

23-000051

ENGINEERING SERVICES REPORT

AURA PRECINCT 15 – HALCYON AURA 2

Prepared for Stockland Land Lease Management Pty Ltd



Document information

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1 INTRODUCTION

This Engineering Services Report has been prepared by Egis Consulting Pty Ltd on behalf of Stockland Development Pty Ltd for the proposed Halcyon Aura Site 2 located in Precinct 15 of Aura. This report would support the submission of Development Application Approval documentation for an over 50's land lease community.

The objective of this report is to demonstrate that the proposed development can be supported by the existing and/or proposed civil infrastructure and is compliant with the Sunshine Council Planning Scheme, Australian Standards and other relevant guidelines. The report will discuss the following site-based design elements and their connection with external infrastructure.

- 1. Earthworks;
- 2. Stormwater Drainage network;
- 3. Internal Roads and Connectivity; and
- 4. Water and Wastewater Reticulation.

1.1 Site Description

Halcyon Aura Site 2 is located in the Western locality of Aura and is bound by future residential to the North, residential neighbourhood centre to the West and Bells Creek South to the South and East. Total site area is 19.77 Ha.

The site forms part of the Caloundra South Priority Development Area (Aura). The Master Plan was approved by the (former) Urban Land Development Authority (ULDA reference No. DEV2011/200) now Economic Development Queensland (EDQ).

Please refer to Figure 1-1 following showing the locality of Precinct 15 'Land Lease Community Site 2' known within this report as the 'Site'.

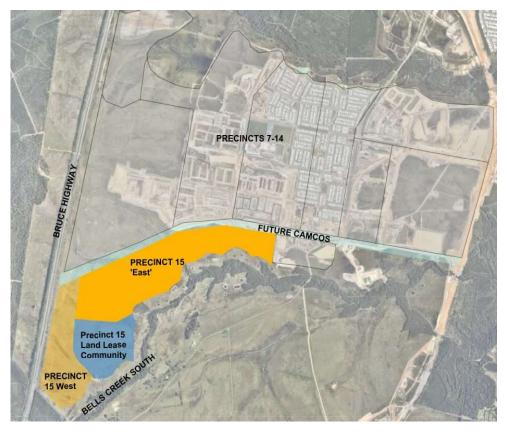


FIGURE 1-1 SITE LOCALITY PLAN (GOOGLE MAPS)



1.2 Land Encumbrances

There are no existing encumbrances over the subject site.

1.3 Existing Land Uses & Access

The subject site is predominantly clear of vegetation with a few scattered green vegetation patches located in the northern part. The site is currently only accessible via a gravel access roadway joining the site to Precinct 15 East.

1.4 Topography

The subject site is reasonably flat and grades from south to north at 0.6% slope. However, the southern corner of the site falls towards the east at 0.5% grade.

1.5 Contaminated Land

The subject site is not known to be contaminated and is not mapped on the contaminated land register.

1.6 Proposed Development

The proposed application is to develop the site as an over 50's land lease community (LLC) resort consisting of 431 dwellings surrounding a Green Spine Area (Open Space Network) with dedicated community facilities consisting of a recreational Club house, Lagoon pool, Lawn Bowls etc. Please refer to Appendix A – Community Master Plan prepared by Archipelago for further details.

The proposed site is divided into three (3) civil delivery packages. These three civil packages are further divided into six (6) sub-stages based on the proposed built form works and delivery of dwellings. Maintaining the construction access to the site during each stage works has been considered, leaving the final stage closest to the northern entry point. The proposed staging plan is shown in the following image.



FIGURE 1-2 SITE CIVIL STAGING PLAN (ARCHIPELAGO)



2 EARTHWORKS

2.1 Earthworks Level Control

The proposed application boundary is bordered by a future Neighbourhood Connector Road to the North, Trunk Connector Road to both the West and South and fronts the Local Access Road (to be used as the main access to the site) onto Bells Creek South from South to the North. The major overall bulk earthworks strategy for greater Aura Masterplan has already been in place and comply with the following objectives:

- Facilitate the Stockland development phasing in coordination with current ROL approvals;
- Be in accordance with the current Aura Regional Flood Model, by BMT (Model ID245);
- Be able to achieve objectives in the BMT Caloundra South Water Quality Management Plan;
- Comply with requirements of the BMT Environmental Management Plan;
- Satisfy the requirements of the Caloundra South Public Environment Report Supporting Document;
- Be in accordance with the approved Caloundra South Master Plan;
- Satisfy the Water Sensitive Urban Design objectives;
- Be in accordance with the Wallum Sedge Frog Management Plan;
- Be in accordance with the Operational Work for Waterway Barrier Works Preliminary Approval and Development Permit;
- Optimise the use of developable area through efficient design;
- Efficient design and utilisation of the natural topography of the site as best as possible; and
- Be economical and cost effective.

Regional flood levels have been established for Bells Creek North and South through modelling undertaken by BMT (TUFLOW Model ID245).

In general, these flood levels control the minimum earthworks levels at the stormwater outlets and embankments. Refer to Engineering services report prepared by Calibre Professional Services Pty Ltd (Dated 20-10-2022) for further details.

However, the preliminary earthworks have been developed by Egis Consulting Pty Ltd over the subject site (Halcyon Aura 2) in order to achieve an earthworks balance for the greater development while also facilitating the creation of suitable flat earthworks pads (1:200 or flatter) capable of being serviced to develop the proposed Land Lease community.

Refer to Appendix B – Egis Consulting Sketch Plans for details of the preliminary earthworks plan. Table 1 & Table 2 below provide the indicative preliminary earthworks volumes of the subjected site (subject to detailed earthworks).

TABLE 1 INDICATIVE EARTHWORKS VOLUMES

	VOLUME
Earthworks in Cut	25,088m³
Earthworks in Fill	40,783m³
Balance	15,695m³

Trench spoil generated from the construction of stormwater, sewerage and water infrastructure has been calculated throughout previous Aura Precincts. It was indicated that 15.56 m3 would be generated per lot and 1.10 m3 would be generated per linear meter of road (total road length 4,675m). These values have been applied to Halcyon Aura 2 project earthworks and the cut/fill quantities are adjusted as follows:



TABLE 2 ADJUSTED EARTHWORKS VOLUMES (INDICATIVE & SUBJECTED TO DETAILED DESIGN)

	VOLUME
Balance or net shortfall	15,695m ³
Spoil generated from lots	6,700m³ (approx)
Spoil generated from roadworks	5,142m³ (approx.)
Overall Balance	3,853m (Import from greater Aura)

Indicative cut and fill earthworks depths over the subject area are shown in Figure 2-1 below, noting that this is subject to change pending the overall Precinct 15 earthworks design (Note: Future proposed HES Basin does not make part of existing surface.

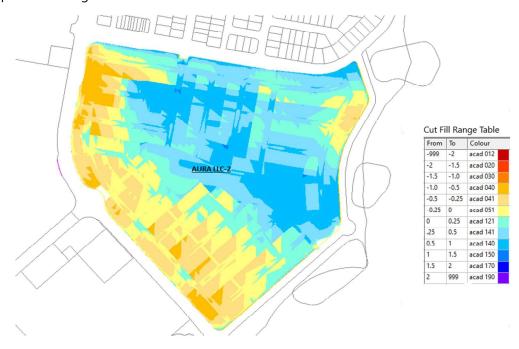


FIGURE 2-1 INDICATIVE EARTHWORKS CUT/FILL HEAT MAP

2.2 Geotechnical

Geotechnical investigations have been undertaken by Douglas Partners comprising a broadscale investigation in 2014 and a second, additional Geotechnical Investigation of Precincts 6 -16 in 2017. Key findings from these reports are summarised as follows:

- Broadly, the area is gently undulating of low relief, with the ground surface overall falling gradually from west to east with several localised knolls associated with the larger trending ridgeline on the western side of the Bruce Highway;
- Subsurface conditions generally comprise topsoil of between 100mm to 350mm overlying silty and clayey sands;
- It is anticipated that the majority of material won from excavations on site will generally be suitable for reuse as bulk filling provided, they are placed in a controlled manner, under Level 1 supervision;
- Groundwater seepage was typically encountered between 1.2m and 2.8m depth;
- CBR testing (16 samples) returned results of between 0.5% to 18.0% with an average result of 7% across the greater Aura Development.
- Emerson class dispersion tests (8 samples) returned values of 5 and 6 on a scale of 1 to 8 indicating a slight potential for erosion;



- Topsoil depth varies from 0.1m to 0.35m. Quality of topsoil is poor and it is anticipated that treatment would be needed to improve nutrient value;
- Drainage for the site during construction is necessary to maintain site trafficability. Consideration for providing a working platform may be necessary in some instances;
- Recommended compaction factors in the calculation of fill volumes vary between 0.80 and 1.10 with the silty/ clayey sands which comprise the majority of the site being 0.80 to 0.85; and
- Site classification of 'Class S' would be anticipated under normal soil moisture conditions.

Further detail regarding existing ground condition and geotechnical suitability for development can be found within the aforementioned geotechnical reports (Section 2.1).

2.3 Adopted Standards and Design Principles

To comply with the Aura Regional Flood Model 2020 (Model ID245) prepared by BMT, the minimum habitable floor levels for allotments is based on providing 500mm freeboard to the 100-year ARI peak flood level with increased rainfall intensity and sea levels considering climate change to a planning horizon of the year 2100. As per previous stages in Aura, the flood planning level for earthworks fill levels includes a minimum 350mm freeboard to the defined regional flood level. The remaining 150mm freeboard will be achieved through slab construction to satisfy the habitable floor level requirements to provide a freeboard of 500mm as required. In approaching the freeboard requirements in this manner, the earthworks volumes across the site can be optimised therefore providing economically sustainable development whilst achieving the flood immunity requirements.

The concept bulk earthworks design provides appropriate flood immunity for various land uses in accordance with the master plan as follows:

- Allotments and roads are designed for immunity to the 100-year ARI peak flood level considering climate change;
- Recreational areas have been designed for the 5-year ARI flood immunity (with 100-year ARI flood immunity for structures).

The design principles, which have been adopted for this concept bulk earthworks strategy, are:

- To be in accordance with flood immunity requirements set by regional flood levels along Bells Creek North and Bells Creek South;
- To be in accordance with local flood levels from the internal stormwater catchments;
- All allotments to be graded at minimum and 1 in 200 towards the road;
- Roads to have minimum grade of 0.5%;
- Cut/fill volumes to be developed to best match requirements of other Precincts;
- To be consistent with the Additional Geotechnical Investigation report for Aura Precincts 6-16 by Douglas Partners.

2.4 Erosion and Sediment Control Strategy

The Erosion and Sediment Control strategy will identify potential environmental risks associated with the development. Specifically, water quality, erodible soils, and environmental impacts to adjoining land and existing/future roads will be addressed. These risks can be mitigated by designing in accordance with the IECA design guidelines, State Planning Policy for Water Quality, council guidelines and implementation of approved site management measures at the time of construction.

Therefore, it is recommended that the contractor must provide specific site-based Erosion and Sediment Control management report and implement the erosion and sediment control measures as appropriate before, during and after (if needed) the construction activities. These measures are likely to consist of diversion drains, temporary sediment basins, silt fences and check dams. Diversion drains would be designed to separate 'dirty water' from 'clean water' and appropriately manage the stormwater discharge during construction to minimise



sediment laden runoff into the surrounding waterways. Sediment fences would serve to trap sediment in minor storm events while rock check dams would act to reduce the velocity of stormwater runoff therefore reducing the transportation of 'dirty water'. Disturbed areas during the construction phase of the project would be stabilised as soon as practical to minimise exposure of these areas to 'dirty water' runoff.

3 STORMWATER QUALITY AND QUANTITY

3.1 Stormwater Quality

The proposed Halcyon Aura site 2 is located within stormwater catchment S4 as nominated within the Aura Precinct 15 Stormwater Quality Management Plan by Design Flow, September 2022, as shown in following image. The Stormwater Quality management is designed in compliance with the approved P15 SWQMP.

Developed flows from the site are split and conveyed to the proposed treatment nodes in accordance with the above-mentioned report without deviation. The northern area of the site is gradually graded from west to east and is divided into two major catchments, Cat N1 (3.90Ha) and Cat N2 (5.81Ha). Whereas the southern area of the site is graded from north to southeast and consists of only one major catchment Cat S1 (9.93 Ha). Internal drainage catchments & pipe network system of the site is designed in such a way that runoff from Cat N1 drains to WSUD S4a, runoff from Cat N2 drains to WSUD S4b and runoff from Cat S1 drains to WSUD S4c. Refer to Appendix B – Egis Consulting Sketch Plans for details.



FIGURE 3-1 AURA MASTER STORMWATER TREATMENT STRATEGY (DESIGN FLOW)



3.2 Stormwater Quantity

3.2.1 Stormwater Detention

A regional flood investigation has been undertaken by BMT to assess the affects the greater Aura development would have on regional flooding. The subsequent report prepared by BMT, Aura Regional Flood Model 2020 (Model ID245) has guided Egis's civil design and stormwater modelling for the development without departure.

The minimum habitable floor levels for allotments are based on providing 500mm freeboard to the regional 100-year ARI peak flood level with increased rainfall intensity and sea levels considered for climate change to a planning horizon of the year 2100. The flood planning level for earthworks fill levels includes a 350mm freeboard. The remaining 150mm freeboard will be achieved through slab construction to satisfy the habitable floor level.

3.3 Land Lease Community Site 2 – Stormwater Strategy

For the proposed development all internal roads and driveways will be designed to capture and convey 100 years ARI storm flows through the piped system.

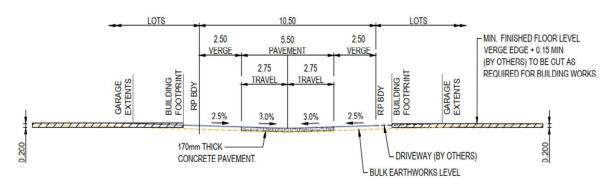
Refer to Appendix B – Egis Consulting Sketch Plans for the indicative stormwater catchments, drainage layout and conceptual outflow locations to the proposed WSUD infrastructure. These catchments have been developed to be generally in accordance with the assumed catchments of Design Flow's Stormwater Quality Management Plan (dated September 2022). Drainage inlet pits are located in the centre of the road (inverted road profile), however the location and details of stormwater drainage elements are conceptual only and subject to further detailed design for operational works.

4 PROPOSED ROAD NETWORK

4.1 Roads & Driveways

All internal roads and driveways are designed in accordance with the development layout provided by Archipelago. Refer to Appendix A - Community Master Plan for details.

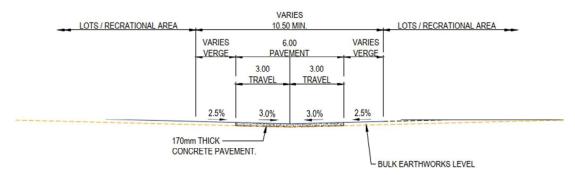
An inverted profiled road/driveway is proposed for the entire development. Most of the road centrelines were designed as sawtooth grading to maximise the capacity of drainage pits while maintaining min. 150mm free board to adjacent buildings FFL. Typical road cross sections of Main Entry/Exit Road and Access Roads are shown in the following Figure 4-1 and Figure 4-2 respectively.



