

Stormwater Management Strategy

DA Modification 25 for Huntlee Stage 1 Urban Release Area

for Huntlee Pty Ltd

November 2025



GROUNDSWELL
ENGINEERS

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Revision	Report Status	Prepared	Reviewed	Issued
A	For Approval	SC	BB	7/11/2025

Limitation Statement

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Professional opinions and conclusions expressed herein are made in accordance with generally accepted engineering practice and the available data at the time of writing.

1. Introduction

Groundswell Engineers have been engaged by Huntlee Pty Ltd to prepare a Stormwater Management Strategy for the proposed Modification Application (MOD25) to the existing Stage 1 Huntlee Subdivision Consent (MOD24).

This report has been prepared to support the MOD25 application and to convey how the changes will address the Civil and Stormwater Management objectives of the development. This report should be read in conjunction with the drawings provided in Appendix A.

1.1. Objectives

This report intends to outline the design objectives and methods of achieving conformance with the current Huntlee DCP, DA Consent including all Modifications, Council guidelines, Australian Standards and general 'best' engineering practice. Detailed information on the following design and project aspects are provided in the report:

- Stormwater quality treatment.
- On-site stormwater detention.
- Stormwater conveyance
- Site Grading

1.2. Project Background

1.2.1. Huntlee Urban Release Area

The Huntlee Project is a major Urban Release Area (URA) in the Hunter region which will provide housing for approximately 20,000 people accommodated within up to 7,300 dwellings. The project will deliver a new town comprising of a commercial centre, residential precincts, open spaces, recreation areas, conservation reserves and supporting employment lands.

In 2013 the Huntlee Development Control Plan (DCP) was adopted by the Director-General of the Department of Planning and Infrastructure pursuant to the provisions of Section 74C of the Environmental Planning and Assessment Act, 1979 (the Act). The DCP applies to all development on the land in Zone R1 General Residential, Zone R2 Low Density Residential and Zone B4 Mixed Use within the Huntlee site and is to be used to assess all development applications.

Figure 1 below shows an extract from the DCP illustrating the extent of the Huntlee Project Area and respective LGA's.

1.2.2. Huntlee Urban Release Area

The Stage 1 Project Area covers approximately 360ha of the Huntlee URA. Stage 1 was granted approval in 2013 and is now well into the construction phase with over 500 dwellings already occupied. The Stage 1 Project Area in context of the overall Huntlee development framework is shown below in **Figure 2**. The Stage 1 development includes the first residential village extending northeast of the existing North Rothbury township, approximately 50 hectares of the Town Centre and 120 large residential lots off Wine Country Drive.

