PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2017/906
Date: 4 JULY 2018

Queensland Government

calibre

ENGINEERING SERVICES REPORT

Aura North Central Location Precinct 11 (Part) to 12 (Part)



PREPARED BY CALIBRE PTY LTD
PREPARED FOR STOCKLAND DEVELOPMENT PTY LTD

17-003001 | 3 April 2018

Calibre Consulting (QLD) Pty Ltd
ABN 38 109 428 506

DOCUMENT CONTROL

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C	17/04/18	Roads Plans Amended in Appendix	BK	MW	MW (RPEQ 16191)

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Executive Summary

Calibre has been commissioned by Stockland Development Pty Ltd to prepare an Engineering Services Report to accompany the submission of the Development Application over the subject site known as Precincts 11 (part) and 12 (part).

The application proposes to subdivide the land into a combination of residential allotments, a school, open space, drainage reserve and community / commercial facilities.

The engineering design incorporates the results of previous studies, which include:

- Caloundra South Development: Flood Risk Management Strategy (BMT WBM, 2015);
- Ultimate Caloundra South Traffic Model (MWH, 2015);
- Construction Environment Management Plan (Calibre, Oct 2017);
- Wallum Sedge Frog Management Plan (Stockland, 2017);
- Additional Geotechnical Investigation, Aura Precincts 6-16 (Douglas Partners, Aug 2017); and
- Infrastructure Master Plan (Water & Sewer) (Parsons Brinckerhoff).

This engineering assessment addresses the following concept design components:

- Conceptual Bulk Earthworks Design;
- Conceptual Erosion and Sediment Control;
- Conceptual servicing strategies for water, sewerage, electrical and gas;
- Roadworks and Traffic; and
- Stormwater Quantity Management.

These concept engineering designs demonstrate that the site can be developed to address the regional and local flood impacts while meeting the service requirements for the road access, stormwater quantity, water reticulation and sewerage reticulation over the application area.

It should be noted that these concept engineering designs will be developed further with detailed designs to be provided at the Operational Works self-certification phase.

1 Introduction

Calibre has prepared this Engineering Services Report to accompany the submission of a Development Application over a portion of the subject site known as Precincts 11 (part) and 12 (part). The application proposes to subdivide the site into various land uses as defined in the proposed development layout. Refer to Drawing Number 17-000934.3011-DA02 for the proposed application extents and lot layout.

The aim of the Engineering Services Report is to identify site opportunities and constraints and provide design solutions which comply with the relevant guidelines and demonstrate that the proposed development can be serviced for road access, stormwater drainage, water reticulation and sewerage reticulation while addressing the environmental and flood impacts.

2 Site Description

Precincts 11 and 12 are located in the North Central locality of the Aura development. The site is bound by Bells Creek (North) to the North, Precinct 10 to the East, proposed future urban development (to be undertaken by Stockland) to the South and Environmental Protection Zone and Aura Brook to the west. It is noted that the site forms part of the Aura Priority Development Area, the Master Plan of which has been approved by the (former) Urban Development Authority (ULDA reference No. DEV2011/200) now Economic Development Queensland (EDQ).

Please refer to Figure 2-1 following showing the site locality:



Figure 2.1 - Site Locality Plan

3 Bulk Earthworks Strategy

Please refer to Drawing Numbers 17-000934-BEW203 and BEW204 in Appendix B for the indicative material movement phasing for central Aura and Drawing Numbers 17-000934.3011-DA06 and DA07 in appendix A for the Precinct 11 (Part) and 12 (Part) bulk earthworks details plans.

3.1 Earthworks Objectives

Calibre have been engaged to undertake strategic planning for the earthworks movements in Precincts 7-15. The precincts 11 (Part) and 12 (Part) Earthworks Strategy within this report area need to comply with the above and the following objectives:

- Facilitate the Stockland development phasing and current ROL approvals;
- Be in accordance with the Aura Regional Flood Model – 2017 Revision prepared by BMT WBM;
- 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;
- 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.

3.2 Earthworks Level Control

Regional flood levels have been established for Bells Creek North and South through modelling undertaken by BMT WBM. In general, these flood levels control the minimum earthworks levels at the stormwater outlets and embankments. Significant bulk earthworks operations are required to achieve flood immunity for the developed site. Refer to Drawing Number 17-000934.3011-DA05 for indicative cut / fill depths.

Cut (m^3)	128,250m3
Fill (m^3)	1,088,700m3
Note that the above figures are preliminary earthworks quantities and include a topsoil strip and respread balance of 169,000m3.	

Table 1 – Cut / Fill Estimate of Quantities

All material will be sourced from within the area in accordance with the proposed earthworks phasing. Local flood levels have been developed with consideration of the regional flood levels from the major waterways and proposed outlet levels for the end of line WSUD devices.

3.3 Adopted Standards and Design Principles

To comply with the Aura Regional Flood Model – 2017 Revision – Addendum Report prepared by BMT WBM, 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 taken into account for 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 350mm freeboard. The remaining 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 requirements.

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

- All allotments and roads are designed for immunity to the 100 year ARI peak flood level with climate change;
- Major and district sports parks have been designed for 20 year ARI flood immunity (with 100 year ARI flood immunity for structures); and
- Recreational areas have been designed for the 5-year ARI flood immunity (with 100-year ARI flood immunity for structures).

