56.19	
	56.06	
	55.93	
	55.80	
	55.67	
	55.54	
	55.41	
	55.28	
	55.15	
	55.02	
	54.89	
	54.76	
	54.63	
	54.50	
	54.37	
	54.29	
	54.22	
	54.15	
	54.08	
	54.01	
	53.94	
	53.87	
	53.80	
	53.73	
	53.66	
	53.31	
	53.05	
	52.86	
	52.66	
	52.55	
	52.22	
	51.83	
	51.46	
	51.11	
	50.75	
	50.35	
	49.96	
	49.56	
	49.15	
	48.09	
	49.10	
	48.11	
	49.22	
	48.23	
	49.19	
	49.18	
	49.15	
	49.12	
	49.12	
	49.21	
	49.30	
	49.45	
	49.64	
	49.99	
	50.18	
	50.36	
	50.47	

SECTION

HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

L
04.01

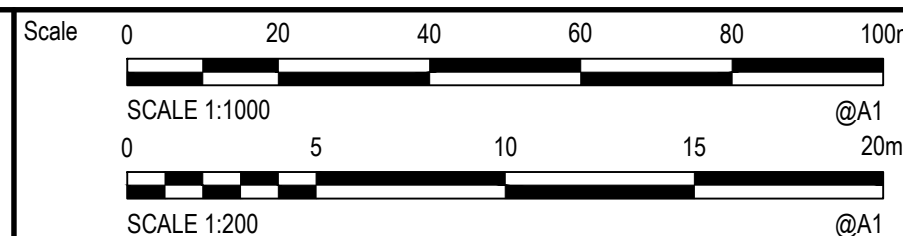


CHAINAGE	MATERPLAN DESIGN SURFACE LEVEL	EXISTING LEVEL
0.00		61.42
10.00		61.19
20.00		60.95
30.00		60.71
40.00	61.80	60.51
50.00	61.57	60.39
60.00	61.51	60.24
70.00	61.36	60.12
80.00	61.23	59.97
90.00	61.13	59.79
100.00	61.03	59.62
110.00	60.93	59.47
120.00	60.83	59.32
130.00	60.79	59.15
140.00	60.71	58.97
150.00	60.78	58.78
160.00	60.46	58.56
170.00	60.31	58.30
180.00	60.20	58.00
190.00	60.10	57.57
200.00	60.00	58.26
210.00	59.90	58.88
220.00	59.80	58.11
230.00	59.70	58.13
240.00	59.60	58.18
250.00	59.50	58.20
260.00	59.41	58.15
270.00	59.31	58.10
280.00	59.22	58.02
290.00	59.12	57.87
300.00	59.02	57.73
310.00	58.93	57.55
320.00	58.83	57.30
330.00	58.73	57.05
340.00	58.63	56.88
350.00	58.56	56.67
360.00	58.63	56.47
370.00	58.75	56.31
380.00	58.80	56.39
390.00	58.73	56.55
400.00	58.52	56.83
410.00	58.58	57.00
420.00	58.75	57.33
430.00	58.89	57.54
440.00	59.93	57.44
450.00	59.94	57.32
460.00	58.95	57.20
470.00	58.90	57.12
480.00	58.80	57.04
490.00	58.71	57.01
500.00	58.62	57.01
510.00	58.52	56.95
520.00	58.45	56.70
530.00	58.38	56.45
540.00	58.32	56.30
550.00	58.15	56.16
560.00	57.91	55.96
570.00	57.66	56.52
580.00	57.42	56.38
590.00	57.17	56.20
600.00	56.93	56.06
610.00	56.68	55.95
620.00	56.44	55.95
630.00	56.19	55.93
640.00	55.99	55.91

SECTION

HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

M
04.01

[illegible]

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135 enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
CUT AND FILL SECTIONS
SHEET 14

Scale	AS SHOWN
First Issue Date	25/02/2025

Size	A1
Datum	MGA20

Status

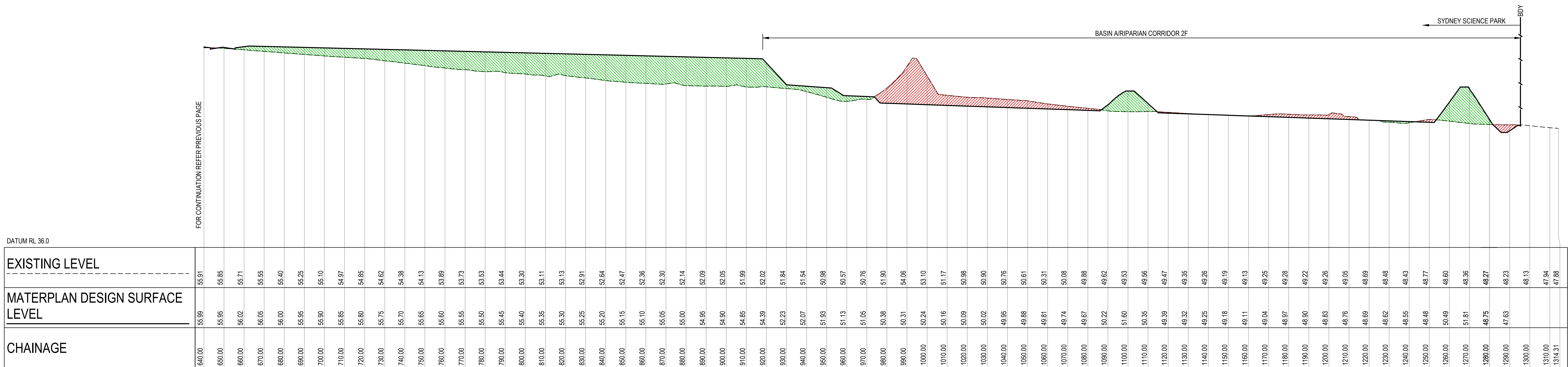
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C04.34

Revisor
3

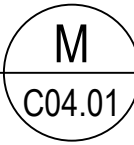
LEGEND

	CUT
	FILL

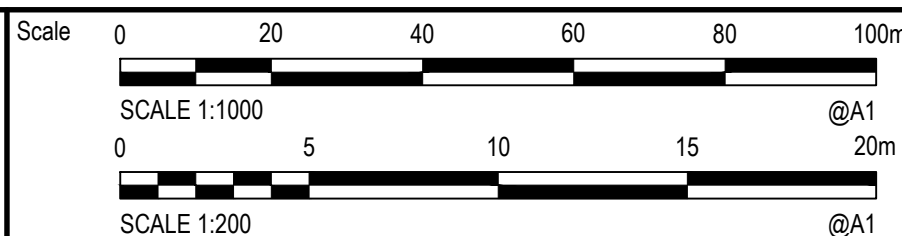


SECTION

HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

[illegible]

Client



The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135 enspiresolutions.com.au

Project	SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS
---------	---

Title
CUT AND FILL SECTIONS
SHEET 15

Scale

First Issue Date
26/02/2025

Size	A1
------	----

MGA2020

Status

FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-05A-SSD1-C04.35

Revisior
2

CHAINAGE	MATERPLAN DESIGN SURFACE LEVEL	EXISTING LEVEL
0.00	47.00	49.76
10.00	47.00	49.77
20.00	47.00	49.80
30.00	47.00	49.82
40.00	47.00	49.82
50.00	47.00	49.81
60.00	49.19	49.79
70.00	51.11	49.79
80.00	52.50	49.86
90.00	53.50	50.05
100.00	54.39	50.57
110.00	54.50	51.15
120.00	54.64	51.58
130.00	54.74	51.91
140.00	54.83	52.26
150.00	54.92	52.60
160.00	55.01	52.95
170.00	55.09	53.28
180.00	55.18	53.48
190.00	55.25	53.72
200.00	55.34	54.01
210.00	55.41	54.29
220.00	55.50	54.54
230.00	55.57	54.80
240.00	55.64	55.09
250.00	55.72	55.55
260.00	55.79	55.53
270.00	55.86	55.86
280.00	55.93	56.06
290.00	55.88	56.21
300.00	55.64	56.33
310.00	55.88	56.30
320.00	55.66	56.21
330.00	55.81	56.01
340.00	55.84	55.82
350.00	55.88	55.62
360.00	55.92	55.40
370.00	55.96	55.18
380.00	56.00	54.98
390.00	56.04	54.76
400.00	56.08	54.56
410.00	55.97	54.16
420.00	55.98	53.80
430.00	55.84	53.61
440.00	55.70	53.58
450.00	55.56	53.32
460.00	55.42	53.15
470.00	55.27	52.92
480.00	55.12	52.50
490.00	55.02	52.31
500.00	55.04	51.98
510.00	55.06	51.78
520.00	55.09	51.71
530.00	55.11	51.63
540.00	55.14	51.63
550.00	55.17	51.67
560.00	55.17	51.75
570.00	55.32	51.85
580.00	55.41	51.99
590.00	55.51	52.15
600.00	55.60	52.33
610.00	55.70	52.52
620.00	55.79	52.65
630.00	55.89	52.85
640.00	55.99	53.03

LAKE

FOR CONTINUATION REFER BELOW

DATUM RL 34.0

LEGEND

CUT

FILL

DATUM RL 41.0	
EXISTING LEVEL	FOR CONTINUATION REFER ABOVE
MATERPLAN DESIGN SURFACE LEVEL	
CHAINAGE	

CHAINAGE	EXISTING LEVEL (RL 41.0)	MATERPLAN DESIGN SURFACE LEVEL (RL 41.0)
640.00	53.03	55.99
650.00	53.27	56.09
660.00	53.47	56.18
670.00	53.48	56.28
680.00	53.61	56.38
690.00	53.86	56.48
700.00	54.20	56.58
710.00	54.95	56.68
720.00	54.87	56.78
730.00	55.14	56.88
740.00	55.99	56.97
750.00	56.01	56.78
760.00	56.41	56.83
770.00	57.36	
780.00	57.40	
790.00	57.40	
800.00	57.40	
810.00	57.36	
815.05	57.28	

[illegible]

