

Oakdale West Estate Kemps Creek Lot 4A & 4B Civil Report

CLIENT/ GOODMAN

DATE/ SEPTEMBER 2022

CODE/ REP106-03-15-272

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Contents

1	Exec	utive Summary	1				
2	Intro	oduction	3				
	2.1	Scope of Report	3				
3	Stor	mwater Management					
	3.1	The Existing Site	4				
	3.2	Proposed Site Stormwater Drainage	4				
	3.3	Council Requirements, SSD Consent Conditions & Recommendations	5				
		3.3.1 Modelling Software	5				
		3.3.2 Hydrology	5				
		3.3.3 Hydraulics	<i>6</i>				
		3.3.4 Catchments	7				
		3.3.5 Overland Flows	7				
	3.4	Conclusion	7				
4	Wat	Water Balance					
	4.1	General	8				
	4.2	Water Balance Objective	8				
	4.3	Water Balance End Uses	8				
	4.4	Total Site Demands and Non-Potable Re-use Rates	8				
	4.5	Rainwater Reuse	8				
	4.6	Rainwater Tank Model Assumptions	9				
		4.6.1 Rainfall Received	9				
		4.6.2 Roof Wetting, First Flush Diversions and Overflow					
	4.7	Conclusion	10				
5	Sedi	mentation and Erosion Control	11				
	5.1	Sedimentation and Erosion Control (Construction)	11				
		5.1.1 Design of Sediment and Erosion Control Measures	11				
	5.2	Site Inspection and Maintenance					
		5.2.1 Sediment Basin Maintenance	12				
	53	Conclusion	12				



APPENDICIES

Appendix A – Proposed Site Plans, Staging and Catchment Plans

Appendix B – List of Civil Works Drawings

Abbreviations

OWIE Oakdale West Industrial Estate

WNSLR Western North South Link Road (Now Compass Drive)

TfNSW Transport for NSW

OEH Office of Environment and Heritage

EP Equivalent Persons

ET Equivalent Tenancy

IWM Integrated Water Management

GPS Goodman Property Services (Aust) Pty Ltd

STP Sewerage Treatment Plant

SWC Sydney Water Corporation

WELS Water Efficiency Labelling

EIS Environmental Impact Statement

SSDA State Significant Development Application

RMS Roads and Maritime Service

EPLR Erskine Park Link Road



1 Executive Summary

AT&L has been engaged by Goodman Property Services (Aust) Pty Ltd to provide a Civil report to support the Development Application for the proposed industrial buildings 4A & 4B at the Oakdale West Industrial Estate (OWIE). The Development consists of two (2) new warehouse buildings each with ancillary office facilities, external hardstand spaces, staff carparking, landscaping and solar panels.

Approval is requested for the construction, operation and use, and fit-out of the buildings. Building 4A spans 16,785 sqm of warehouse space and 650 sqm of office space, creating a total Gross Lettable Area of 17,435 sqm. The building has a proposed ridge height of 13.7m. Building 4B spans 14,700 sqm of warehouse space and 850 sqm of office space, creating a total Gross Lettable Area of 15,550 sqm. The building has a proposed ridge height of 13.7m. 24/7 operations are proposed with a focus on warehouse and industrial use.

The proposed developments comply with MOD 11 of SSD 7348 Concept Plan that is currently with the Department of Planning & Environment for assessment. The applications will be submitted to Penrith City Council as a local council development application.

The proposed buildings form part of the larger OWIE which comprises 154 hectares of land within the Western Sydney Employment Area (WSEA) and is owned by a Joint Venture (JV) between Goodman and Brickworks Limited. The subject sites are benched, serviced and ready for aboveground construction. SSD 7348 approved the infrastructure to these development pads.

For the purpose of this report, it is assumed that the infrastructure stage works per SSD 7348 are approved and completed. This includes but not limited to; Bulk earthworks, Access Roads, Services, Stormwater Basins, Stormwater system and connection into each lot.

This development application encompasses the planned phase of works on the Oakdale West site, specifically on-lot works associated with Lot 4A and Lot 4B. The on-lot works include:

- Proposed detailed earthworks to accommodate the building and external levels
- Proposed stormwater (piped) system and connection to drainage stub provided in the infrastructure works.
- Proposed overland flow path to relevant basin, outlined in SSD 7348. Lot 4A and Lot 4B drain to Basin 4.
- Proposed hardstand and carpark pavement
- Proposed erosion and sediment controls

This report is prepared to satisfy condition C11 with SSD 7348:

Future DAs shall demonstrate the design of the warehouses, offices and hardstand areas are consistent with (or the latest revision of) the:

- (a) Civil, Stormwater and Infrastructure Services Report, prepared by AT&L, dated October 2018: and
- (b) Flood Impact Assessment: Oakdale West Estate, prepared by Cardno, dated 27 March 2017.



This report is to be read in conjunction with AT&L's latest civil report prepared for SSD 7348, which is entitled 'REP005-01-15-272-MOD 7 Civil Report'.

The site is located in the Penrith City Council Local Government area. Under SSD 7348, precinct based bio-retention basins will be provided as part of the infrastructure works. The basins are designed to both attenuate stormwater flows and treat the nutrients to Penrith City Council treatment rates. The precinct based Site Detention is designed to mitigate post development flows to pre-developed flows for peak Average Reoccurrence Interval (ARI) events and has been sized to ensure that for all storm events up to and including the 1% AEP event.



2 Introduction

The aim of the report is to assess the potential impacts of the proposed development with respect to stormwater and has been prepared in accordance with Penrith City Council current design guidelines and the relevant Australian Standards.

AT&L has been engaged by Goodman Property Services (Aust) Pty Ltd to provide a Civil Report to support the Development Application for the proposed industrial buildings 4A & 4B at the Oakdale West Industrial Estate (OWIE).

The Development consists of two (2) new warehouse buildings each with ancillary office facilities, external hardstand spaces, staff carparking, landscaping and solar panels.

Approval is requested for the construction, operation and use, and fit-out of the buildings.

Building 4A spans 16,785 sqm of warehouse space and 650 sqm of office space, creating a total Gross Lettable Area of 17,435 sqm. Building 4A has a proposed ridge height of 13.7m.

Building 4B spans 14,700 sqm of warehouse space and 850 sqm of office space, creating a total Gross Lettable Area of 15,550 sqm. Building 4B has a proposed ridge height of 13.7m.

24/7 operations are proposed with a focus on warehouse and industrial use.

The proposed developments comply with MOD 11 of SSD 7348 Concept Plan that is currently with the Department of Planning & Environment for assessment.

The applications will be submitted to Penrith City Council as a local council development application.

The proposed buildings form part of the larger OWIE which comprises 154 hectares of land within the Western Sydney Employment Area (WSEA) and is owned by a Joint Venture (JV) between Goodman and Brickworks Limited.

The subject sites are benched, serviced and ready for aboveground construction. SSD 7348 approved the infrastructure to these development pads.

2.1 Scope of Report

This report generally discusses the design philosophy behind the following components of the Stormwater Management design for Oakdale West Industrial Estate (OWIE):

- Stormwater Management
 - o Infrastructure Biodiversity and Bioretention Basin
 - o Piped and Overland Flows
 - Water Balance across the site
- Erosion and Sediment Control
- Pavement
- Site Services

The proposed Lot 4A is bound by the future Southern Link Road to the north, Lot 4B to the northeast, Lot 4E to the east, and Lot 44 DP708347 to the south.

The proposed Lot 4B is bound by the future Southern Link Road to the north, Road No. 6 to the northeast (now called Cuprum Close), Lot 4E to the east, and Lot 4A to the south.

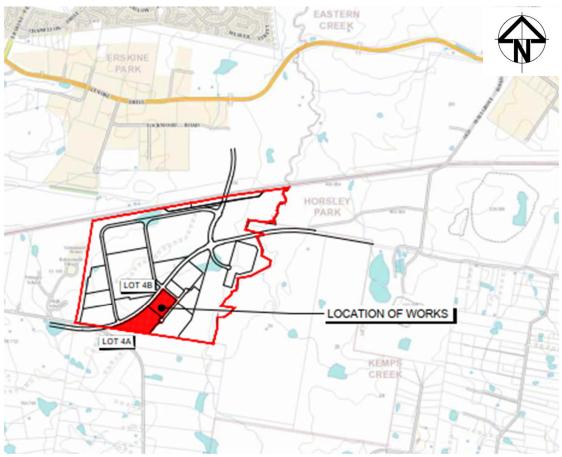


Figure 1 - Locality Plan

3 Stormwater Management

3.1 The Existing Site

For the purpose of this report, it is assumed the infrastructure stage works are approved and works completed. This includes but not limited to; Bulk earthworks, Access Roads, Services, Stormwater Basins, Stormwater system and connections into lots. The works are detailed in Stage 1 consent, SSD 7348.

Refer to Drawing C1087 within Appendix A for a post-development stormwater catchment plan indicating the location of basins and catchments provided in the infrastructure stage.

3.2 Proposed Site Stormwater Drainage

Lot 4A and Lot 4B are a part of a larger catchment which ultimately discharges into Bio-Retention Basin No.4 as shown in Appendix A. For additional details on Basin 4, refer to 'REP005-01-15-272-MOD 7 Civil Report' submitted and approved under SSDA 7348.

Lot 4A is approximately 4.73Ha. The proposed stormwater discharge point is located to
the northeast of Lot 4A. An existing stormwater stub is provided into Lot 4A for
connection into stormwater system contained within the Right of Way 01 (constructed
under SSDA 7348). A GPT will be provided to capture the gross pollutants generated
within Lot 4A before discharging to Right of Way 01.



 Lot 4B is approximately 2.61Ha. The proposed stormwater discharge point to the northeast of Lot 4B. An existing stormwater stub is provided into Lot 4B for connection into the stormwater system within Road No. 6 (now called Cuprum Close). A GPT will be provided to capture the gross pollutants generated within Lot 4B before discharging into Road No.6.

Refer to the Civil Drawings for layout and details for the proposed stormwater network across the site.

3.3 Council Requirements, SSD Consent Conditions & Recommendations

This report is prepared to satisfy condition C11 with SSD 7348, which states:

Future DAs shall demonstrate the design of the warehouses, offices and hardstand areas are consistent with (or the latest revision of) the:

- (a) Civil, Stormwater and Infrastructure Services Report, prepared by At&L, dated October 2018; and
- (b) Flood Impact Assessment: Oakdale West Estate, prepared by Cardno, dated 27 March 2017.

All estate level stormwater drainage for the OWIE development is designed to comply with the following:

- Penrith City Council Design Guidelines for Engineering Works;
- Penrith City Council Water Sensitive Urban Design (WSUD) Policy December 2013; and
- C3 Water Management DCP.

A summary of the design requirements adopted is listed below:

- All stormwater drainage within the Lot 4A and Lot 4B will be the responsibility of Goodman;
- Finished Floor Levels (FFL) of proposed buildings within the precinct (separate approval) to have minimum 500mm freeboard to 1% AEP overland flows; and
- Gross pollutant trap (GPT) will be installed within Lot 4A and Lot 4B on the final downstream stormwater pit prior to discharging. As these GPT's will be located on-lot they will be owned and maintained by Goodman. The GPT will capture 90% of Gross Pollutants from Lot 4A and Lot 4B as per the PCC WSUD guidelines.

Rainwater tanks are desirable for re-use for irrigation, toilet and other non-potable water uses. Rainwater tank size is determined in accordance with the Penrith City Council C3 Water Management DCP to meet 80% of non-potable demand for irrigation and toilet flushing. Refer to Section 4 of this report for a more detailed description on rainwater harvest tanks.

3.3.1 Modelling Software

DRAINs modelling software has been used to calculate the Hydraulic Grade Line (HGL) of the estate level stormwater pipes. DRAINs is a computer program used for designing and analysing



urban stormwater drainage systems and catchments. It is widely accepted by Council's across NSW as the basis for stormwater design and has been confirmed by Penrith City Council as the preferred stormwater software analysis package.

MUSIC modelling software will be used to evaluate the non-potable water from rainwater tanks once the number to toilets, roof and gutter design, and landscape irrigation needs are finalised. For a detailed description of the MUSIC modelling refer to Section 4 of this report.

3.3.2 Hydrology

- Pipe drainage shall be designed to accommodate the 5% AEP storm event;
- The combined piped and overland flow paths shall be designed to accommodate the 1% AEP storm event;
- Where trapped low points are unavoidable and potential for flooding private property is a concern, an overland flowpath capable of carrying the total 1% AEP storm event shall be provided. Alternatively, the pipe and inlet system may be upgraded to accommodate the 1% AEP storm event;
- Rainfall intensities shall be as per the Intensity-Frequency-Duration table in accordance with the Australian Rainfall and Runoff (AR&R) volume 2;
- Times of concentration for each sub catchment shall be determined using the kinematic wave equation;
- Runoff coefficients shall be calculated in accordance with AR&R. The fraction impervious shall be determined from analysis of the sub catchments;
- Flow width in gutter shall not exceed 2.5m for the minor design storm event;
- Velocity depth ratios shall not exceed 0.4 for all storms up to and including the 1% AEP event;
- Inlet pits to be spaced so that flow width shall not exceed 80l/sec;
- Bypass from any pit on grade shall not exceed 15% of the total flow at the pit; and
- Blockage factors of 20% and 50% shall be adopted for pits on grade and at sags respectively, with these blockage factors in-built to each pit within the DRAINs model.

3.3.3 Hydraulics

- A hydraulic grade line HGL design method shall be adopted for all road pipe drainage design. The HGL shall be shown on all drainage long sections;
- The minimum pipe size shall be 375mm diameter RCP;
- Maximum spacing between pits shall not exceed 75m;
- The minimum pipe grade shall be 0.5%;
- All pipes shall be Rubber Ring Jointed unless noted otherwise;
- The minimum cover over pipes shall be 450mm in grassed areas and 600mm within carriageways;
- Where minimum cover cannot be achieved due to physical constraints the pipe class shall be suitably increased;
- All trafficable shall be Reinforced Concrete Pipes or Fibre Reinforced Cement equivalent;
- The pipe friction coefficients to adopted shall be:

Materials	Mannings – n	Colebrook-White	Min. Pipe Class
		K	



RCP	0.012	0.6	3
FRC	0.01	0.15	3

Table 1 – Pipe Details

- All pipes classes shall be designed for the ultimate service loads and where applicable, construction loads will be designed for;
- Pipes discharging to the overland flow path shall adopt a minimum tailwater level equivalent to respective overland flow level;
- Pit Loss coefficients shall be calculated in accordance with Missouri Charts;
- A minimum 150mm freeboard shall be maintained between pit HGL and pit surface levels for the minor storm event;
- Overland flowpaths shall maintain a minimum of 500mm freeboard to all habitable floor levels: and
- Pits deeper than 1.2m shall contain step irons at 300 mm centres.

3.3.4 Catchments

A Stormwater Catchment Plan for Lot 4A and Lot 4B, and flow paths into Bio-retention Basin No. 4 are shown in Appendix A.

3.3.5 Overland Flows

Overland flows within the hardstand area and carparks have been designed to be safely conveyed to inground drainage for all storms above the 5% AEP up to 1% AEP.

All flow widths and velocities are design in accordance with the Penrith City Council Design Guidelines for Engineering Works.

Stormwater pipes from all recessed docks are design for the 1% AEP.

3.4 Conclusion

As highlighted in the above section, all stormwater drainage within Lot 4A and 4B development has been designed in accordance with the Penrith City Council Engineering Guidelines. This includes design of the stormwater network (pits and pipes) and GPTs.

Finished Floor Levels (FFL) to have minimum 500mm freeboard to 1% AEP overland flows.