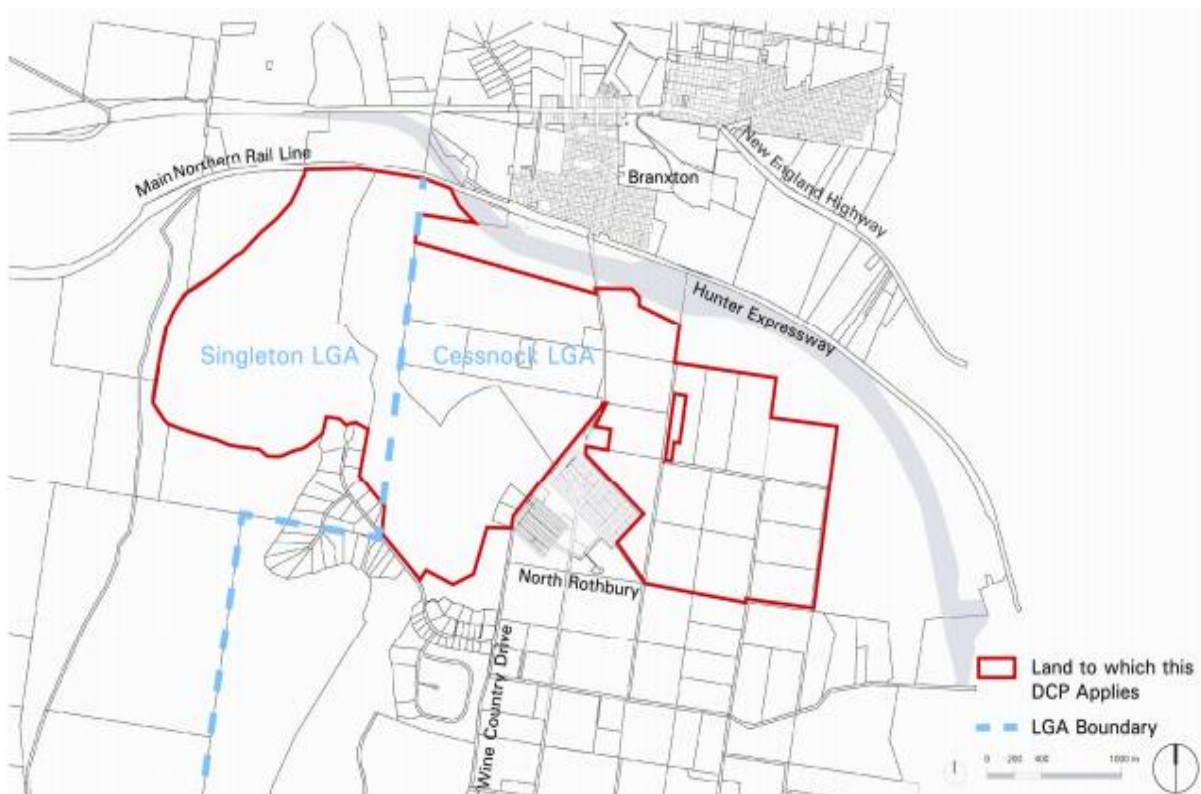


Figure 1: Extract from Huntlee DCP 2013

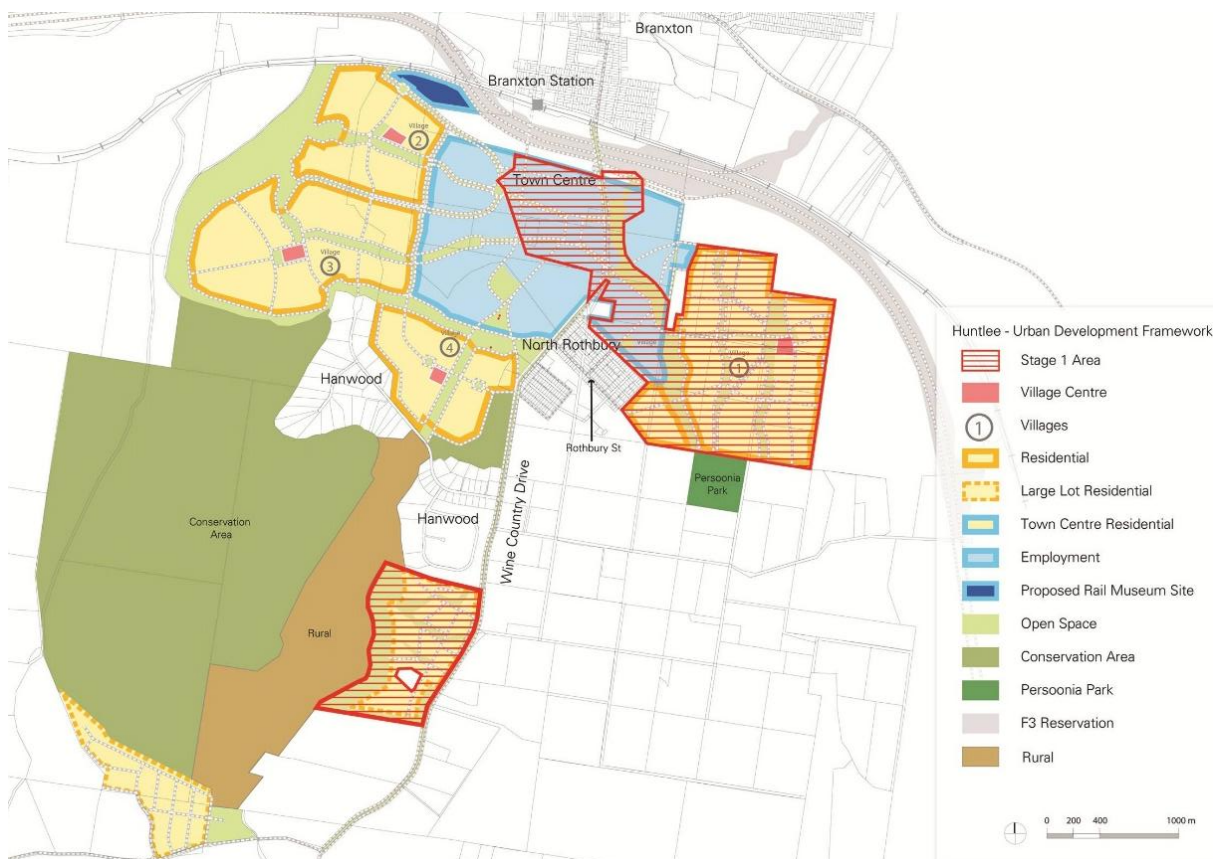


Figure 2: Stage 1 Project Area within Overall Huntlee Development Framework

1.3. Proposed Development Modification

MOD25 is seeking approval to extend the Stage 1 boundary to accommodate a future Community Hub near the southern boundary of the Town Centre precinct TC4. Approval is also sought for layout refinements across the Town Centre, including boundary realignments of 5 commercial/ mixed use lots and minor changes to the Road Hierarchy and shared path/ cycleway strategy. It is noted that layout refinements are minor in nature and do not have a significant bearing on the civil design or stormwater management as currently approved under the Consent. **Figures 3 and 4** below show the current Stage 1 project area masterplan vs the proposed MOD 25 Masterplan Layout.

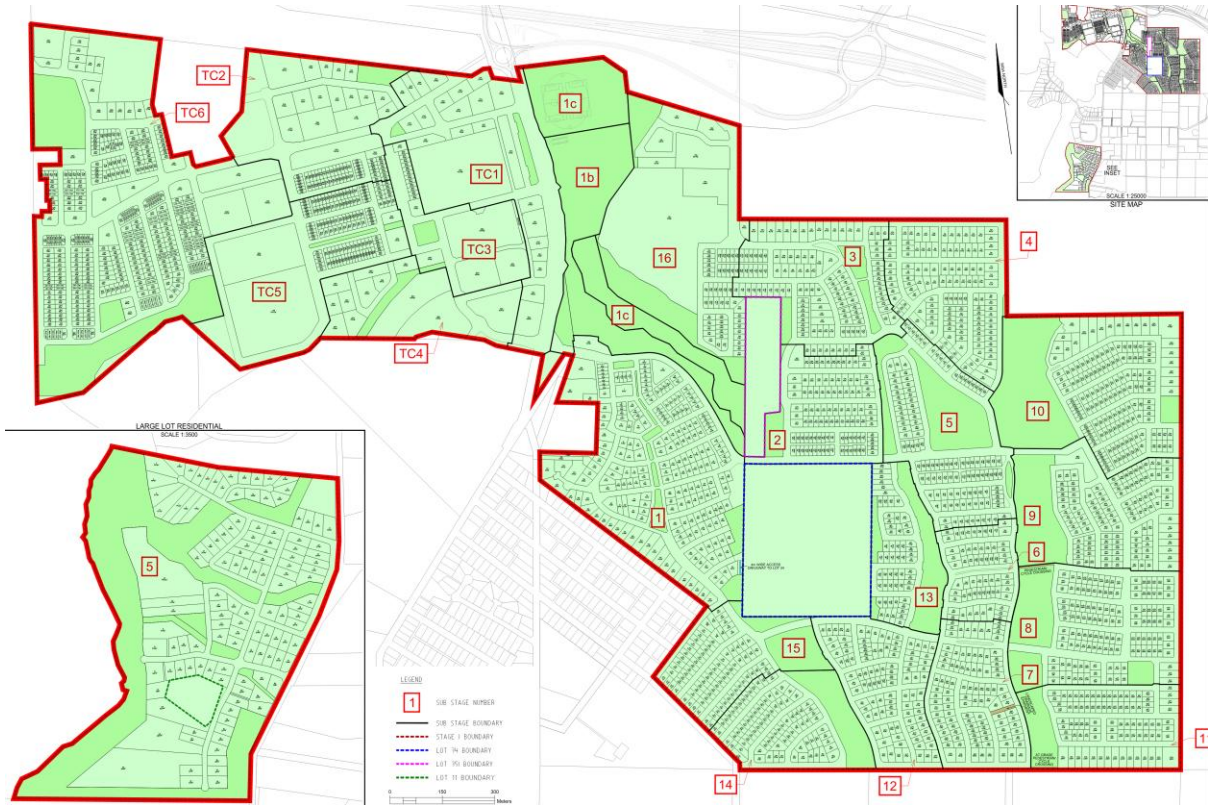


Figure 3: Current Stage 1 Project Area Masterplan Layout

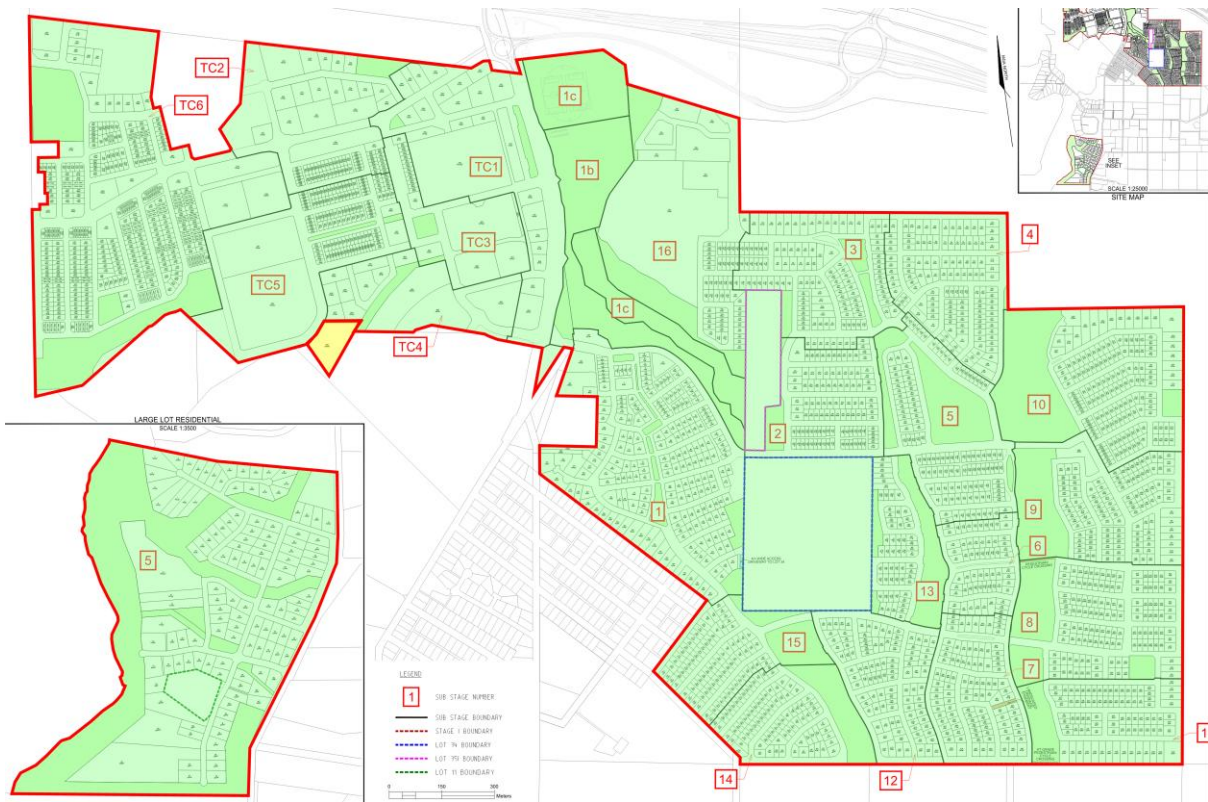


Figure 4: Proposed Stage 1 Project Area Masterplan Layout (MOD 25)

2. Stormwater Management Strategy

2.1. Approved Stormwater Management Strategy

Stormwater management for the Stage 1 Huntlee Project Area is largely based on the Concept Stormwater Mitigation Strategy prepared by Worley Parsons as presented in the report 'Trunk Stormwater and Flooding Assessment' published August 2012 and the modifications currently approved. The strategy proposes regional online detention basins and offline sub catchment water quality facilities which ultimately drain to Anvil Creek, a major branch of the Hunter River. Figure 5 below illustrates the location of these regional detention basins with respect the main Tributary 1 and 2 sub-catchments.