SYDNEY METRO

SYDNEY SCIENCE PARK

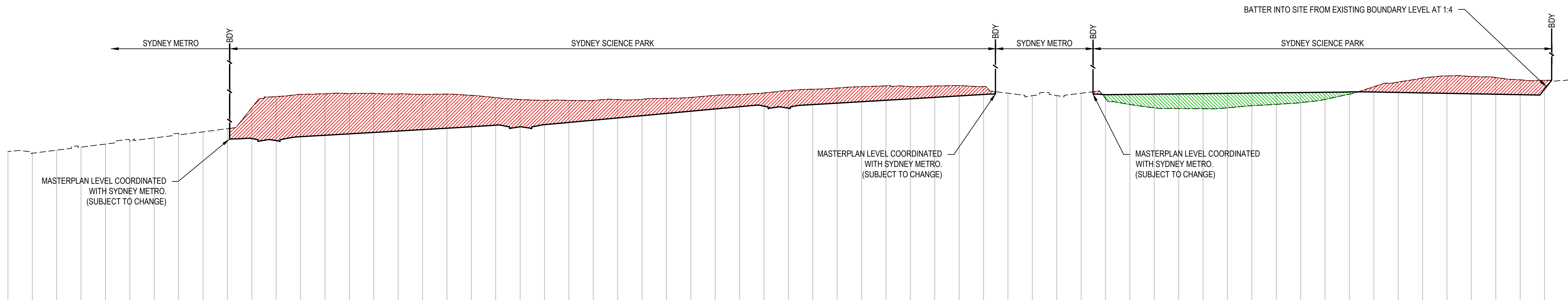
BDY

BDY

MASTERPLAN LEVEL COORDINATED WITH SYDNEY METRO. (SUBJECT TO CHANGE)

SECTION

HORIZONTAL SCALE 1:1000@A1
 VERTICAL SCALE 1:200@A1



SECTION

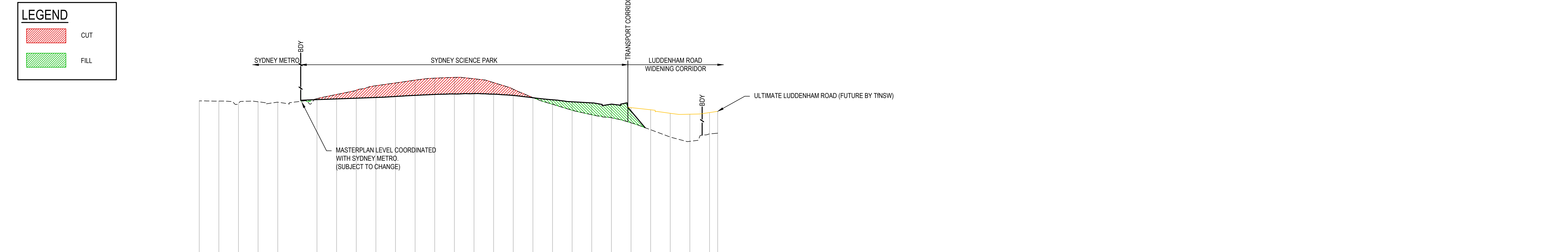
HORIZONTAL SCALE 1:1000@A1
 VERTICAL SCALE 1:200@A1

Client

 **CELESTINO**



Project SYDNEY SCIENCE PARK SSD#1 SITE WIDE CONCEPT CIVIL DESIGN AND EARTHWORKS	Scale	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION	
	AS SHOWN		
	First Issue Date 28/02/2025		
Title CUT AND FILL SECTIONS SHEET 17	Size	Project Number/Drawing Number 180001-05A-SSD1-C04.37	Revision 3
	A1		
	Datum MGA2020		



DATUM RL 44.0

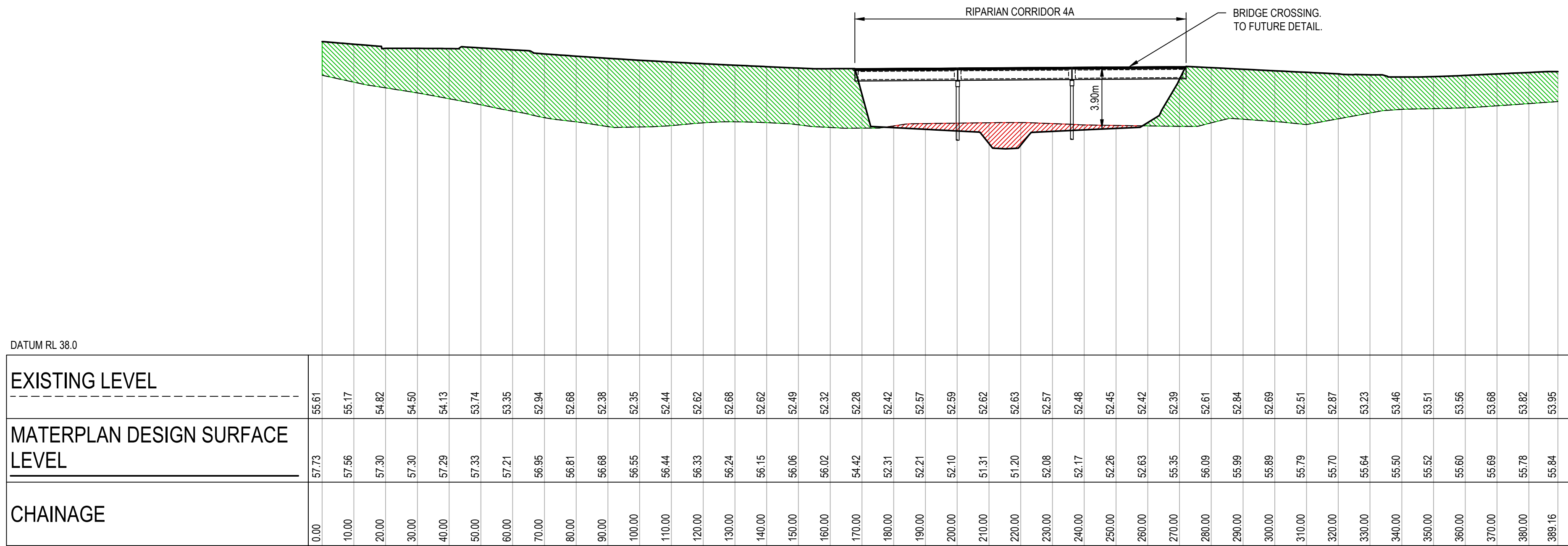
EXISTING LEVEL	60.63	60.62	60.40	60.55	60.51	60.55	60.87	61.29	61.72	62.19	62.47	62.76	62.96	63.03	62.89	62.50	61.83	60.98	60.29	59.68	59.23	58.92	58.40	57.69	56.96	56.51	57.26	57.34
MATERPLAN DESIGN SURFACE LEVEL						60.77	60.84	60.92	60.99	61.09	61.21	61.30	61.35	61.38	61.32	61.20	60.96	60.75	60.54	60.43	60.31	59.61						
CHAINAGE	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00	190.00	200.00	210.00	220.00	230.00	240.00	250.00	260.00	264.18

SECTION Q

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

C04.01



SECTION R

HORIZONTAL SCALE 1:1000@A1

VERTICAL SCALE 1:200@A1

C04.01

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
3	22/09/2025	ISSUED FOR APPROVAL	SS	HJI		SHH
2	17/04/2025	90% ISSUE FOR INFORMATION	RNA	HJI		SHH
1	31/01/2025	60% ISSUE FOR INFORMATION	RAD	HJI		SHH

Client

CELESTINO

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

0 5 10 15 20m

SCALE 1:200 @A1

North

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire

Enspire Solutions Pty Ltd
Level 7, 54 Miller Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
SSD#1 SITE WIDE CONCEPT
CIVIL DESIGN AND EARTHWORKS

Title
CUT AND FILL SECTIONS
SHEET 18

Scale
AS SHOWN
First Issue Date
01/03/2025

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Size
A1

Datum
MGA2020

Project Number/Drawing Number
180001-05A-SSD1-C04.38

Revision
3



Appendix B Transgrid 330kV Transition Concept



NOTES:
1. UNDERGROUND CABLE ROUTE TO BE CONFIRMED.

SYDNEY SCIENCE PARK

NORTHERN
TRANSITION
STATION

20m BUFFER ZONE

NEW POLES

TRANSMISSION LINES AND
STRUCTURES TO BE REMOVED

SOUTHERN
TRANSITION
STATION

20m BUFFER ZONE

NEW POLES

TRANSMISSION LINES AND
STRUCTURES TO BE REMOVED

PRELIMINARY

AMENDMENT:
TRANSITION STATION'S RELOCATED.
NEW POLES.
NOTE 1 ADDED.