The design principals, 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 and Aura Brook;
- All allotments to be graded at minimum and 1 in 200 (towards either the road or rear of allotment);
- Roads to have minimum grade of 0.4%;
- Cut/fill volumes to be developed to best match requirements of other Precincts;
- To be consistent with the Construction Environmental Management Plan by Calibre; and
- To be consistent with the Additional Geotechnical Investigation report for Aura Precincts 6-16 by Douglas Partners.

3.4 Proposed Earthworks Strategy

The North Central locality of the Aura development has been broken down into three phases of bulk earthworks movements as per the Drawing Numbers 17-000934-BEW202 to BEW 204 (refer Appendix B). For the purposes of this DA the material movement Phases 2A, 3A and 3B will be implemented. The basis of these material movements is to cut material from the west and south of P11 and P12 to fill the north and east. These material movements and filling operations are required to adhere to the minimum allotment levels developed by BMT WBM along the riverine waterways and the resulting local flood level requirements.

Significant bulk earthworks operations are required to achieve flood immunity for the developed site. Indicative cut and fill over the subject Precincts are shown indicatively on drawing 17000934.3011-DA05 in Appendix A.

Based on conceptual modelling, fill levels within the subject precincts are anticipated to be in the order of up to 3.5m. Douglas Partners have been consulted in relation to the potential for creep settlement as a result of this filling and have advised that there is little concern in this regard. It is envisaged that there will be efficiencies in the modelling of earthworks which can be realised once further development planning has occurred.

3.5 Geotechnical

Geotechnical investigation has been undertaken by Douglas Partners comprising broadscale investigation in 2014 and an 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 localised filling and topsoil 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;
- Groundwater seepage was typically encountered between 1.2m and 2.55m depth;
- CBR testing (16 samples) returned results of between 0.5% to 18.0% with an average result of 7%;
- 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 0.6m with an average depth of 0.2m. 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.

4 Erosion and Sediment Control

A key focus of the development works will be to ensure that appropriate and effective erosion and sediment control measures are implemented in the design and construction of the subject site. Refer to strategy Drawing Numbers 17-000934-ESC500 to 503 in Appendix B detailing the conceptual erosion and sediment control layout and details. The intent of these plans are to generally demonstrate the type and location of key erosion and sediment controls to be implemented and demonstrate that the measures can be incorporated into the proposed layout.

The Principle Contractor will be responsible for the appointment of an appropriately qualified CPESC to oversee the design, construction and management of Erosion and Sediment Controls. The controls are to focus on providing 'better than best' stormwater management for the development and are anticipated to include:

- Shake down grids and wash down areas;
- Diversion drains separating clean and 'dirty' water;
- Traditional and High Efficiency Sediment basins;
- Downstream bunding;
- Discharge ponds; and
- Sediment fencing.

All construction and stormwater discharge will be treated to meet the objectives of the Federally Approved Construction Environment Management Plan (Calibre 2017) and is to discharge to downstream areas that are stabilised.

4.1 Adopted Erosion and Sediment Control Standards

Stormwater management during the construction phase must meet the CEMP and the State Planning Policy Objectives as set out in the below extract from Appendix 2 – Stormwater management design objectives

Part 1 Construction phase – stormwater management design objectives[12]

Issue	Desired outcomes
Drainage control	1. Manage stormwater flows around or through areas of exposed soil to avoid contamination. 2. Manage sheet flows in order to avoid or minimise the generation of rill or gully erosion. 3. Provide stable concentrated flow paths to achieve the construction phase stormwater management design objectives for temporary drainage works (part 2). 4. Provide emergency spillways for sediment basins to achieve the construction phase stormwater management design objectives for emergency spillways on temporary sediment basins (part 3).
Erosion control	1. Stage clearing and construction works to minimise the area of exposed soil at any one time. 2. Effectively cover or stabilise exposed soils prior to predicted rainfall. 3. Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised[13] using methods which will achieve effective short-term stabilisation.
Sediment control	1. Direct runoff from exposed site soils to sediment controls that are appropriate to the extent of disturbance and level of erosion risk. 2. All exposed areas greater than 2500 metres^2 must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5).
Litter, hydrocarbons and other contaminants	1. Remove gross pollutants and litter. 2. Avoid the release of oil or visible sheen to released waters. 3. Dispose of waste containing contaminants at authorised facilities.
Waterway stability and flood flow management	1. Where measures are required to meet post-construction waterway stability objectives (specified in table B), these are either installed prior to land disturbance and are integrated with erosion and sediment controls, or equivalent alternative measures are implemented during construction. 2. Earthworks and the implementation of erosion and sediment controls are undertaken in ways which ensure flooding characteristics (including stormwater quantity characteristics) external to the development site are not worsened during construction for all events up to and including the 1 in 100 year ARI (1% AEP).

The concept erosion and sediment control plans 17-000934-ESC501 to ESC503 (Refer Appendix B) have been prepared in collaboration with Designflow to ensure compliance with the above objectives

Detailed engineering design will be further developed in accordance with these guidelines and incorporate the EDQ Guidelines for site management at the time of the Operational Works.