TYPICAL ROAD CROSS SECTION - ACCESS ROAD

FIGURE 4-1 ACCESS ROAD SECTION





TYPICAL ROAD CROSS SECTION - MAIN ENTRY/EXIT ROAD

FIGURE 4-2 ENTRY/EXIT ROAD SECTION

Vehicle swept paths analysis, using 12.5m long Standard Service Vehicle and Standard Passenger Vehicle, is used in road design to check that there is sufficient room for turning vehicles to operate safely on the road network and to avoid causing damage to roadside furniture and buildings. Please refer to Appendix B – Egis Consulting Sketch Plans for details.

4.1.1 Land Lease Community Site 2 Access and Egress Points

The developments access and egress will comprise a two-way traffic system around the green spine of the site. The proposed access is approximately 50m south of the roundabout located on the eastern boundary of the subject site with the egress connected directly to the roundabout. There is a further emergency access / exit located on the northern boundary of the site.

5 WATER AND WASTEWATER RETICULATION

5.1 Water and Wastewater Reticulation

Water and Sewer servicing for the proposed development will be in accordance with the approved Preliminary Precinct Network Plan (PPNP) without departure.

Potable water supply for the Site will be provided via the proposed 600mm diameter watermain (incoming from Precinct 14) located on eastern esplanade road near the main entrance.

Wastewater will be discharged via either a single or double connection to the proposed trunk gravity sewer OD225mm alignment located to the east of the site. The number of connections is yet to be confirmed with Unitywater.

The proposed sewer and water network connections for the development are shown indicatively in Appendix B – Egis Consulting Sketch Plans.

All water and wastewater infrastructure is proposed to be designed generally in accordance with Unitywater Standards, the SEQ Water Supply and Sewerage Design and Construction Code or as otherwise agreed with Unitywater.

The following table provides the comparison of water and sewerage EPs proposed in PPNP and generated from the proposed Halcyon Aura site 2 development.



TABLE 3 EP CALCULATIONS & ALLOWANCE

LAND USE	COUNT	EP RATE	EP
Dwelling (Lots)	500	1.8	900
Community Facilities (GFA)	1937	0.01	19.37
			919.37
FPNP Approved Allowance			925
Residual Capacity			5.63

6 WASTE/REFUSE COLLECTION

This section outlines best practice waste management for the residential and common facility areas of the development, including recommended types of bins and waste collection procedures.

Sunshine Coast Council offers a comprehensive waste collection, disposal, recycling, and advisory service for all types of developments in the region. For LLC site 2, two-bin service is proposed to all single residential dwellings & communal areas. It consists of separate bins for general waste and recycle bins. General waste bin will be collected on every week and recycle bins will be collected on alternate weeks based on Council's plan bin collection days.

Each residence will be provided a bin storage area to accommodate standard waste and recycle bins within the property and screened from public view. The residents will be responsible for the management of their own waste & recycling bin, such as cleaning bins as required and arranging for broken bins to be replaced by Council.

On the evening before the nominated waste and recycling collection days, residents will place their bins in front of their homes for collection by the Council. For safety purpose the reverse movement of the waste/refuse vehicle is restricted. Therefore, residents residing on the dead-end streets will be responsible for transporting their own bins from their property to one of the designated bin holding/collection areas (see Appendix B for reference). A Council collection vehicle will put up next to the bin holding/collection areas and service the bins. Once servicing is complete, residents will be responsible for returning their own bins to their property as soon as possible.

For common facility areas the waste bins will be stored inside the facility and screened from the public view. Site management of LLC-2 will be responsible to place the bins at designated bin holding/collection areas for pickup on designated days. The on-site Caretaker will be responsible for placing the bins in designated bin collection areas for pickup on designated days. The main clubhouse building will comprise of a refuse area with the nominated drain to switch to sewer disposal when hose is in operation for washdown purposes. The drain will otherwise connect to stormwater.

Green waste bins are not required in a community of this nature due to the 'low maintenance' style living offered. Individual residential sites comprise of Astroturf and common areas that comprise of real turf are serviced by an external landscape maintenance contractor who removes and disposes of green waste in accordance with their agreement.

The above will be controlled through the relevant Community Site Rules and Site Agreement to ensure ongoing compliance.

A waste/refuse collection plan is provided to cater the proposed development, please refer to Appendix B for details.



7 UTILITIES

The development will be serviced with electrical and telecommunications Fibre-To-The-Premises (FTTP).

As per previous precincts with Aura the services are proposed to be co-located on a standard alignment within a corridor 0-900mm from the property boundary. Detailed design may determine that alternative alignments are required in some instances and these will be detailed on an as required basis. These services will be provided in accordance with conditions of, and through agreement with, the relevant service providers. Electrical and telecommunication design will be done by others.

8 CONCLUSION

The above details are provided for assessment of civil engineering constraints in conjunction with the Development Application for the proposed Halcyon Aura 2 Land Lease Community in Precinct 15.

All elements of this submission have been prepared with reference to Aura's current Master planning Approval requirements and subsequent Development Approval conditions together with Stockland's construction phasing for the greater development.

As such, it is considered that the intended development proposal supports the developments target land use.



PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2023/1405
Date: 27 November 2023

APPENDIX A: ILLUSTRATIVE MASTER PLAN



LEGEND



★ WALK AROUND LOTS ADDITIONAL 700mm WIDTH

D DEEPER LOTS

TOTAL = 431



SCHEMATIC DESIGN

Client

Stockland | Halcyon Communities

Archipelago

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22006

Halcyon Blu

Bells Creek Road, Banya, 4055

PRECINCT

DRAWING TITLE MASTERPLAN - LOT LAYOUT PLAN

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DEVELOPMENT APPROVAL
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APPENDIX B: EGIS CONSULTING SKETCH PLANS



AURA

LAND LEASE COMMUNITY MASTER PLAN (HALCYON BLU)

APPLICATION FOR MATERIAL CHANGE OF USE

FOR STOCKLANDS DEVELOPMENTS PTY LTD



LOCALITY PLAN





DRG NO	REVISION	DRAWING TITLE
DA1000	3	LOCALITY PLAN AND DRAWING INDEX
DA1100	3	OVERALL LAYOUT PLAN
DA1200	3	CUT FILL LAYOUT PLAN SHEET 1 OF 2
DA1201	3	CUT FILL LAYOUT PLAN SHEET 2 OF 2
DA1205	3	BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 5
DA1206	3	BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 5
DA1207	3	BULK EARTHWORKS LAYOUT PLAN SHEET 3 OF 5
DA1208	3	BULK EARTHWORKS LAYOUT PLAN SHEET 4 OF 5
DA1209	3	BULK EARTHWORKS LAYOUT PLAN SHEET 5 OF 5
DA1210	3	BULK EARTHWORKS SECTIONS SHEET 1 OF 2
DA1211	3	BULK EARTHWORKS SECTIONS SHEET 2 OF 2
DA1300	3	ROADWORKS LAYOUT PLAN SHEET 1 OF 2
DA1301	3	ROADWORKS LAYOUT PLAN SHEET 2 OF 2
DA1302	3	ROADWORKS TYPICAL SECTIONS
DA1310	3	ROAD 1 LONGITUDINAL SECTIONS SHEET 1 OF 2
DA1311	3	ROAD 1 LONGITUDINAL SECTIONS SHEET 2 OF 2
DA1312	3	ROAD 2 & ROAD 2A LONGITUDINAL SECTIONS
DA1313	3	ROAD 3 & ROAD 4 LONGITUDINAL SECTIONS
DA1314	3	ROAD 5 & 6 LONGITUDINAL SECTIONS
DA1315	3	ROAD 7 & ROAD 8 LONGITUDINAL SECTIONS
DA1316	3	ROAD 9 & ROAD 10 LONGITUDINAL SECTIONS
DA1317	3	ROAD 11 & 12 LONGITUDINAL SECTIONS
DA1318	3	ROAD 13 & 14 LONGITUDINAL SECTIONS
DA1319	1	ROAD 15, DRIVEWAY 1 & 2 LONGITUDINAL SECTIONS
DA1320	1	DRIVEWAY 3, 4, & 5 LONGITUDINAL SECTIONS
DA1400	3	CONCEPT STORMWATER DRAINAGE LAYOUT PLAN SHEET 1 OF 2
DA1401	3	CONCEPT STORMWATER DRAINAGE LAYOUT PLAN SHEET 2 OF 2
DA1420	3	STORMWATER DRAINAGE INTERNAL CATCHMENT PLAN SHEET 1 OF 2
DA1421	3	STORMWATER DRAINAGE INTERNAL CATCHMENT PLAN SHEET 2 OF 2
DA1430	1	OVERLAND FLOW STRATEGY SHEET 1 OF 2
DA1431	1	OVERLAND FLOW STRATEGY SHEET 2 OF 2
DA1500	3	SERVICES LAYOUT PLAN SHEET 1 OF 2
DA1501	3	SERVICES LAYOUT PLAN SHEET 2 OF 2
DA1600	3	SEWERAGE RETICULATION LAYOUT PLAN SHEET 1 OF 2
DA1601	3	SEWERAGE RETICULATION LAYOUT PLAN SHEET 2 OF 2
DA1700	3	WATER RETICULATION LAYOUT PLAN SHEET 1 OF 2
DA1701	3	WATER RETICULATION LAYOUT PLAN SHEET 2 OF 2
DA1800	3	VEHICLE SWEPT PATHS CONCEPT PLAN SHEET 1 OF 2
DA1801	3	VEHICLE SWEPT PATHS CONCEPT PLAN SHEET 2 OF 2
DA2000	3	WASTE COLLECTION CONCEPT PLAN SHEET 1 OF 2
DA2001	3	WASTE COLLECTION CONCEPT PLAN SHEET 2 OF 2