SSP-PD-SK-103 SOUTHERN TRANSITION STATION GA
SSP-PD-SK-104 NORTHERN TRANSITION STATION GA

DRAWN
REVIEWED
VERIFIED
APPROVED
PRELIMINARY
SCALE 1:100

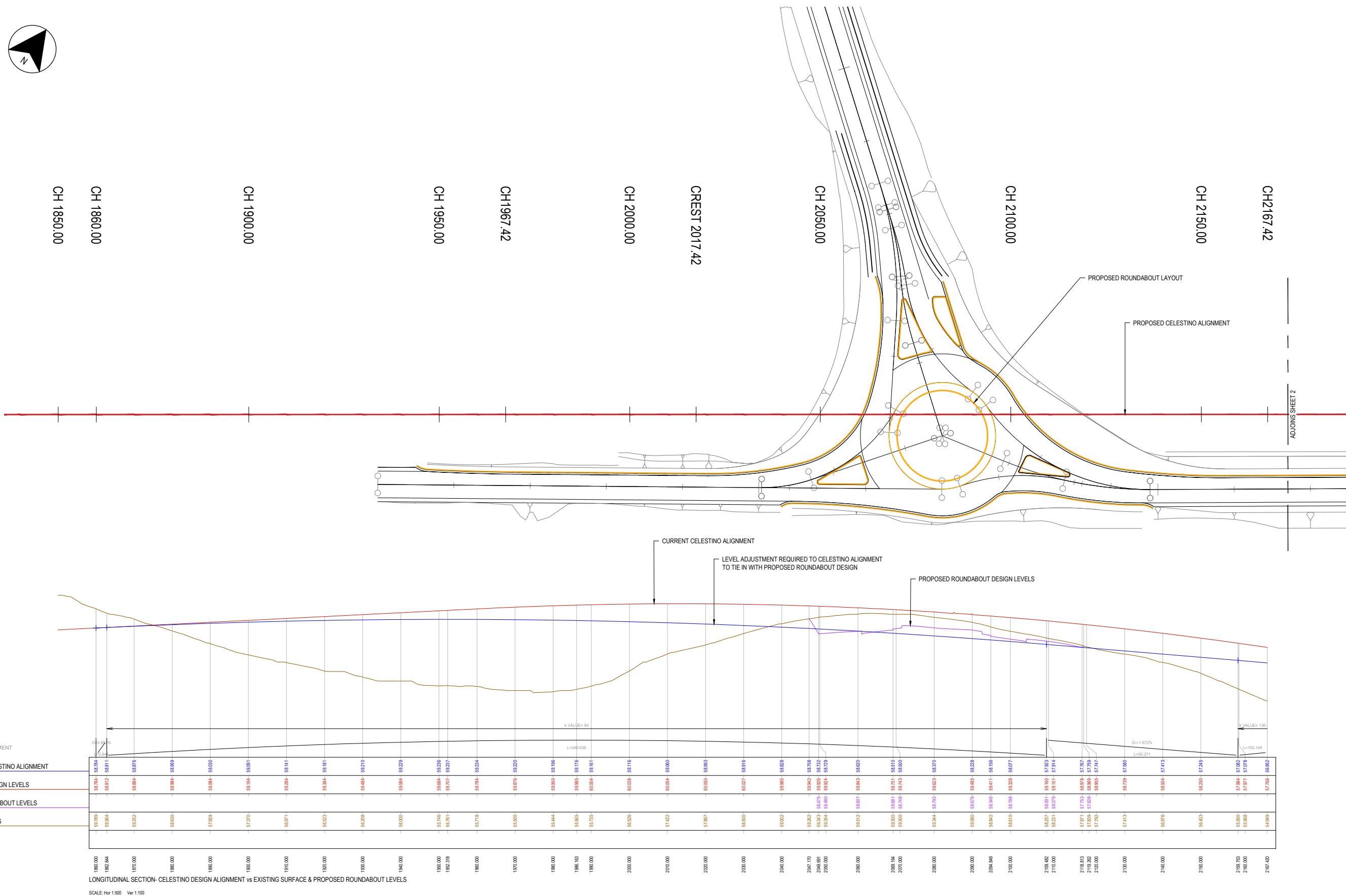
SYDNEY SCIENCE PARK TRANSITION SITE
SYDNEY TRANSITION SITE
SITE LAYOUT
NEGOTIATED SCOPE
A0
SSP-PD-SK-201
03
PREFIX NUMBER SHEET AMDT
INDEX CLASS N 06-02

PLOT ISSUE DATE 25/11/2019 3:10:34 PM C:\PLOT FROM SUPERSEDES SUPERSEDED BY

This drawing is copyright and is the property of TransGrid. It is to be used for the purpose for which it was prepared and no other use without the prior permission in writing of TransGrid.

80x1158mm SOURCE DESIGN FILE\\Build HV Network\\ENG SS HIGH VOLTAGE DESIGN\\Tenders\\Sydney Science Park\\3.Drawings\\CAD\\SSP-PD-SK-20103 (Site Layout).DGN

Appendix C Sydney Metro Luddenham Road Commentary



Proj Date: 12/10/22 - 13:01 Cad File: C:\Users\shreth\OneDrive\Documents\14524\SMWSAEDS-SMD-LDN-CV-SKE-200501.dwg

100mm AT FULL SIZE

100mm

A1 Original		Co-ordinate System: GDA94		Height Datum: AHD		This sheet may be prepared using colour and may be incomplete if copied	
A		FOR INFORMATION ONLY		BS		MH	
No.		Amendment Description		Design by		Verified by	
				Approved by		Date	
						14/10/22	

SCALES



NOTE: Do not scale from this drawing.



Security: OFFICIAL

FOR INFORMATION

The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.			
SERVICE PROVIDERS			
DRAWN	BAVIS SHRESTHA	10/10/22	
DESIGNED	BAVIS SHRESTHA	11/10/22	
DRG CHECK	MARTIN HOUSTON	12/10/22	
DESIGN CHECK	BRUCE PUCKNELL	13/10/22	
APPROVED	JONATHAN BABER	14/10/22	

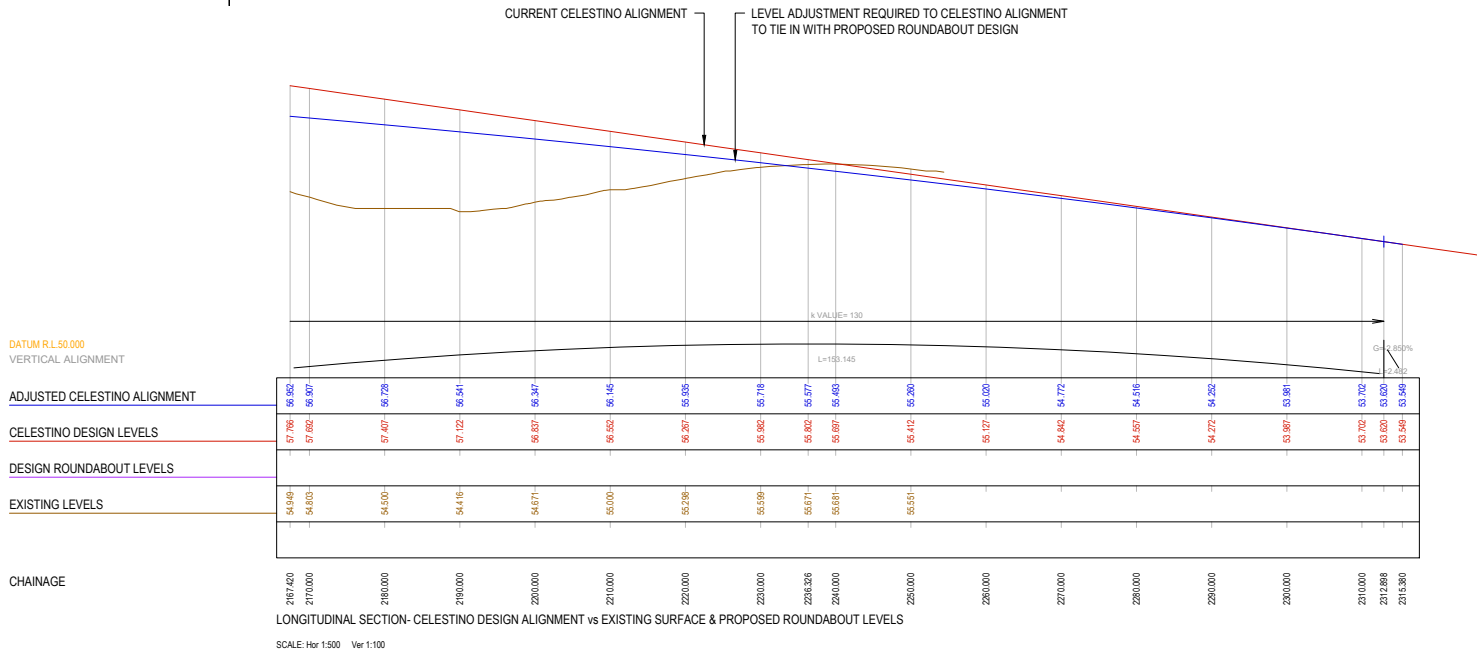
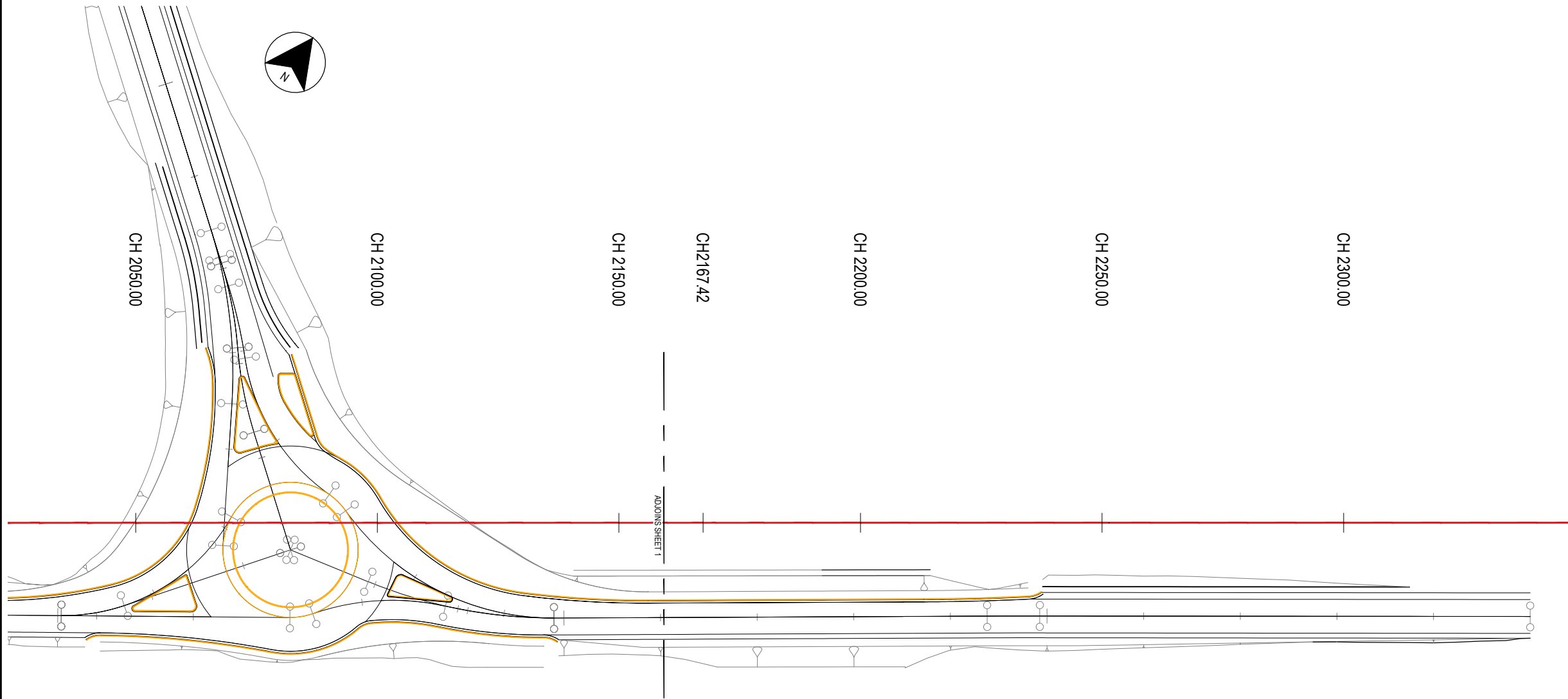
SYDNEY METRO WESTERN SYDNEY AIRPORT			
LUDDENHAM STATION			
CIVIL DESIGN			
ROADWORKS			
LUDDENHAM ROAD UPGRADE - SHEET 1			
DOCUMENT No:		SHEET: 1 OF 2	
STATUS: FOR INFORMATION		EDMS NO:-	
DRG No. SMWSAEDS-SMD-LDN-CV-SKE-200501		REV	VER
		A	-