4.2 Proposed Erosion and Sediment Control Strategy

A range of sediment and erosion control devices including High Efficiency Sediment (HES) Basins will be utilised through construction. These HES basins provide efficiency when compared to the conventional batch type basins by allowing the stormwater to pass through the basin rather than having to capture it all. It requires an automated dosing system to actively dose stormwater as it enters the coarse sediment forebay (first cell), where mixing and the majority of settling occurs before entering the second cell of the basin. In the second, larger cell of the basin, treated stormwater with finer suspended solids settle out before a self-decanting apparatus 'skims' off the cleaner water at the surface before discharging it from site. Implementing these HES basins can reduce the required footprint required which in a development the size of Aura can be a substantial gain.

As these basins form a last line of defence for erosion and sediment control there will be first line defence systems such as clean water diversions, dirty water diversions, sediment fencing and rock check dams etc in place throughout the construction process. Areas should be stabilised as soon as practical following the construction works to minimise the exposure of these areas to dirty water runoff.

Refer to the Stormwater Quality Management Plan prepared by Designflow for all stormwater quality management.

5 Traffic Assessment

Refer to Drawing Number 17-000934.3001-DA03 and DA04 for the road hierarchy and proposed cross sections.

The Precincts 11 (Part) and 12 (Part) will be accessed initially from the East / West sub arterial and trunk connectors running through the proposed Precinct 10 from the East There is a network of sub arterial, collector, access streets and laneways proposed to service the development.

Detailed assessment of the proposed road network is included in the Precincts 11 and 12 (Part): Traffic Assessment prepared by Calibre, December 2017. Calibre have assessed several scenarios to evaluate the performance of the road network culminating in the year 2026 with the full occupation of the sub precincts. Particular focus is on the high intensity intersections, 1, 2 and 3 on the boundary of precincts 11 and 12. Refer below Figure 5.1 from Calibres Traffic Assessment report.

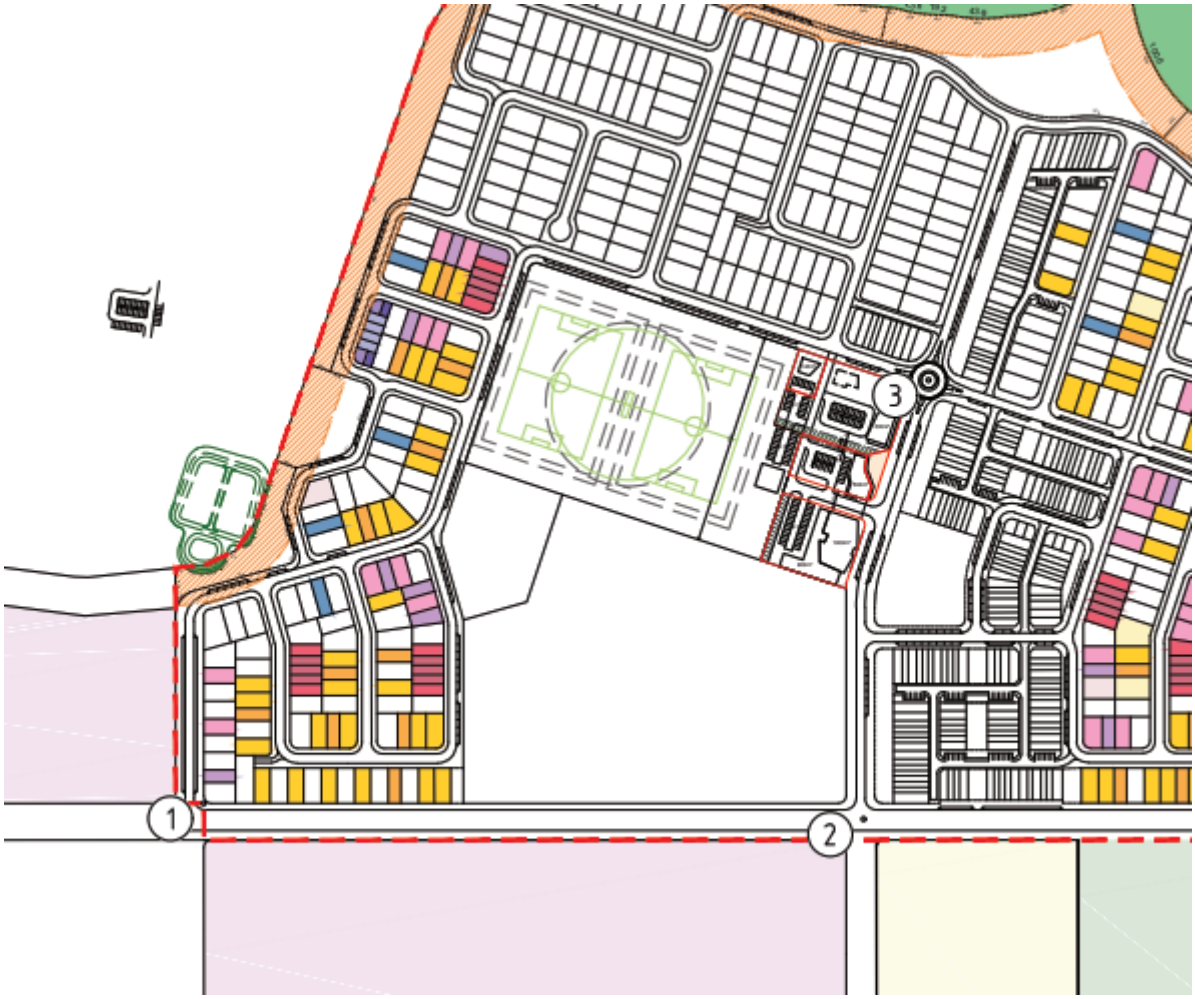


Figure 5.1 – High Intensity Intersections

The precincts are also fully serviced with pedestrian, on and off road bicycle networks to comply with the LGIA. The surrounding intersections will be assessed in detail as part of the detailed design for the relevant precincts.