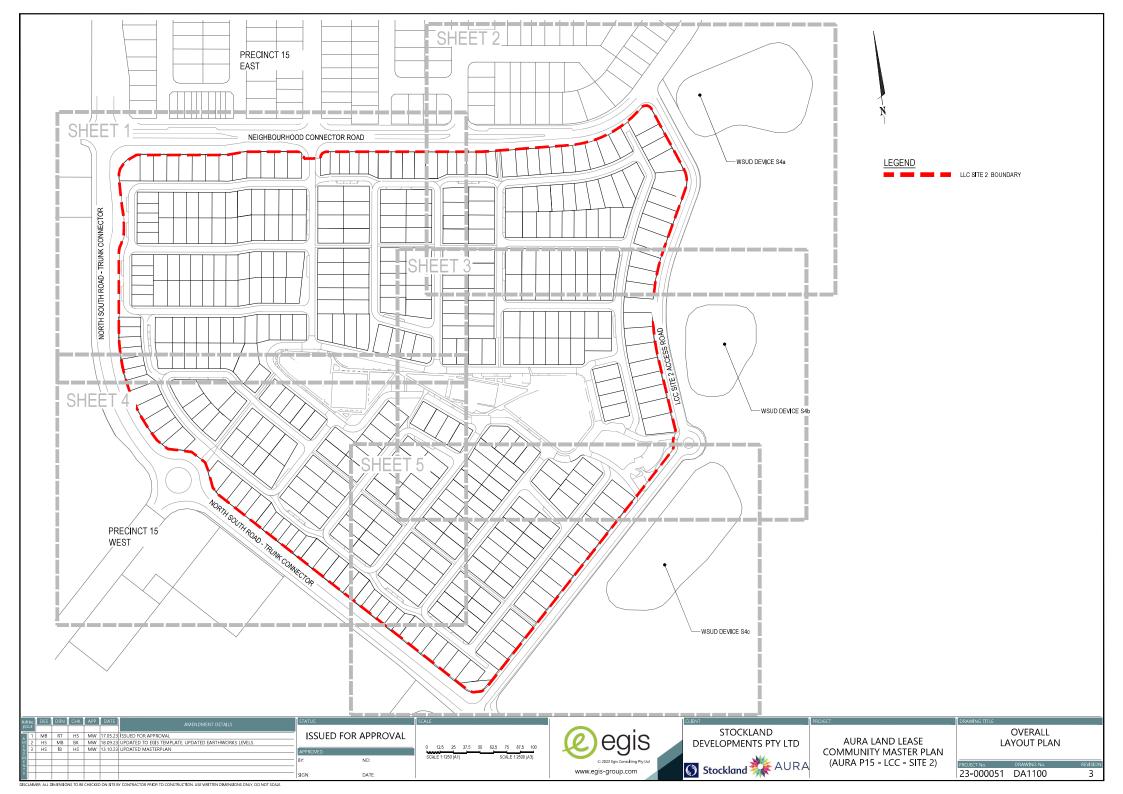
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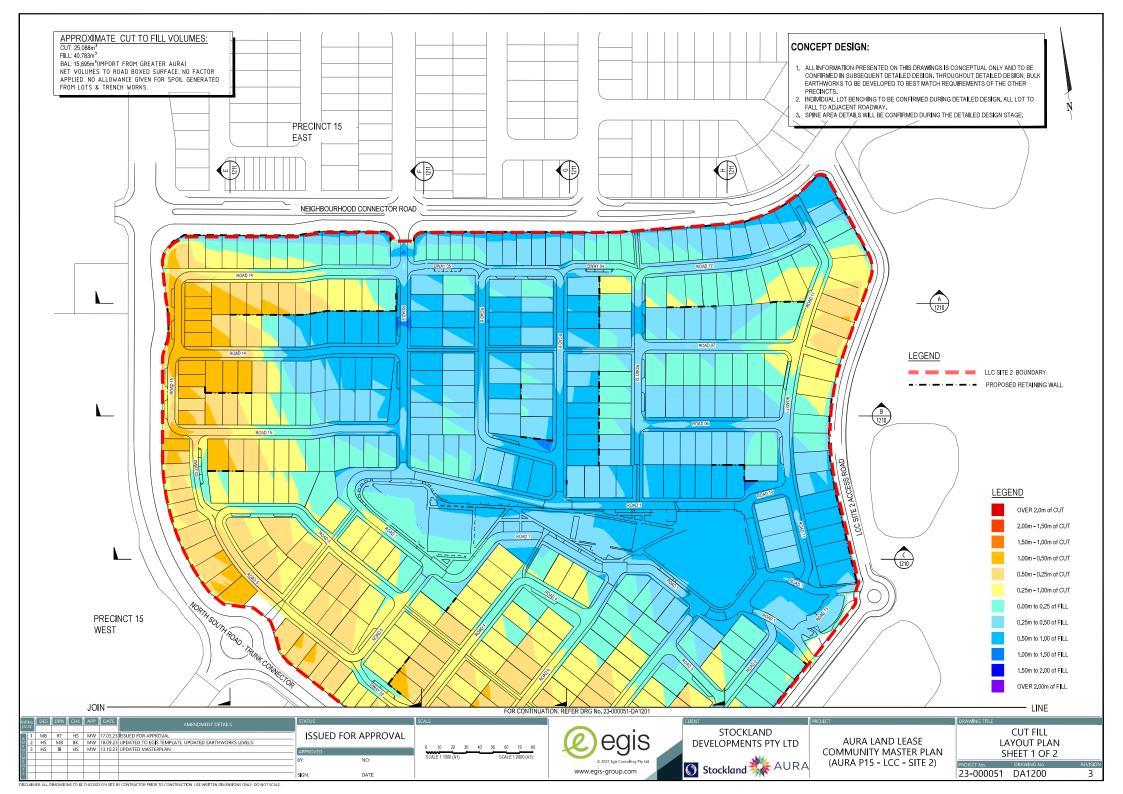
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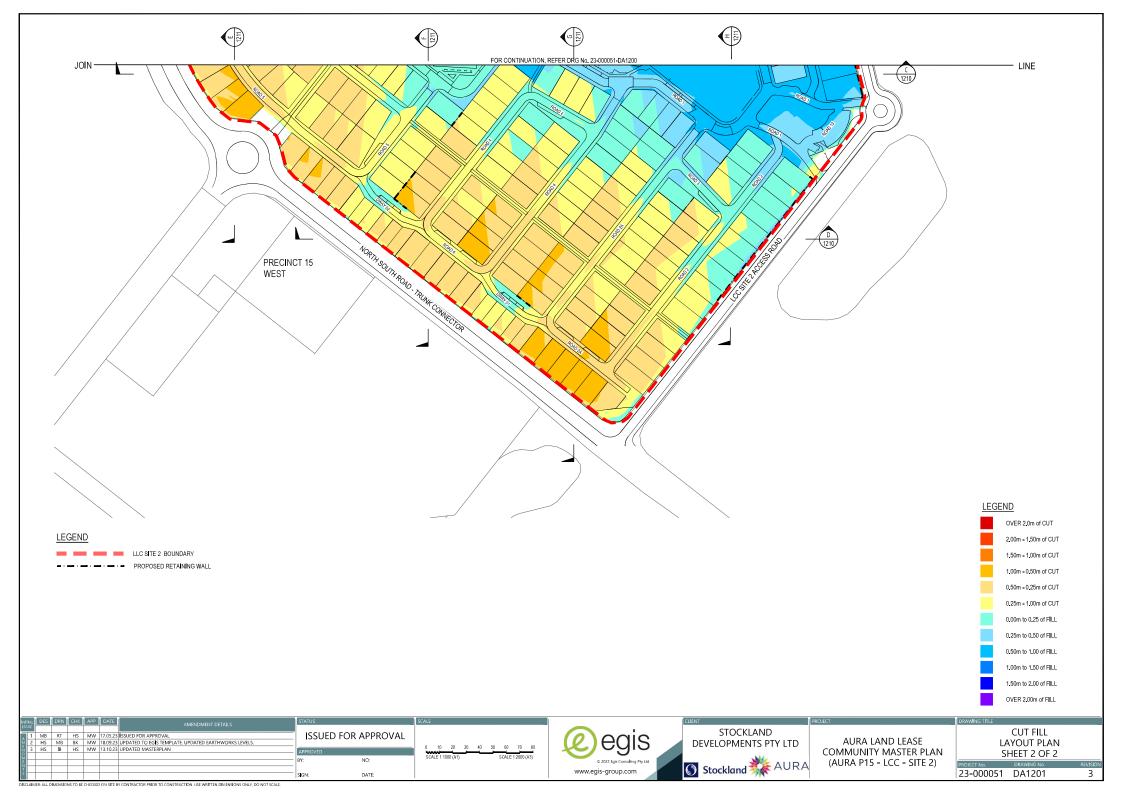
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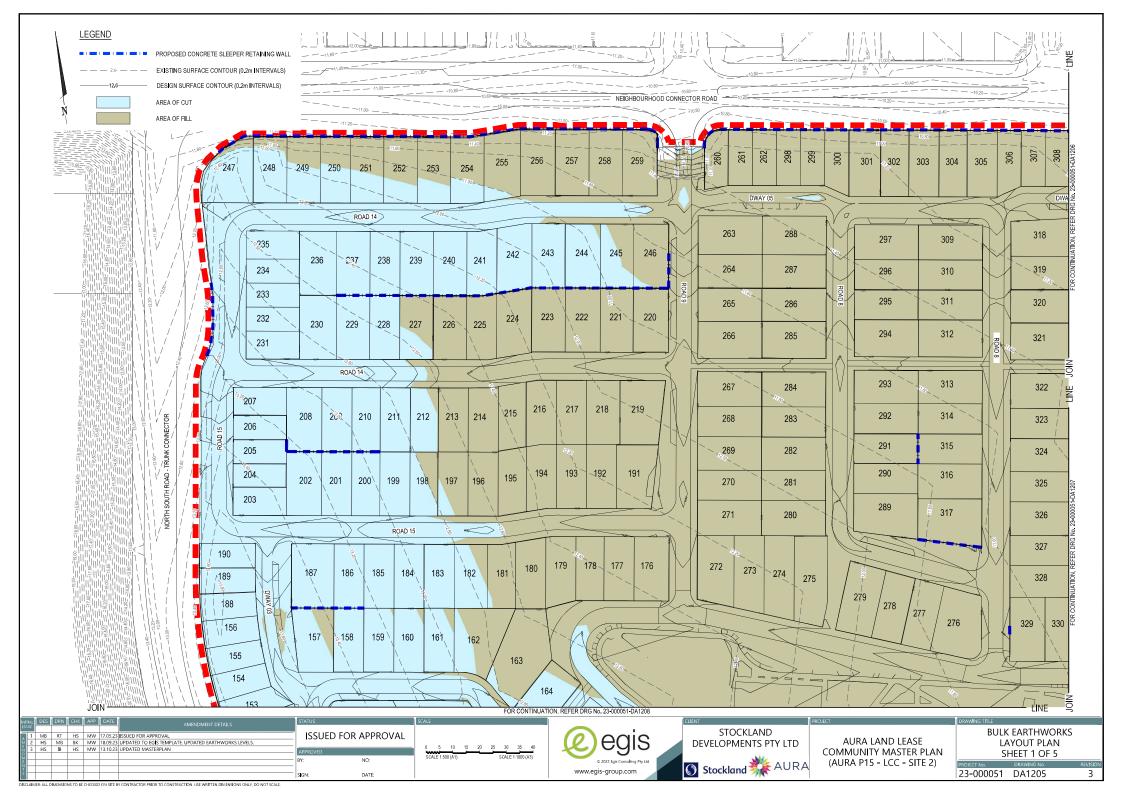
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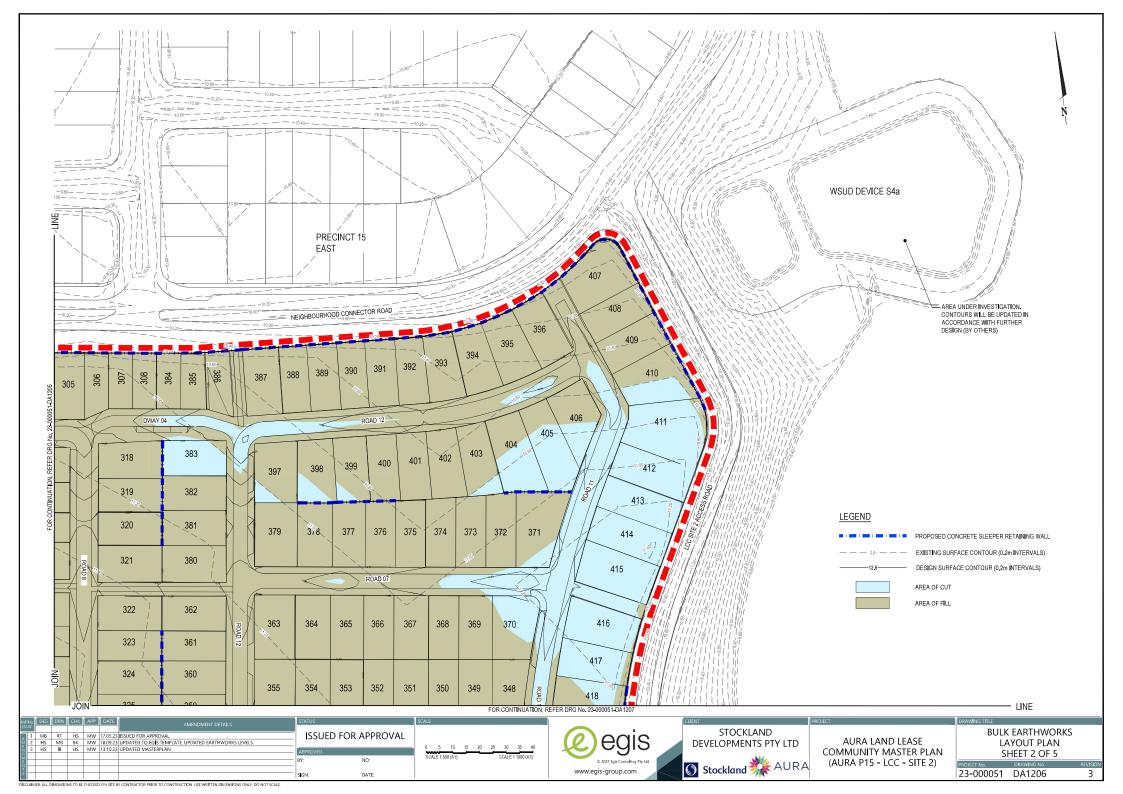
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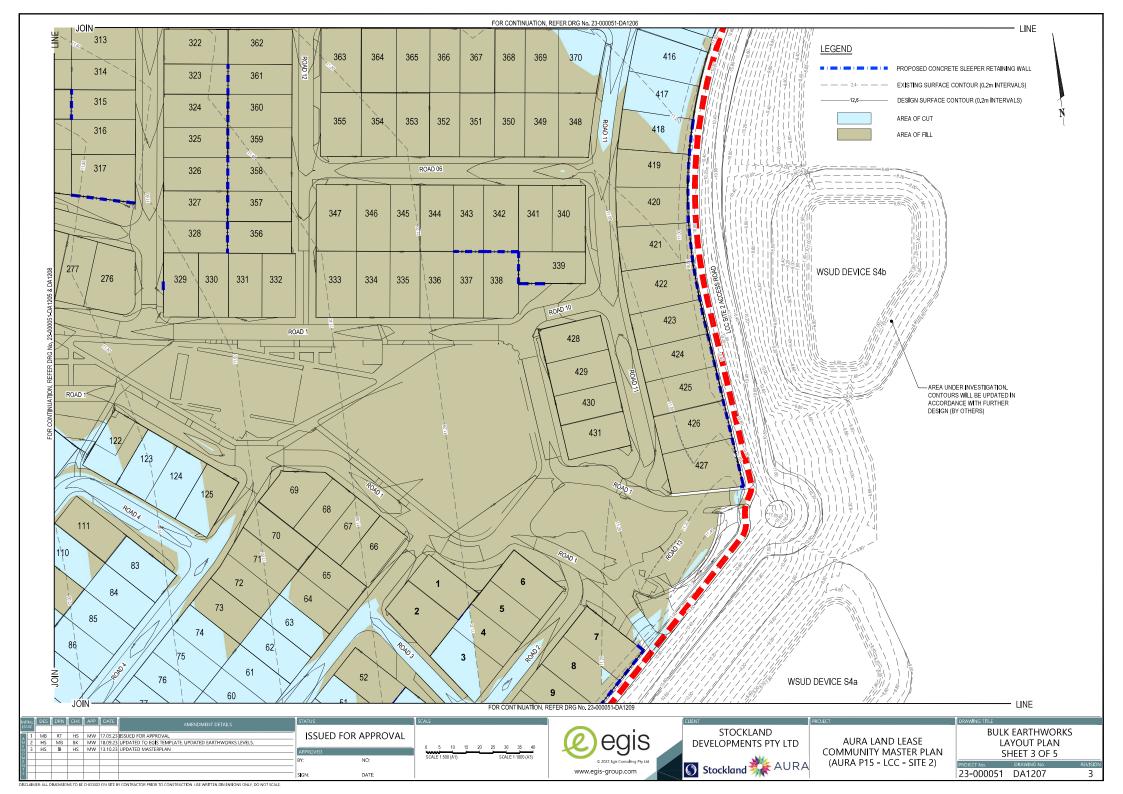