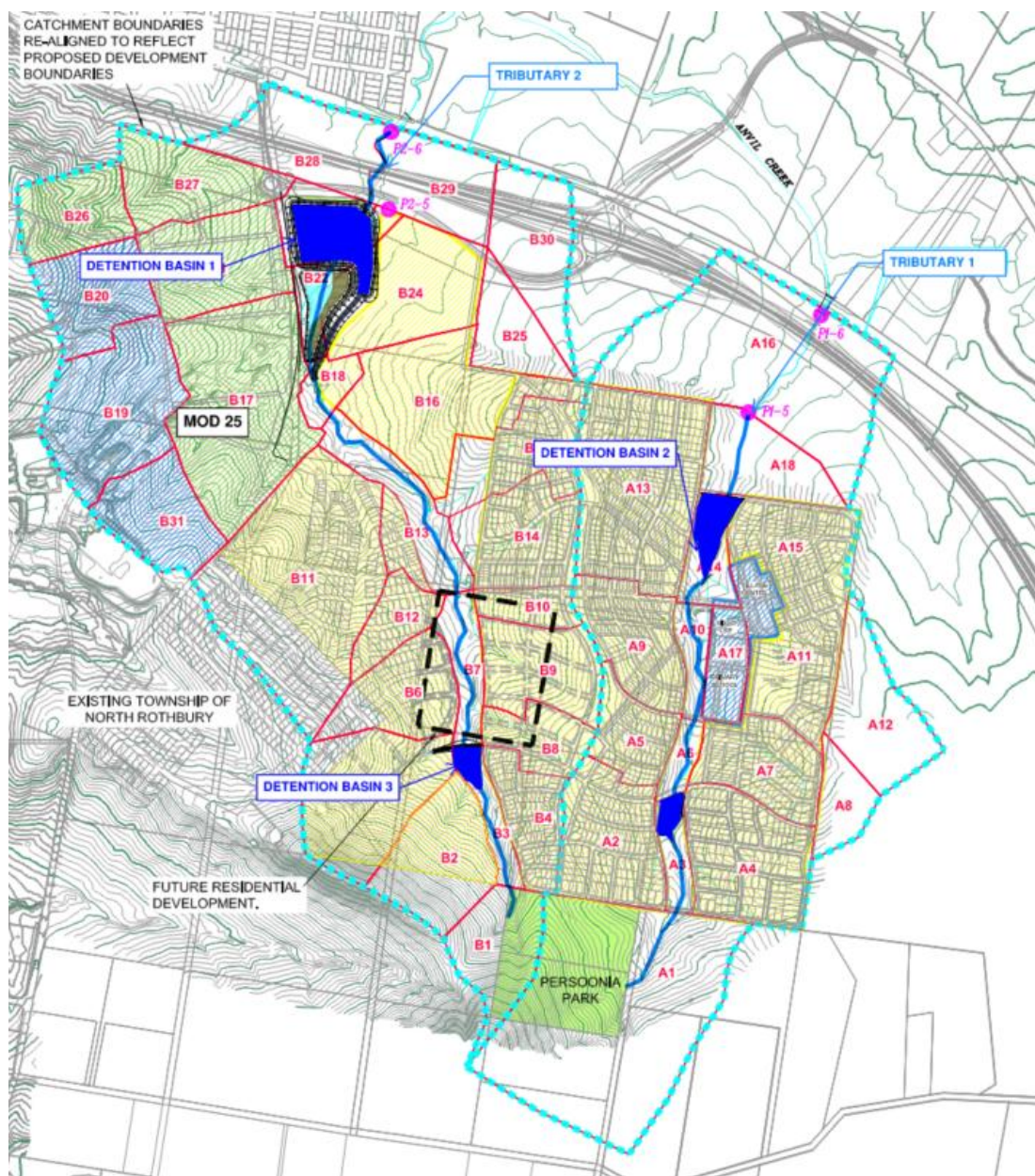


Figure 5: Stormwater Strategy Tributaries with Stage 1 Project Area (Trunk Stormwater and Flooding Assessment - Worley Parsons. August 2012)

Regional detention basins 2 and 3 have now been completed and are fully operational onsite. At the time of writing, regional detention basin 1 was well under construction with completion anticipated in early 2026. In accordance with the masterplan strategy the drainage facility at the end of Tributary 2 also includes a large offline water quality facility in the form of a constructed wetland designed to mitigate runoff from the Town Centre sub catchment.

Figures 6 and 7 below illustrate the post developed catchments accounted in the detailed design of water quality and detention facilities. It is noted that these catchments extended beyond the Stage 1 project boundary, shown in red, where appropriate to account for future Stage 2 development. The adopted impervious fractions are also depicted in Figure 7. Full details of these basins can be found within the Tributary 2 Basin 1 design report prepared by Northrop Consulting Engineers (NL151661_E22_Tributary 2 Detention Basin 1 Design Report).