6 Stormwater Quantity Management

6.1 Regional Flooding

At the time of writing the BMT WBM, Aura Regional Flood Model – 2017 Revision – Addendum Report is the current regional flood assessment for the Precincts 11-15. The civil design and stormwater modelling have been closely aligned to define the sub-catchments and develop a hydrologic model of the area pre and post development. From this, regional flood levels have been established for Bells Creek North and South. In general, these flood levels control the minimum earthworks levels at the stormwater outlets and embankments. Significant bulk earthworks operations are required to achieve flood immunity for the developed site.

As previously mentioned, 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 taken into account 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 freeboard will be achieved through slab construction to satisfy the habitable floor level.

The stormwater quality basins are designed for Q20 immunity throughout.

6.2 Local Drainage

The Precincts 11 and 12 catchments discharge to Bells Creek (North) to the North and Aura Brook to the South in accordance with the Designflow Stormwater Quality Management Report. These flows follow an internal network of major drainage elements through a series of piped and surface flow channels. The lower order road network is designed to transport Q2 drainage flows through the piped system with the higher order roads designed to pipe Q10 flows.

Refer to the Stormwater Catchment and Layout Plans 17-000934.3011-DA12 and DA13 in Appendix A for the indicative catchments, channels, culvert crossings and conceptual outflow locations to the proposed WSUD devices.

As with other major infrastructure elements, location and details of stormwater drainage elements are conceptual only and subject to further detailed design for operational works.

6.3 Aura Brook

Aura Brook is an engineered channel South West of the subject site. The channel is designed to convey Q100 flows from central Aura to discharge into Bells Creek (South). The width of the channel varies along its alignment to account for proposed end of line WSUD devices. Refer to the Concept Stormwater Management Plan (Internal Conveyance) Precincts 11 and 12 for all technical details.

Detailed engineering design will be further developed in accordance with the relevant guidelines and incorporate the EDQ Guidelines for site management at the time of the Operational Works.

7 Water and Wastewater Reticulation

The overall water and sewer servicing strategy for Aura has been previously prepared by Parsons Brinckerhoffin entitled the Caloundra South Water Supply and Sewerage Infrastructure Master Plan (IMP).

Continuing on from the IMP, the proposed Trunk water and sewer servicing within the Precinct 11 (Part) and Precinct 12 (Part) is detailed in the Preliminary Precinct Network Plan (PPNP), Aura – Precincts 6 (Part), 11 (Part) and 12 (Part) prepared by Calibre, December 2017. The primary objective of this PPNP is to determine suitable staging of water and wastewater servicing strategies in support of the development.

The proposed internal water network is shown indicatively on drawings 17-000934.3001-DA10 and DA11 in appendix A.
The proposed internal wastewater network is shown indicatively on drawings 17-000934.3001-DA08 and DA09 in appendix A.
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.

Pressure constraints within the existing network during Phase 1 limits development within Precinct 11 (Part) and Precinct 12 (Part) to areas below 12m AHD. It has been assumed that these areas highlighted in d*rawing no. 17-003001.02-SK101* will be developed under Phase 2. If any development were to proceed prior to Phase 2 infrastructure being constructed, a local booster pump will be required to service development areas above 12m AHD.

8 Utilities

The development will be serviced with electrical and telecommunications (National Broadband Network).