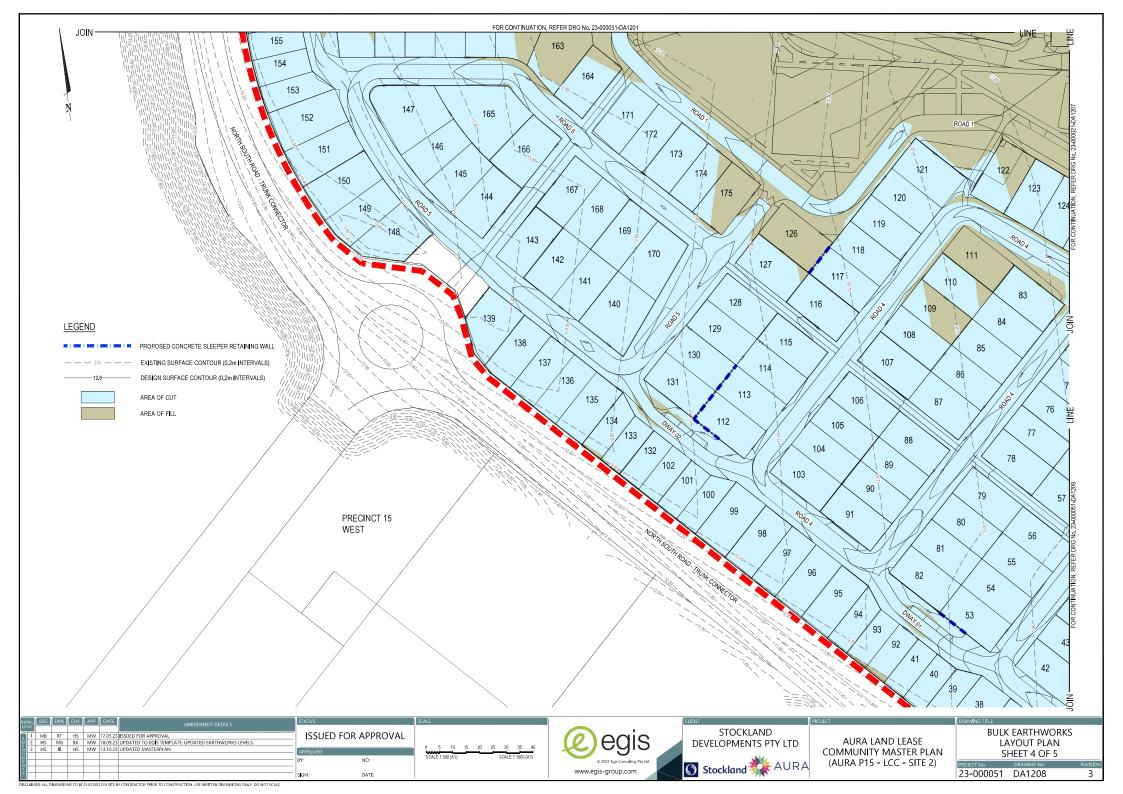




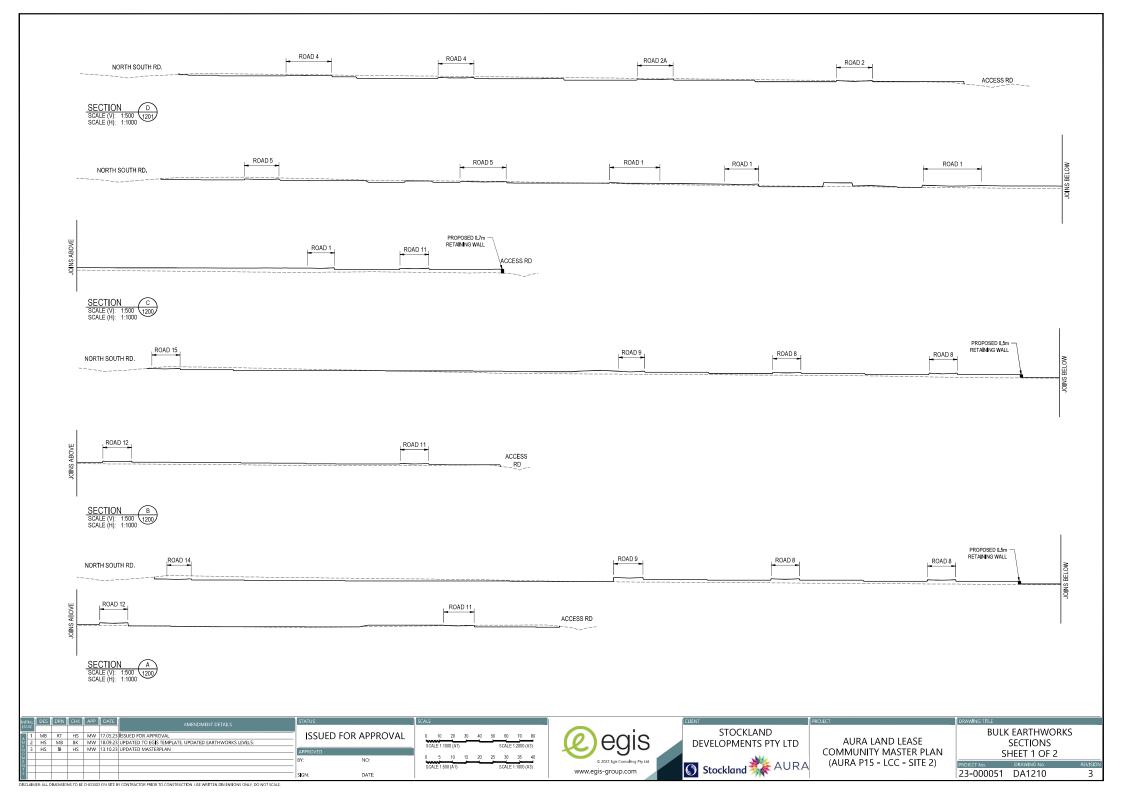


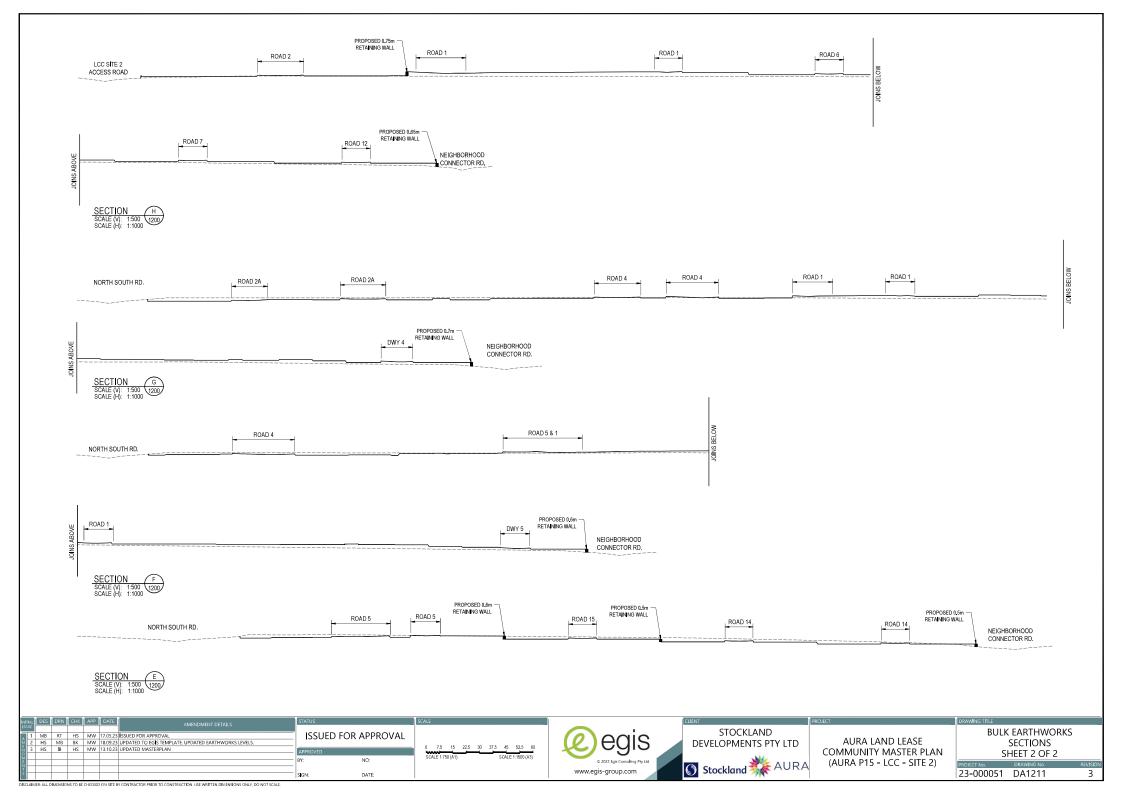








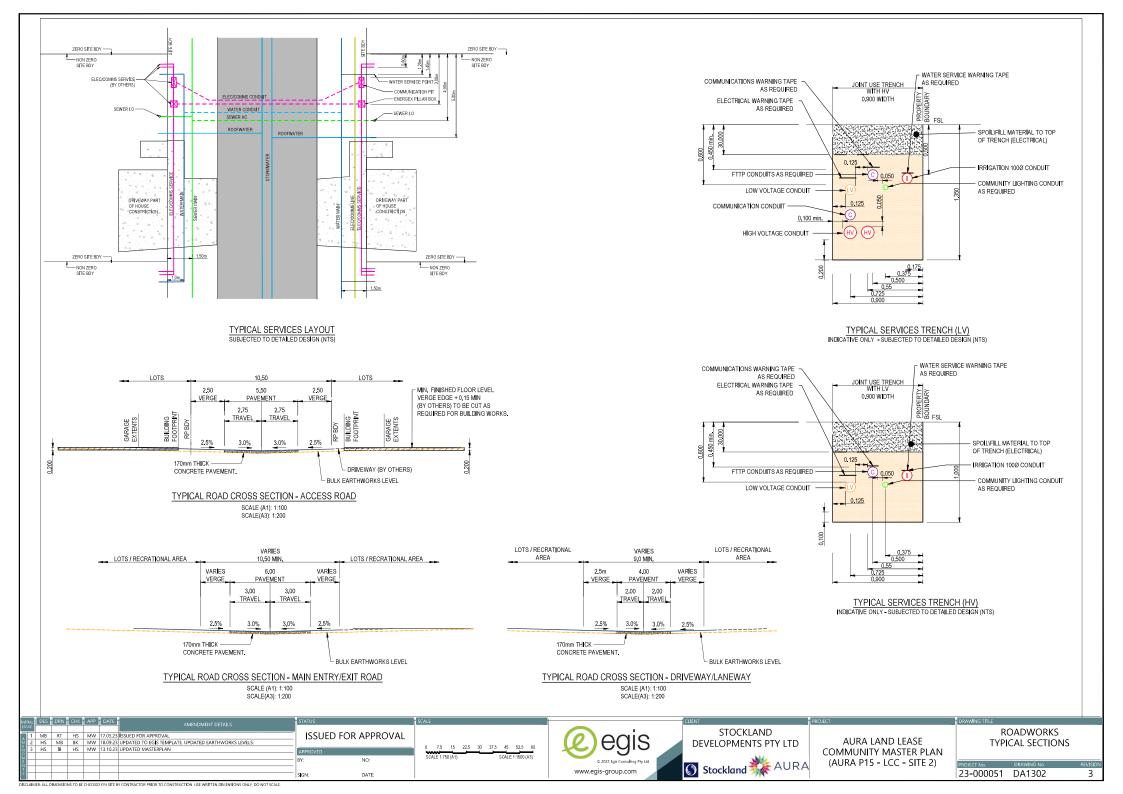


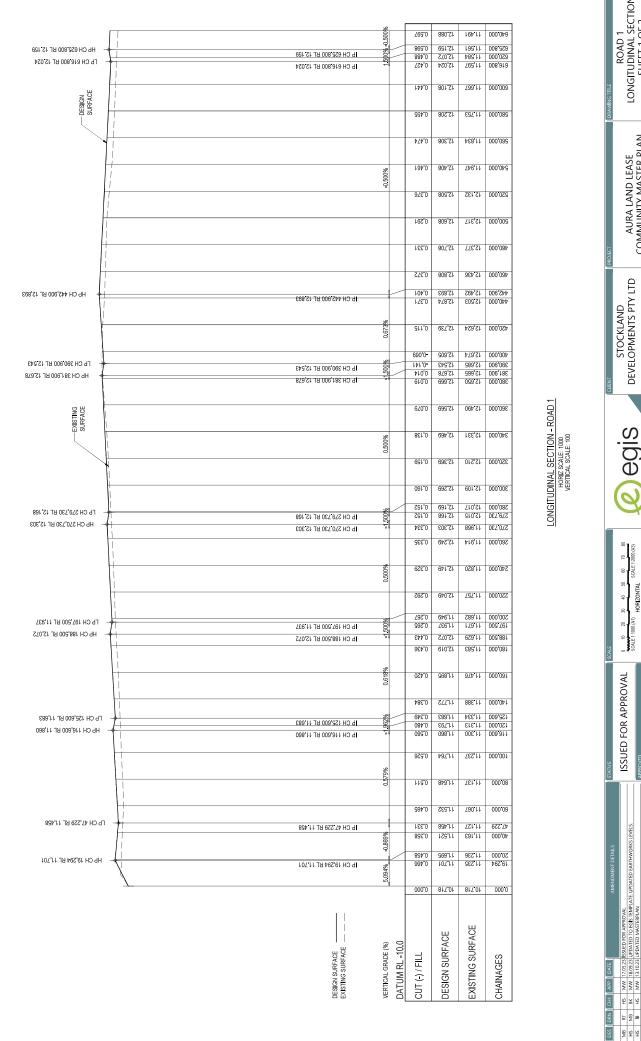












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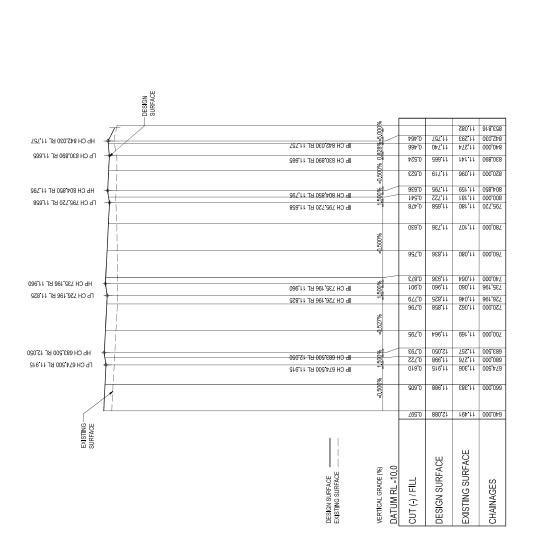
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DEVELOPMENTS PTY LTD

AURA LAND LEASE COMMUNITY MASTER PLAN (AURA P15 - LCC - SITE 2)

SHEET 1 OF 2

ROAD 1 LONGITUDINAL SECTIONS

PROJECT NO. DRAWING NO. 23-000051 DA1310



LONGITUDINAL SECTION - ROAD 1 HORIZ SCALE: 1000 VERTICAL SCALE: 100

0 10 20 30 40 50 60 70 80 SCALE 1:2000 (A3) HORIZONTAL VERTICAL ISSUED FOR APPROVAL DATE ë ISSUED FOR APPROVAL UPDATED EARTHWORKS LEVELS. UPDATED EARTHWORKS LEVELS. UPDATED MASTERPLAN

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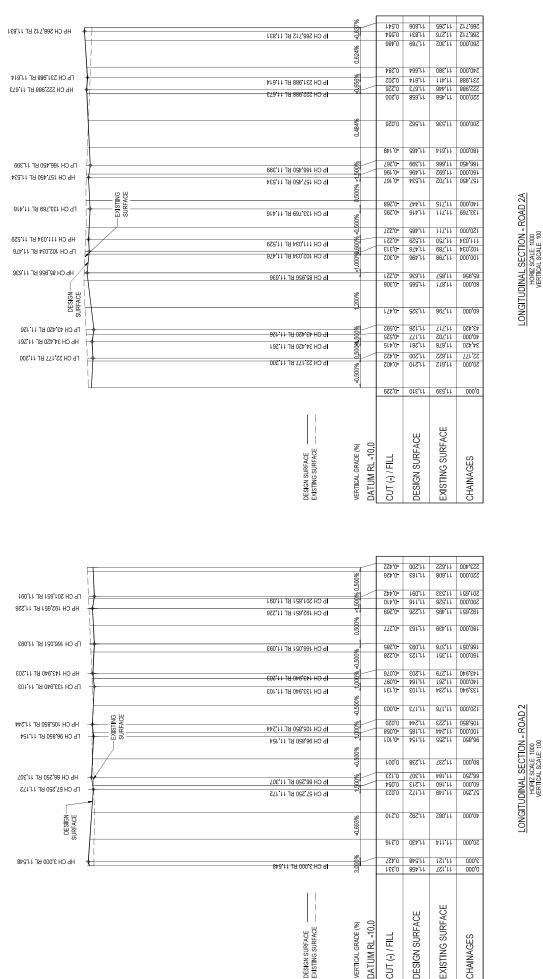
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ROAD 1 LONGITUDINAL SECTIONS SHEET 2 OF 2

PROJECT NO. DRAWING NO. 23-000051 DA1311



LONGITUDINAL SECTION - ROAD 2A HORZ SCALE: 1000 VERTICAL SCALE: 100

ROAD 2 & ROAD 2A LONGITUDINAL SECTIONS

DA1312

PROJECT No. 23-000051

AURA LAND LEASE COMMUNITY MASTER PLAN (AURA P15 - LCC - SITE 2)