Cad File: C:\Users\shrd42\appdata\local\temp\shrd42\14524\SMWSAEDS-SMD-LDN-CV-SKE-200501.dwg

Plot Date: 12/10/22 - 13:01

100mm AT FULL SIZE

100mm



A1 Original		Co-ordinate System: GDA94		Height Datum: AHD		This sheet may be prepared using colour and may be incomplete if copied	
BS		MH		JB		14/10/22	
Design by		Verified by		Approved by		Date	



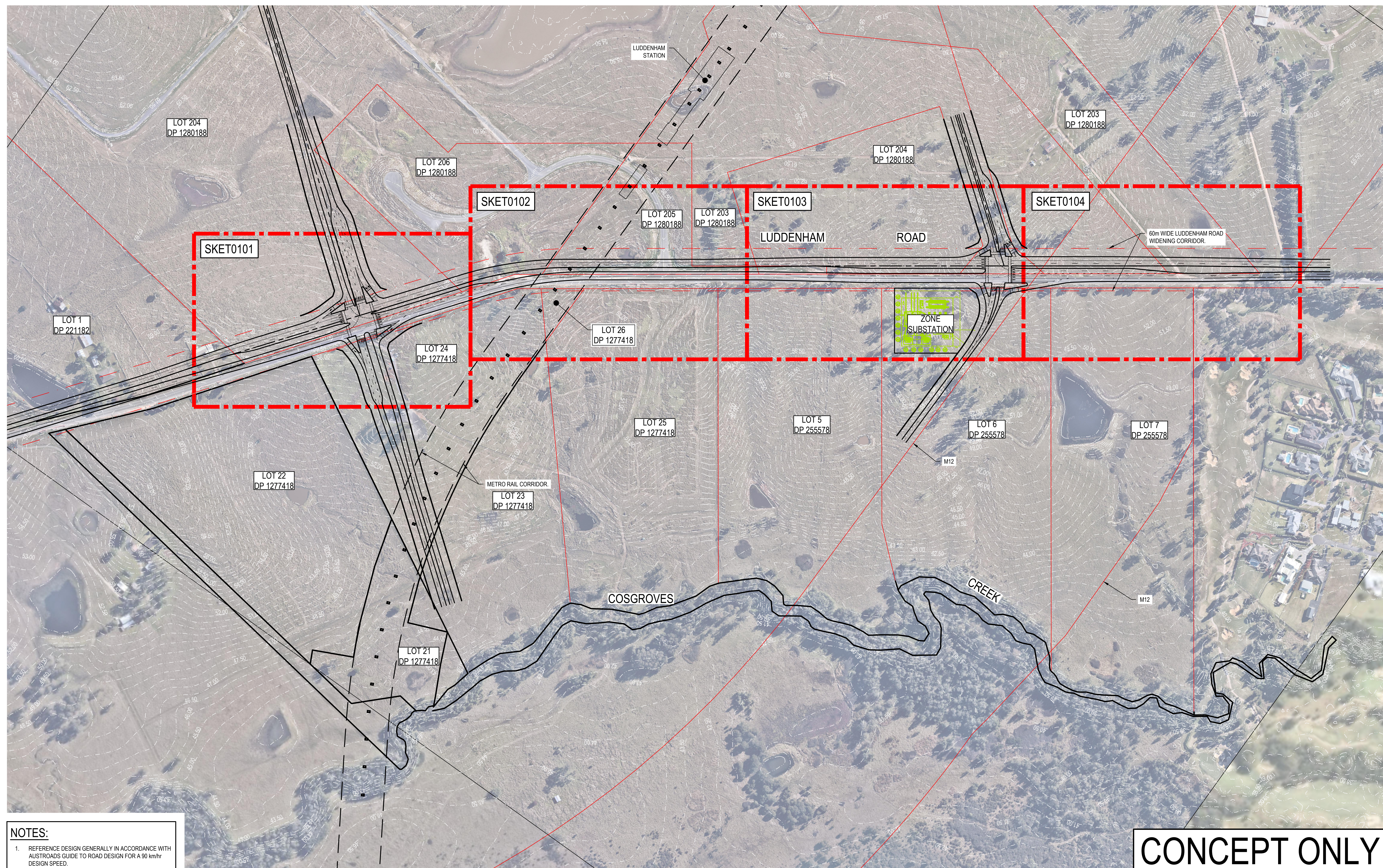
Security: OFFICIAL

FOR INFORMATION

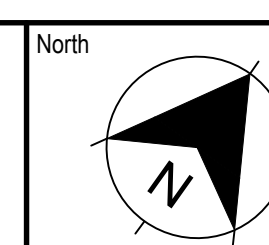
The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.			
SERVICE PROVIDERS			
DRAWN	BAVIS SHRESTHA	10/10/22	
DESIGNED	BAVIS SHRESTHA	11/10/22	
DRG CHECK	MARTIN HOUSTON	12/10/22	
DESIGN CHECK	BRUCE PUCKNELL	13/10/22	
APPROVED	JONATHAN BABER	14/10/22	

SYDNEY METRO WESTERN SYDNEY AIRPORT			
LUDDENHAM STATION			
CIVIL DESIGN			
ROADWORKS			
LUDDENHAM ROAD UPGRADE - SHEET 2			
DOCUMENT No:		SHEET: 2 OF 2	
STATUS: FOR INFORMATION		EDMS NO:-	
DRG No. SMWSAEDS-SMD-LDN-CV-SKE-200502		REV	VER
		A	-

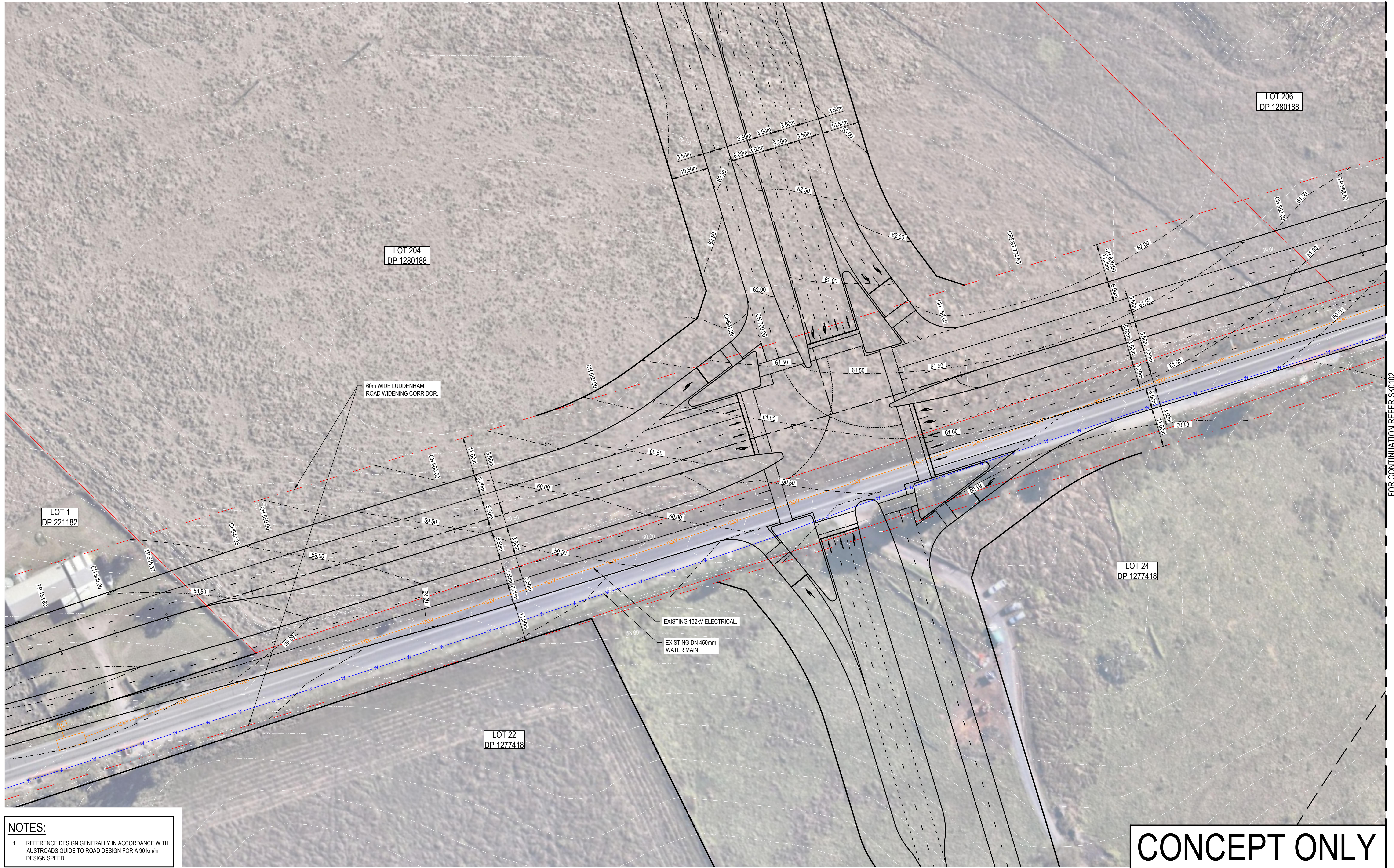
Appendix D Future Luddenham Road Widening Reference Design