4 Water Balance

4.1 General

The water balance was simulated using a water cycle management model as part of the MUSIC Model to allow the evaluation of various elements of the water cycle to be assessed at differing stages in the development.

Penrith City Council WSUD policy (July 2015) stipulates the rainwater tanks to meet 80% of non-potable demand including outdoor use, toilets and laundry.

4.2 Water Balance Objective

Potable water supplies in the Sydney area are in recognised short supply with projected population increases, potential climate change and periods of extended drought and any development in sources of the Sydney region places increasing demands on an already reduced water supply. As a result, government bodies, together with Sydney Water have encouraged sustainable development by the implementation of an integrated approach to water cycle management (potable water, sewage, stormwater and rainwater) to minimise demands of potable water supplies.

Whilst opportunities for Water Reuse include such initiatives as regional stormwater harvesting, black water recycling and recycled water, this development is limited to rainwater collection and reuse on an individual lot by lot basis.

Once the number to toilets, roof and gutter design, and landscape irrigation needs are finalised, we will used MUSIC to establish an estimated tank size for each lot within the development and demonstrated the volume of water reuse possible and provide a more sustainable servicing solution.

4.3 Water Balance End Uses

AT&L has identified the following water demand end uses to be required across the development:

- Toilet and urinal flushing; and
- Landscape watering (outdoor garden use).

The proportion of total water demands for irrigation and toilet flushing within the development could be met with the use of recycled roof water drained directly into a rainwater tank. The tank should be sized to ensure the site meets the requirement to meet the 80% non-potable reuse requirement. This is in accordance with Penrith City Council's WSUD policy.

4.4 Total Site Demands and Non-Potable Re-use Rates

The following rates were adopted from the Penrith City Council WSUD technical Guidelines for Industrial and Commercial developments (Section 4.5):

- 0.1 kL/day per toilet or urinal;
- 0.4 kL/year/m2 as PET-Rain for Sprinklers; and
- 0.3 kL/year/m2 as PET-Rain for Subsurface irrigation.



4.5 Rainwater Reuse

The use of rainwater collected in rainwater tanks from runoff on the roofs of the warehouse roofs provides a valuable alternative to potable water for a variety of non-potable end uses, such as vehicle washing, air conditioning cooling, and toilet flushing and watering.

We have assumed for this development, irrigation and toilet flushing will be plumbed to the rainwater tanks. Other uses such as truck washing maybe considered at the detailed design stage.

A rainwater tank model was constructed to simulate the rainwater tank operations and select the optimal rainwater tank size, in doing so, the following considerations were made:

- Rainfall received:
- Roof area or runoff area;
- Roof Wetting;
- First Flush; and
- Rainwater demands (by end use).

4.6 Rainwater Tank Model Assumptions

The rainwater tank model assumptions built into the scenarios assumed the following.

4.6.1 Rainfall Received

The rainfall runoff that could potentially be captured by the rainfall tank from the roof of each building was simulated individually for the 'dry', 'wet' and 'average' rainfall year within each scenario run.

4.6.2 Roof Wetting, First Flush Diversions and Overflow

While it is assumed that rainfall runoff has the potential to runoff 100% of the area of the roof into the rainwater tank, the proportion of rainfall that actually reaches the rainwater tank is affected by four factors:

- It is assumed that the initial 2mm of rainfall that falls on the roof is considered 'wetting', that is, potential rainfall runoff that is not captured by the rainwater tank, but is rather 'lost runoff' as evaporation or other;
- To prevent sediment and other pollutants entering the rainwater tank, a portion of the
 initial runoff from the roof is transferred to stormwater, this is known as the 'first flush'.
 The portion of water diverted as part of the first flush differs for each facility depending
 on the amount of pollution each roof is susceptible to;
- As the development is located in a predominantly light industrial area, where there may
 be potential for some roof pollution, a standard first flush volume of 1mm of runoff from
 across the roof area has been adopted; and
- Any roof runoff that exceeds the rainwater tank capacity is 'overflow' and is directed to the stormwater drainage system.



4.7 Conclusion

The use of rainwater harvest tanks and the design basis to size the tanks to ensure as a minimum, 80% of all non-potable water on each lot can be sourced from the tank, demonstrates a commitment to water recycling and minimising the usage of mains water.

This is in line with the industry best practise and the NSW State Government's objective of reducing the amount of potable (drinking) water consumed for non-potable uses.



5 Sedimentation and Erosion Control

5.1 Sedimentation and Erosion Control (Construction)

A Soil and Water Management Plan (SWMP) will be prepared in accordance with the NSW Department of Housing Publication titled: Managing Urban Stormwater – Soils and Construction (2004) for Lot 4A and Lot 4B.

The key objective of the SWMP are:

- Acknowledging the activities on a construction site which may contribute to erosion, sedimentation and water quality impacts;
- The implementation of industry best management practices to minimise adverse water quality and sedimentation impacts brought about through construction activities on waterbodies surrounding the work; and
- Establishment of processes that effectively manage erosion, sedimentation and water quality practices during the life of the project.

5.1.1 Design of Sediment and Erosion Control Measures

Suitable erosion and sediment controls shall be provided by the Contractor and maintained throughout all stages of works, including at completion of the bulk earthworks.

All design, documentation, installation and maintenance of sediment and erosion controls will be in accordance with the requirements of:

- Protection of the Environment Operations Act;
- Penrith City Council's specifications; and
- Office of Environment and Heritage's 'Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) (The "Blue Book") Volume 1 and Volume 2.

Temporary sediment basin in Lot 4A and Lot 4B will be provided within the infrastructure stage associated with the SSD 7348 Stage 1 consent works. The basins are to be maintained throughout the construction phase of the on-lot works, until such time that the site has been suitably stabilised and the sediment basin is no longer required to meet the requirements of the Blue Book.

5.2 Site Inspection and Maintenance

The inspection and maintenance requirements outlined in this section must be carried out while either earthworks or quarrying is being conducted, and all areas re-established.

The Contractor will be required to inspect the site after every rainfall event and at least weekly, and will:

- Inspect and assess the effectiveness of the SWMP and identify any inadequacies that may arise during normal work activities or from a revised construction methodology;
- Construct additional erosion and sediment control works as necessary to ensure the desired protection is given to downstream lands and waterways;
- Ensure that drains operate properly and to affect any repairs;



- Remove spilled sand or other materials from hazard areas, including lands closer than 5
 metres from areas of likely concentrated or high velocity flows especially waterways and
 paved areas;
- Remove trapped sediment whenever less than design capacity remains within the structure;
- Ensure rehabilitated lands have affectively reduced the erosion hazard and to initiate upgrading or repair as appropriate;
- Maintain erosion and sediment control measures in a fully functioning condition until all construction activity is completed and the site has been rehabilitated;
- Remove temporary soil conservation structures as the last activity in the rehabilitation.
- Inspect the sediment basin during the following periods:
 - During construction to determine whether machinery, falling trees, or construction activity has damaged and components of the sediment basin. If damage has occurred, repair it;
 - o After each runoff event, inspect the erosion damage at flow entry and exit points. If damage has occurred, make the necessary repairs;
 - At least weekly during the nominated wet season (if any), otherwise at least fortnightly; and
 - o Prior to, and immediately after, periods of 'stop work' or site shutdown.
- Clean out accumulated sediment when it reaches the marker board/post, and restore
 the original volume. Place sediment in a disposal area or, if appropriate, mix with dry
 soil on the site;
- Do not dispose of sediment in a manner that will create an erosion or pollution hazard;
- Check all visible pipe connections for leaks, and repair as necessary;
- Check all embankments for excessive settlement, slumping of the slopes or piping between the conduit and the embankment, make all necessary repairs;
- Remove the trash and other debris from the basin and riser; and
- Submerged inflow pipes must be inspected and de-silted (as required) after each inflow event.

5.2.1 Sediment Basin Maintenance

Stormwater within the settling zone should be drained or pumped out within 5 days (design time), if the nominated water quality targets can be met, to the satisfaction of the superintendent. Flocculation should be employed where extended settling is likely to fail to meet the objectives within the 5-day time period.

Flocculation is when flocculating agents are applied to the sediment basins causing the colloidal particles to clump into larger units or 'floc' that can either settle in a reasonable time or be filtered.

Refer to Appendix E4 of the Blue Book for flocculation methodologies and manufacturer's instructions for application rates, regarding the proposed sediment basins.

5.3 Conclusion

The erosion control measures proposed for the site will comply with the requirements of Penrith City Council Engineering Guidelines and in accordance with the latest revision AT&L infrastructure report.

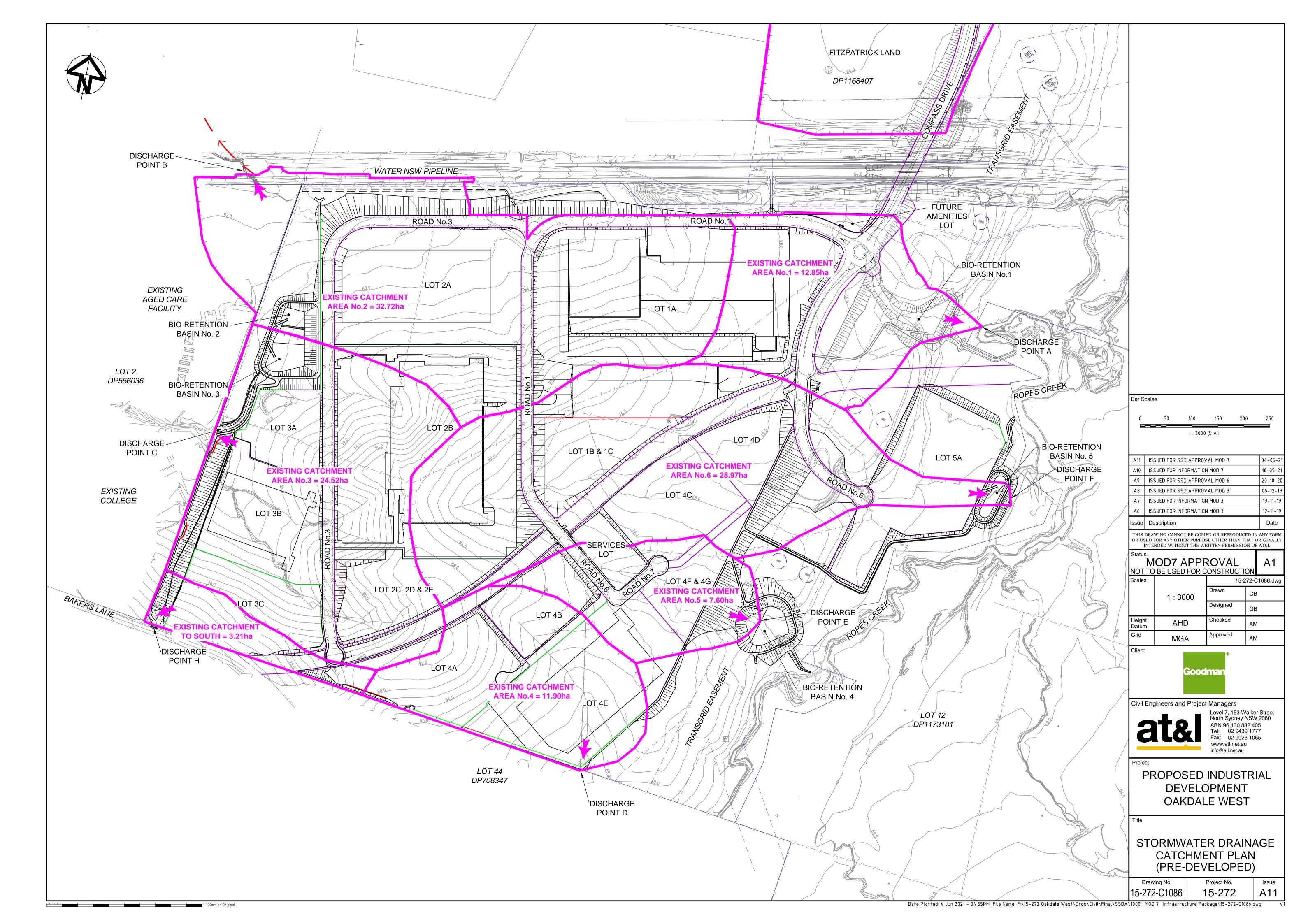


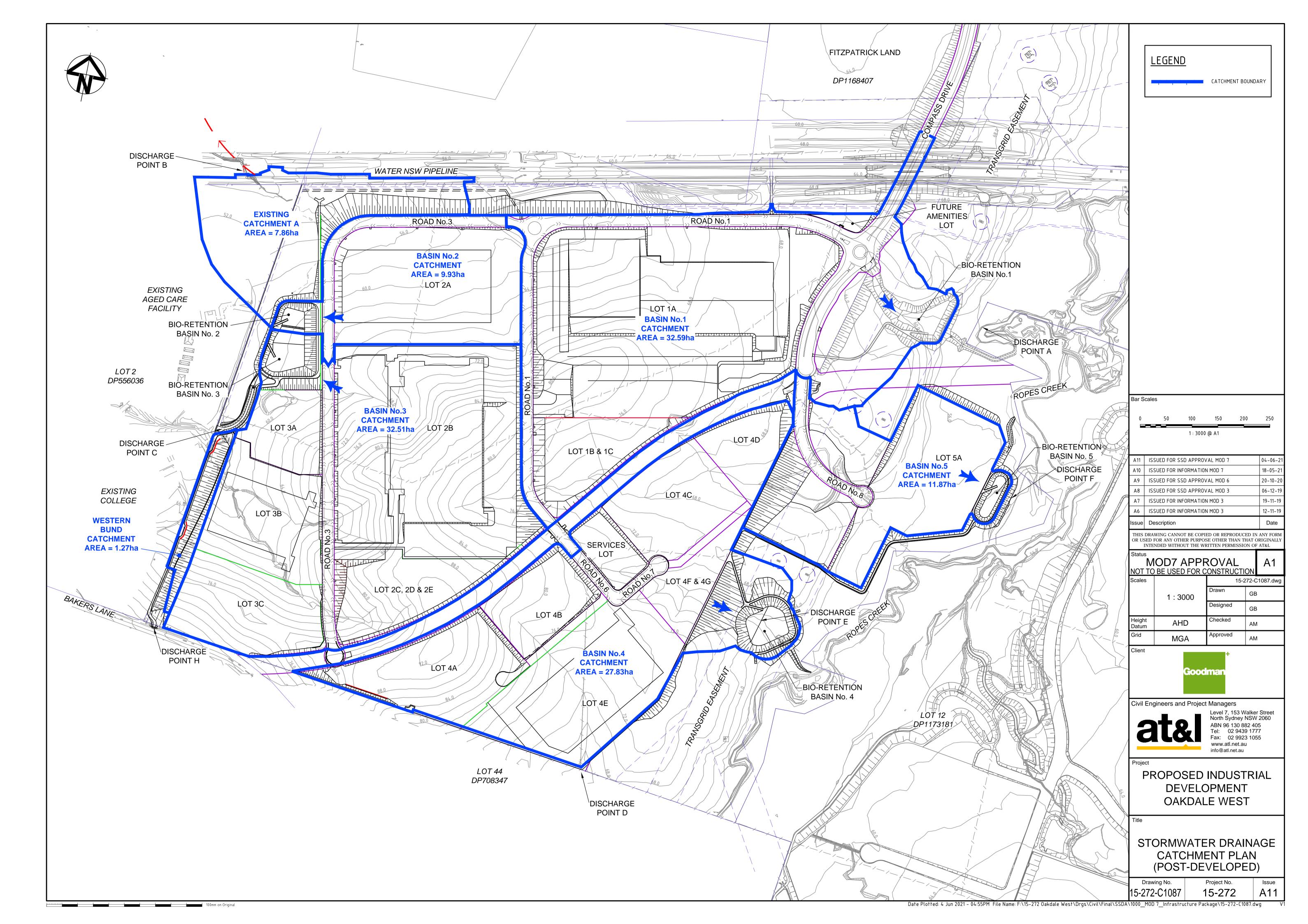
A SWMP will ensure that the best management practice is applied to the development site in controlling and minimising the negative impacts of soil erosion.