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DEVELOPMENTS PTY LTD

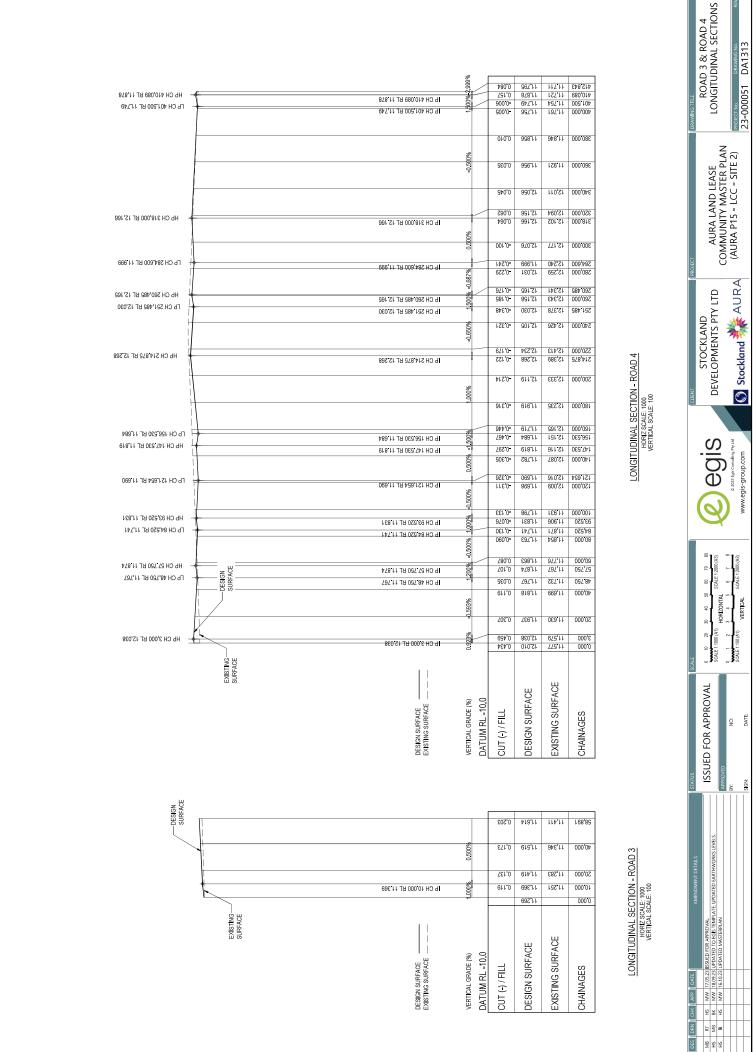
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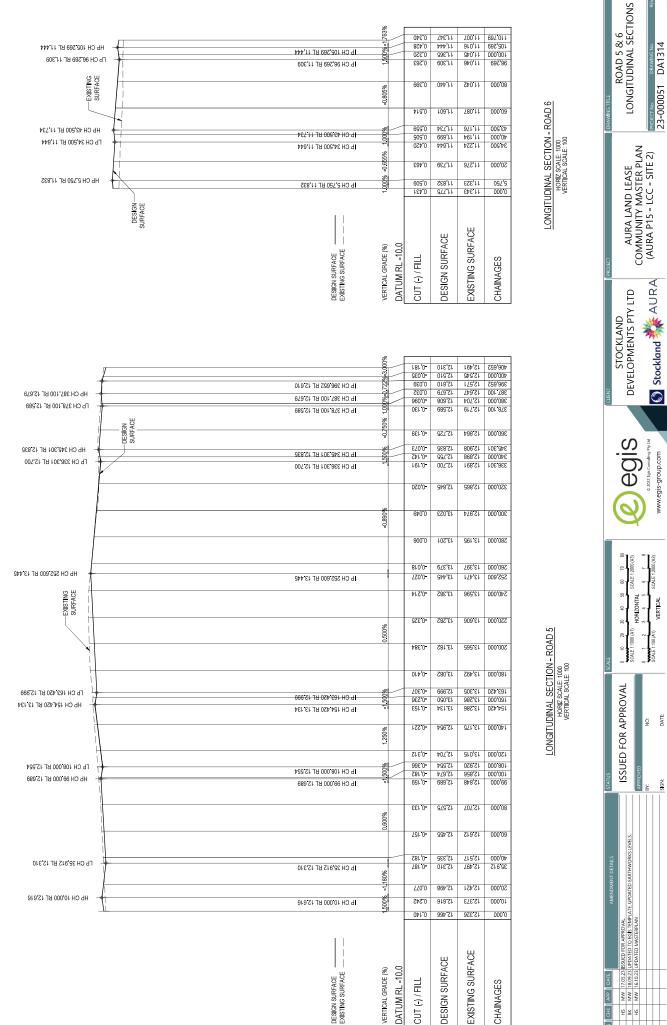
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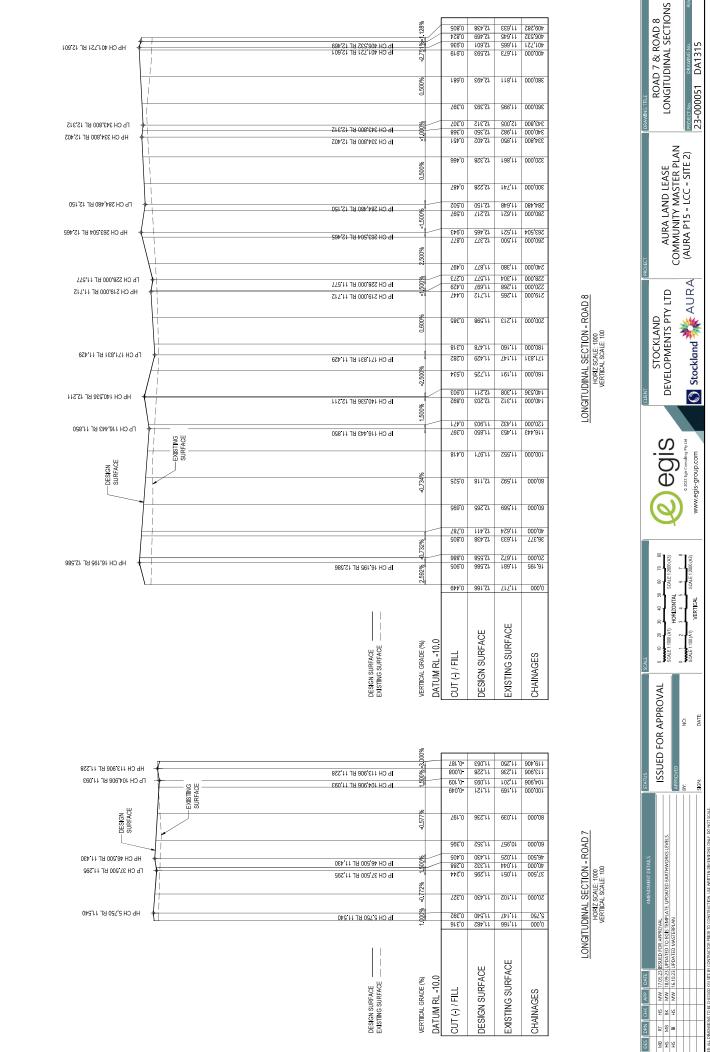
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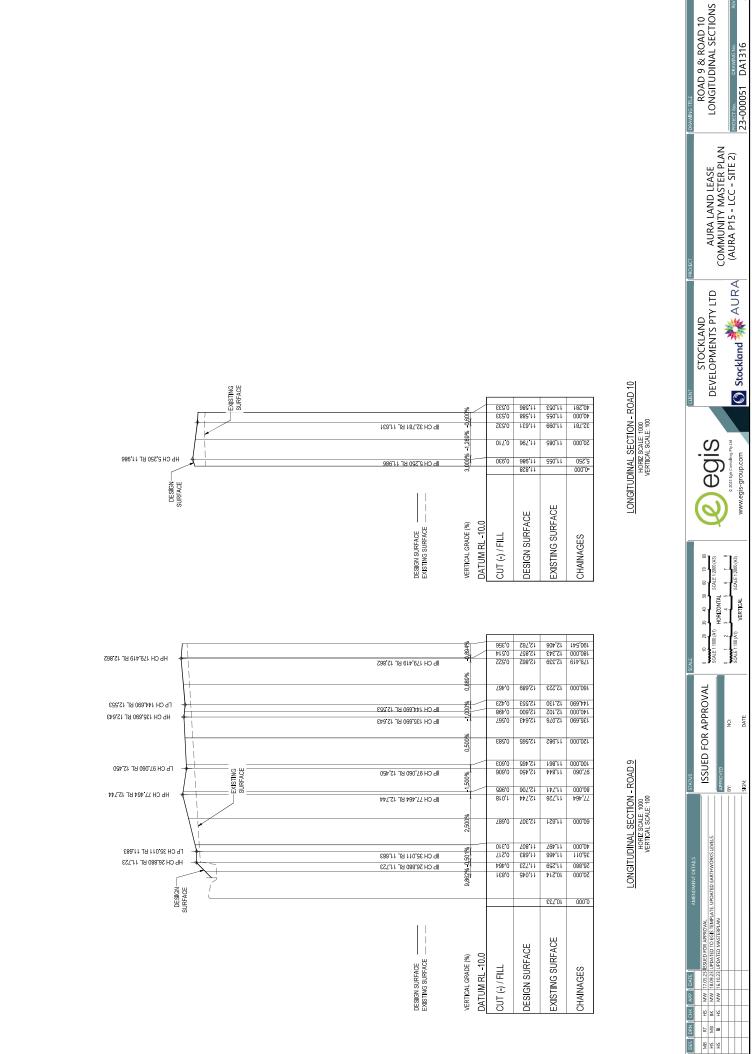
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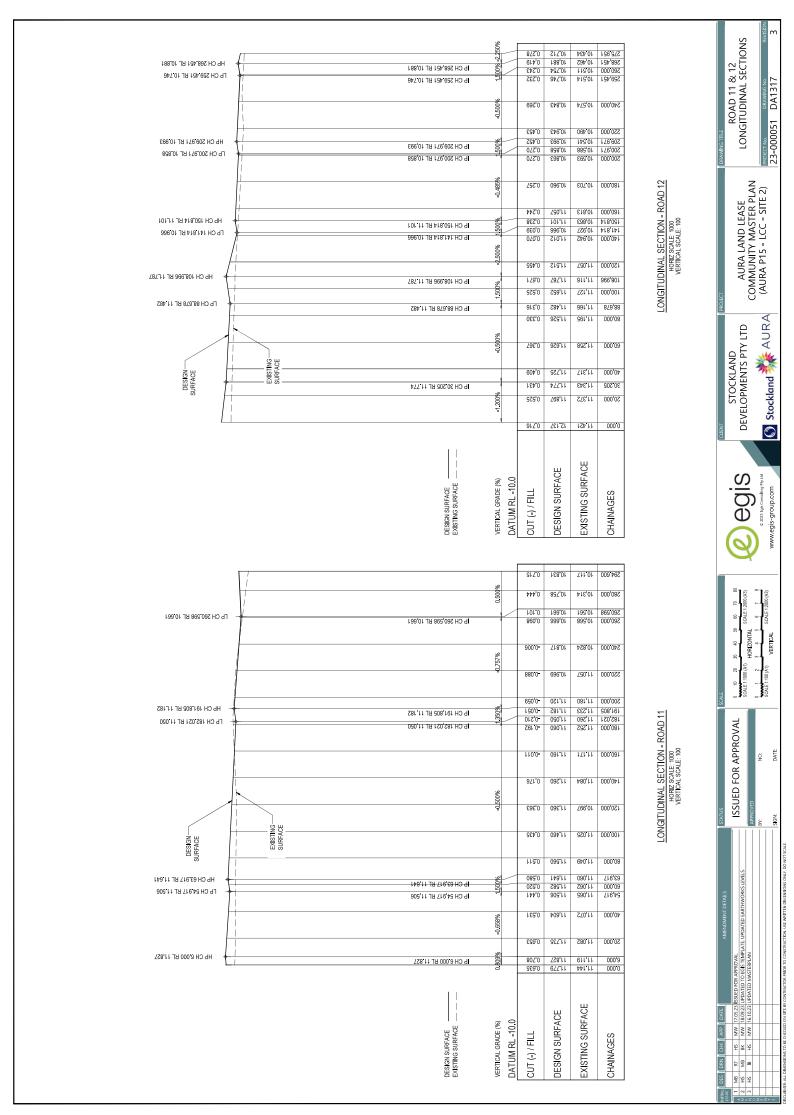


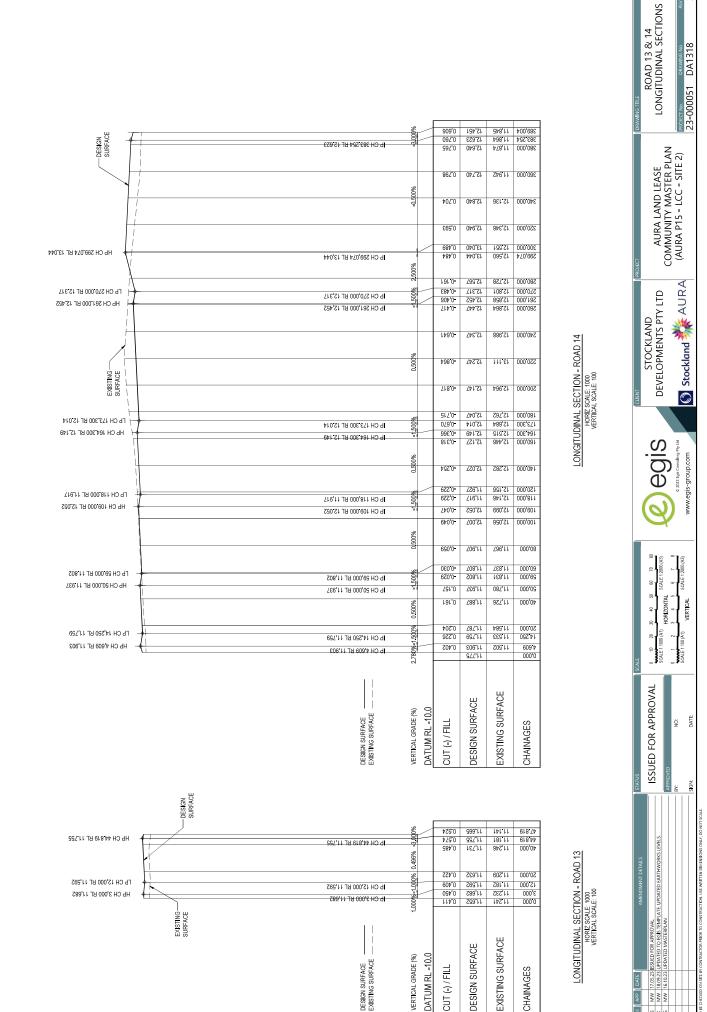
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VERTICAL