1	27/06/2023	CONCEPT ISSUE	JS	SHH			SHH
REV	DATE	DESCRIPTION	DRN	DEF	VERIF		APPR



 Project SYDNEY SCIENCE PARK 565-609 LUDDENHAM ROAD, LUDDENHAM	Scale 1:2500	Status CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION
	Date 27/06/2023	
Title LUDDENHAM ROAD UPGRADE CELESTINO REFERENCE DESIGN GENERAL ARRANGEMENT PLAN	Size A1 Datum MGA2020	Project Number/Drawing Number 180001-SK-LR-0100 Revision 1



NOTES:

1. REFERENCE DESIGN GENERALLY IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN FOR A 90 km/hr DESIGN SPEED.

FOR CONTINUATION REFER SK0102

REV.	DATE	DESCRIPTION	JS	SHH	SHH
1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH

Client

SYDNEY SCIENCE PARK

CELESTINO

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

North

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
SITEWORKS PLAN
SHEET 1

Scale 1:500	Status CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION
Date 27/06/2023	Project Number/Drawing Number 180001-SK-LR-0101
Size A1	Revision 1
Datum MGA2020	

NOTES:

1. REFERENCE DESIGN GENERALLY IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN FOR A 90 km/hr DESIGN SPEED.

LOT 206
DP 1280188

LOT 205
DP 1280188

LOT 203
DP 1280188

60m WIDE LUDDENHAM
ROAD WIDENING CORRIDOR.

INDICATIVE VIADUCT COLUMN
LOCATION.
(TYP).

EXISTING 132kV ELECTRICAL.

EXISTING DN 450mm
WATER MAIN.

LOT 26
DP 1277418

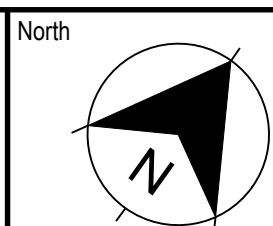
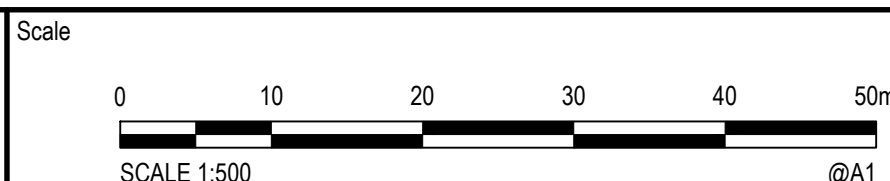
LOT 24
DP 1277418

LOT 25
DP 1277418

LOT 5
DP 255578

CONCEPT ONLY

REV.	DATE	DESCRIPTION	JS	SHH	SHH
1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH



Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
SITEWORKS PLAN
SHEET 2

Scale
1:500

Date
27/06/2023

Size
A1

Datum
MGA2020

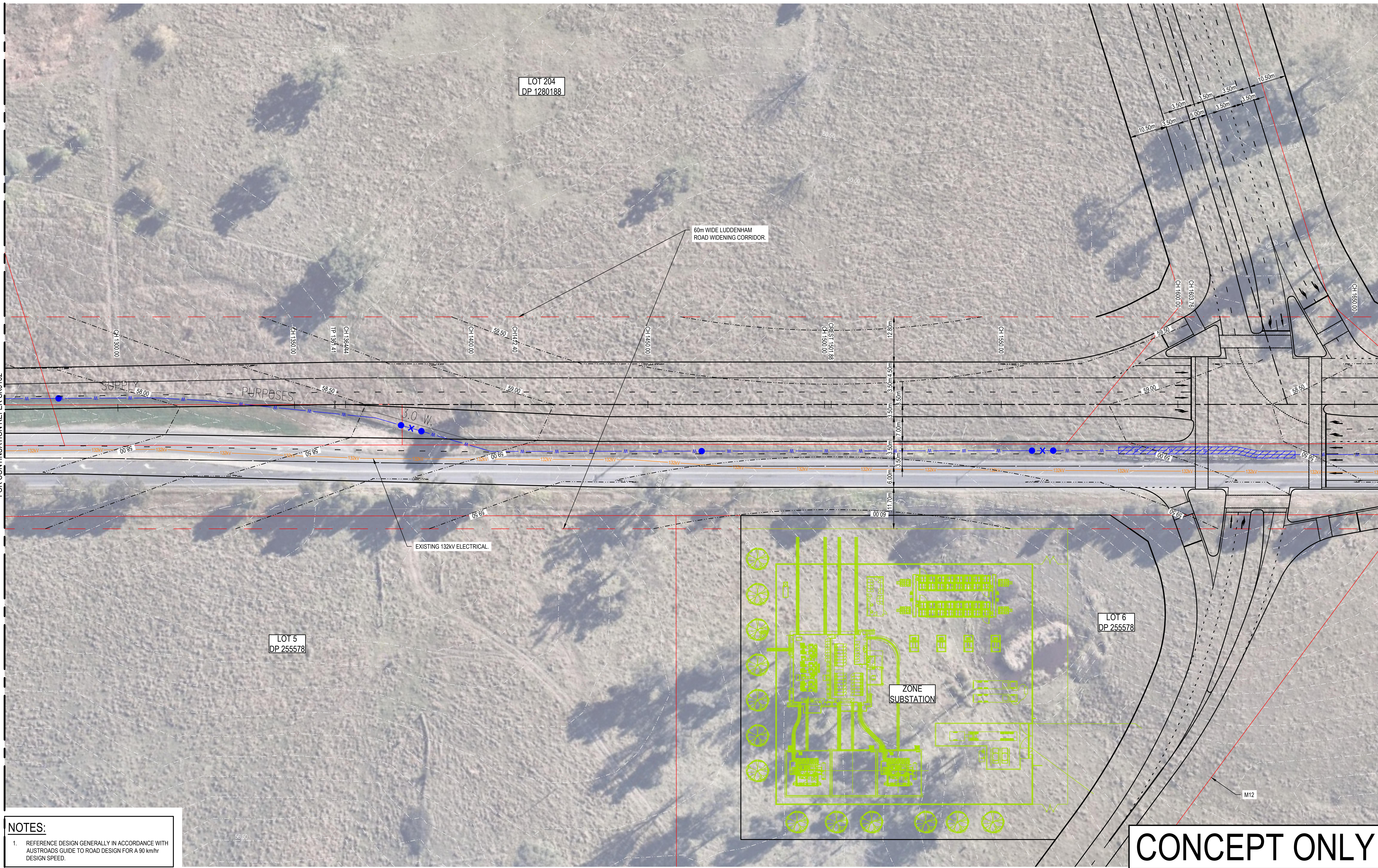
Status
CONCEPT APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-SK-LR-0102

Revision
1

FOR CONTINUATION REFER SK0102

FOR CONTINUATION REFER SK0104



NOTES:
1. REFERENCE DESIGN GENERALLY IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN FOR A 90 km/hr DESIGN SPEED.

CONCEPT ONLY

REV.	DATE	DESCRIPTION	JS	SHH	SHH
1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH

Client

SYDNEY SCIENCE PARK

CELESTINO

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

North

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
SITEWORKS PLAN
SHEET 3

Scale
1:500

Date
27/06/2023

Size
A1

Datum
MGA2020

Status
CONCEPT APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-SK-LR-0103

Revision
1

FOR CONTINUATION REFER SK0103



NOTES:

1. REFERENCE DESIGN GENERALLY IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN FOR A 90 km/hr DESIGN SPEED.

CONCEPT ONLY

REV.	DATE	DESCRIPTION	JS	SHH	SHH
1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH

Client

 **SYDNEY SCIENCE PARK**

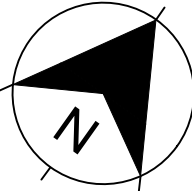
 **CELESTINO**

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

North



The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

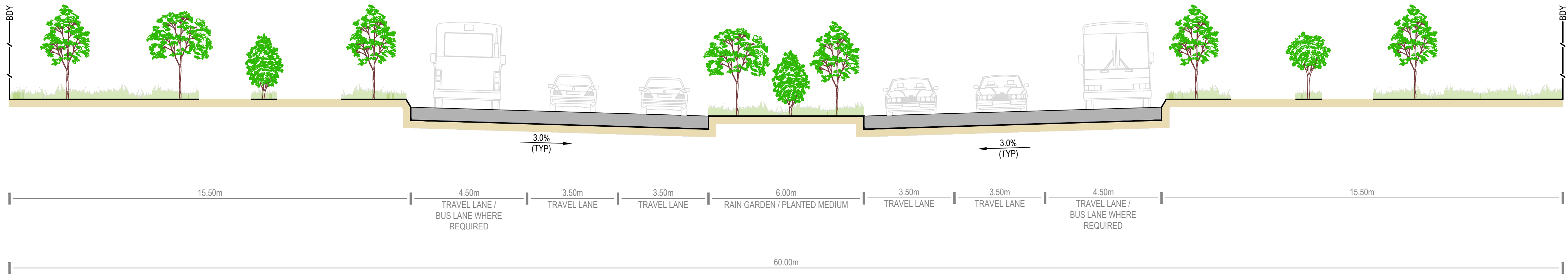


Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
SITEWORKS PLAN
SHEET 4

Scale 1:500	Status CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION
Date 27/06/2023	Project Number/Drawing Number 180001-SK-LR-0104
Size A1	Revision 1
Datum MGA2020	



LUDDENHAM ROAD
SCALE 1:100

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
1	27/06/2023	CONCEPT ISSUE	JS	SHH		SHH

Client



**SYDNEY
SCIENCE PARK**

CELESTINO

Scale



0 1 2 4 6 8 10m
SCALE 1:100 @A1

North



enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
CROSS SECTION AND LONG SECTION
SHEET 1