Appendix A

Proposed Infrastructure Catchment Plans







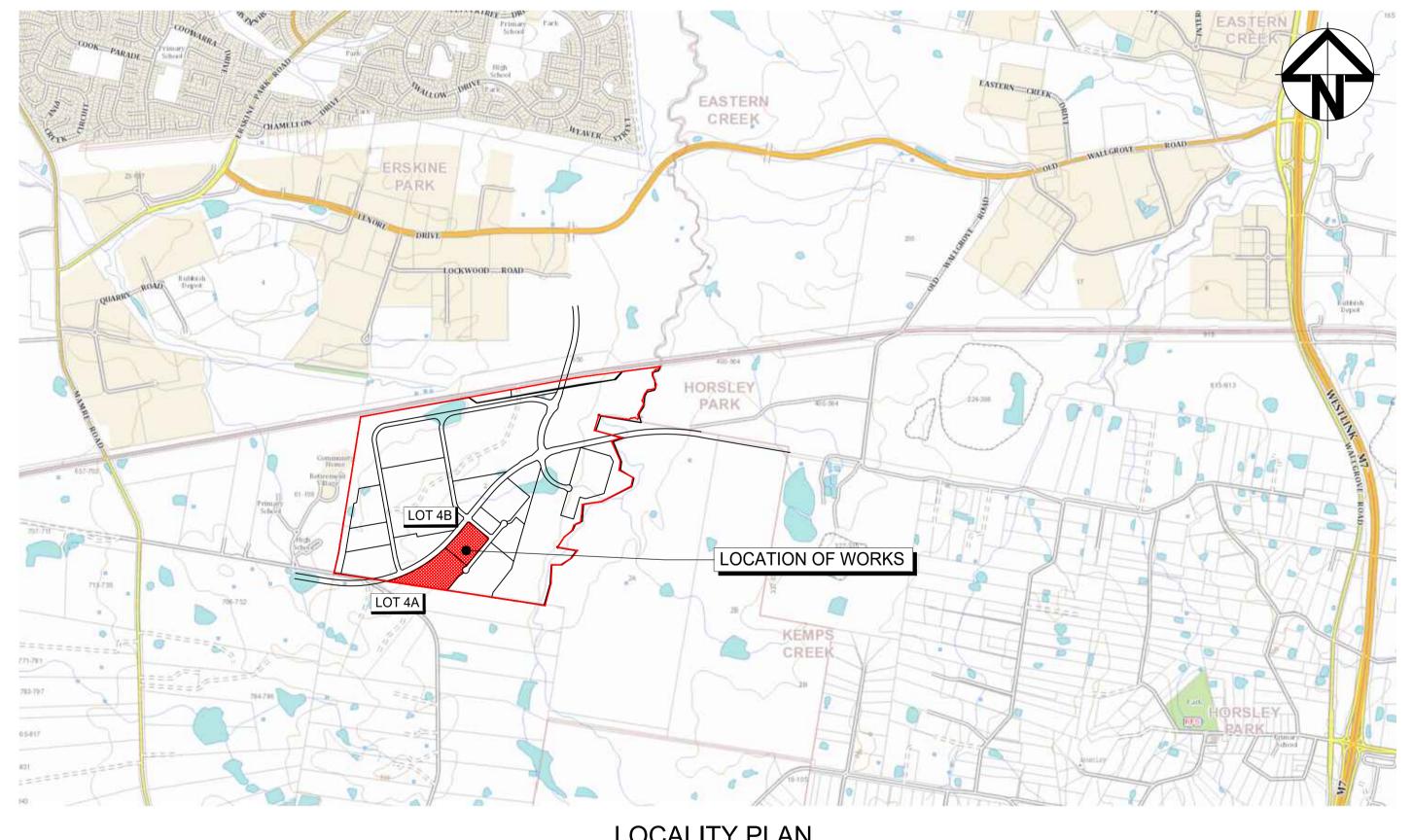
Appendix B

AT&L – Drawing List of Civil Works

OAKDALE WEST

7800-SERIES LOT 4A & 4B CIVIL WORKS PACKAGE DEVELOPMENT APPLICATION

	DRAWING LIST
DRAWING No.	DRAWING TITLE
15-272-C7800	COVER SHEET DRAWING LIST LOCALITY PLAN
15-272-C7801	GENERAL NOTES
15-272-C7805	GENERAL ARRANGEMENT PLAN
15-272-C7810	TYPICAL SECTIONS SHEET 1
15-272-C7811	TYPICAL SECTIONS SHEET 2
15-272-C7812	TYPICAL SECTIONS SHEET 3
15-272-C7813	TYPICAL SECTIONS SHEET 4
15-272-C7815	BULK EARTHWORKS PLAN
15-272-C7820	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 1
15-272-C7821	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 2
15-272-C7822	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 3
15-272-C7823	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 4
15-272-C7824	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 5
15-272-C7825	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 6
15-272-C7826	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 7
15-272-C7827	SITEWORKS AND STORMWATER DRAINAGE PLAN SHEET 8
15-272-C7830	PAVEMENT PLAN
15-272-C7835	RETAINING WALL GENERAL ARRANGEMENT PLAN
15-272-C7836	RETAINING WALL PROFILES
15-272-C7840	EROSION AND SEDIMENT CONTROL PLAN
15-272-C7841	EROSION AND SEDIMENT DETAILS



LOCALITY PLAN

Bar Scales Civil Engineers and Project Managers Client YR PROPOSED INDUSTRIAL North Sydney NSW 2060 THIS DRAWING CANNOT BE ABN 96 130 882 405 DEVELOPMENT COPIED OR REPRODUCED IN Checked LOCAL Tel: 02 9439 1777 Fax: 02 9923 1055 OAKDALE WEST - LOT 4A & 4B ANY FORM OR USED FOR ANY Goodman www.atl.net.au OTHER PURPOSE OTHER THAN THAT ORIGINALLY INTENDED **COVER SHEET** FOR APPROVAL WITHOUT THE WRITTEN DRAWING LIST ISSUED FOR DA 19-08-22 NOT TO BE USED FOR CONSTRUCTION PERMISSION OF AT&L 15-08-22 ISSUED FOR DRAFT LOCALITY PLAN Project - Drawing No. 15-272-C7800 Date Description

SITEWORKS NOTES

1. ORIGIN OF LEVELS:- REFER SURVEY NOTES.

2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO AT & L.

3. MAKE SMOOTH CONNECTION WITH EXISTING WORKS.

- 4. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL
- 5. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMAPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
- 6. PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
- 7. ASPHALTIC CONCRETE SHALL CONFORM TO R.M.S SPECIFICATION R116.
- 8. ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S FORM 3051 (UNBOUND), R.M.S FORM 3052 (BOUND) COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1
- TEST PER 50m OF BASECOURSE MATERIAL PLACED.
- 9. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S FORM 3051, 3051.1 AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m OF SUB-BASE COURSE MATERIAL PLACED.
- 10. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (9) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH R.M.S FORM 3051 AND 3051.1 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF AT & L.
- 11. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THE CONTRACTOR IS TO SEEK ACCEPTANCE OF THE PRODUCT FROM AT&L. THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
- 12. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY CARDNO HARD & FORESTER PTY LTD, BEING REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. AT & L DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA. CONTACT AT & L.

THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM THE ORIGINAL SURVEY DOCUMENTS.

IMPORTANT NOTE:

THIS PLAN IS PREPARED FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE. THE TITLE BOUNDARIES SHOWN HEREON WERE NOT MARKED BY THE AUTHOR AT THE TIME OF SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND NOT BY FIELD MEASUREMENT.

A SERVICES SEARCH OF THE AREA SURVEYED ABOVE HAS NOT BEEN UNDERTAKEN. VISIBLE SERVICES SHOWN HEREON HAVE BEEN LOCATED WHERE POSSIBLE BY FIELD SURVEY. PRIOR TO ANY DEMOLITION. EXCAVATION OR CONSTRUCTION ON THE SITE. THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.

EXISTING UNDERGROUND SERVICES NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.

AT & L CAN NOT GUARANTEE THAT THE SERVICES

INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.

CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

CONCRETE NOTES

- 1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- 2. CONCRETE QUALITY ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa	SPECIFIED	NOMINAL	
	AT 28 DAYS	SLUMP	AGG. SIZE	
VEHICULAR BASE KERBS, PATHS, AND PITS	32 25	60 80	20 20	

- CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE
- WITH AS 1379. 3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN
- WRITING BY AT & L. 4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS
- NOTED OTHERWISE. 5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED
- 6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS, ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.M.S SPECIFICATION R83.

AT ALTERNATE INTERSECTIONS.

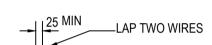
- 7. REINFORCEMENT SYMBOLS: N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
- R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302 SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304
- NUMBER OF BARS IN GROUP _ _ BAR GRADE AND TYPE

17 N 20 250

NOMINAL BAR SIZE IN mm - LSPACING IN mm

THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERANCE NUMBER FOR FABRIC TO AS 1304.

8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DFTAII ·



KERBING NOTES

- 1. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MP U.N.O IN REINFORCED CONCRETE NOTES.
- 2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON MIN. 100mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 95% MODIFIED DRY DENSITY (AS 1289 5.2.1).
- 3. EXPANSION JOINTS (E.J) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS. ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
- 4. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
- 5. BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
- 6. IN THE REPLACEMENT OF KERB AND GUTTER:-EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm U.N.O FROM THE LIP OF GUTTER. UPON COMPLETION OF THE NEW KERB AND GUTTER NEW BASECOURSE AND SURFACE TO BE LAID 900mm WIDE U.N.O.
- EXISTING ALLOTMENT DRAINAGE PIPES ARE TO BE BUILT INTO THE NEW KERB AND GUTTER WITH 100mm DIA HOLE.

EXISTING KERB AND GUTTER IS TO BE COMPLETELY REMOVED WHERE NEW KERB AND GUTTER IS SHOWN.



CONTRACTOR SHALL CALL; DIAL BEFORE YOU DIG 1100 PRIOR TO COMMENCEMENT OF WORK TO OBTAIN

ALL CURRENT SERVICE AUTHORITY PLANS

STORMWATER DRAINAGE NOTES

1. STORMWATER DESIGN CRITERIA (A) AVERAGE RECURRENCE INTERVAL 1:100 YEARS MAJOR STORM (OVERLAND FLOW) 1:20 YEARS MINOR STORM (PIPED NETWORK)

(B) RAINFALL INTENSITIES: TIME OF CONCENTRATION:5 MINUTES 1:100 YEARS= 219 mm/hr 1:20 YEARS= 167 mm/hr

(C) RUNOFF COEFFICIENTS: ROOF AREAS: C 100 =1.0 EXTERNAL PAVEMENTS: C 100 =1.0

- 2. PIPES 300 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '3' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS, U.N.O. ALL ROAD CROSSINGS TO BE CLASS "4" U.N.O.
- 3. PIPES UP TO 300 DIA SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS.
- 4. EQUIVALENT STRENGTH VCP OR FRC PIPES MAY BE USED, SUBJECT TO THE APPROVAL.
- 5. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT
- 6. PIPES TO BE INSTALLED TO TYPE HS1 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 (OR A DENSITY INDEX OF NOT LESS THAN 75)
- 7. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2
- 8. PRECAST PITS MAY BE USED EXTERNAL TO THE BUILDING SUBJECT TO APPROVAL BY AT & L.
- 9. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED. FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
-). WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
- 1. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
- 12. GRATES AND COVERS SHALL CONFORM TO AS 3996.
- 13. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
- 4. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

BULK EARTHWORKS NOTES

- 1. ORIGIN OF LEVELS: REFER SURVEY NOTES
- 2. REFER PELLS SULLIVAN MEYNINK REPORT PSM1541-126S REV 0 (DATED NOV 2015) FOR BULK EARTHWORKS SPECIFICATIONS.

FINISHED SURFACE LEVELS

1. ALL FINISHED SURFACE LEVELS ARE ±1000mm U.N.O.

EROSION AND SEDIMENT CONTROL

NOTES

GENERAL INSTRUCTIONS

- 1. THE SITE SUPERINTENDENT/ENGINEER WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED.
- 2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH a. LOCAL AUTHORITY REQUIREMENTS
- b. EPA REQUIREMENTS c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH
- 3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- 4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
- 5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY, REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

- 6. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
- AS SHOWN ON PLAN. REFER DETAIL.

(A) INSTALL A WIND FENCE ALONG THE BOUNDARIES

- (B) INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
- (C) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
- (D) INSTALL SEDIMENT BASIN AS SHOWN ON PLAN
- (E) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
- (F) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

- 7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
- 8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

- 9. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS. SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT
- 10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN
- 11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED
- 12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

- 13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
- 14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
- (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
- (B) ENSURING THAT NOTHING IS NAILED TO THEM
- (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
- (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
- (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
- (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.

EROSION AND SEDIMENT CONTROL NOTES

STAGING

ENGINEERS.

SUITABLE EROSION AND SEDIMENT CONTROLS SHALL BE DESIGNED. PROVIDED AND MAINTAINED BY THE CONTRACTOR THROUGHOUT ALL STAGES OF WORKS, INCLUDING AT COMPLETION OF THE BULK EARTHWORKS WHERE SHOWN ON AT&L DRAWINGS OR WHERE DIRECTED BY THE SUPERINTENDENT OR PENRITH CITY COUNCIL'S

SEDIMENT AND EROSION CONTROLS ARE TO BE DESIGNED AND DOCUMENTED BY A SUITABLY QUALIFIED EXPERT ENGAGED BY THE CONTRACTOR AND APPROVED AS PART OF THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH CONTROLS SHALL BE IN ACCORDANCE WITH THE RELEVANT REQUIREMENTS IN THE LATEST VERSION OF THE MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION GUIDELINE (LANDCOM).

Bar Scales ISSUED FOR DA 19-08-22 ISSUED FOR DRAFT 15-08-22 Date Description 100mm on Original

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Client

Scales		Drawn		YR
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Grid	LOCAL		Checked	DS
Height Datum	AHD		Approved	DS
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Scales

Drawn

PROPOSED INDUSTRIAL DEVELOPMENT OAKDALE WEST - LOT 4A & 4B

Project

Title

GENERAL NOTES

Civil Engineers and Project Managers

www.atl.net.au info@atl.net.au FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION Project - Drawing No.