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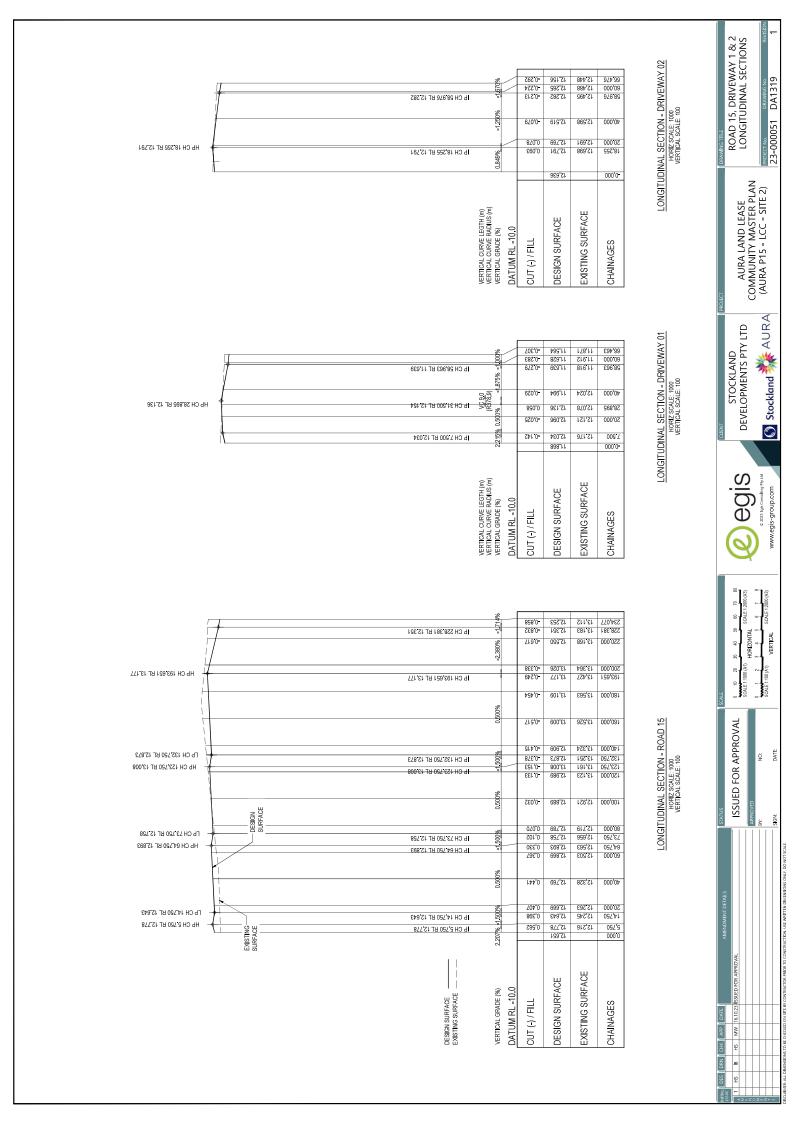
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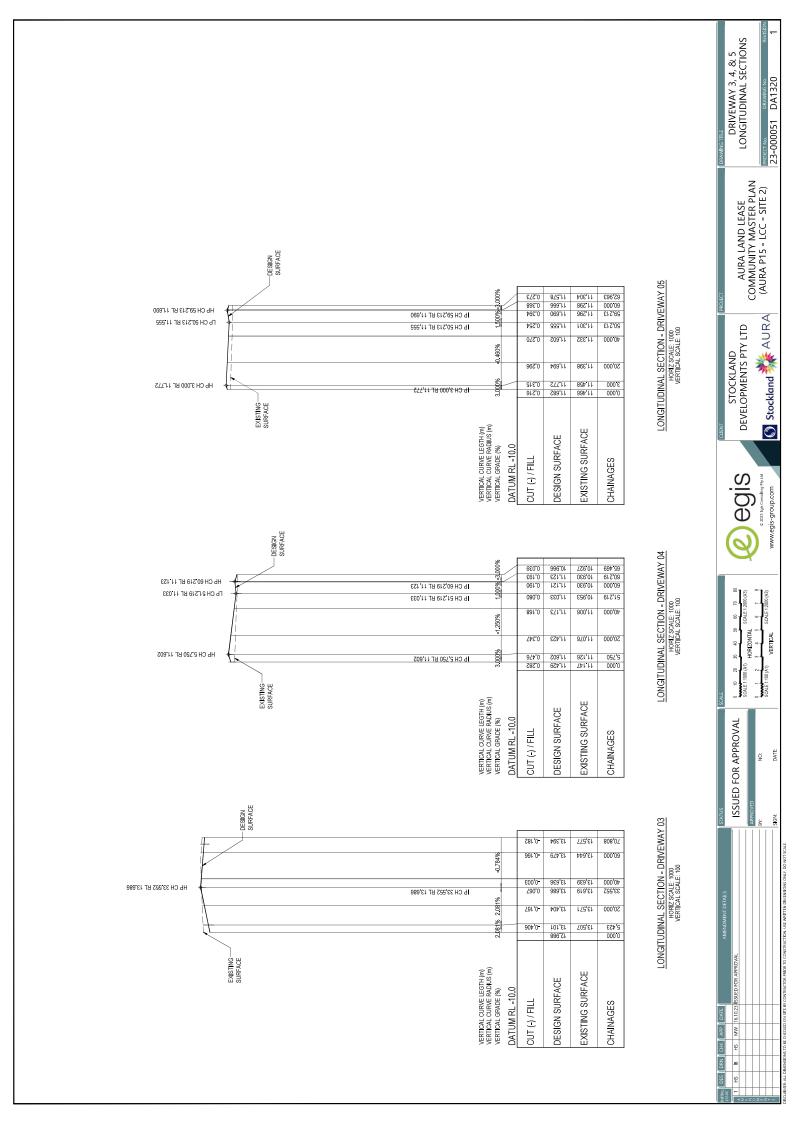


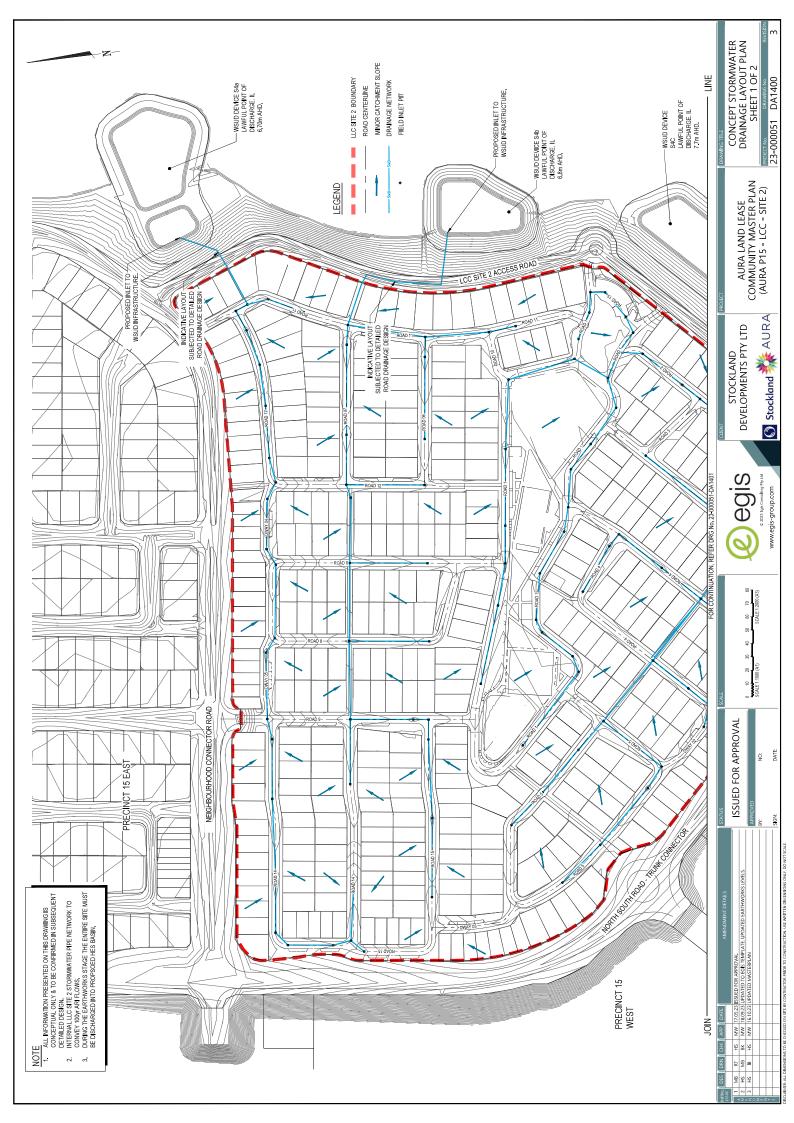


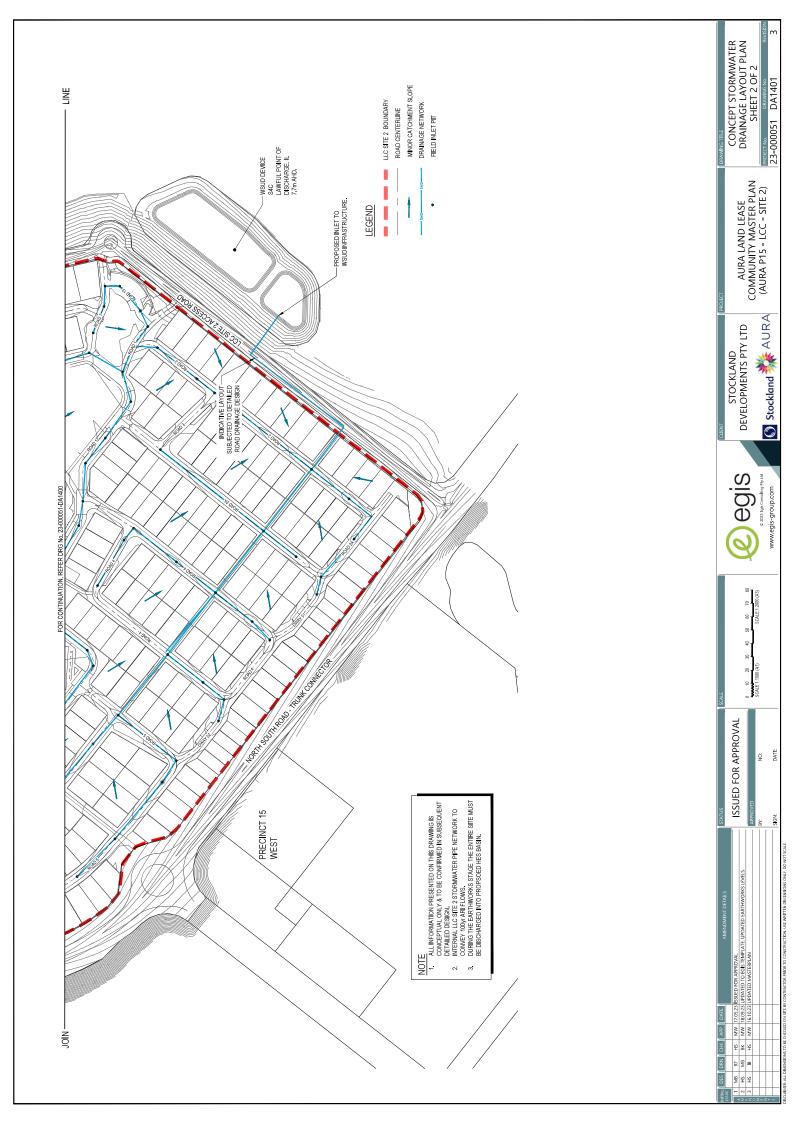
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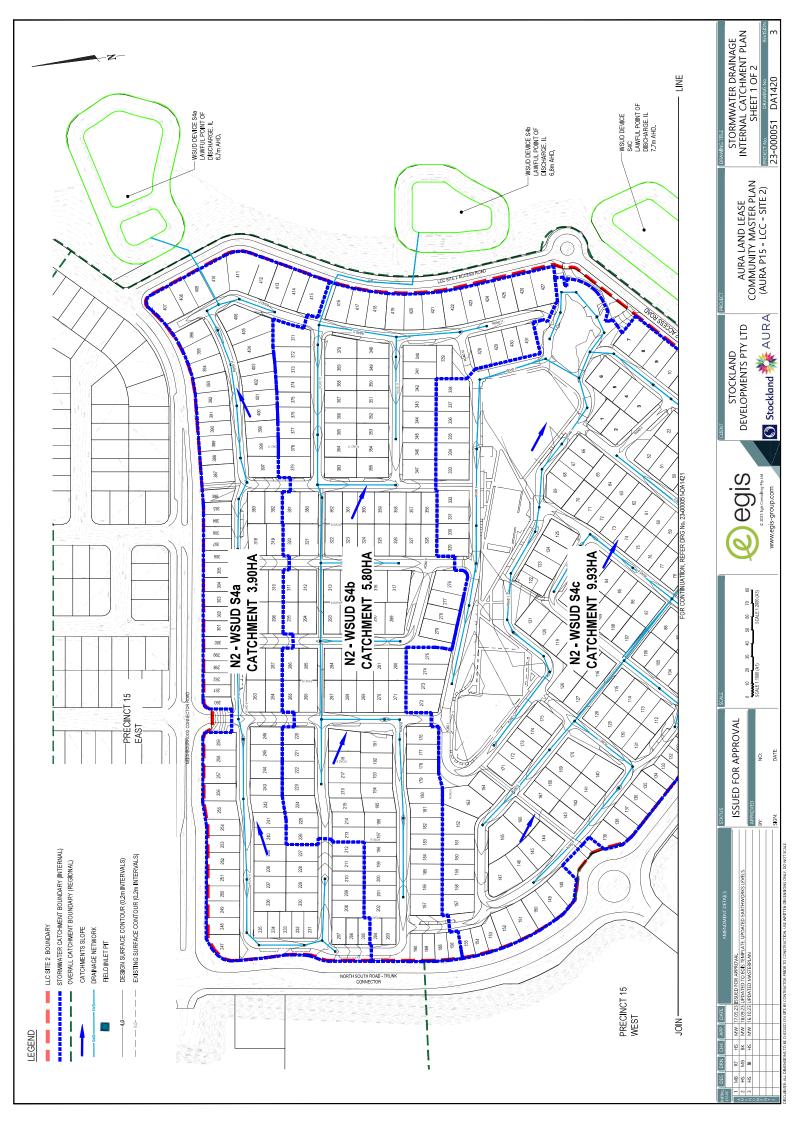
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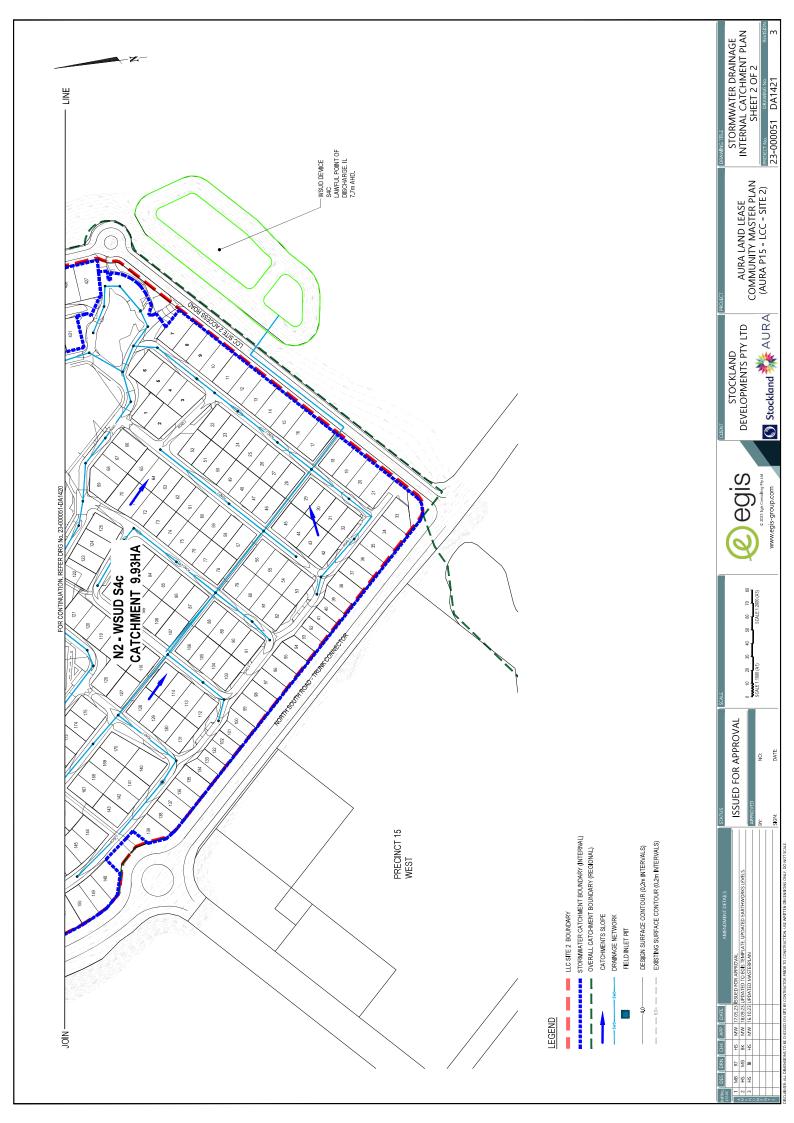