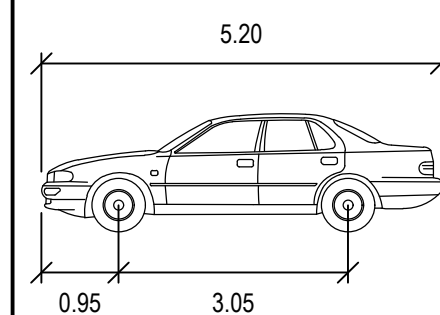
Scale
AS SHOWN
Date
27/06/2023

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-SK-LR-0105

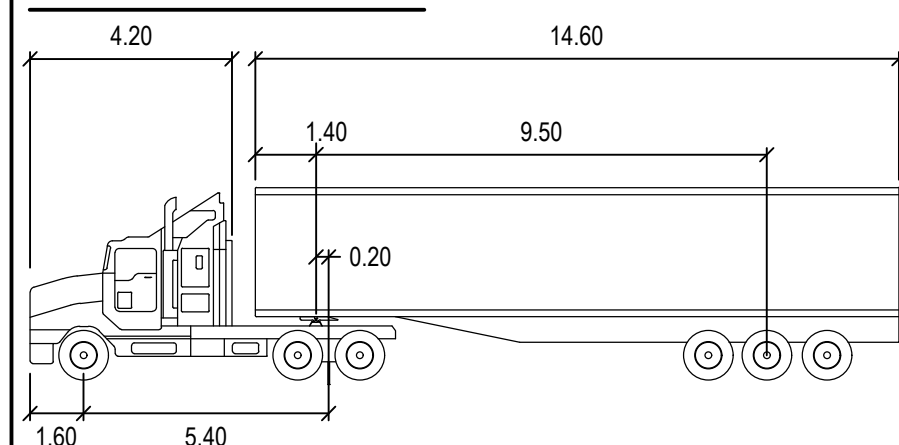
Revision
1

VEHICLE PROFILE:

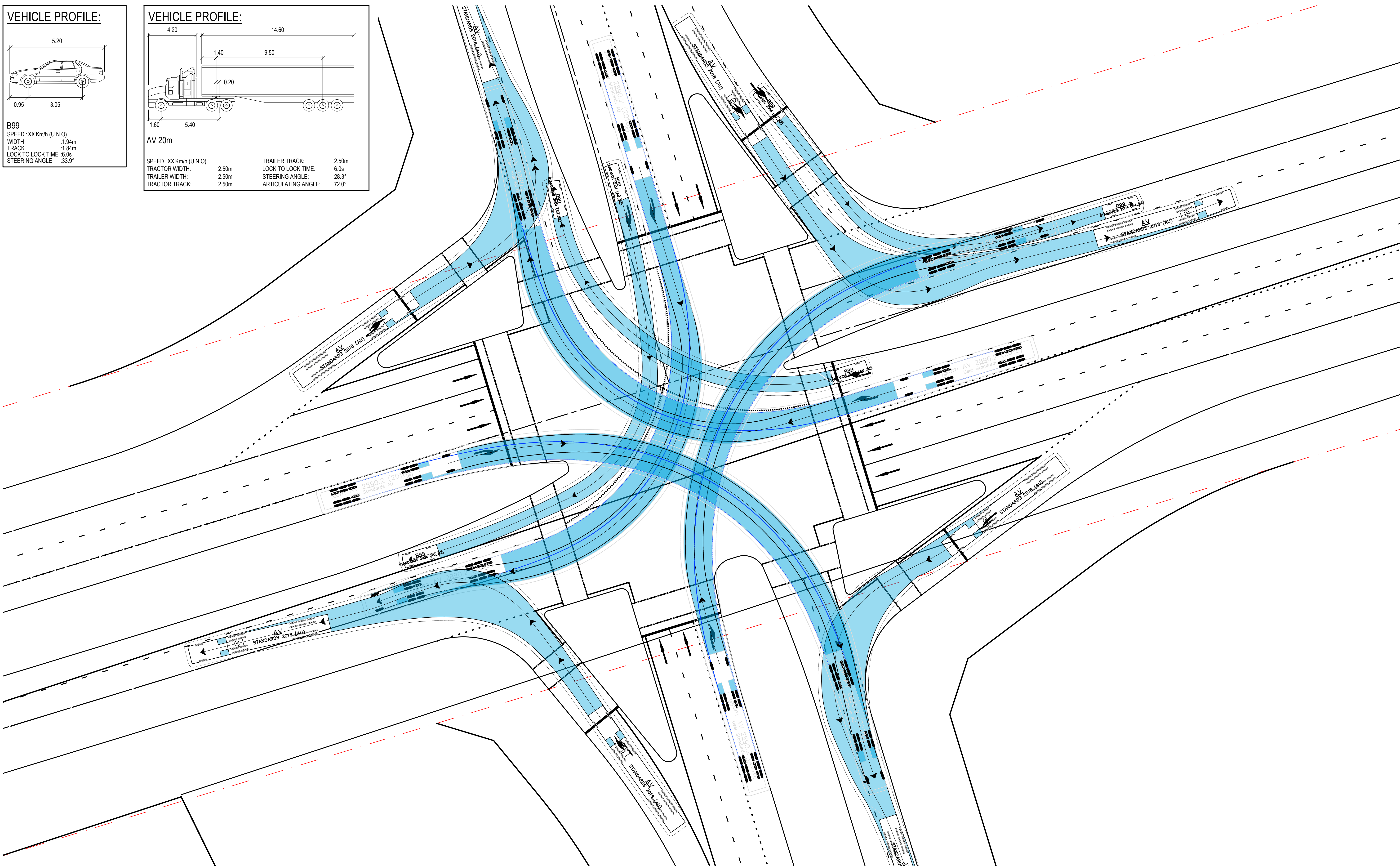


B99
SPEED : XX Km/h (U.N.O)
WIDTH : 1.94m
TRACK : 1.84m
LOCK TO LOCK TIME : 6.0s
STEERING ANGLE : 33.9°

VEHICLE PROFILE:

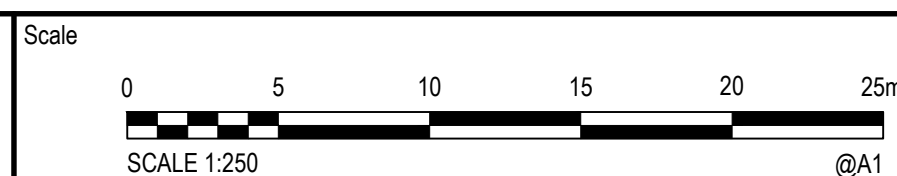


AV 20m
SPEED : XX Km/h (U.N.O)
TRACTOR TRACK : 2.50m
TRACTOR WIDTH : 2.50m
TRAILER TRACK : 2.50m
TRAILER WIDTH : 2.50m
LOCK TO LOCK TIME : 6.0s
STEERING ANGLE : 28.3°
ARTICULATING ANGLE : 72.0°

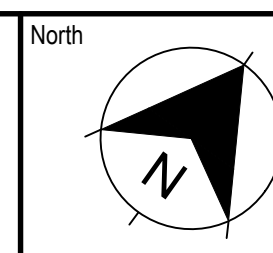


TURNING PATH
SCALE 1:250

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH	



The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



enspire
Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM
Title
LUDDENHAM ROAD UPGRADE
TURNING PATH PLAN
SHEET 1

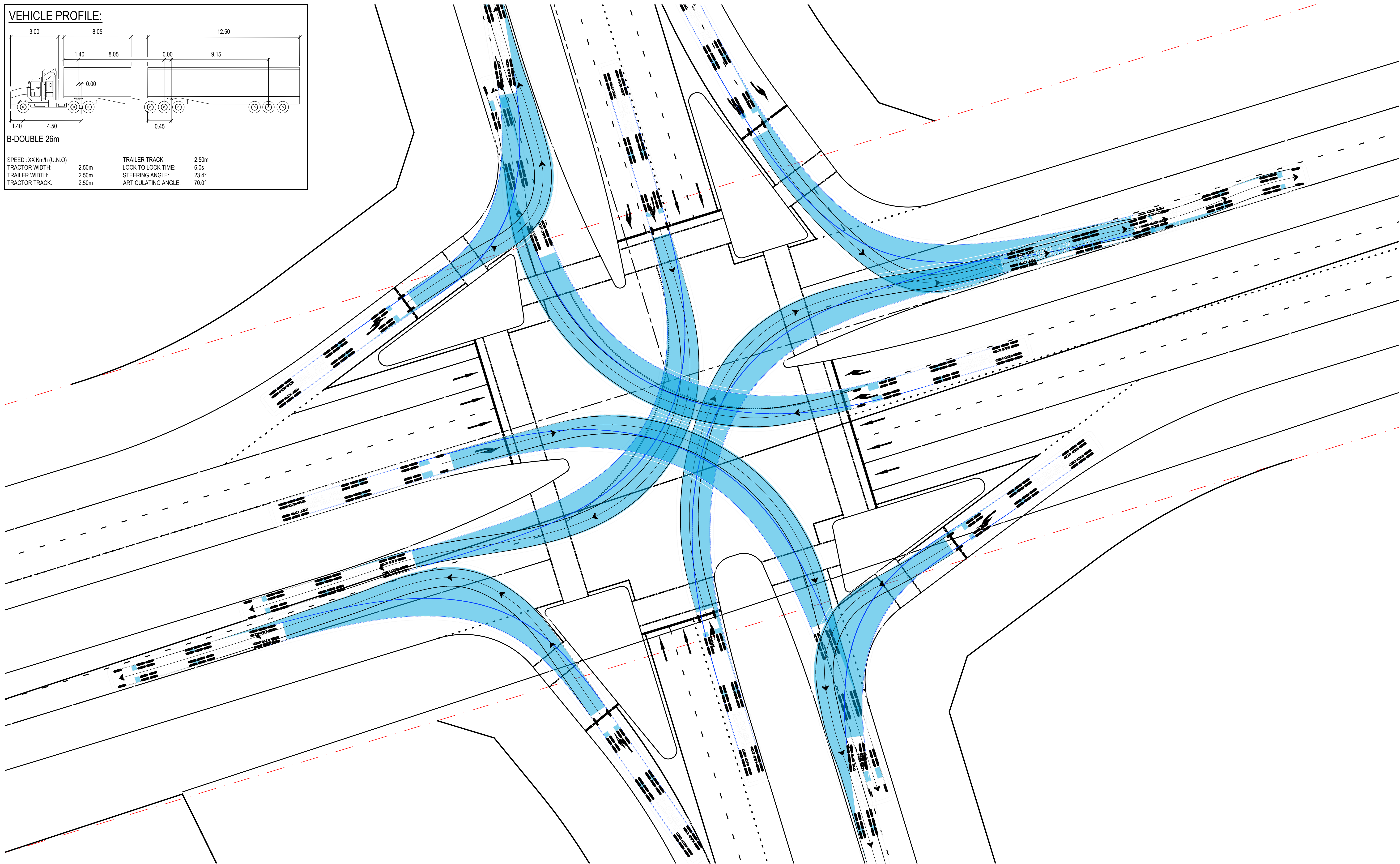
Scale
1:250
Date
27/06/2023
Size
A1
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION
Project Number/Drawing Number
180001-SK-LR-0107
Revision
1