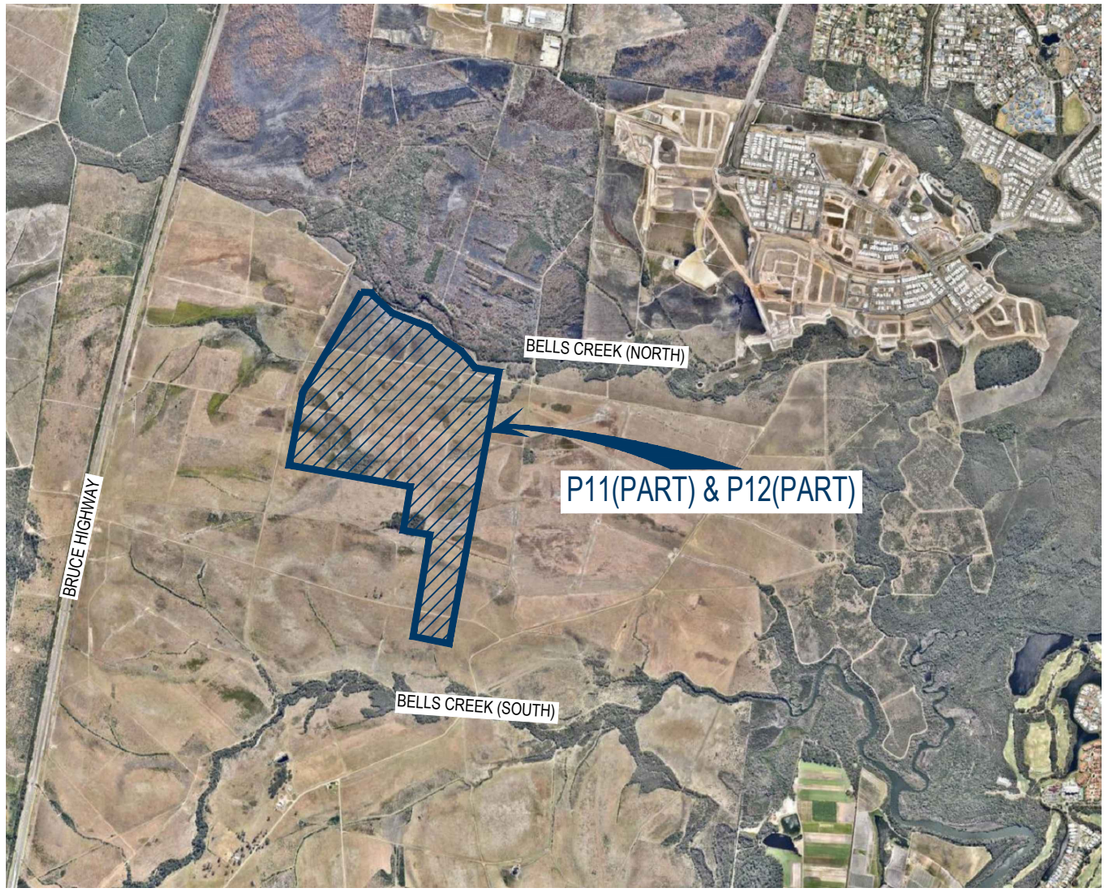
As per previous precincts with Aura the services are proposed to be co-located on a standard alignment within a corridor 0-900mm from the property boundary. Detailed design may determine that alternative alignments are required in some instances and these will be detailed on an as required basis.

These services will be provided in accordance with conditions of, and through agreement with, the relevant service providers.

Appendix A Precinct 11 and 12 DA Plans

STOCKLAND DEVELOPMENT PTY LTD

AURA NORTH CENTRAL LOCALITY
PRECINCT 11 AND 12
DEVELOPMENT APPLICATION
STOCKLAND KAWANA WATERS PTY LTD



N

3 APRIL 2018

DRAWING LIST
DEVELOPMENT APPLICATION

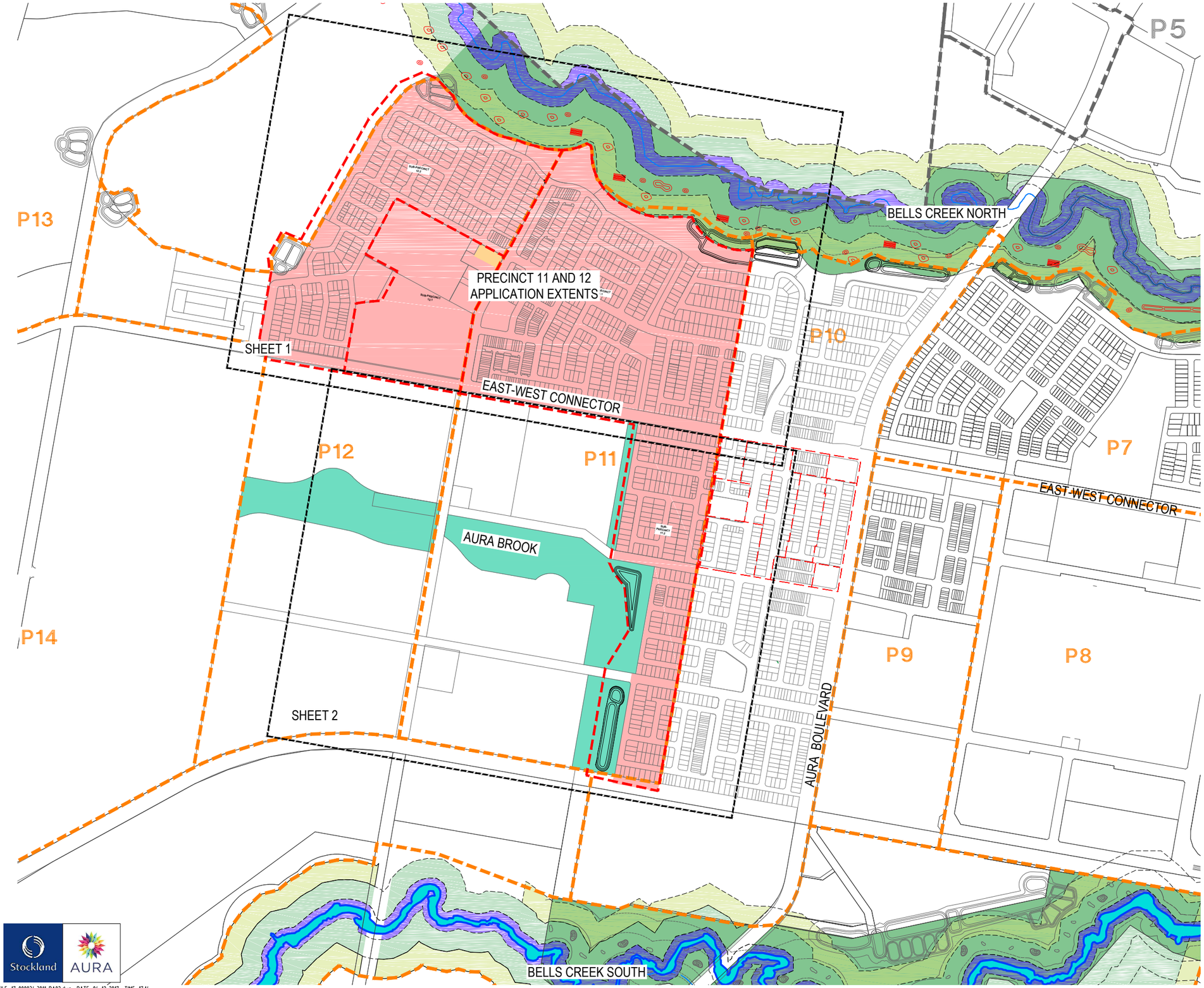