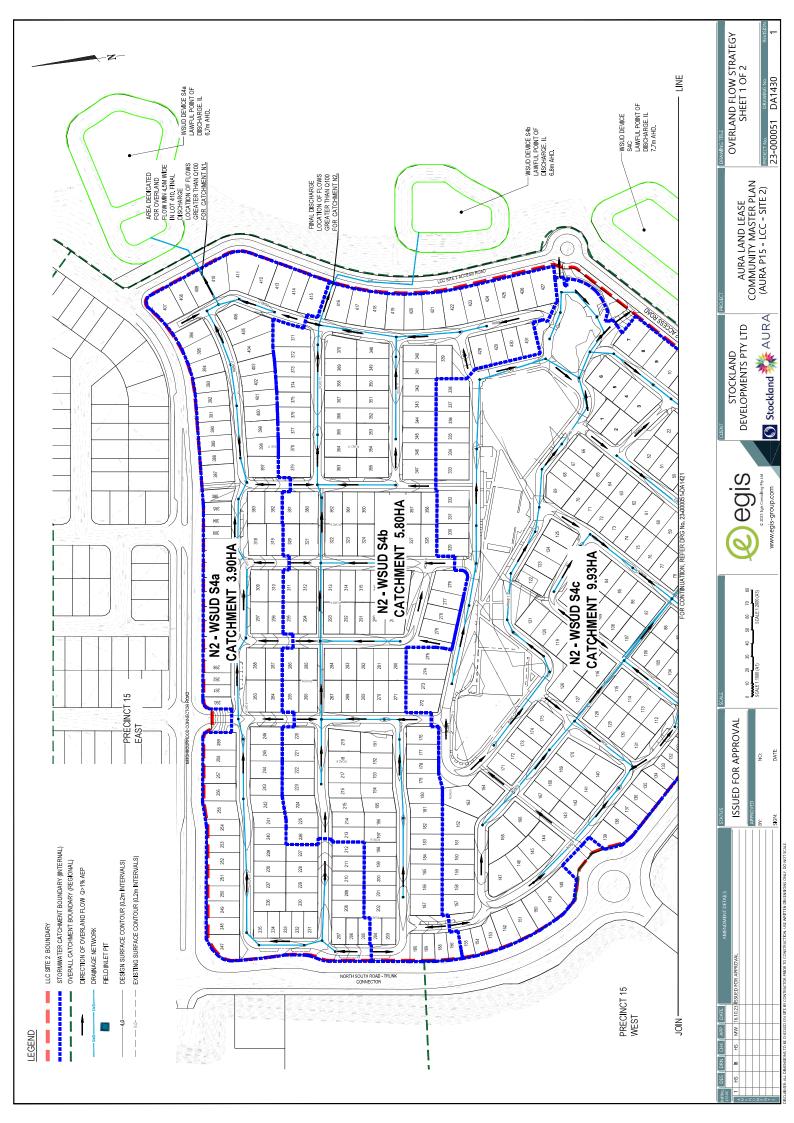


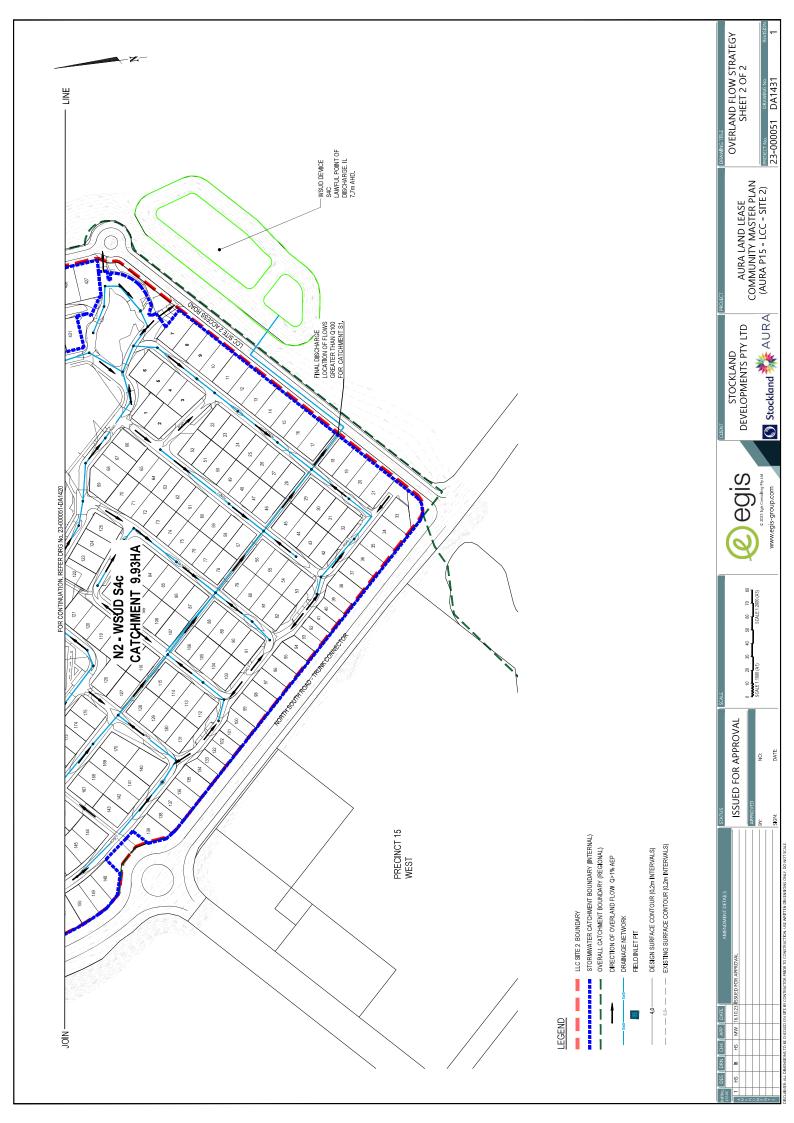


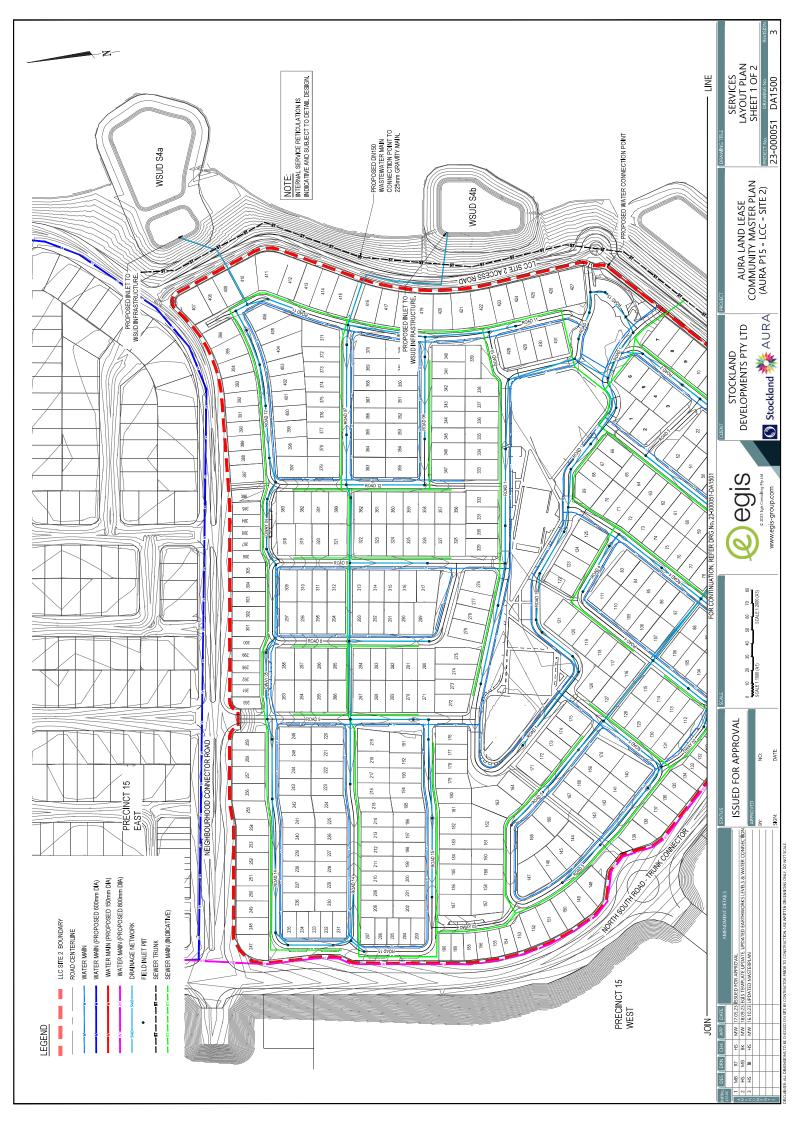


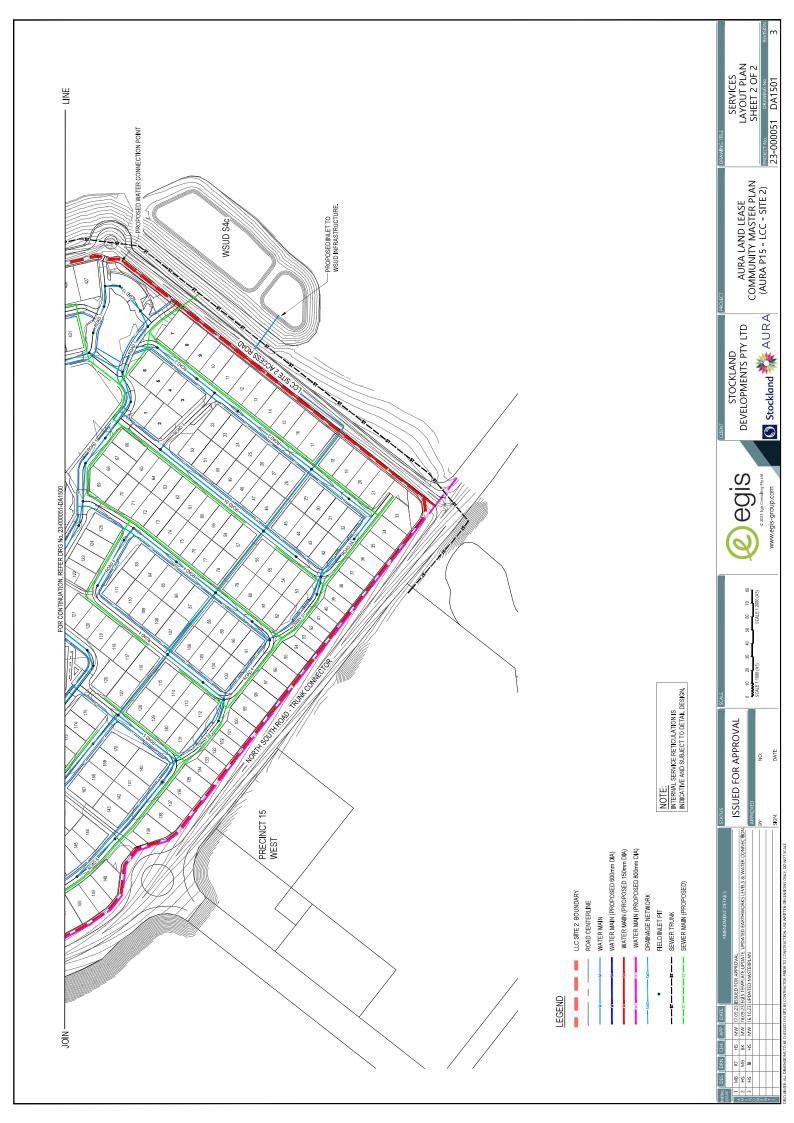






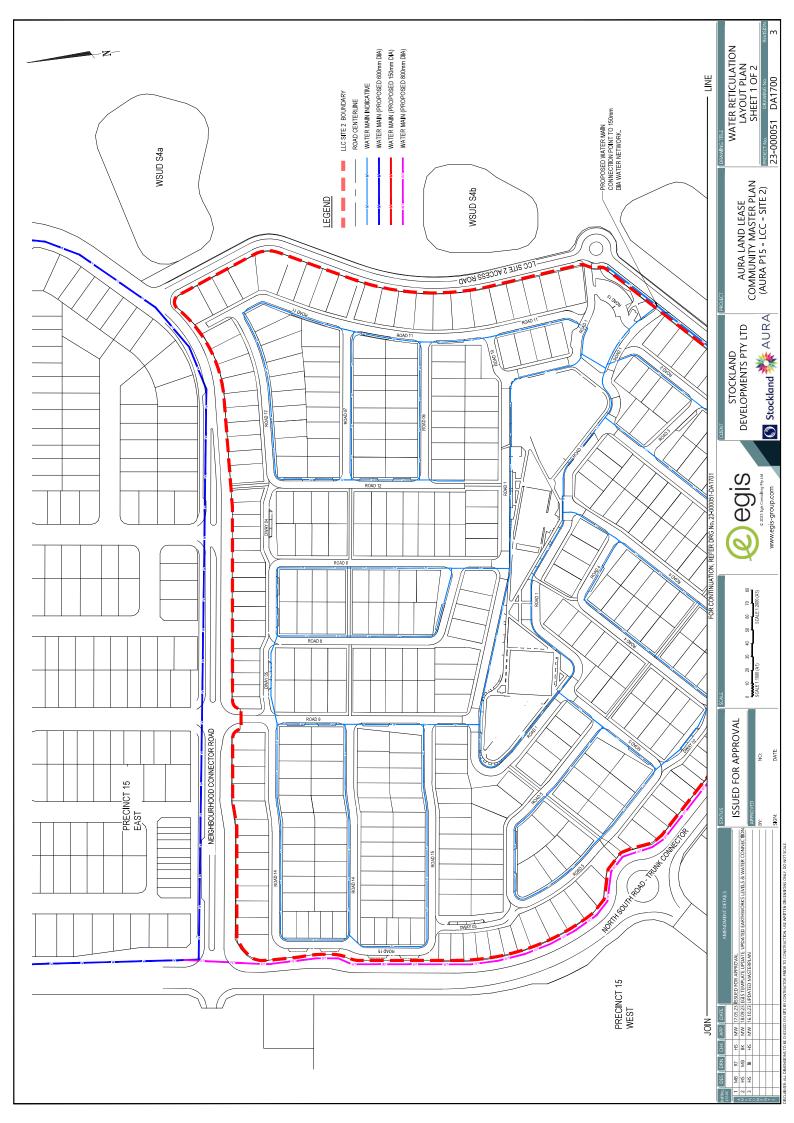


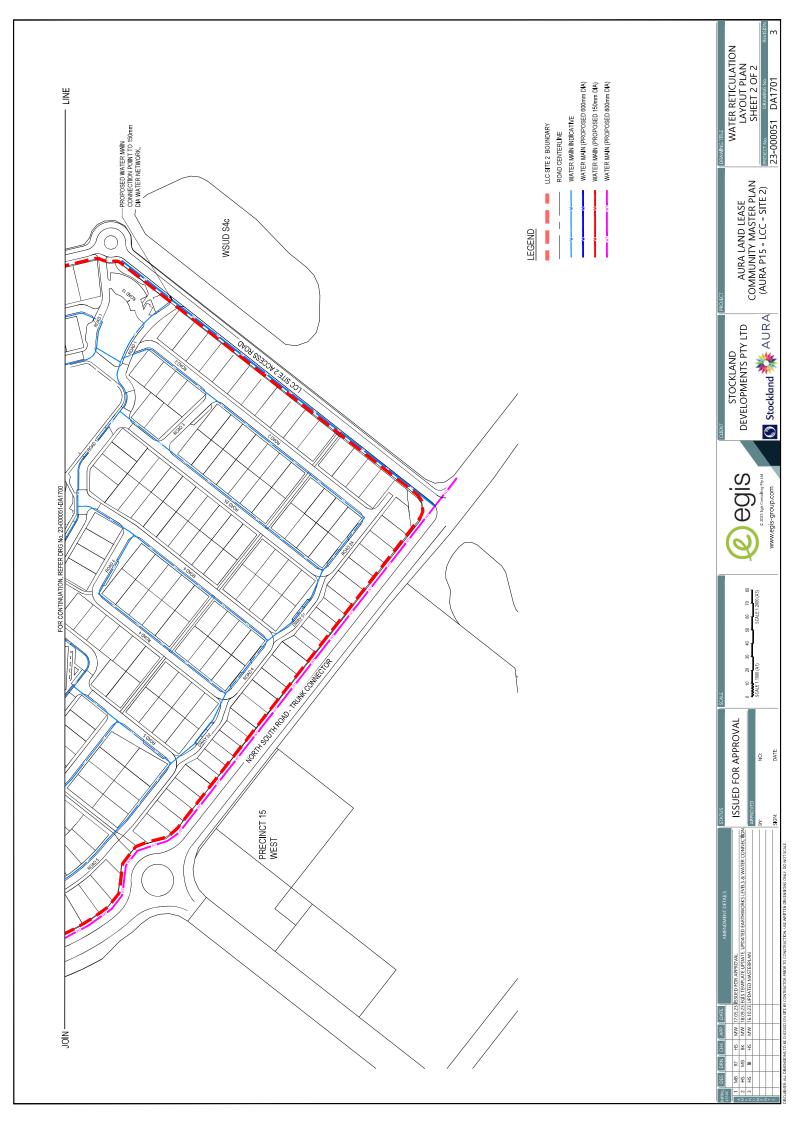