VEHICLE PROFILE:

B-DOUBLE 26m

SPEED : XX Km/h (U.N.O)	TRAILER TRACK:	2.50m
TRACTOR WIDTH:	LOCK TO LOCK TIME:	6.0s
TRAILER WIDTH:	STEERING ANGLE:	23.4°
TRACTOR TRACK:	ARTICULATING ANGLE:	70.0°



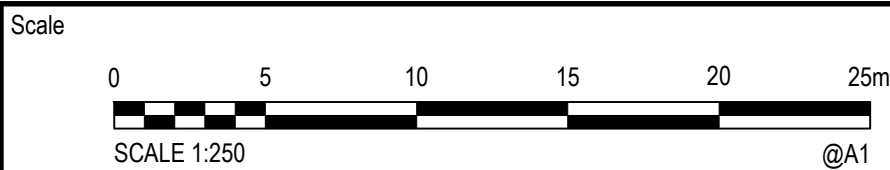
TURNING PATH
SCALE 1:250

1	27/06/2023	CONCEPT ISSUE	JS	SHH	SHH
REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF./APPD.

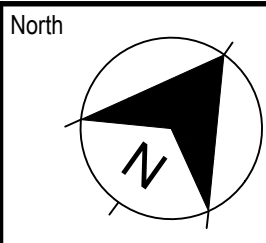
Client

SYDNEY SCIENCE PARK

CELESTINO



The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title
LUDDENHAM ROAD UPGRADE
TURNING PATH PLAN
SHEET 2

Scale
1:250

Date
27/06/2023

Size
A1

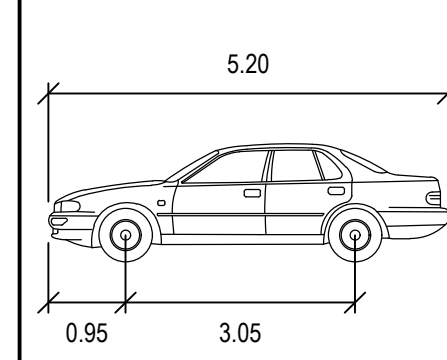
Datum
MGA2020

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
180001-SK-LR-0108

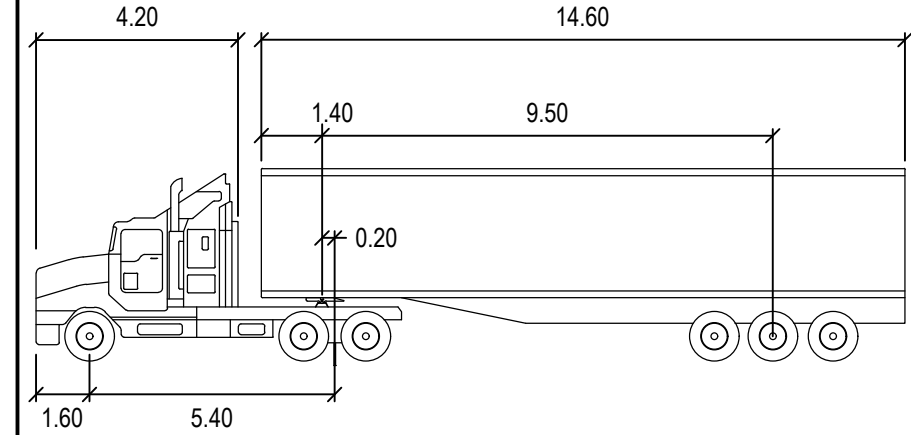
Revision
1

VEHICLE PROFILE:

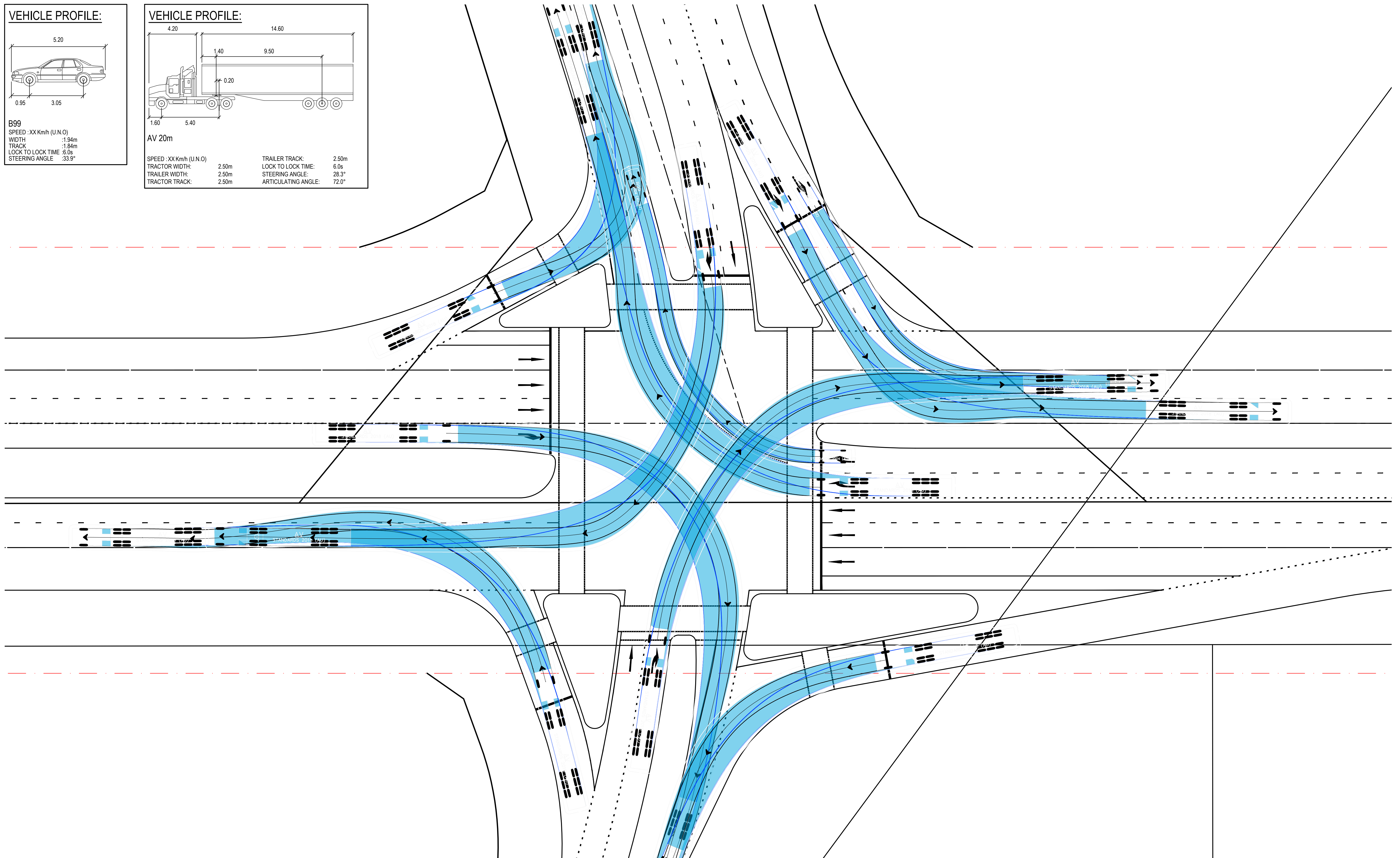


B99
SPEED : XX Km/h (U.N.O)
WIDTH : 1.94m
TRACK : 1.84m
LOCK TO LOCK TIME : 6.0s
STEERING ANGLE : 33.9°

VEHICLE PROFILE:



AV 20m
SPEED : XX Km/h (U.N.O) TRAILER TRACK: 2.50m
TRACTOR WIDTH: 2.50m LOCK TO LOCK TIME: 6.0s
TRAILER WIDTH: 2.50m STEERING ANGLE: 28.3°
TRACTOR TRACK: 2.50m ARTICULATING ANGLE: 72.0°



TURNING PATH
SCALE 1:250

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
1	27/06/2023	CONCEPT ISSUE	JS	SHH		SHH