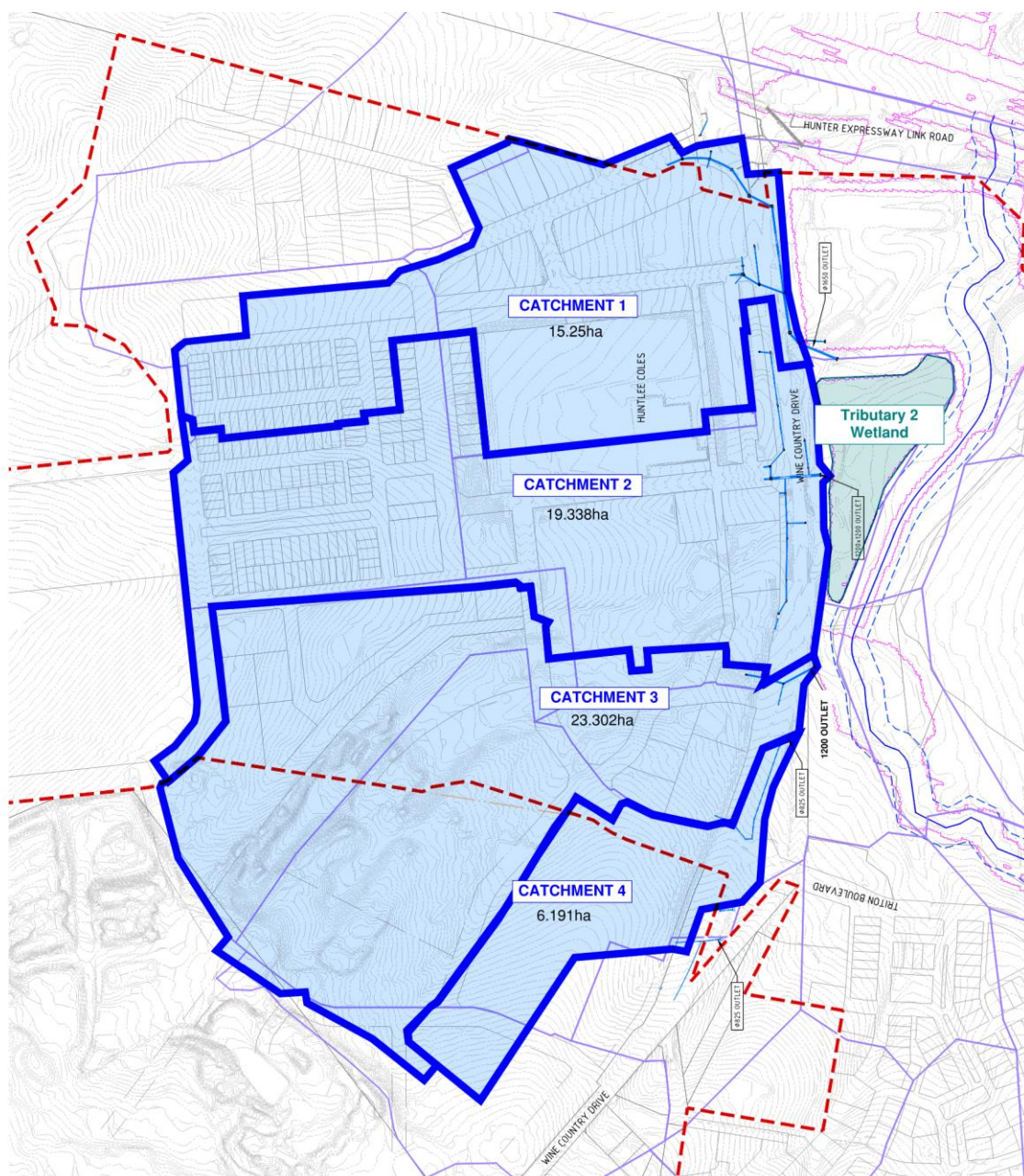


Figure 6: Huntlee Town Centre Wetland Post Developed Catchment Boundary

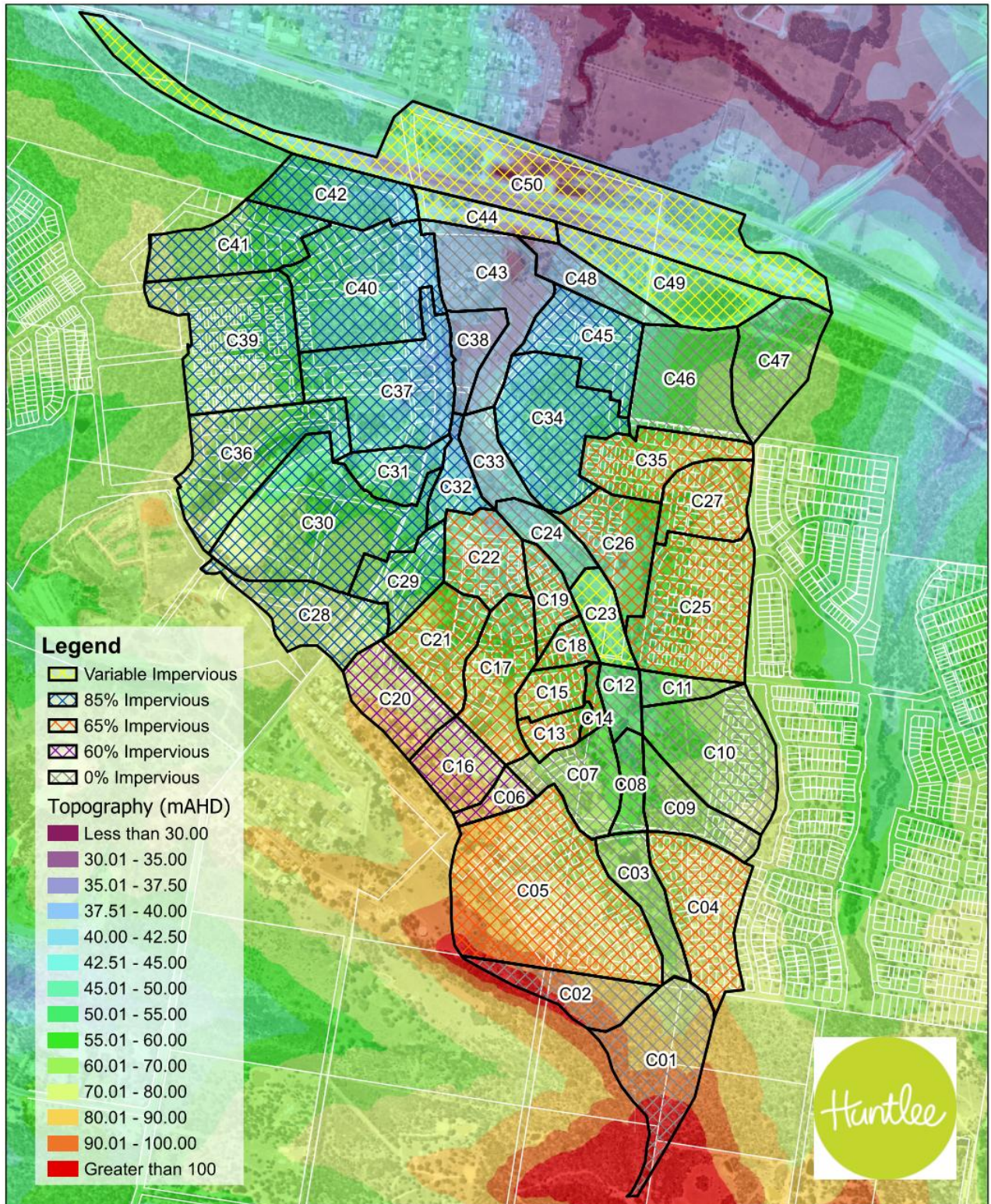


Figure 7: Huntlee Tributary 2 Detention Basin 1 Post Developed Catchment Boundary

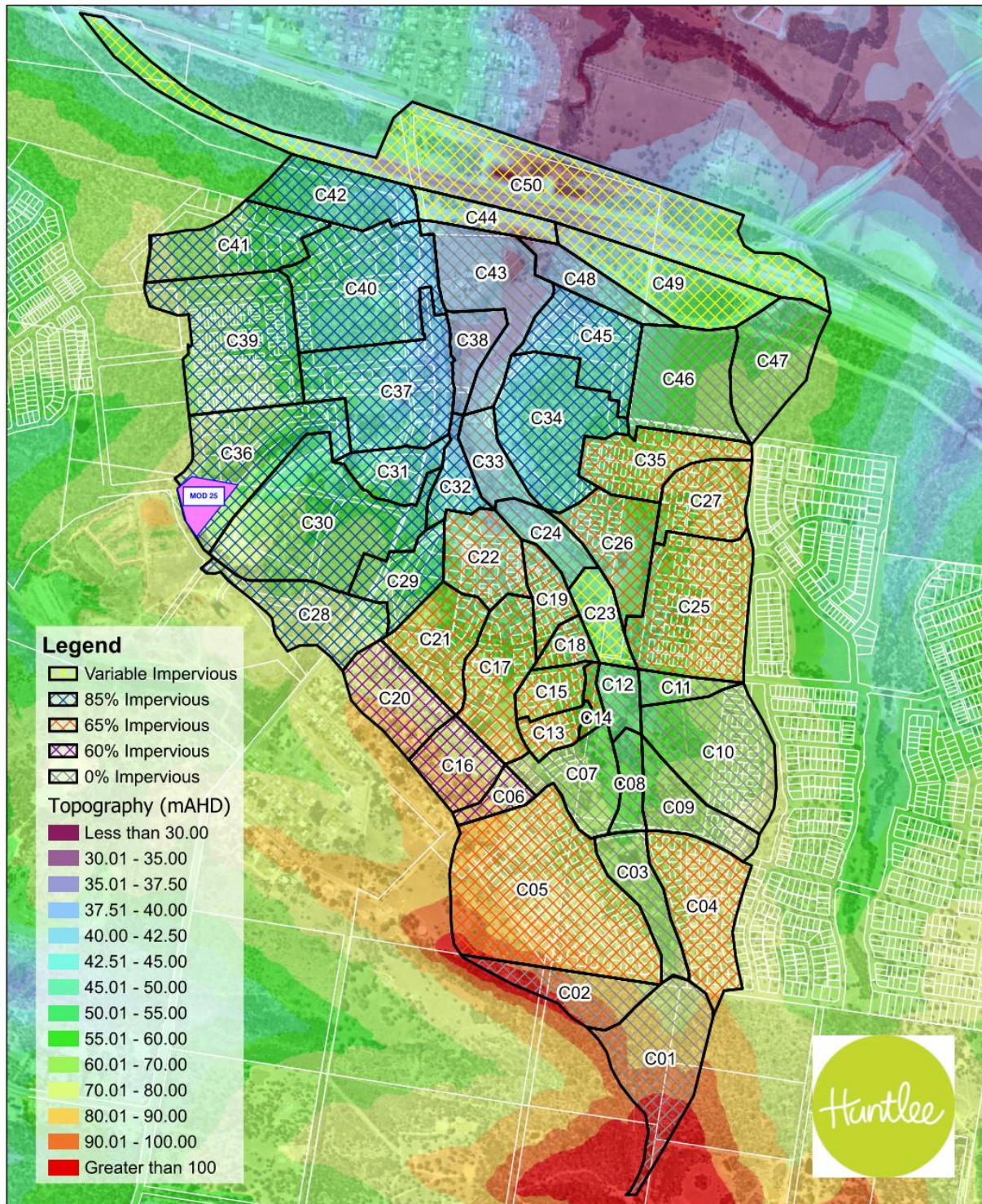


Figure 9: MOD 25 Expansion within the Huntlee Tributary 2 Detention Basin 1 Post Developed Catchment Boundary

As shown, the subject site is located within the Tributary 2 catchment area. Therefore, the changes proposed as part of MOD25, including the addition of the Community Hub lot in the Stage 1 Project Area, are accounted for in the in the end of line facility from both a water quality and quantity perspective. Further mitigation measures or changes to the approved water quality and quantity strategy are therefore not proposed as part of MOD 25.