17-000934.3011-DA01	TITLESHEET & LOCALITY PLAN
17-000934.3011-DA02	OVERALL LAYOUT AND KEY PLAN
17-000934.3011-DA03	PROPOSED ROAD HIERARCHY PLAN
17-000934.3011-DA04	PROPOSED ROAD CROSS SECTIONS
17-000934.3011-DA05	CUT FILL DEPTH RANGES PLAN
17-000934.3011-DA06	BULK EARTHWORKS DETAIL PLAN SHEET 1 OF 2
17-000934.3011-DA07	BULK EARTHWORKS DETAIL PLAN SHEET 2 OF 2
17-000934.3011-DA08	SEWER RETICULATION LAYOUT PLAN SHEET 1 OF 2
17-000934.3011-DA09	SEWER RETICULATION LAYOUT PLAN SHEET 2 OF 2
17-000934.3011-DA10	WATER RETICULATION LAYOUT PLAN SHEET 1 OF 2
17-000934.3011-DA11	WATER RETICULATION LAYOUT PLAN SHEET 2 OF 2
17-000934.3011-DA12	STORMWATER CATCHMENT AND LAYOUT PLAN SHEET 1 OF 2
17-000934.3011-DA13	STORMWATER CATCHMENT AND LAYOUT PLAN SHEET 2 OF 2