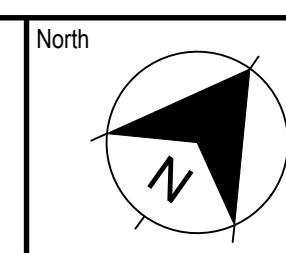
Client

SYDNEY SCIENCE PARK

CELESTINO



The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

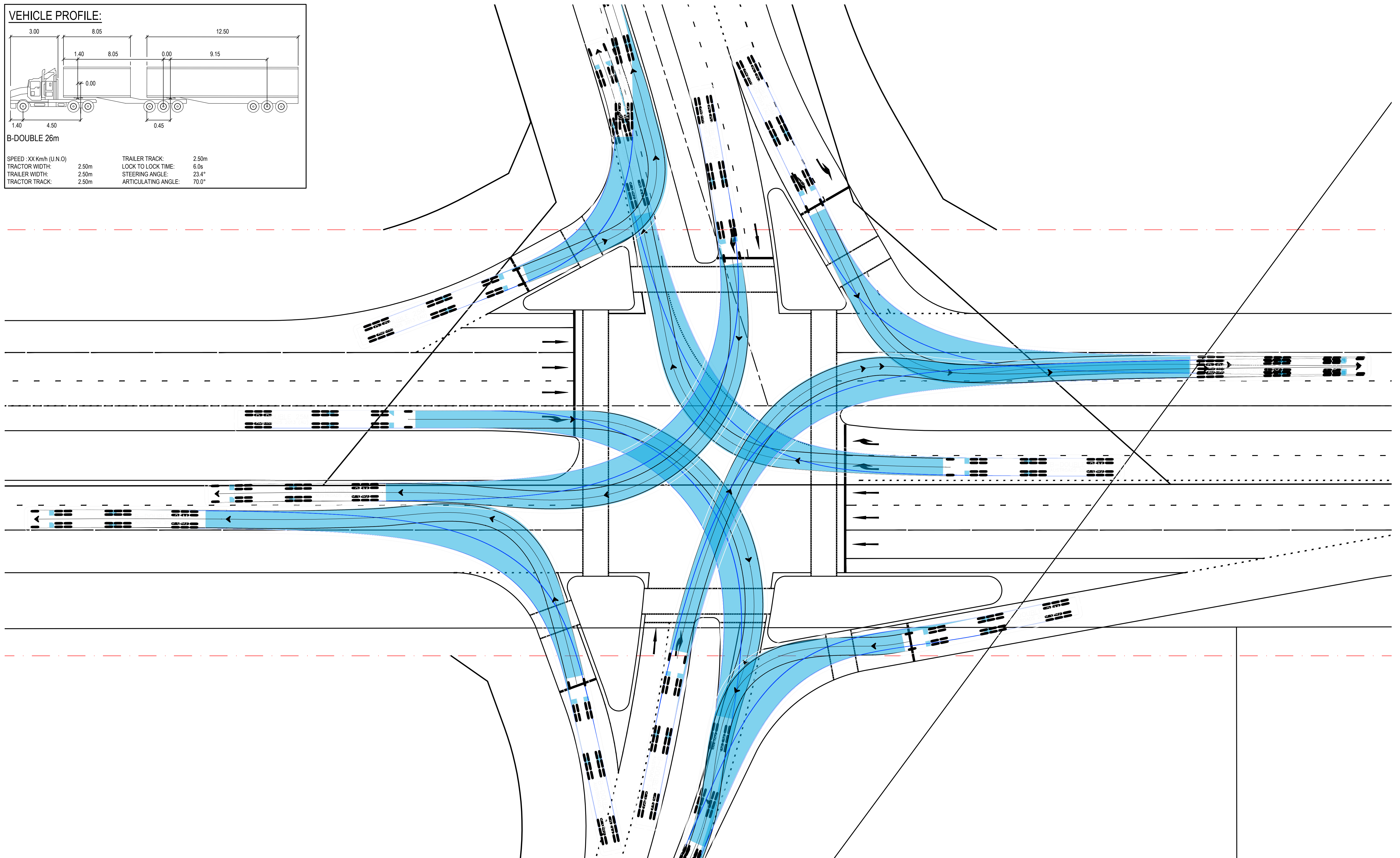
Title
LUDDENHAM ROAD UPGRADE
TURNING PATH PLAN
SHEET 3

Scale 1:250	Status FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION
Date 27/06/2023	Project Number/Drawing Number 180001-SK-LR-0109
Size A1	Revision 1
Datum MGA2020	

Technical drawing of a truck with dimensions in meters:

- Cab width: 3.00
- Cab height: 1.40
- Trailer height: 0.00
- Trailer width: 8.05
- Total trailer length: 12.50
- Wheelbase: 4.50

SPEED : XX Km/h (U.N.O)	TRAILER TRACK:	2.50m
TRACTOR WIDTH: 2.50m	LOCK TO LOCK TIME:	6.0s
TRAILER WIDTH: 2.50m	STEERING ANGLE:	23.4°
TRACTOR TRACK: 2.50m	ARTICULATING ANGLE:	70.0°



SCALE 1:250

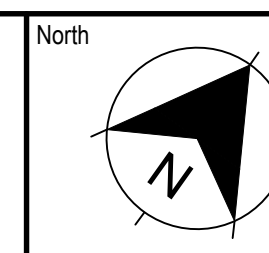
[illegible]

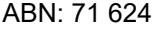
Scale

0 5 10 15 20 25m

SCALE 1:250 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.



 **enspire**

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project
SYDNEY SCIENCE PARK
565-609 LUDDENHAM ROAD, LUDDENHAM

Title	LUDDENHAM ROAD UPGRADE TURNING PATH PLAN SHEET 4
-------	--

Scale	1:250
Date	27/06/2023
Size	A1
Datum	MGA2020

Status

FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number	180001-SK-LR-0110
-------------------------------	-------------------

on

Appendix E Rail Corridor Risks and Hazards Assessment Report

Sydney Science Park SSD #1 Sitewide Concept

Rail Corridor Risks and Hazards Assessment Report



Prepared for Celestino Developments
SSP Pty Limited

09 September 2025

Document Information

Prepared by
Enspire Solutions Pty Ltd
Level 7, 54 Miller Street
North Sydney NSW 2060
ABN 71 624 801 690

© Enspire 2025. Copyright in the whole and every part of this document belongs to Enspire and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Enspire.

This document is produced by Enspire solely for the benefit and use by the client in accordance with the terms of the engagement. Enspire does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Document Title	Sydney Science Park SSD #1 Sitewide Concept
Document Subject	Rail Corridor Risks and Hazards Assessment Report
Prepared For	Celestino Developments SSP Pty Limited
Project Name	Sydney Science Park
Application Number	SSD-78774218
Project Number	180001
File Name	(appendix e) rail corridor risks and hazards assessment.docx

Transmittal

[illegible]



Contents

1 Introduction	1
2 Risks and Hazards Assessment Framework.....	2
3 Risks and Hazards Assessment Key Outcomes	2

List of Figures

Figure 1 – Subject Site.....	1
------------------------------	---

List of Appendices

Appendix A	Risks and Hazard Assessment
------------	-----------------------------



1 Introduction

This Risks and Hazards Assessment report has been prepared to support a State Significant Development (**SSD**) application for Sydney Science Park (**SSP**) to identify and mitigate risks and hazards that may affect the Sydney Metro – Western Sydney Airport corridor in accordance with the *Sydney Metro – Technical Services – Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines*.

A general arrangement plan of the Subject Site is shown in **Figure 1**.



Figure 1 – Subject Site

Rail corridor highlighted red. Sydney Metro lands for access roads and residue development highlighted in orange.



2 Risks and Hazards Assessment Framework

This report assesses the potential impacts of concept design proposed adjacent the Sydney Metro rail corridor, noting that the concept component of the proposal does not seek consent for works adjacent the rail corridor. A separate Risks and Hazards Assessment has been prepared for the Stage 1 component of the proposal which does propose works adjacent the rail corridor.

Identification of risks and hazards has been informed by the *Sydney Metro – Technical Services – Sydney Metro At Grade and Elevated Sections Corridor Protection Guidelines*, Prepared by Sydney Metro, dated September 2018 and the following methodology:

1. Identification of risks and hazards.
2. Assessment of initial consequences and likelihood with no action.
3. Identification of potential risk and hazard reduction options adopting a hierarchy of control framework (e.g. eliminate, replace, reduce etc.).
4. Reassessment of residual consequences and likelihood with adoption of risk and hazard reduction options.
5. Status of identified risks and hazards.

The risks and hazards assessment is provided in **Appendix A**.

3 Risks and Hazards Assessment Key Outcomes

Risks and hazards associated with the concept design phase of the proposed development have been considered with residual risk levels generally low based on design actions being implemented in the design.

This risks and hazards assessment is to be revisited and updated at future milestone of the development.

Appendix A Risks and Hazard Assessment

Risks and Hazards Assessment

Prepared For:	Celestino Developments SSP Pty Limited
Project Name:	Sydney Science Park
Project Number:	180001
Date:	9/09/2025
Prepared by:	S. Hotong
Reviewed by:	

V	Very High	Consider alternative option or modify design to reduce risk level. Only accept design if justifiable on other grounds.
H	High	Consider alternative option or modify design to reduce risk level. Only accept design if justifiable on other grounds.
M	Moderate	Review risks to determine if they can be further reduced by simple design changes
L	Low	Review risks to determine if they can be further reduced by simple design changes

Item	Activity	Risk / Hazard	Stage	Initial Risk			Design Action	Residual Risk			Person Responsible for Controls	Status
				Likelihood	Consequence	Risk Level		Likelihood	Consequence	Risk Level		
1	Excavation and trenching	Impact on structural integrity of existing viaduct piers.	Design	3	4	Very High	Interface with existing levels at the rail corridor boundary.	1	1	Low	Designer	Implemented
2	Landscaping & tree planting works	Reduced capability to undertake maintenance work on the viaduct and viaduct piers. Reduced access capability.	Design	3	2	Moderate	Design landscaping to be outside the rail corridor.	1	1	Low	Designer	Implemented
3	Road works	Stormwater flow regime changes having impact on viaduct or viaduct piers.	Design	3	3	High	Coordinate with Sydney Metro to establish detail design levels at the rail corridor boundary to interface with (where these will differ to existing). Coordinate with Sydney Metro to establish overland flow paths across and through the rail corridor.	1	1	Low	Designer	Implemented
4	Operation of a road within vicinity of viaduct piers	Vehicle impact with piers.	Design	3	4	Very High	Coordinate with Sydney Metro to establish concept road levels at road crossings under the viaduct for vertical clearance compliance.	1	1	Low	Designer	Implemented
5	Operation of a road under viaduct	Vehicle impact with viaduct.	Design	3	4	Very High	Coordinate with Sydney Metro to establish concept road levels at road crossings under the viaduct for vertical clearance compliance.	1	1	Low	Designer	Implemented