2.3. Stormwater Conveyance

The pit and pipe network throughout the Huntlee project area is to be developed as part of the detailed design of each substage. Detailed design is to be undertaken in accordance with the Huntlee 2013 DCP and Cessnock City Council's (CCC) Engineering Guidelines for Design and Construction. Accordingly, the following design storm events are to be adopted:

- Minor Drainage Network – 10% AEP
- Major Drainage Network including Overland Flow System – 1% AEP.

Hydraulic design and results are to be provided as part of the Subdivision Works Certificate (SWC) application for each respective substage of the development.

2.3.1 Connection to Existing Network

As shown in Figure 10 the proposed MOD25 stormwater network will connect to the Bakehouse/ Splitters Road stormwater network, which ultimately drains under Wine Country Drive to the Tributary 2 Basin 1 facility. Details of the existing Splitters Road network and stormwater strategy are included in the TC Stage 6 SWC Package prepare by Northrop Consulting Engineers.

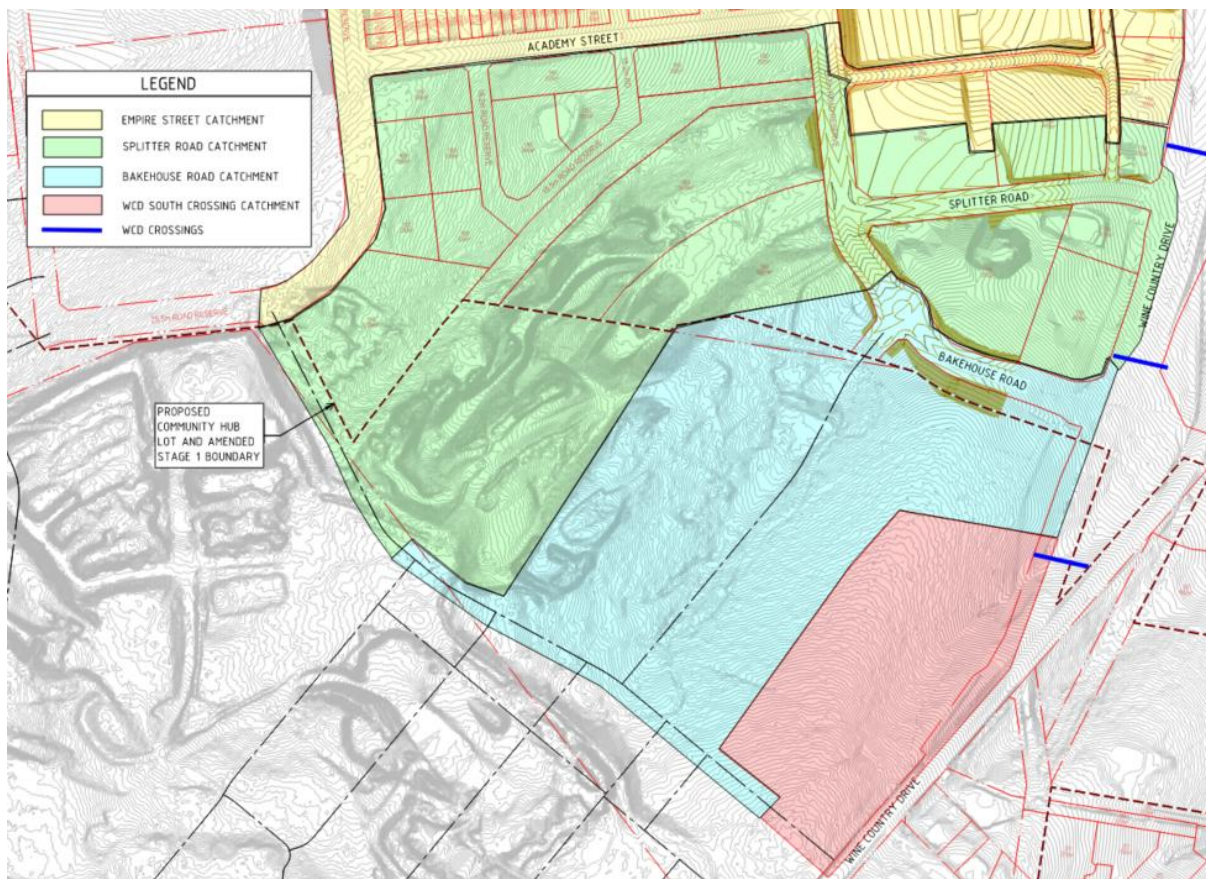


Figure 10: MOD25 Stormwater Network Catchment Plan

2.3.2 Interim Stormwater Easement

A stormwater easement is proposed as part of MOD25 to provide a connection between the Community Hub lot and the existing Splitters Road stormwater network. The stormwater easement

will accommodate a swale that will be designed to contain flows generated in the major storm event. An indicative layout of the proposed easement is illustrated in blue in **Figure 11**.

An easement width of 3.0m is proposed to contain the swale and any necessary piped infrastructure which will benefit Council as the stormwater infrastructure owner. It is anticipated that the easement will be extinguished in the future once the proposed roads and their associated stormwater networks adjacent to the site are constructed and operational in accordance with the site wide masterplan.

Detailed modelling of the proposed easement infrastructure will be undertaken at SWC Stage.



Figure 11: Proposed Stormwater Easement MOD25

3. Site Grading

The proposed Community Hub site has been subject to past disturbance in certain areas, with variable surface slopes and an irregular ground profile. The site generally slopes in a south easterly direction, with existing grades ranging from approximately 6 – 11% and localised areas of steeper battering.

The proposed grading design maintains the existing drainage pattern, directing stormwater to the east where it will ultimately connect to the existing stormwater network, complying with the proposed stormwater conveyance strategy. Preliminary civil drawings including a concept grading plan has been provided in Appendix A which illustrate the proposed site levels. The design generally consists of two main pads, with batters transitioning to the surrounding natural ground level as required.

4. Conclusion

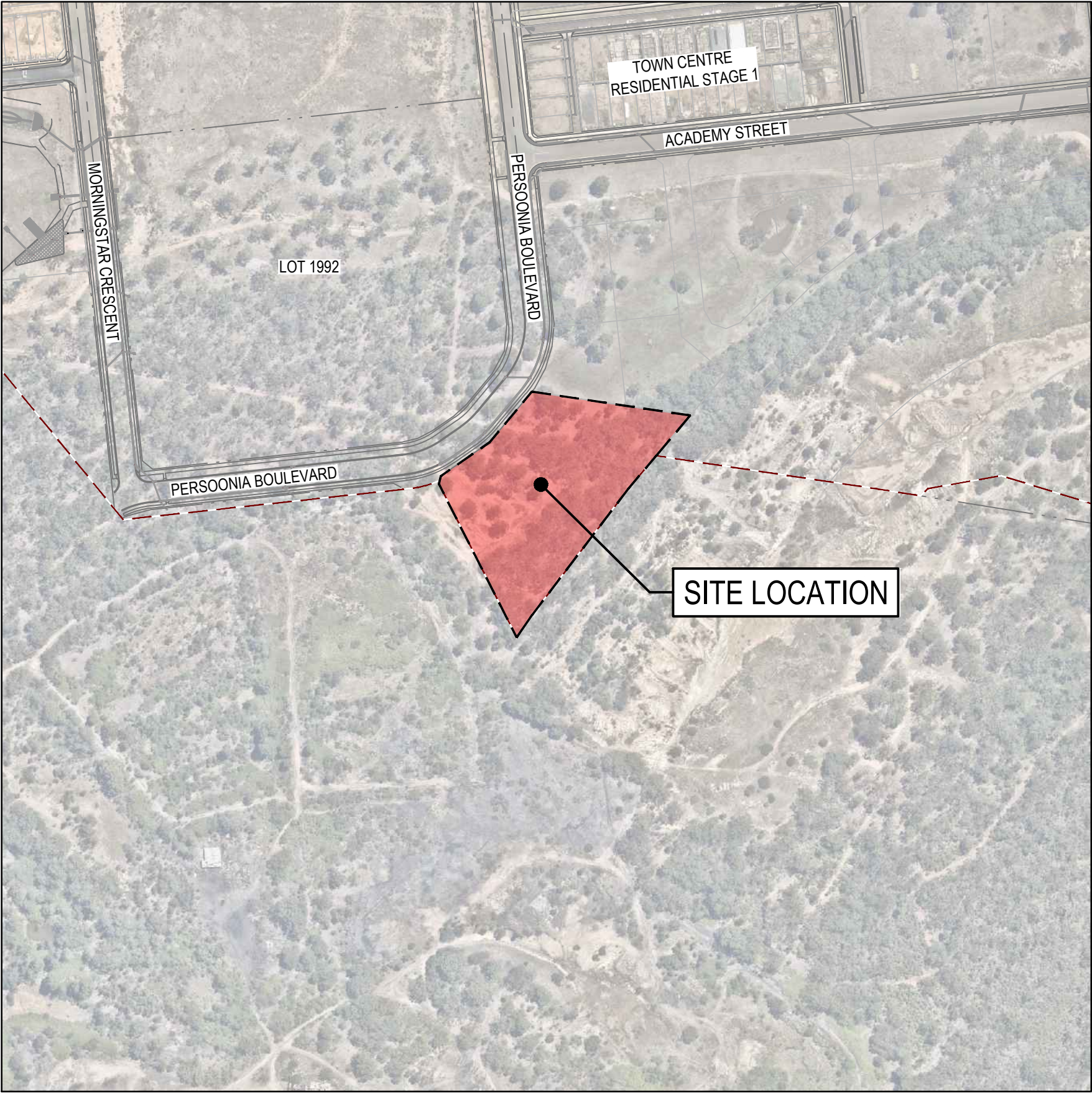
The proposed stormwater management strategy for MOD25 is considered to effectively meet the objectives of the 2013 Huntlee DCP and is therefore recommended to Council for adoption. The proposal will minimise the potential impact of local and downstream flooding by ensuring no net increase in peak flows during event up to and including the 1% AEP storm. Further to this, with the adoption of Water Sensitive Urban Design Principles to mitigate the effects of urbanisation on water quality, the required pollutant load reduction targets are met.