Level 7, 153 Walker Street

Issue

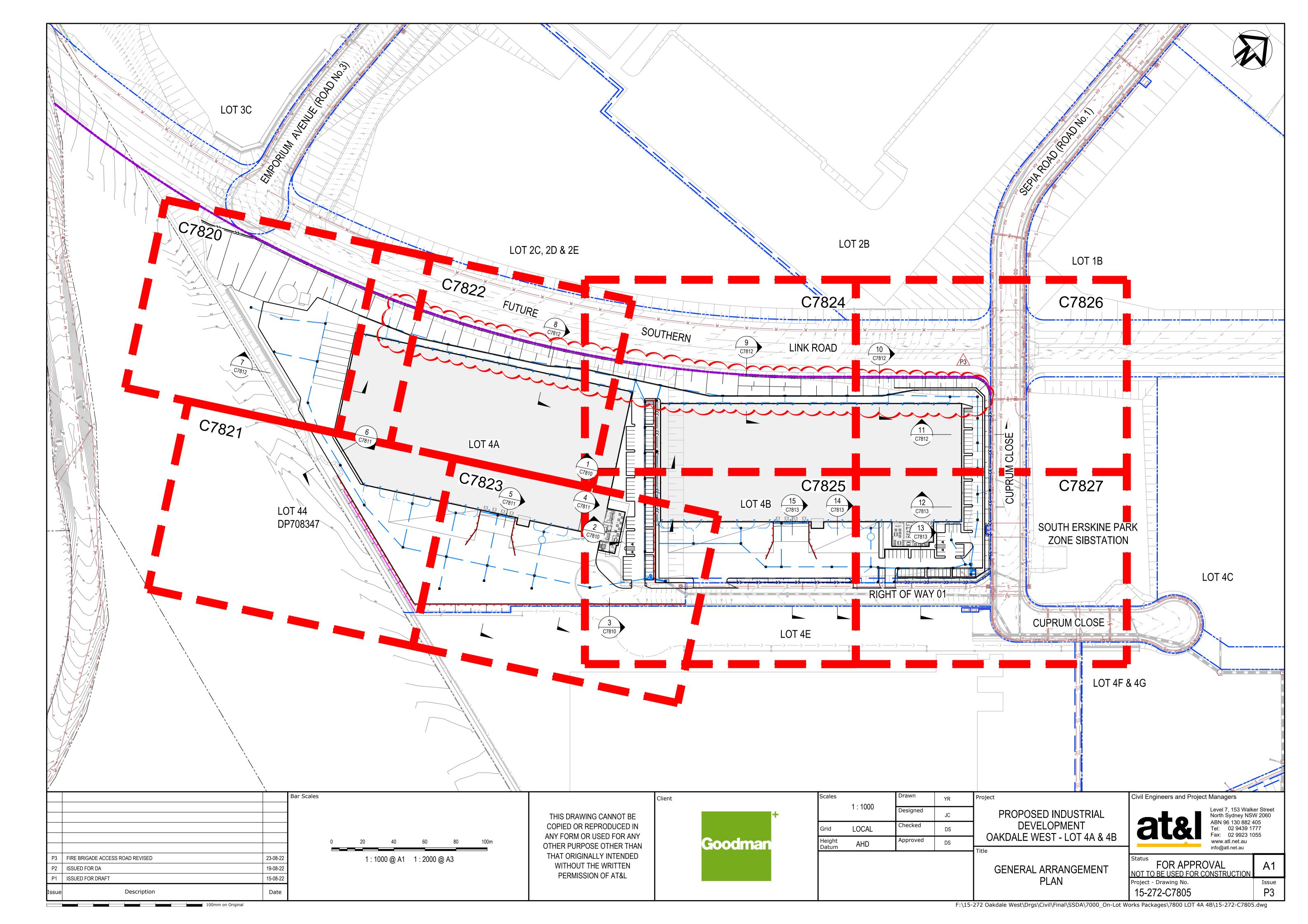
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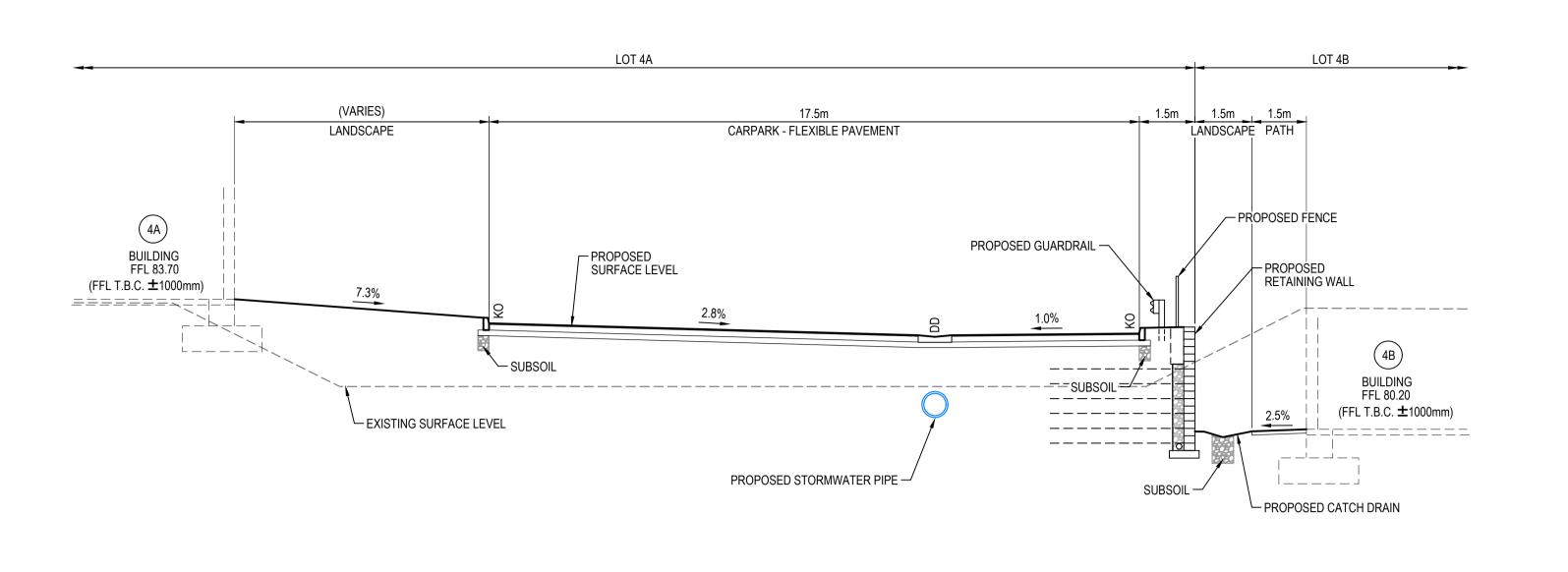
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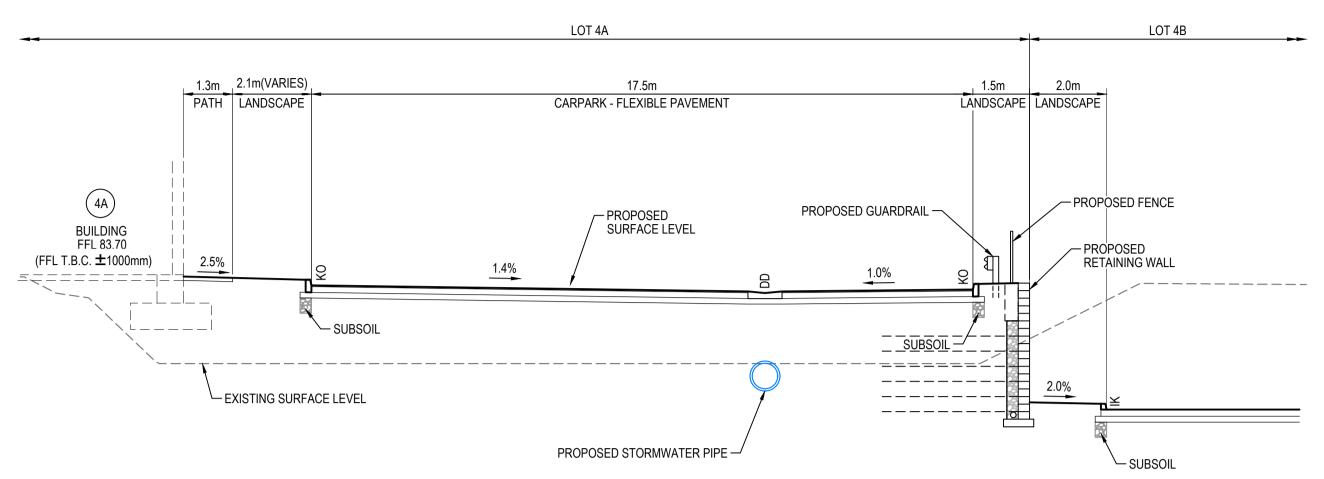
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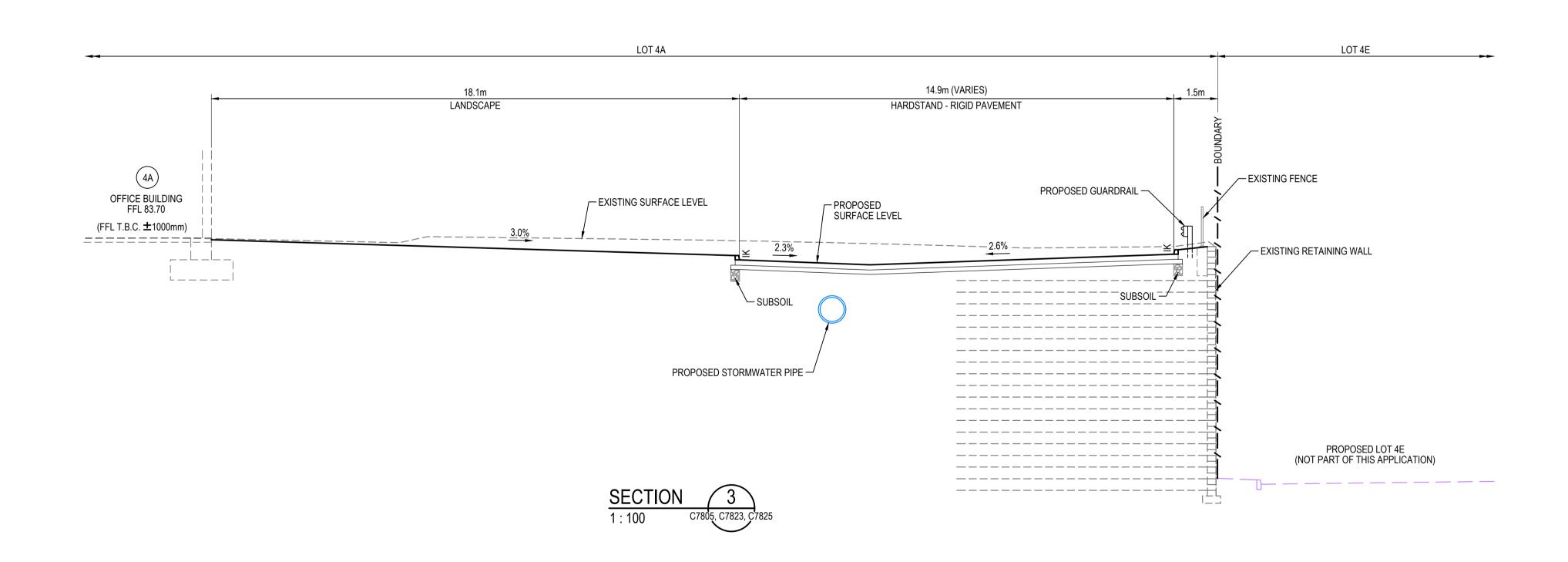