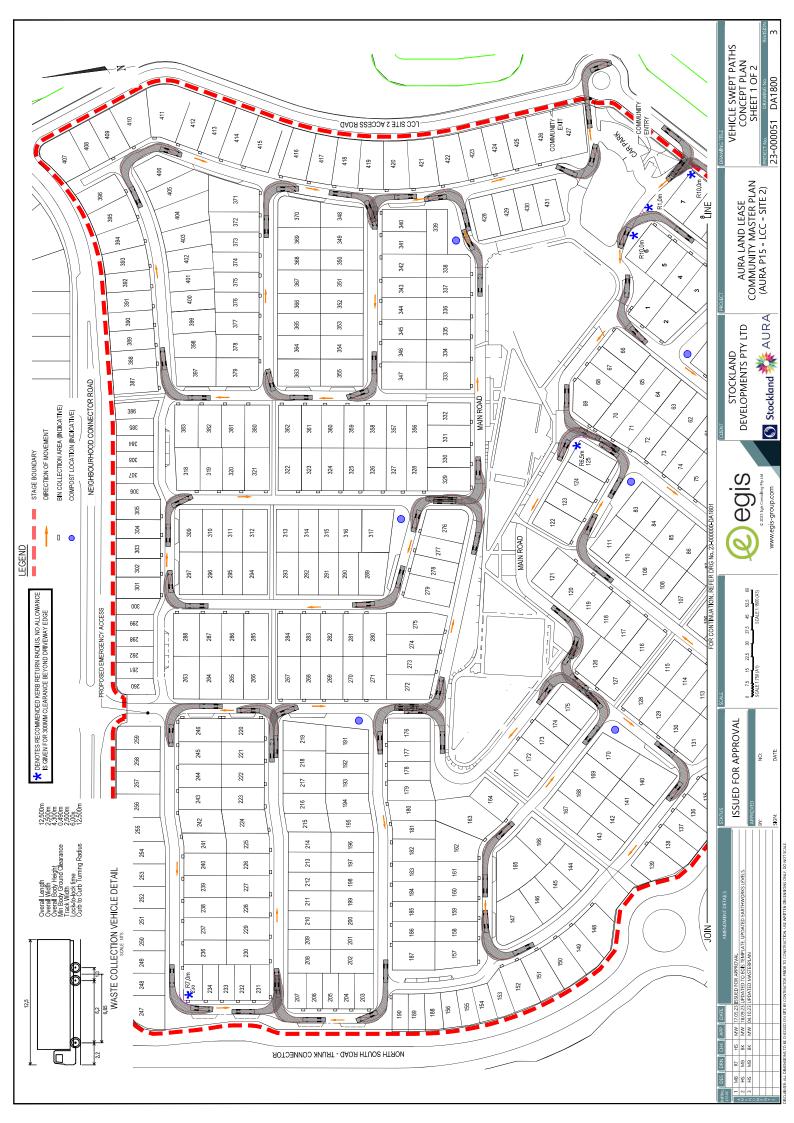


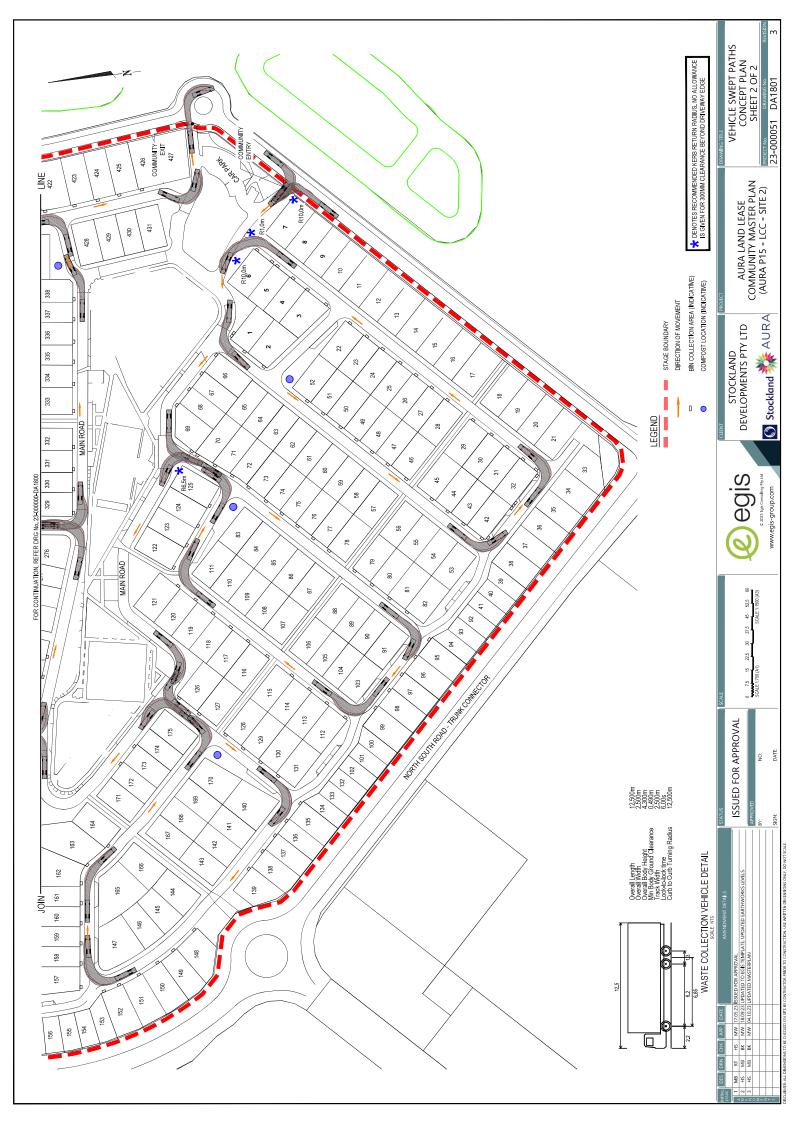


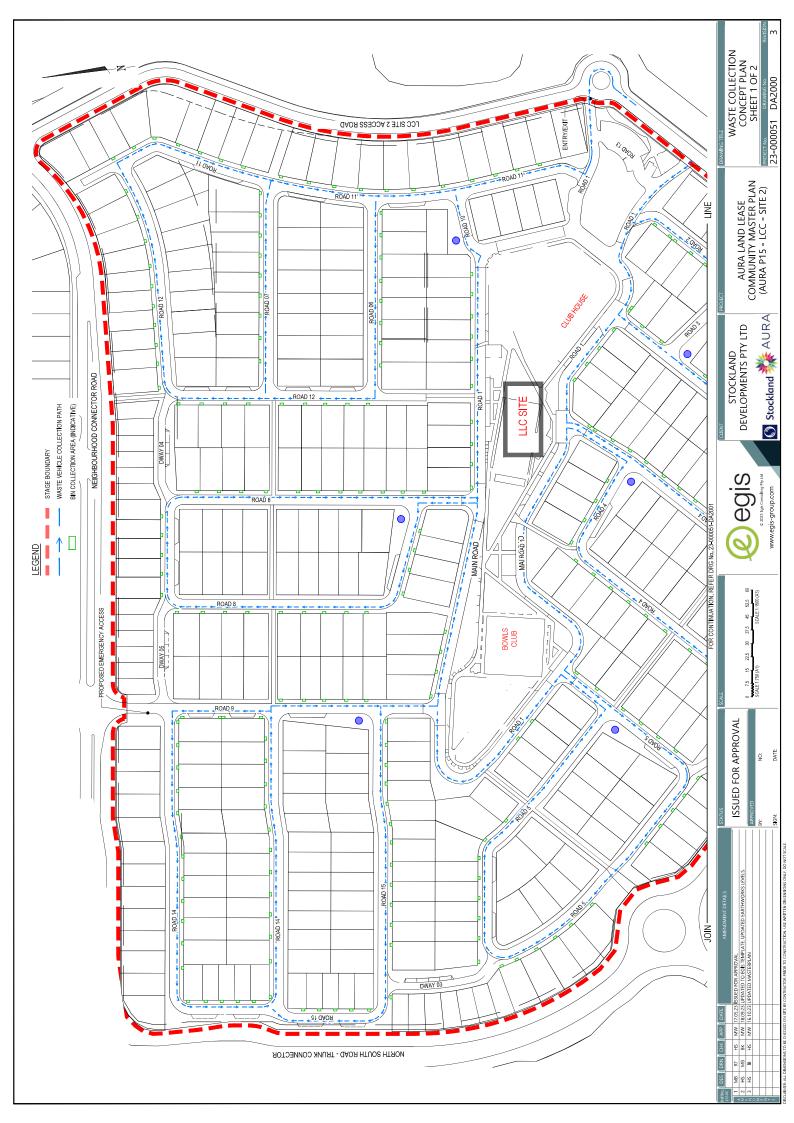


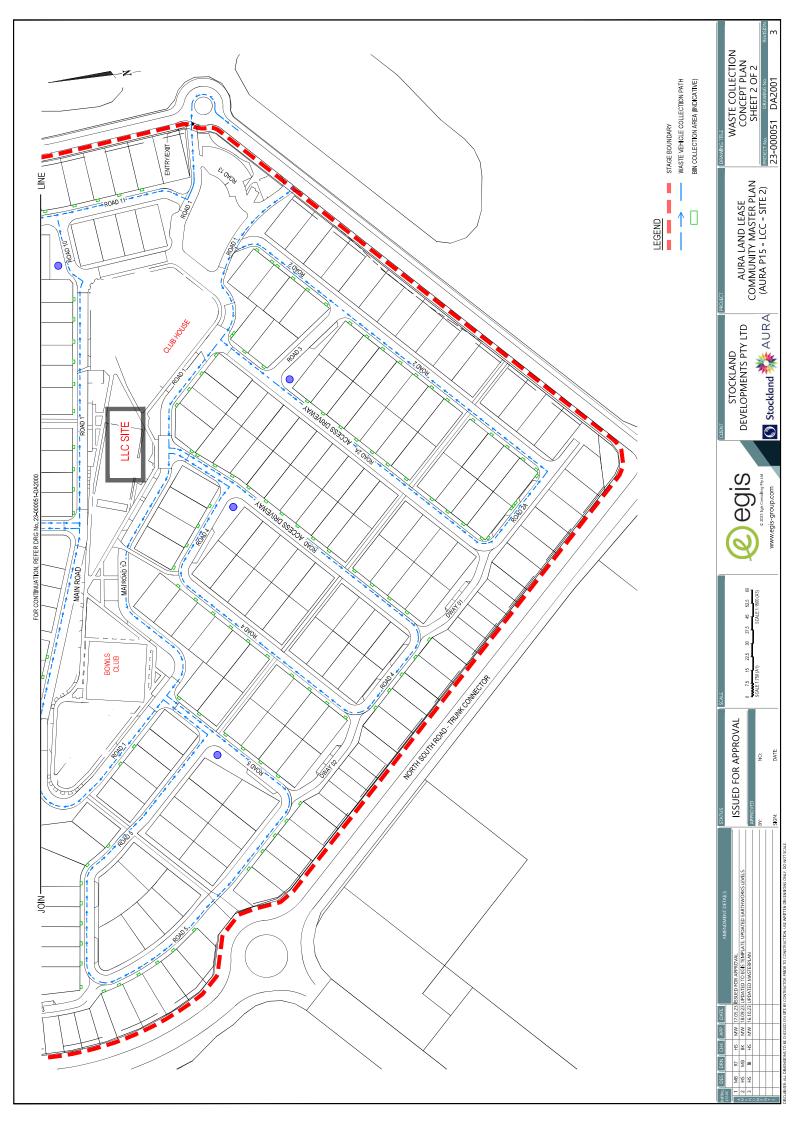












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