APPENDIX A - Concept Civil Plans

HUNTLEE SUBDIVISION

MOD 25 PRELIMINARY GRADING

CONCEPT - CIVIL ENGINEERING PACKAGE



LOCALITY PLAN

IMAGE SOURCE : NEARMAP

DRAWING LIST

DRAWING	TITLE
250035-M25-SK-000-01	COVER SHEET, DRAWING LIST AND LOCALITY PLAN
250035-M25-SK-101-01	CIVIL SITE PLAN
250035-M25-SK-201-01	CUT AND FILL PLAN
250035-M25-SK-210-01	CUT AND FILL PLAN SECTIONS - SHEET 1
250035-M25-SK-210-02	CUT AND FILL PLAN SECTIONS - SHEET 2

REV	DESCRIPTION	ISSD	APP	DATE	PROJECT MANAGER	CLIENT			SCALE			PROJECT TITLE	STATUS
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					DESIGNED S.CROFT / T.SQUIRES								
					DRAFTED R.HUTCHISON								
					VERIFIED B.CLARK								

LWP

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Huntlee

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SCALE

0 30 60 90 120m
SCALE 1:3000

NORTH

SHEET SIZE A1
SETOUT TBD

54 HUDSON STREET, HAMILTON NSW 2303

DRAWING TITLE

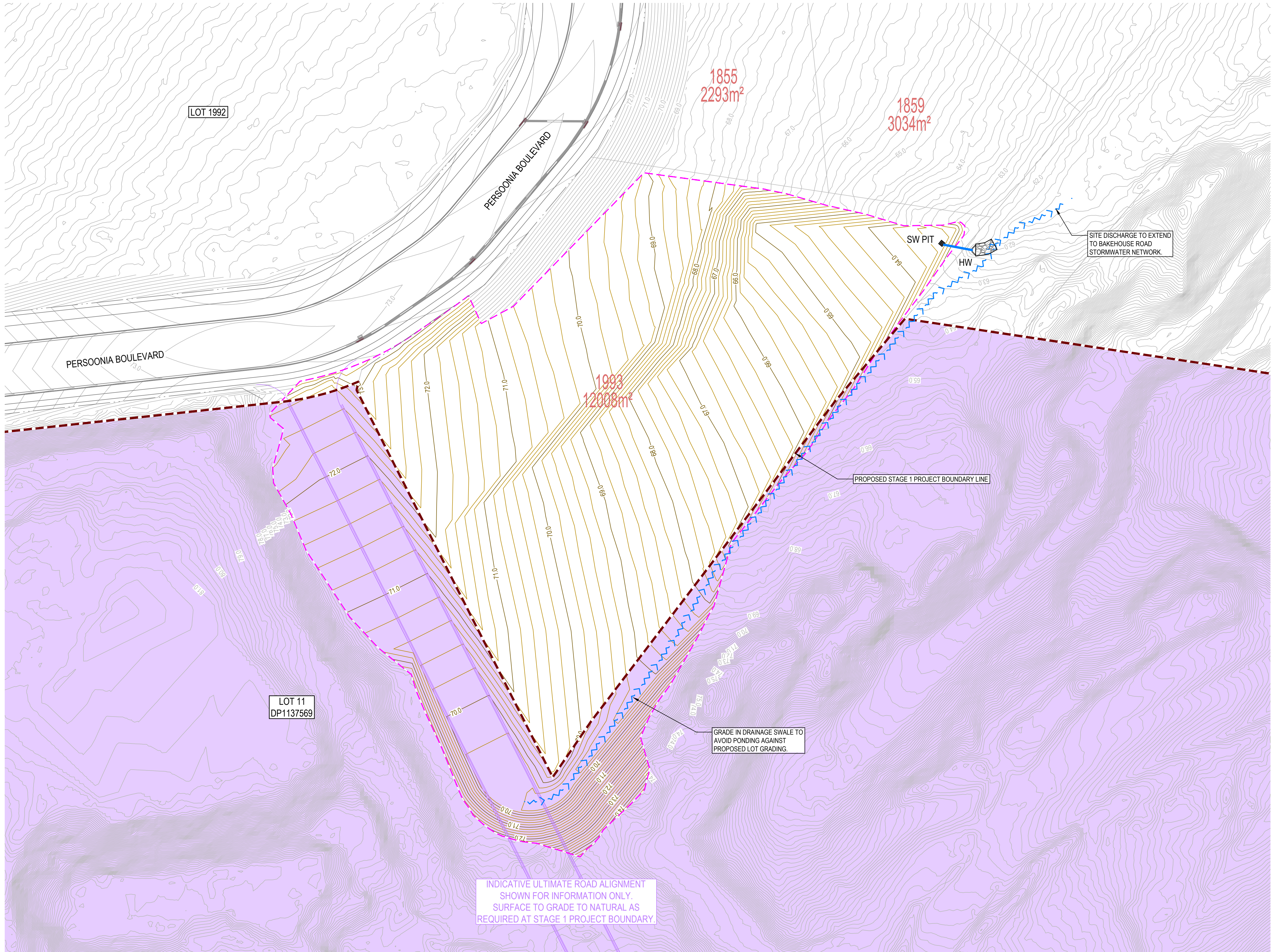
COVER SHEET, DRAWING LIST
AND LOCALITY PLAN