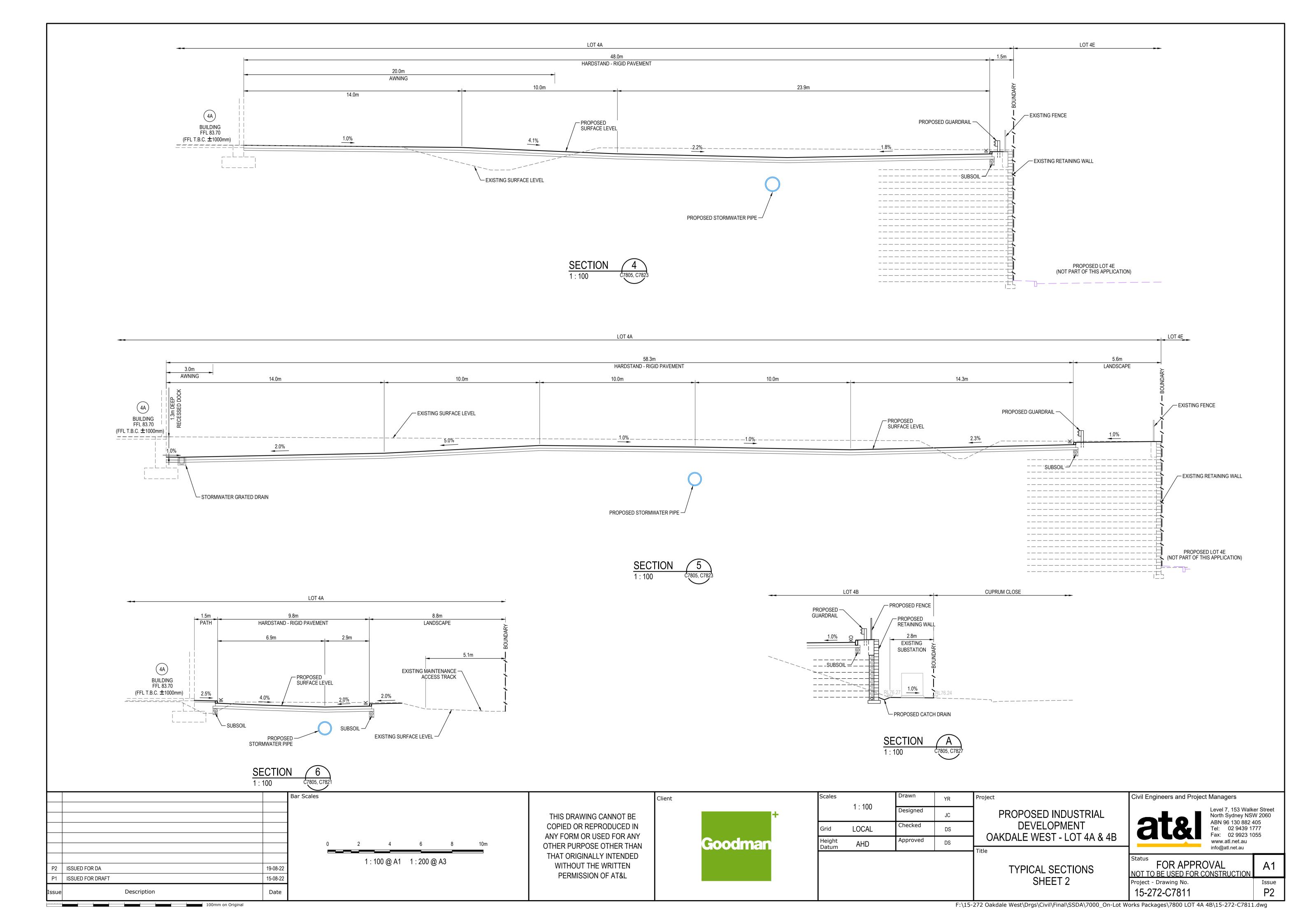


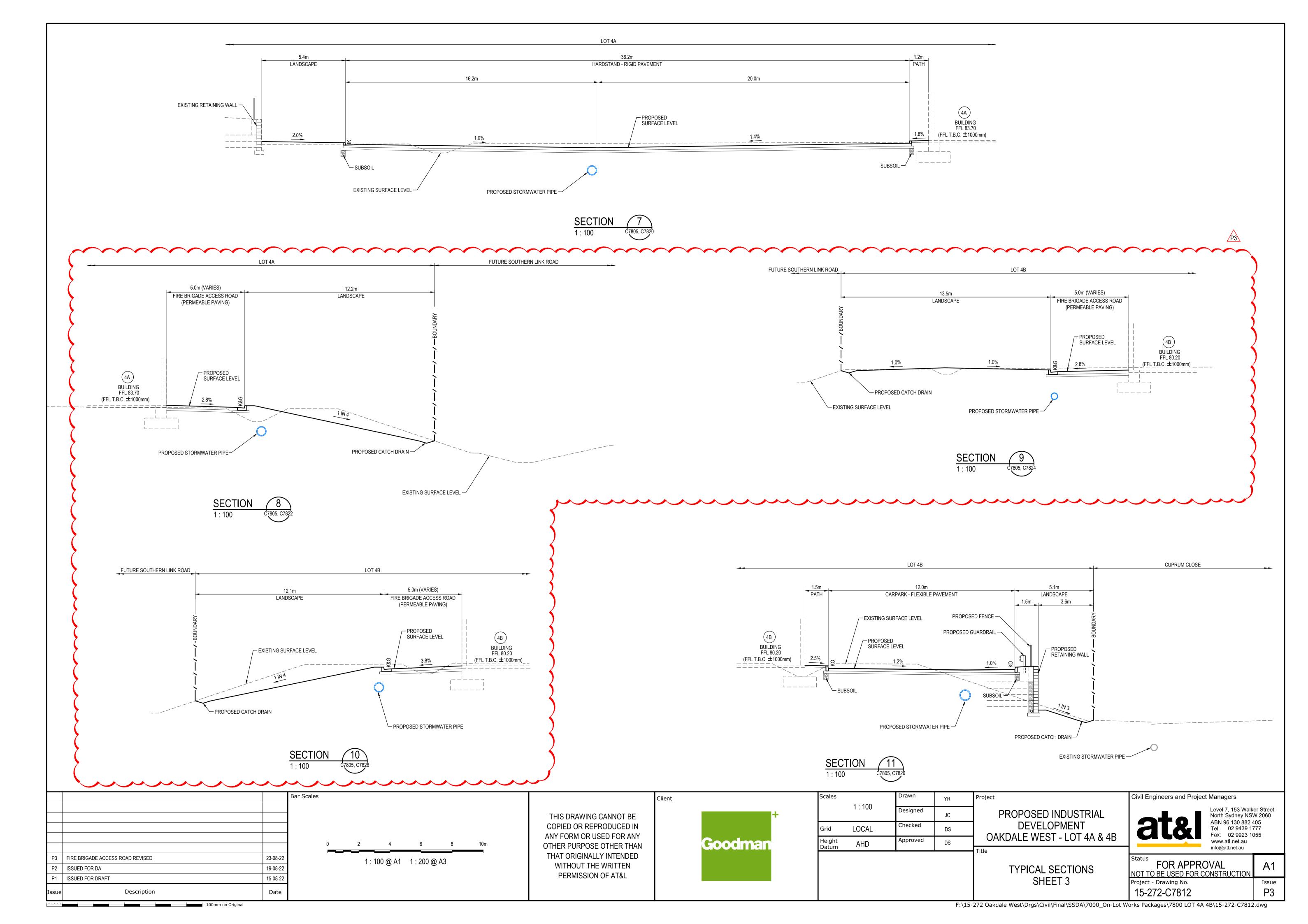
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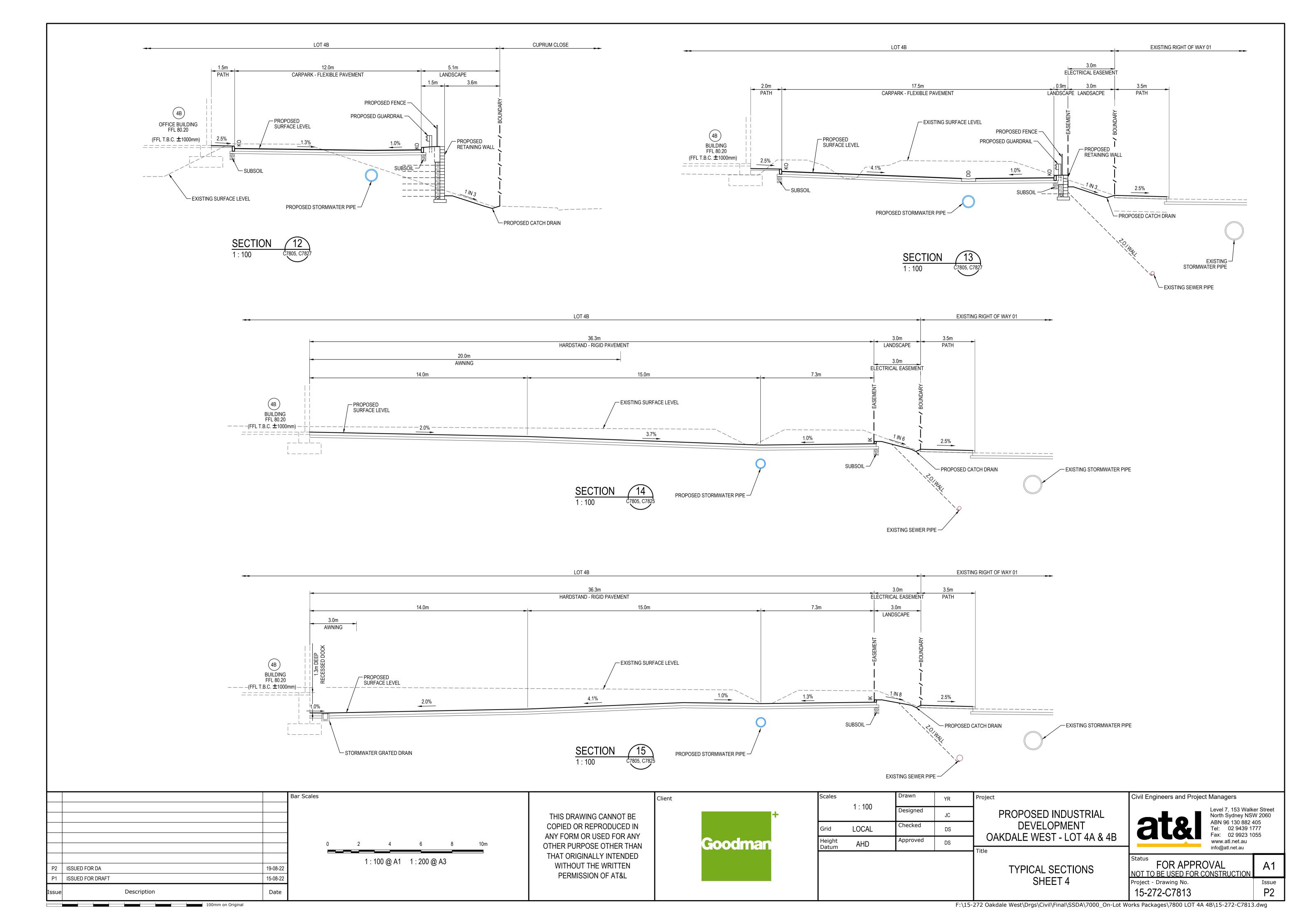
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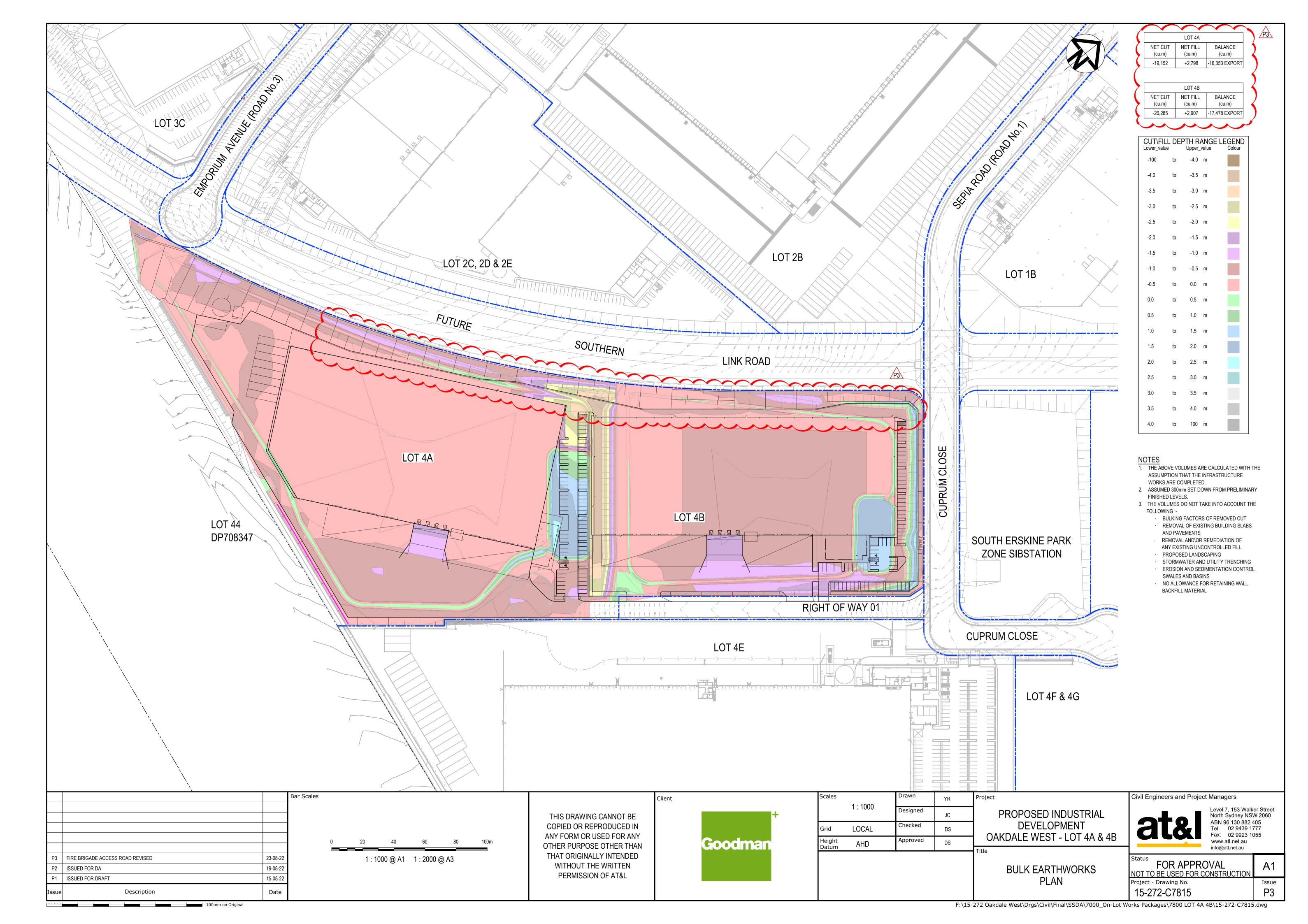


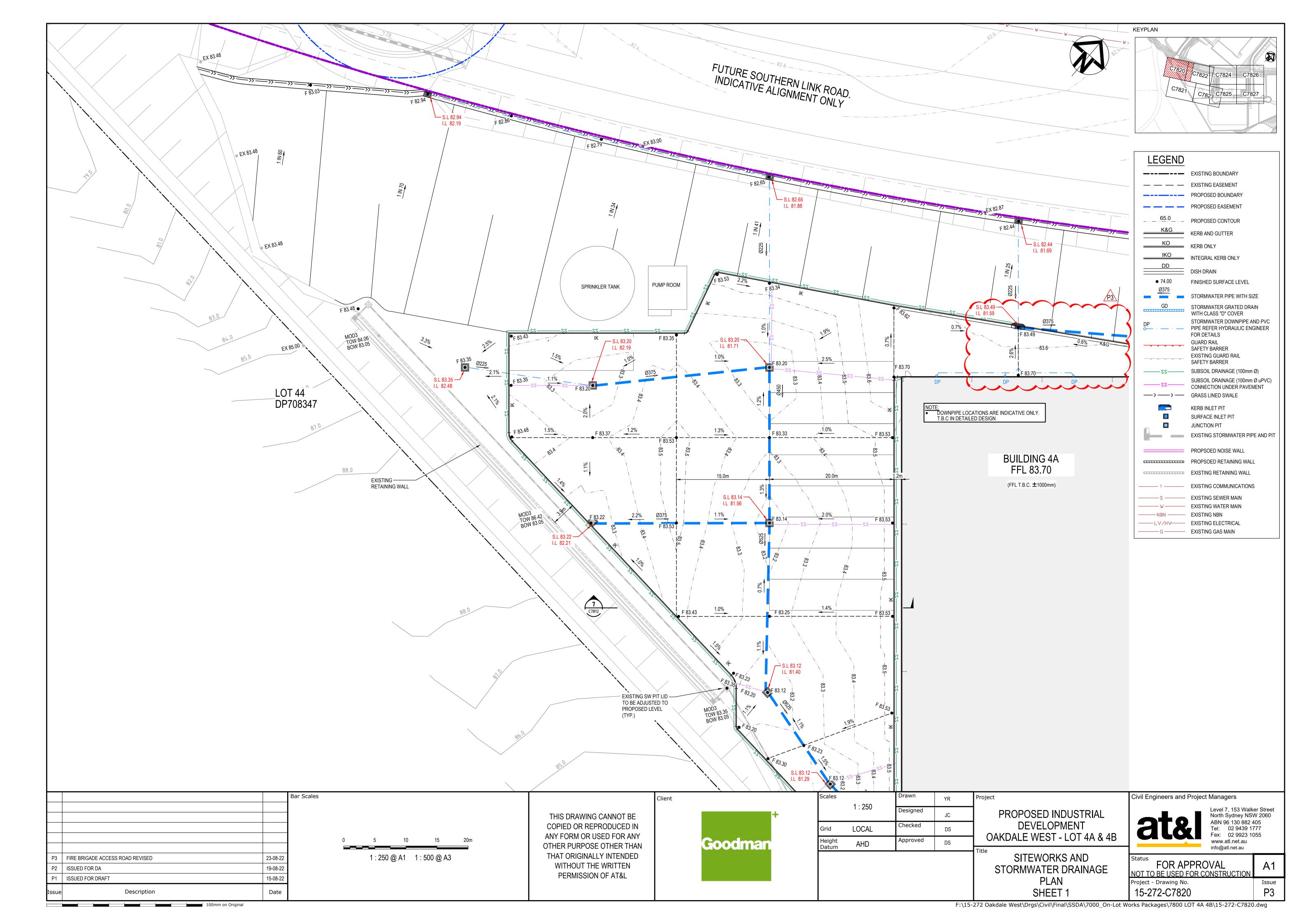
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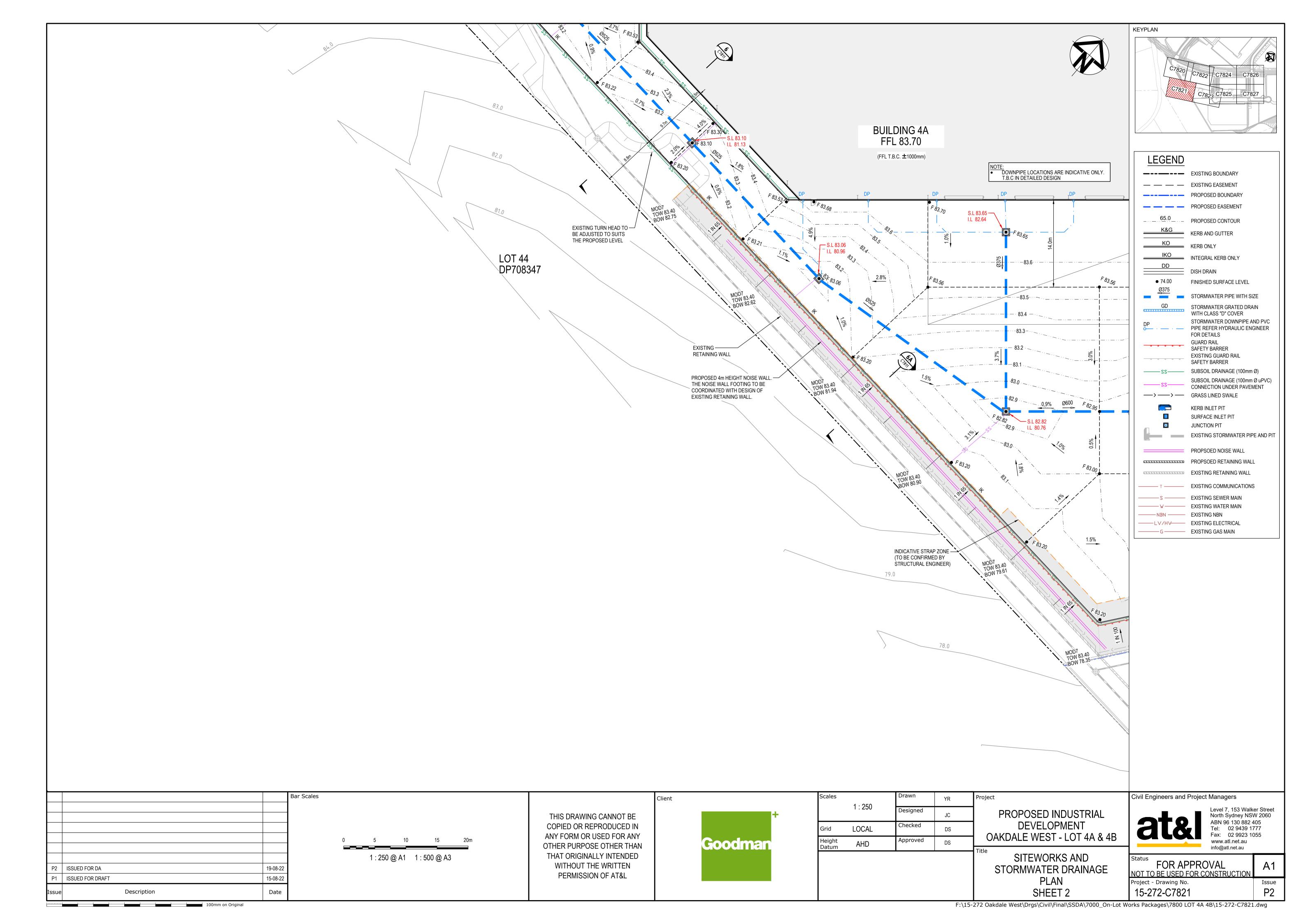