AURA
PRECINCT 11 AND 12
DEVELOPMEMT APPLICATION

Project No.:	Phase:	Milestone:	Revision Date.:	Drawing No.:	Revision:
17-000934.3011	-	FOR APPROVAL	03.04.18	17-000934.3011-DA01	-

FILE: 17-000934.3011-DA01.dwg DATE: 18-12-2017 TIME: 12:39
Xref's: USR: ben gear

FILE: H:\17\000934 - AURA P7 - 10\000934 AURA\3000 OTHER WORKS\3011 - RDL P11 & 12\4_MODEL\AUTOCAD\17-000934.3011-DA01.DWG LAST SAVED BY: JAMES MCINTYRE



LEGEND

- PROPOSED APPLICATION EXTENTS
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- END OF LINE STORMWATER QUALITY BASIN

Stockland AURA

FILE: 17-000934.3011-DA02.dwg DATE: 04-12-2017 TIME: 17:14
Xref's: x 17-000934.3011 - TITLE X-17-000934 - P11-12 DABASE X-17-000934 - LOTS USR: joshua beddow

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	JM	JM	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:5000 100 50 0 100 200 A1
1:10000 A3

MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
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APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

PROJECT
AURA
PRECINCT 11 & 12

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Level 3, 16 Innovation Parkway, Birtinya QLD Australia 4575
Telephone 07 5314 2520 Facsimile 07 5314 2522
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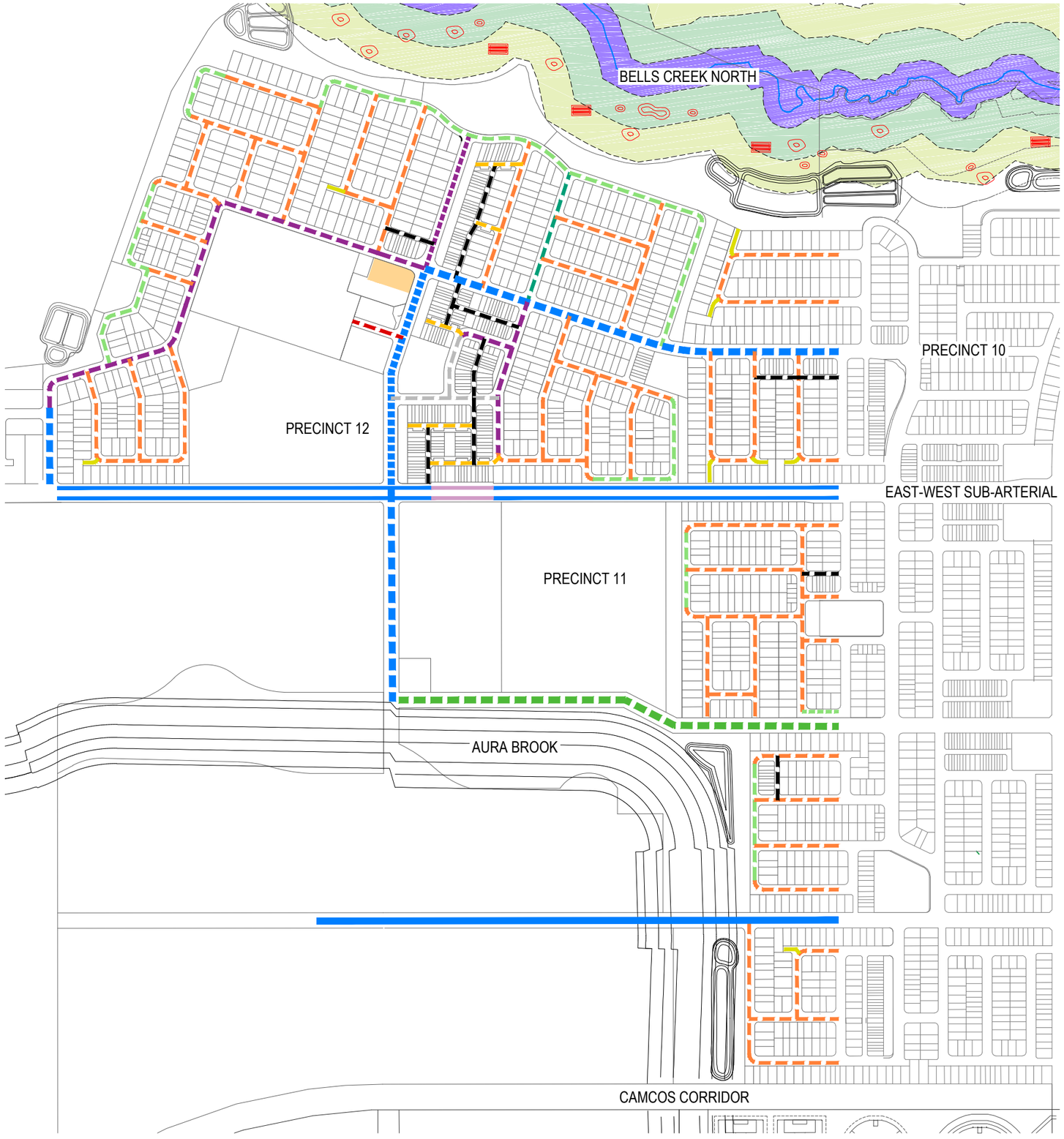
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DRAWING TITLE
OVERALL LAYOUT AND KEY PLAN

DRAWING NUMBER 17-000934.3011-DA02

ISSUE A



N

NOTE
REFER 17-000934.3011-DA04 FOR TYPICAL ROAD CROSS SECTION

LEGEND

- SUB-ARTERIAL 2: 29m(30.72m @ BUS BAYS)
- SUB-ARTERIAL 2: 34m
- TRUNK CONNECTOR 24m
- GREEN STREET 24m
- NEIGHBOURHOOD CONNECTOR A 22.5m
- NEIGHBOURHOOD CONNECTOR B 22.5m
- ACCESS STREET ASYMMETRICAL A - 17.5m (PARKING BAYS ONE SIDE ONLY)
- ACCESS STREET ASYMMETRICAL B - 17.5m (PARKING BAYS ONE SIDE ONLY)
- GREEN LINK ACCESS STREET - 17.5m (NO PARKING BAYS)
- URBAN ACCESS STREET - 17.5m (PARKING BAYS BOTH SIDES)
- STANDARD ACCESS STREET - 15.5/16m (7.5m CARRIAGEWAY)
- ESPLANADE ACCESS STREET - 13.5m (6.5m PAVEMENT)
- ESPLANADE ACCESS STREET - 13.5m (5.5m PAVEMENT)
- HUB LINK 15.0m
- LANEWAY LINK 14.8m
- LANEWAY 8.0m
- CONCRETE DRIVEWAY 4.5m
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- END OF LINE STORMWATER QUALITY BASIN

Stockland AURA

LE: 17-000934.3011-DA03.dwg DATE: 16-04-2018 TIME: 12:45
ef's: x 17-000934.69 - TITLE X-17-000934 - P11-12 DABASE X-17-000934 - LOTS USR: Joshua Price

ISSUE		CALCS	DRAWN	DATE	AMENDMENT DETAILS
		BG	BG	01.12.17	
LATEST ISSUES	A	JM	JM	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
	B				
	C				
	D				
	E				
	F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:3500 70 0 70 140 A1
1:7000 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
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APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

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PROJECT
AURA
PRECINCT 11 & 12