PROJECT - SET - DRAWING - SHEET

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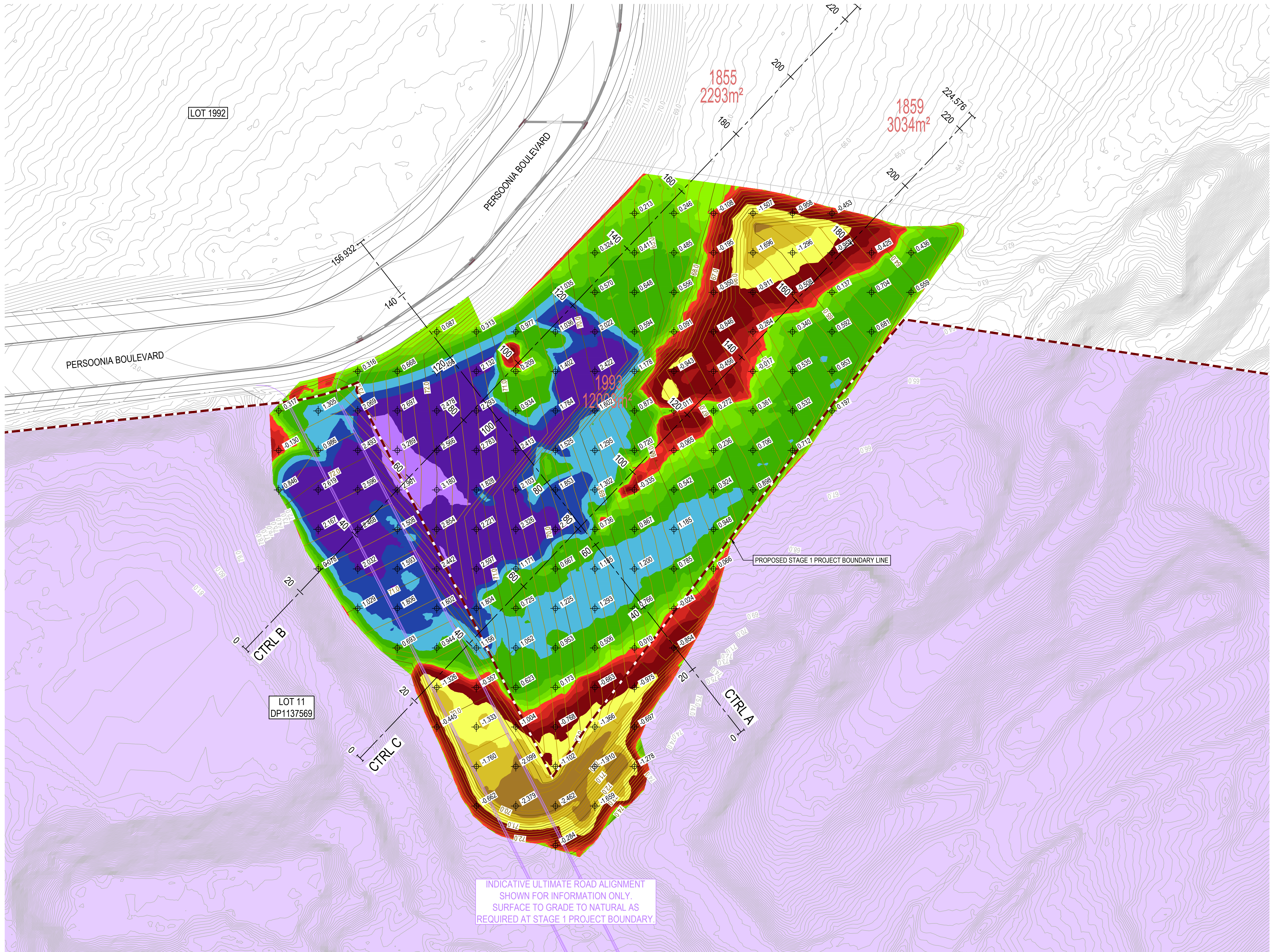
REVISION

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LEGEND	
	HUNTLEE STAGE 1 PROJECT BOUNDARY
	EXISTING BOUNDARY LINE
	DRAFT / FUTURE BOUNDARY LINE
	DESIGN CONTOURS 0.2m INTERVAL)
	EXISTING CONTOURS (0.2m INTERVAL)
	EXISTING STORMWATER NETWORK
	PROPOSED STORMWATER PIPE
	SW PIT
	PROPOSED STORMWATER PIT AND TAG
	PROPOSED HEADWALL AND TAG
	RIP RAP ENERGY DISSIPATER
	DRAINAGE SWALE
	INDICATIVE LIMIT OF WORKS OUTLINE
	FUTURE / STAGE 2 DA AREA WORKS. SHOWN INDICATIVELY FOR INFORMATION ONLY.

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					R.HUTCHISON							DRAWING TITLE CIVIL SITE PLAN	PROJECT - SET - DRAWING - SHEET
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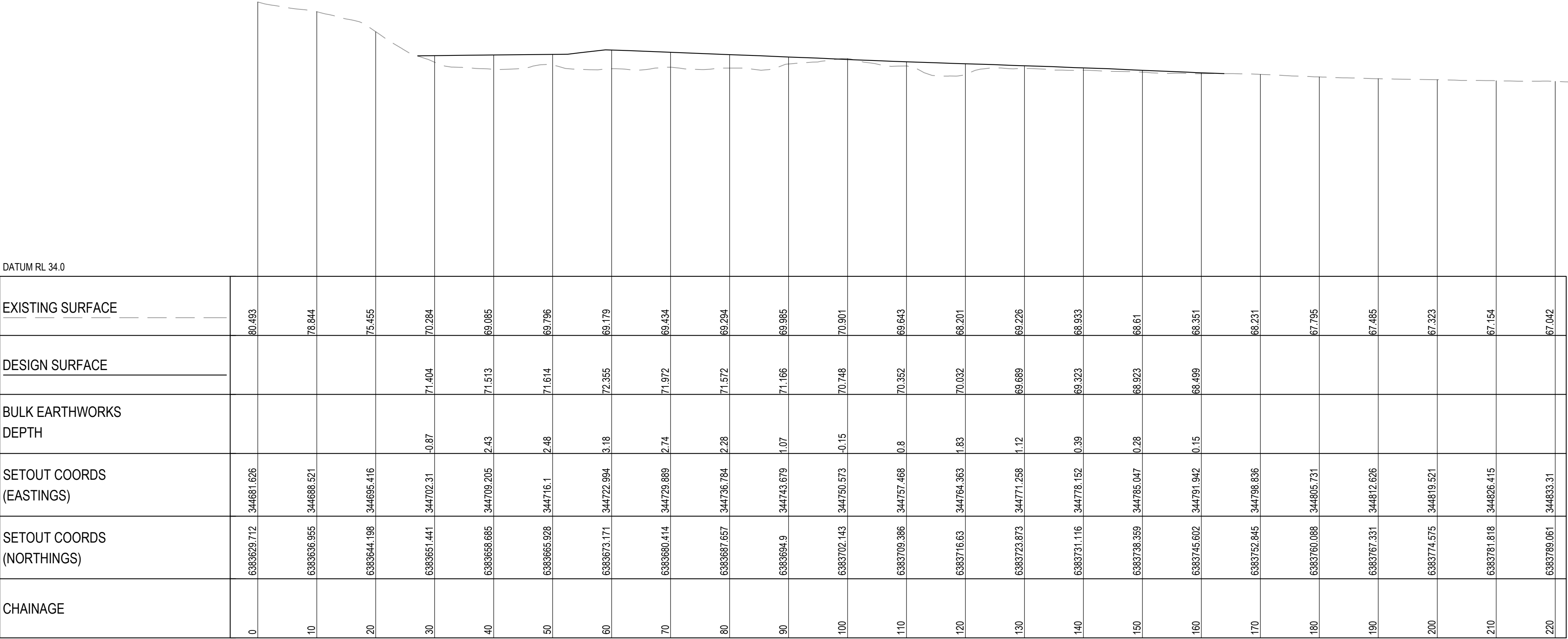


LEGEND	
	HUNTLEE STAGE 1 PROJECT BOUNDARY
	EXISTING BOUNDARY LINE
	DRAFT / FUTURE BOUNDARY LINE
	BULK EARTHWORKS SPOT HEIGHT
	DESIGN CONTOURS (0.2m INTERVAL)
	EXISTING CONTOURS (0.2m INTERVAL)
	FUTURE / STAGE 2 DA AREA WORKS. SHOWN INDICATIVELY FOR INFORMATION ONLY.