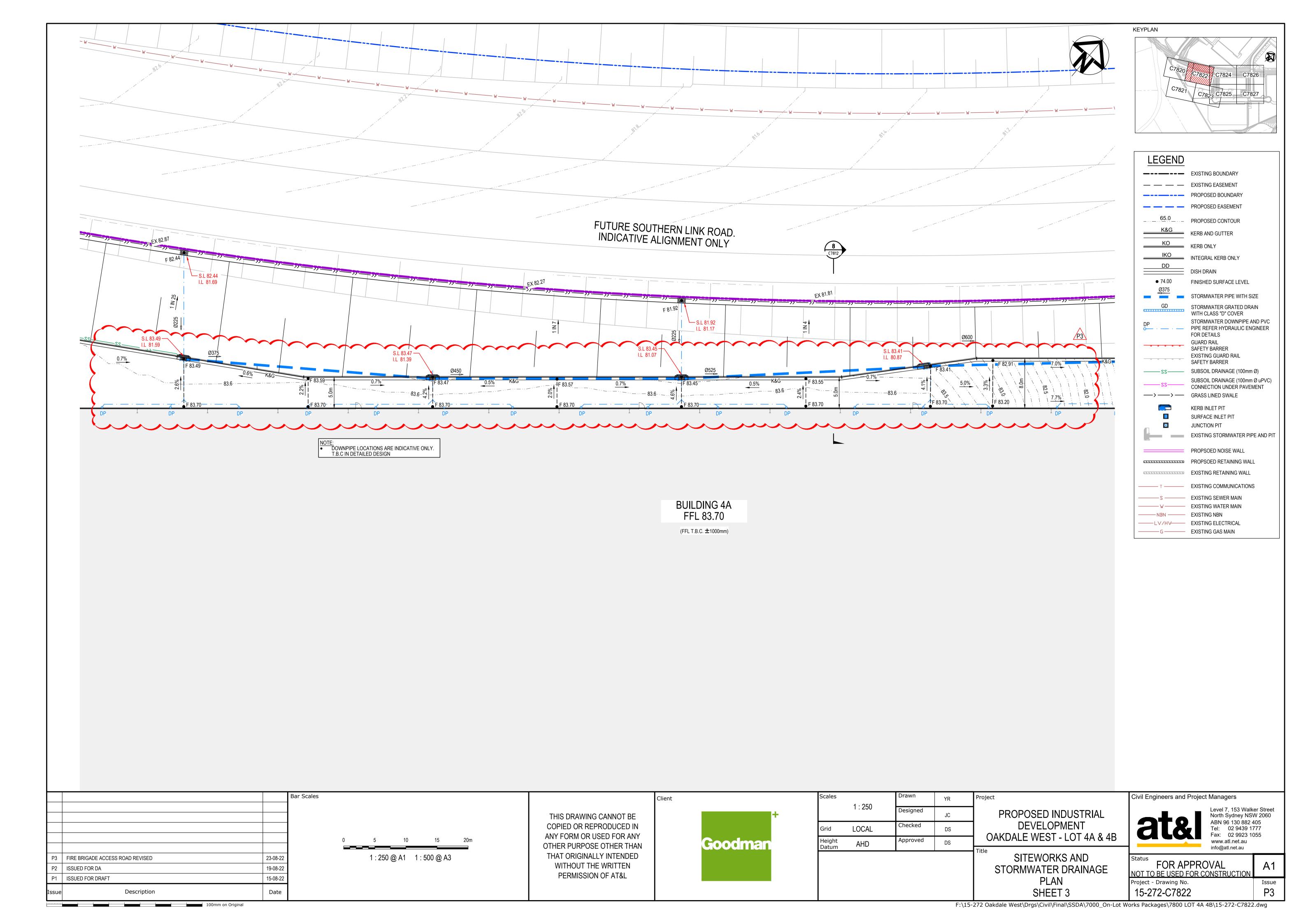


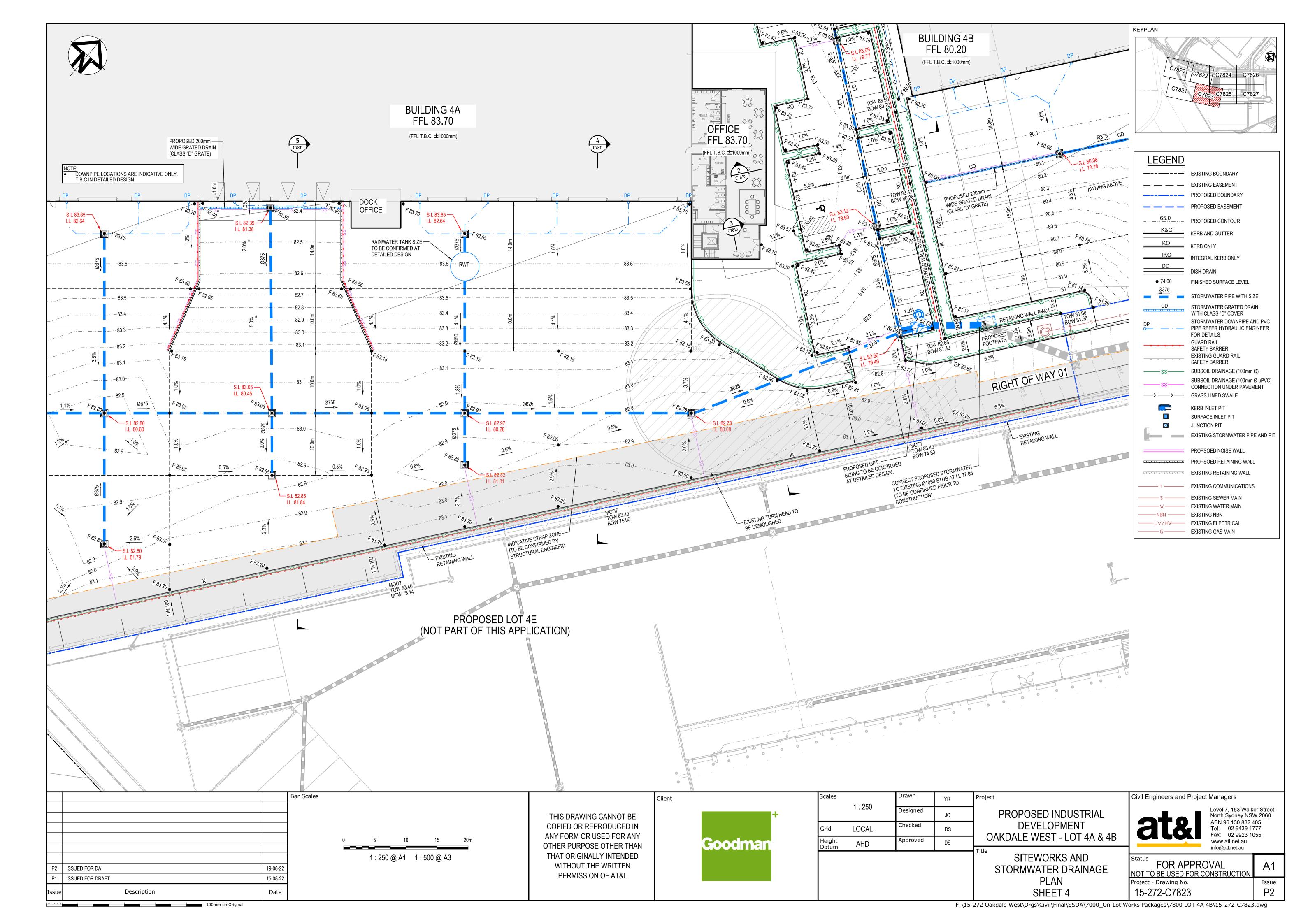


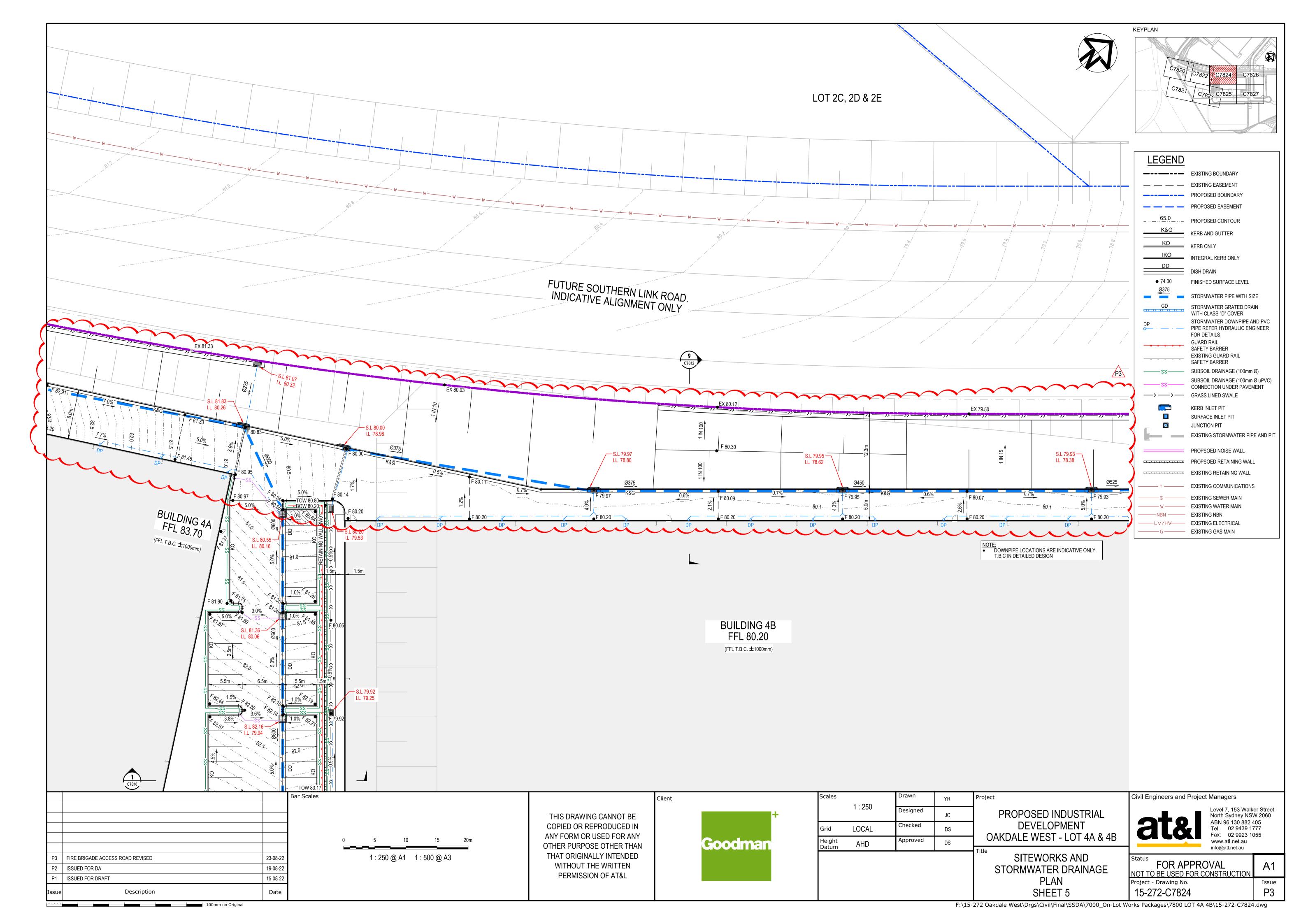


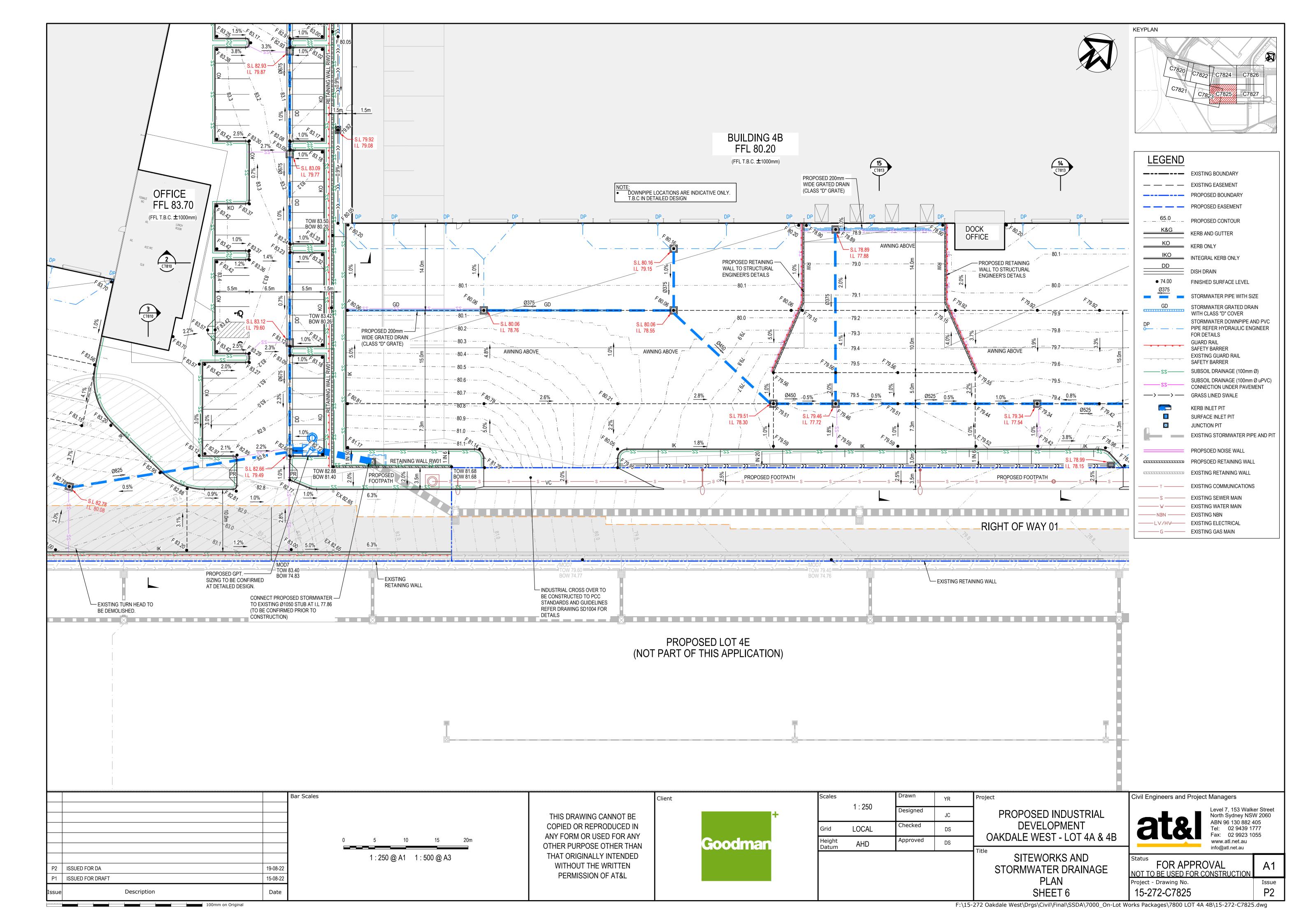


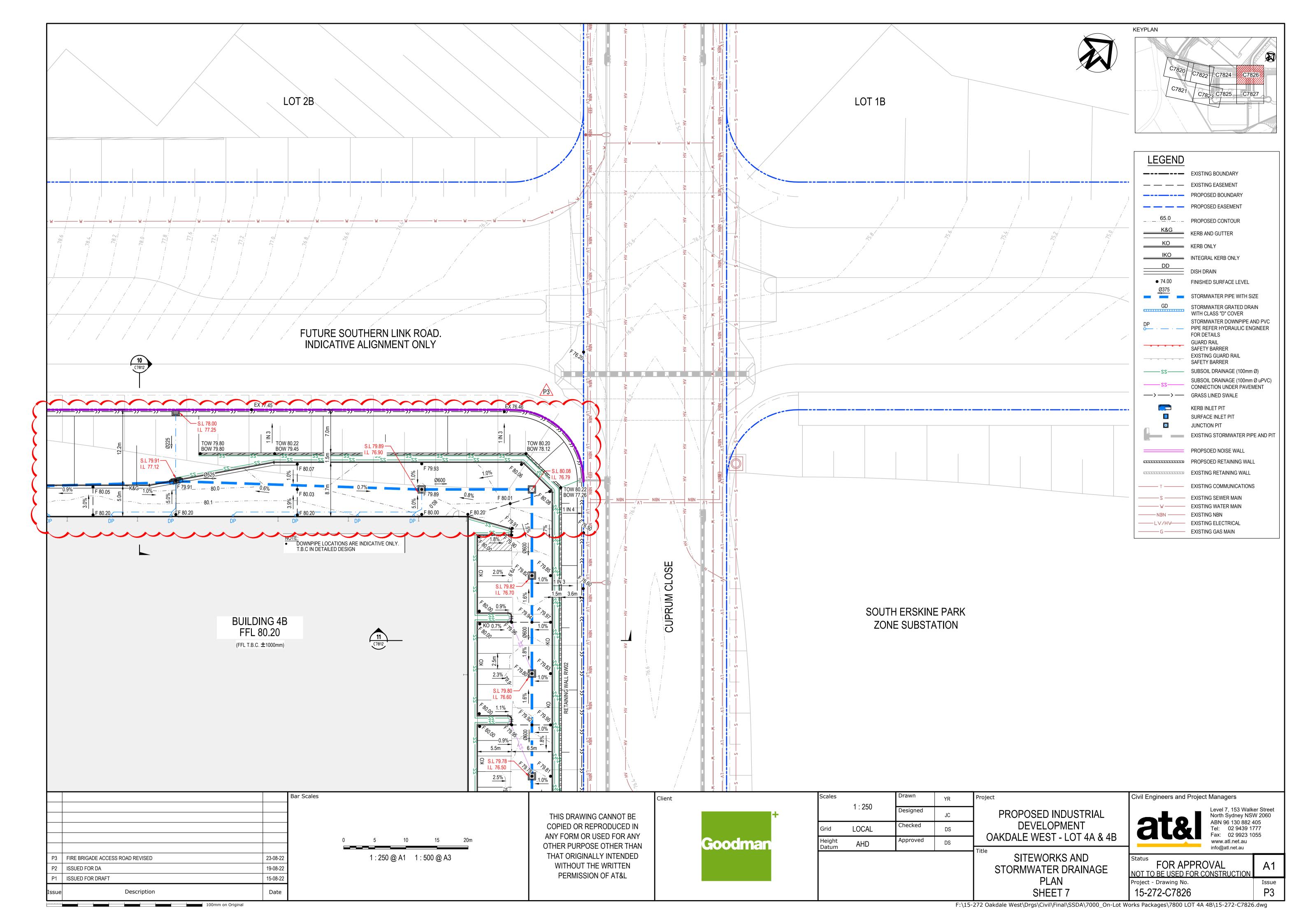


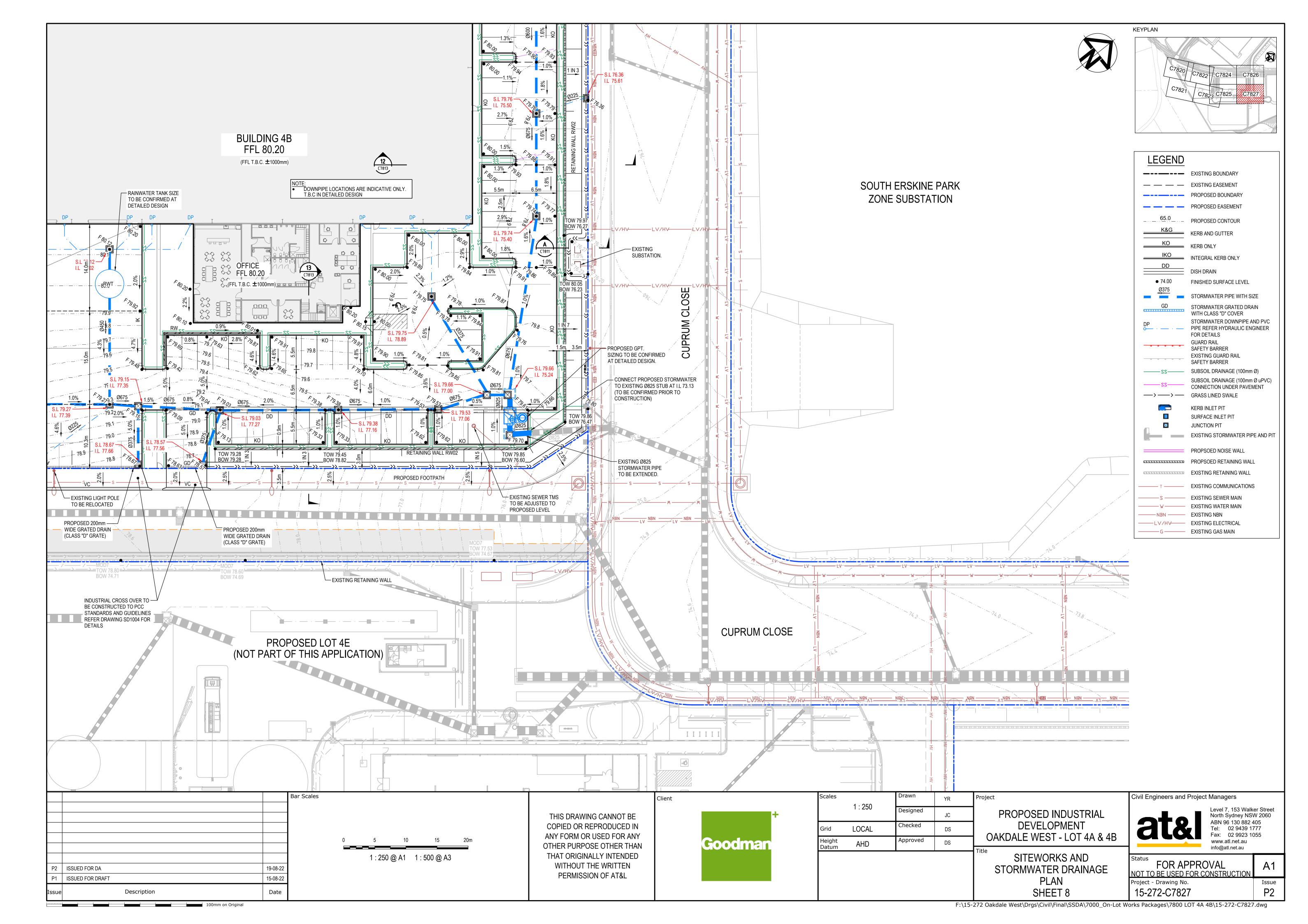


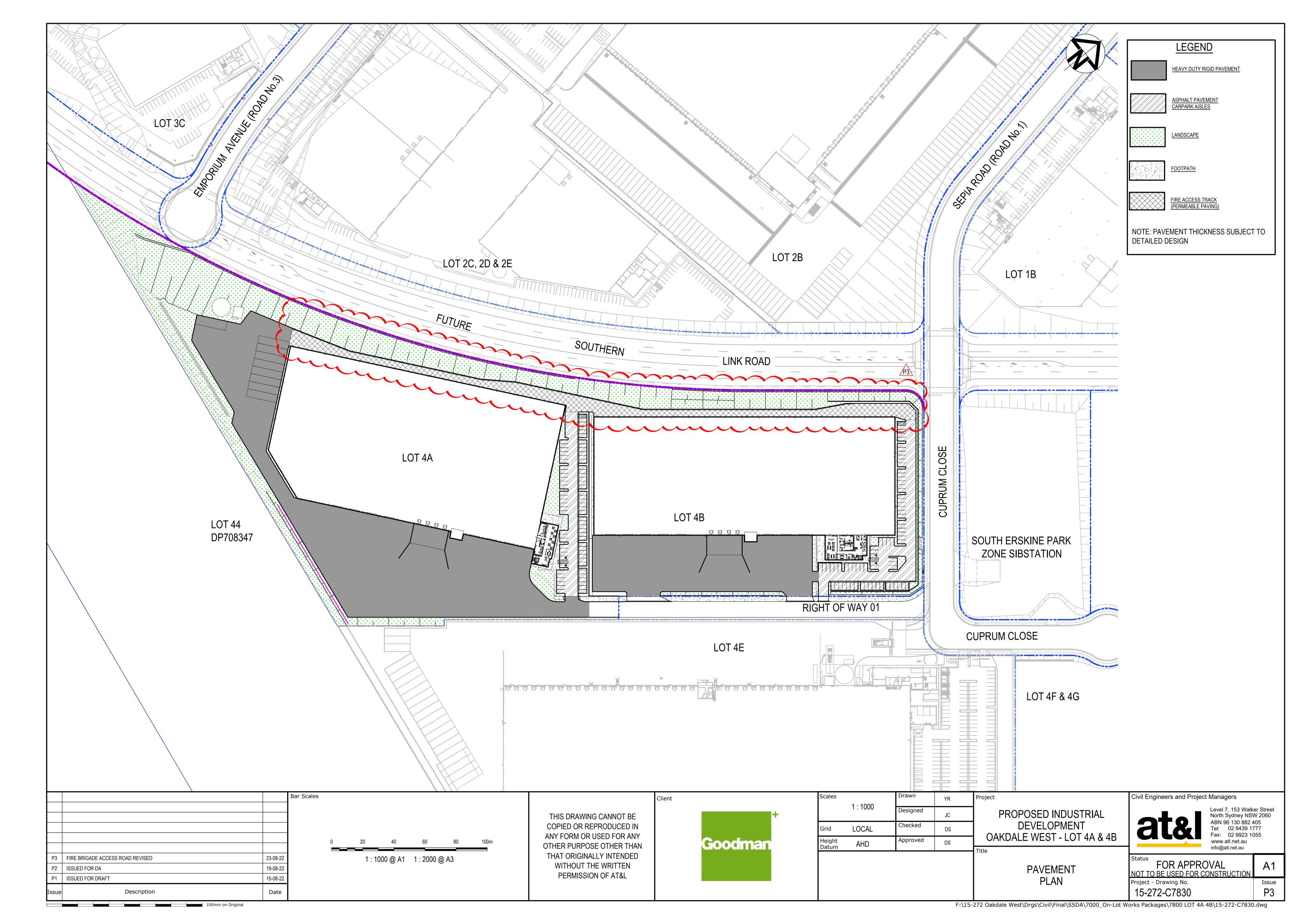


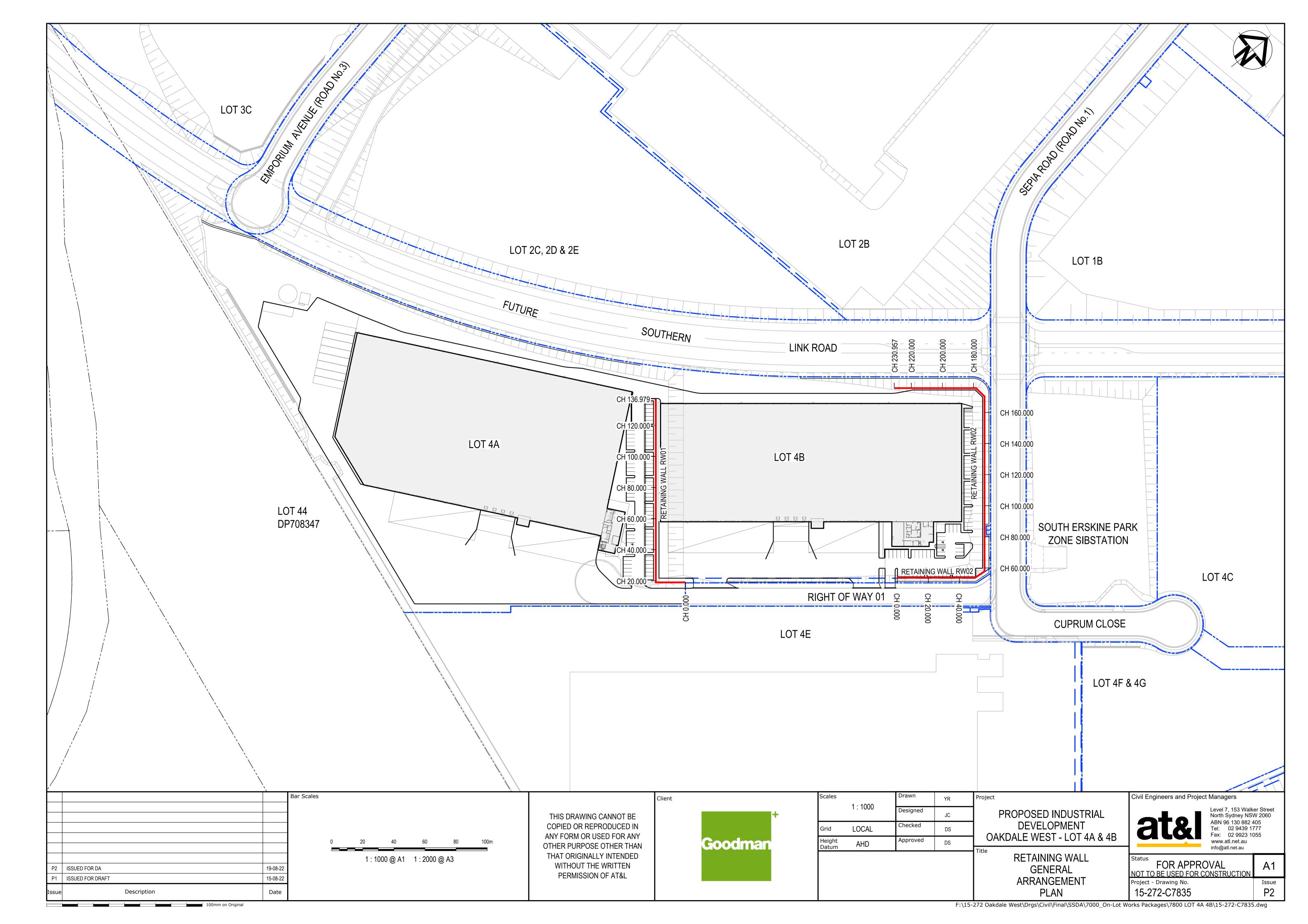


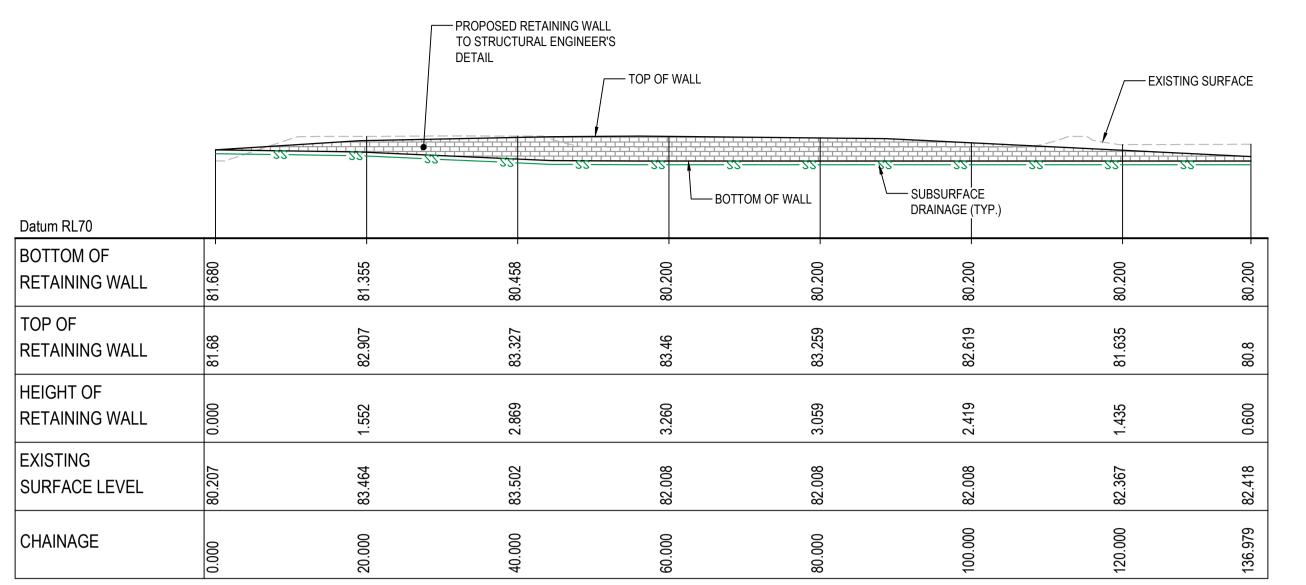






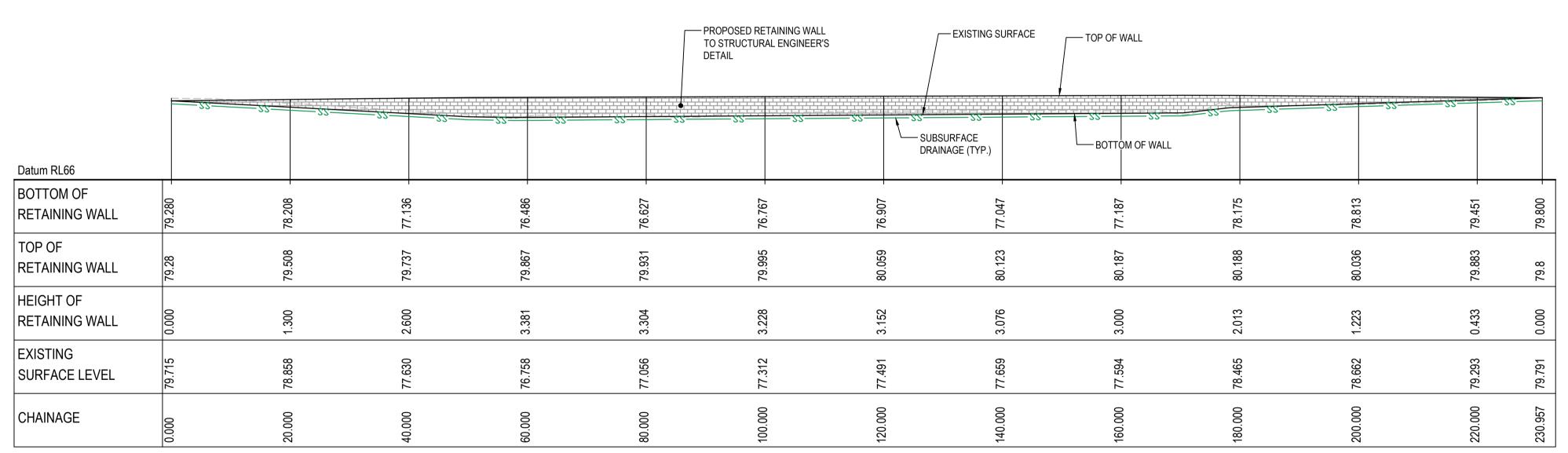






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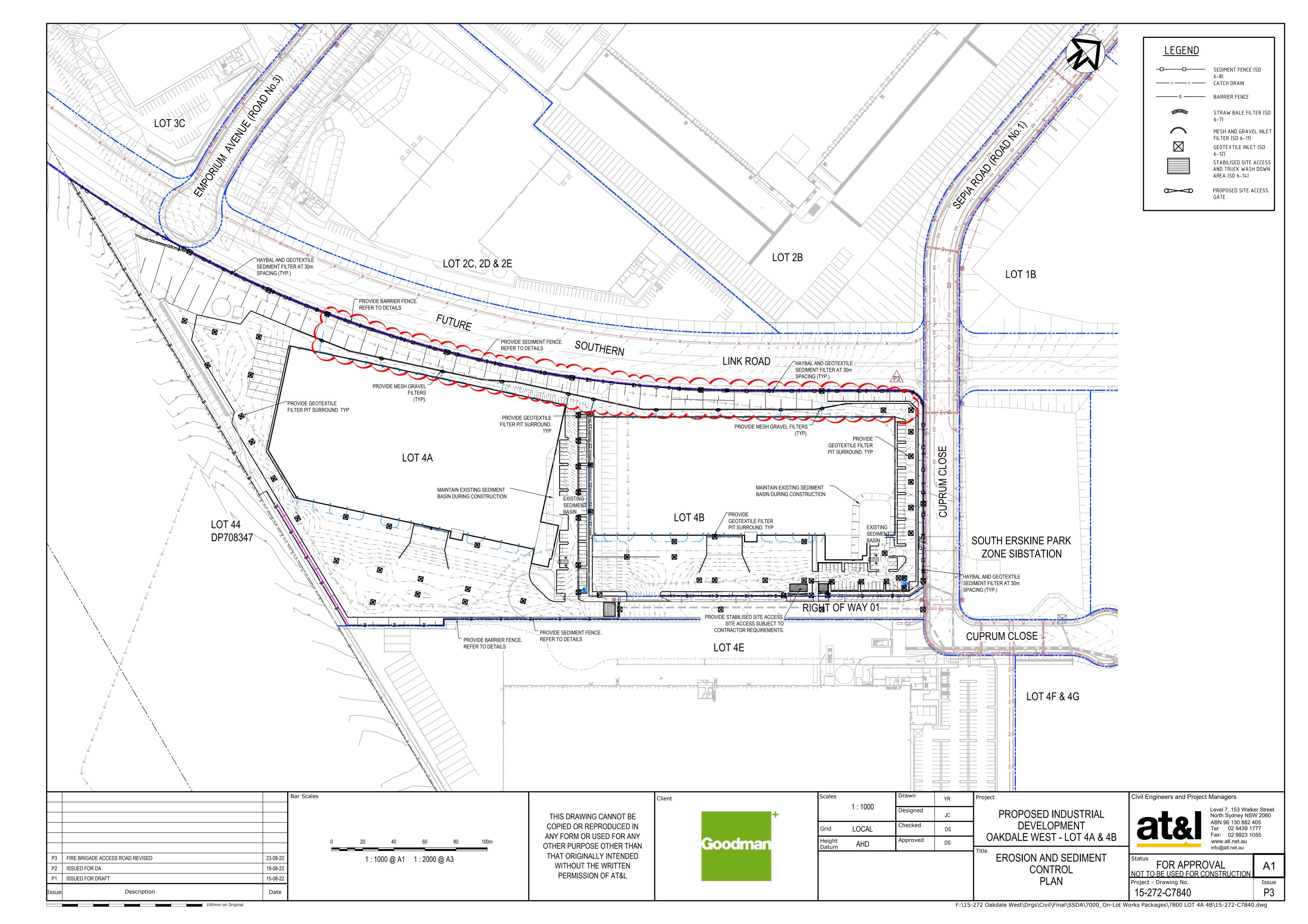
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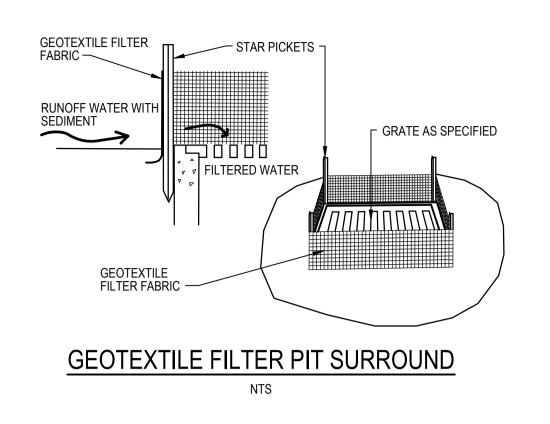