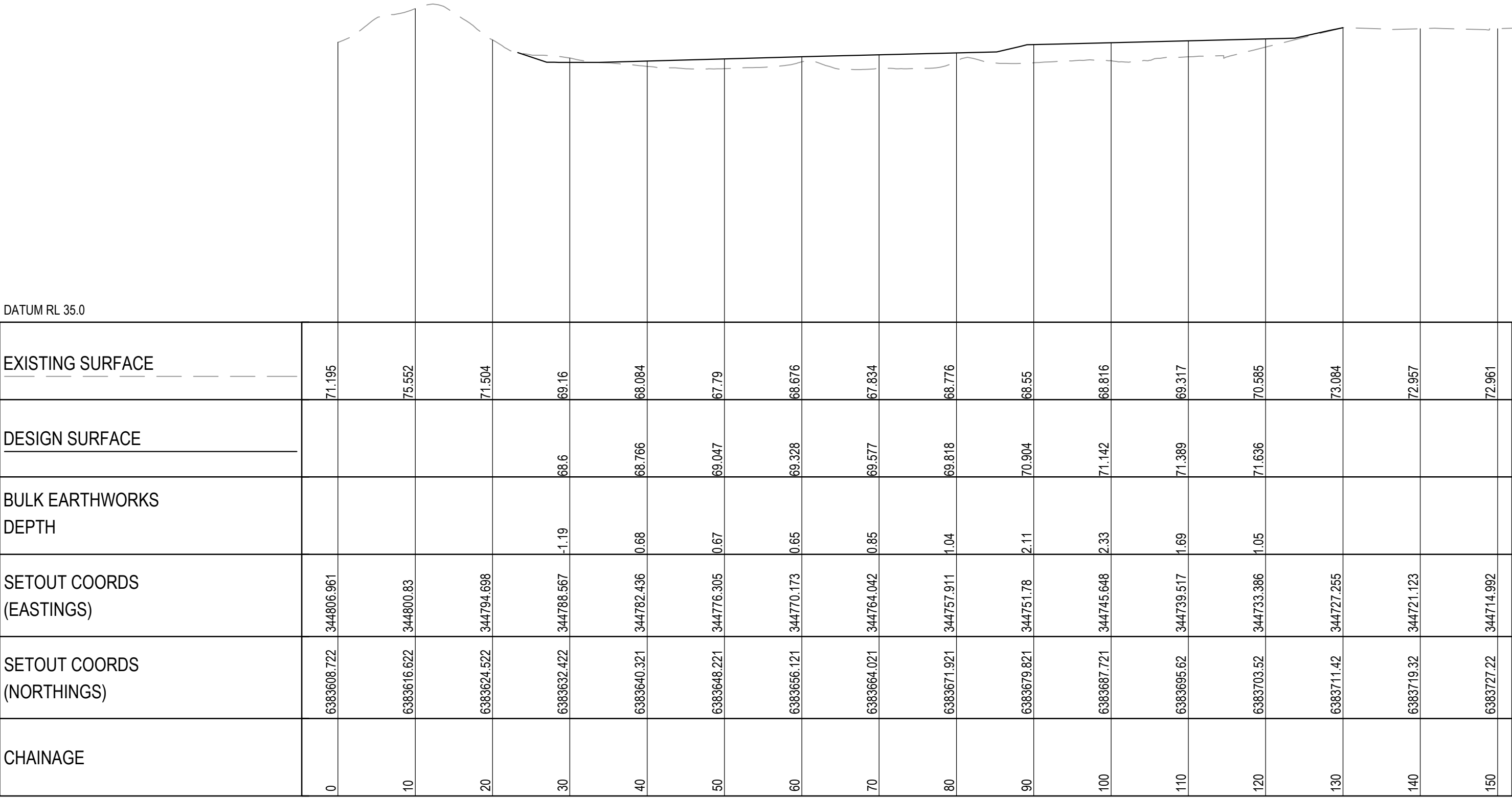
DEPTH OF CUT	
	-20m TO -3m
	-3m TO -2m
	-2m TO -1.5m
	-1.5m TO -1m
	-1m TO -0.5m
	-0.5m TO -0.25m
	-0.25m TO -0.1m
	-0.1m TO -0.0m
DEPTH OF FILL	
	0.0m TO 0.1m
	0.1m TO 0.25m
	0.25m TO 0.5m
	0.5m TO 1m
	1m TO 1.5m
	1.5m TO 2m
	2m TO 3m
	3m TO 10m

NOTES	
1.	NEGATIVE ELEVATIONS DENOTES AREAS TO BE CUT.
2.	POSITIVE ELEVATIONS DENOTES AREAS TO BE FILLED.
3.	CUT/FILL DEPTHS ARE FROM FINISHED SURFACE TO NATURAL SURFACE.
4.	BULK EARTHWORK LEVELS DO NOT ALLOW FOR TOPSOIL, PAVEMENT BOXING, STORMWATER OR SERVICE TRENCHING.
5.	LOT GRADING, BENCHING AND RETAINING TO BE UNDERTAKEN AT DETAILED DESIGN.
6.	APPROXIMATE CUT / FILL VOLUMES BASED ON THE NOTES ABOVE ARE AS FOLLOWS:
	• BULK CUT = 3,875m ³
	• BULK FILL = 13,426m ³
	• BULK CUT/FILL BALANCE = 9,551m ³ (FILL)

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					VERIFIED B.CLARK					REVISION A



LONGITUDINAL SECTION ALONG B
HORIZONTAL SCALE 1:500@A1
VERTICAL SCALE 1:500@A1



LONGITUDINAL SECTION ALONG A
HORIZONTAL SCALE 1:500@A1
VERTICAL SCALE 1:500@A1

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					R.HUTCHISON							DRAWING TITLE	PROJECT - SET - DRAWING - SHEET
					B.CLARK							CUT AND FILL PLAN SECTIONS - SHEET 1	250035-M25-SK-210-01
													REVISION
													A

DATE: 10.12.2024 10:23 AM

PLOTTED BY: REECE HUTCHISON

FOUND: C:\Users\ReeceHutchison\Groundswell Engineering\Intranet - Documents\Projects\250035-01 Huntlee Stp 1\G Drawings\Civil\1 - Sketches\MOD 25\250035-M25-SK-201 CUT FILL.dwg

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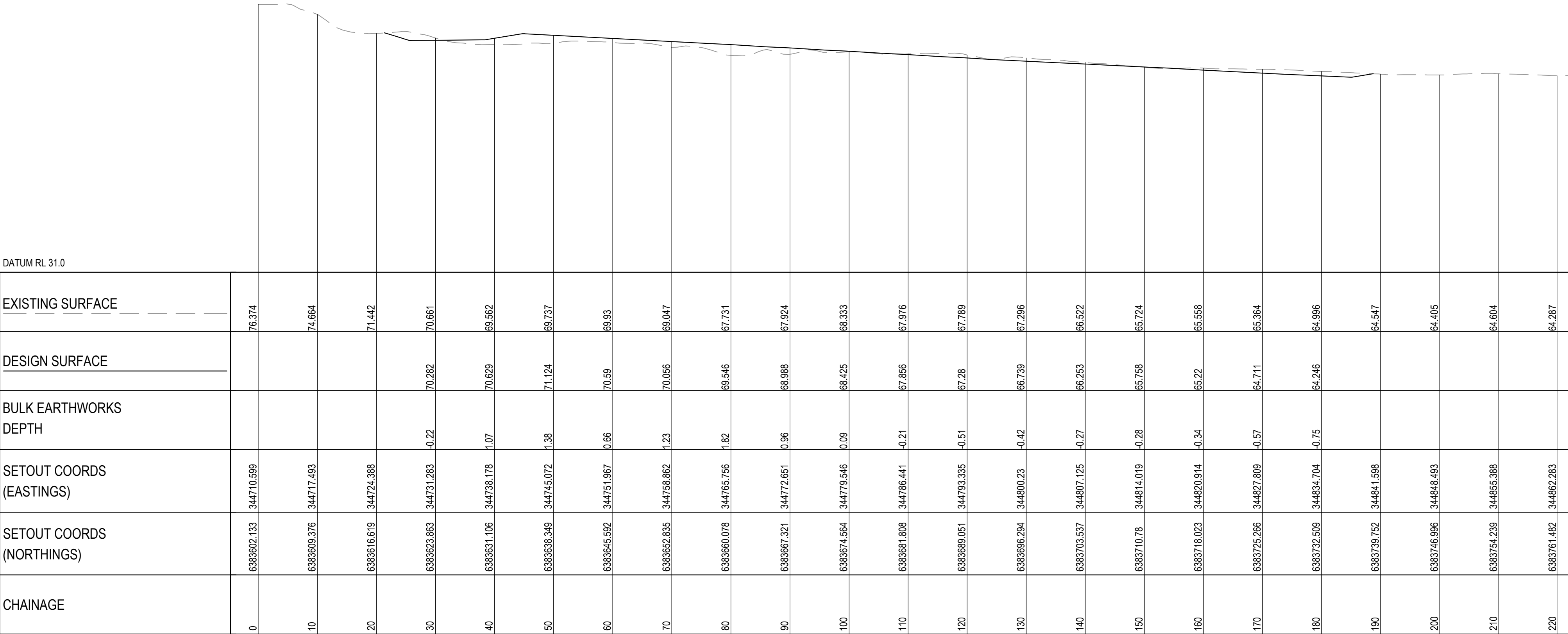
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LONGITUDINAL SECTION ALONG C
HORIZONTAL SCALE 1:500@A1
VERTICAL SCALE 1:500@A1

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