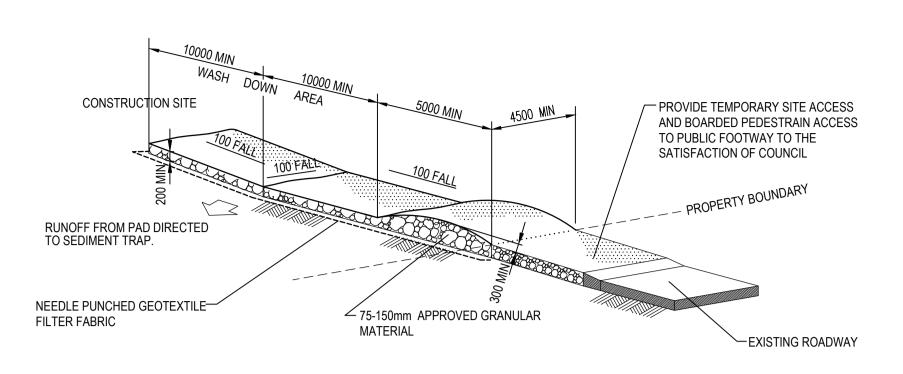
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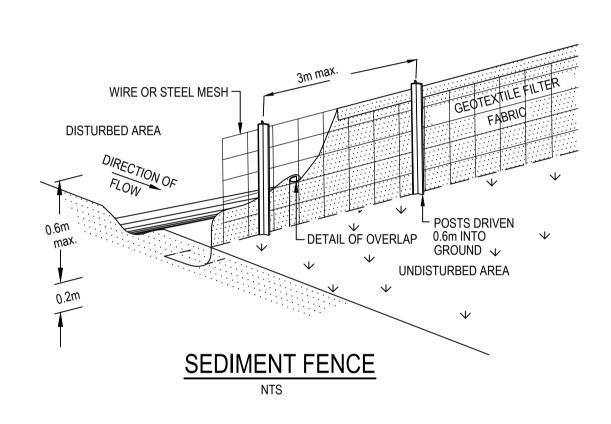
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Issue Description Date							PROFILES	Project - Drawing No. Issue 15-272-C7836 P2	
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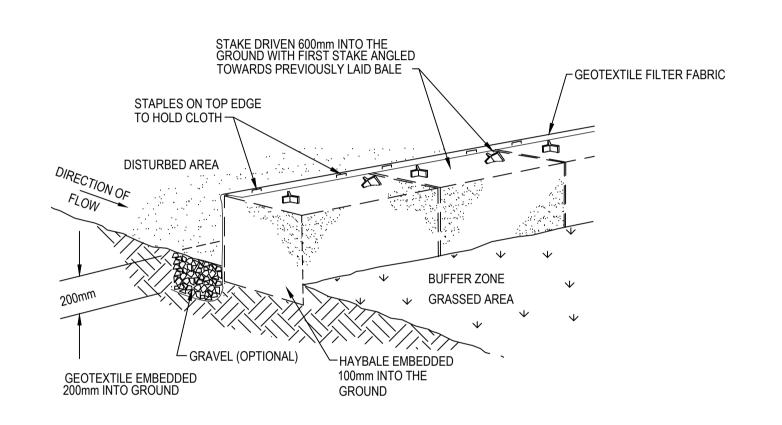




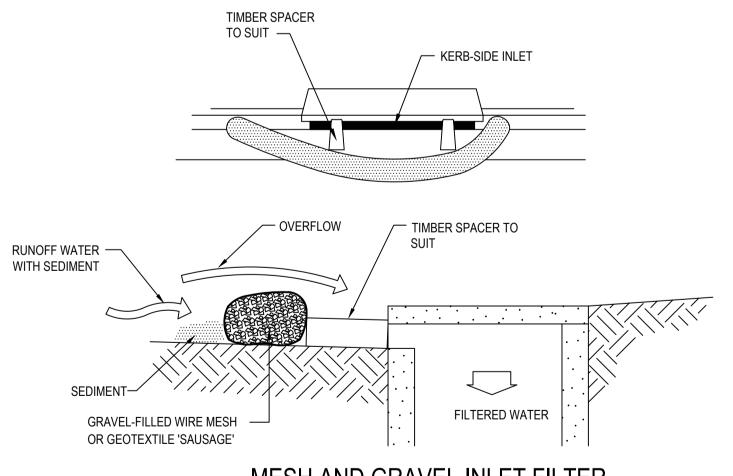


STABILISED SITE ACCESS AND TRUCK WASH DOWN AREA





HAYBALE AND GEOTEXTILE SEDIMENT FILTER



MESH AND GRAVEL INLET FILTER

Client

			Bar Scales
P2	ISSUED FOR DA	19-08-22	
P1	ISSUED FOR DRAFT	15-08-22	
ssue	Description	Date	

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Scales	NITO	Drawn	YR	Project
	NTS	Designed	JC	
Grid	LOCAL	Checked	DS] _
Height Datum	AHD	Approved	DS	\square
Datain				Title

Scales

Drawn

PROPOSED INDUSTRIAL DEVELOPMENT OAKDALE WEST - LOT 4A & 4B

FOR APPROVAL

ABN 96 130 882 405 Tel: 02 9439 1777 Fax: 02 9923 1055 www.atl.net.au info@atl.net.au NOT TO BE USED FOR CONSTRUCTION

Issue

P2

Level 7, 153 Walker Street North Sydney NSW 2060

EROSION AND SEDIMENT DETAILS