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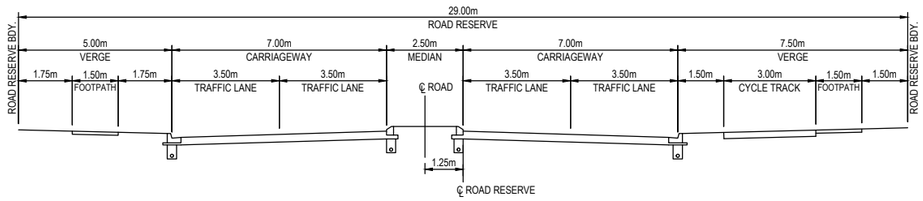
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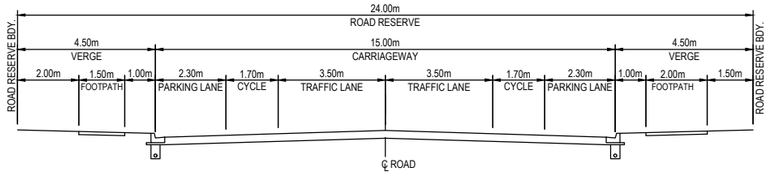
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PROPOSED ROAD HEIRARCHY PLAN

DRAWING NUMBER
17-000934.3011-DA03

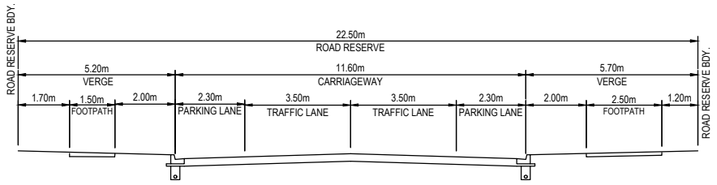
ISSUE
A



SUB ARTERIAL 2
29m ROAD RESERVE

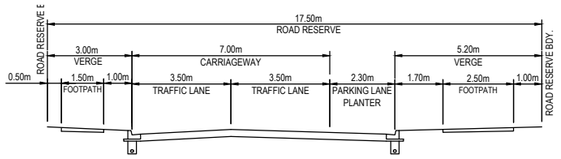


TRUNK CONNECTOR
24m ROAD RESERVE

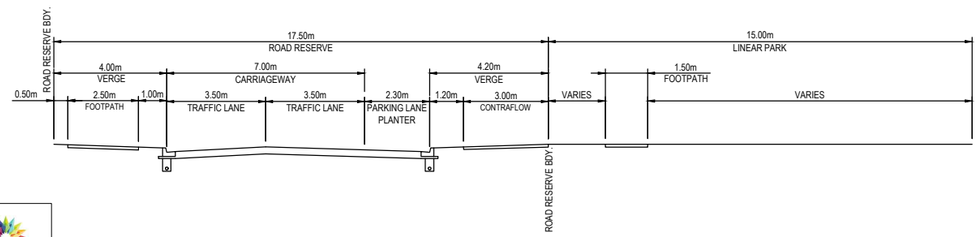


NEIGHBOURHOOD CONNECTOR A
22.5m ROAD RESERVE

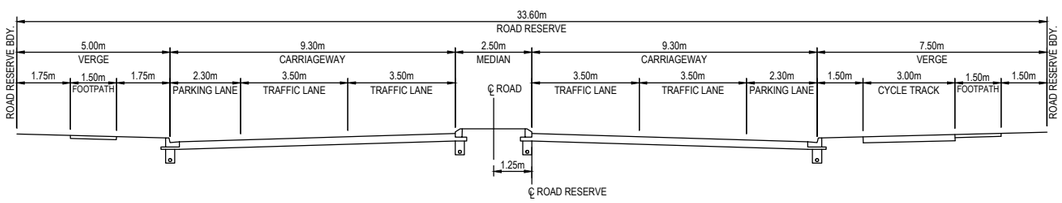
NEIGHBOURHOOD CONNECTOR B
22.5m ROAD RESERVE



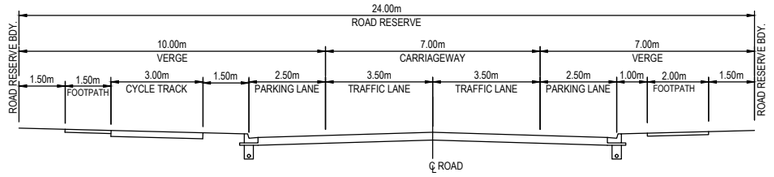
ACCESS STREET ASYMMETRICAL A
17.5m ROAD RESERVE



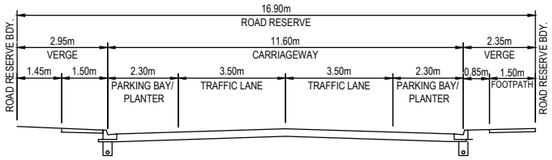
ACCESS STREET ASYMMETRICAL B
17.5m ROAD RESERVE



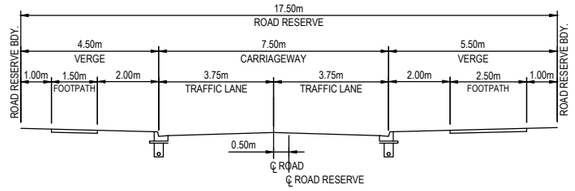
SUB ARTERIAL 2 - ULTIMATE
34m ROAD RESERVE



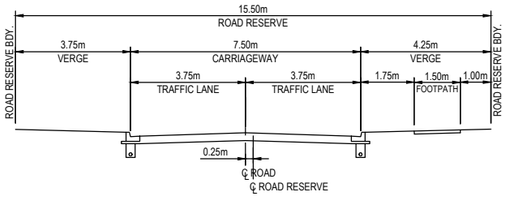
G1 - GREEN STREET
24m ROAD RESERVE



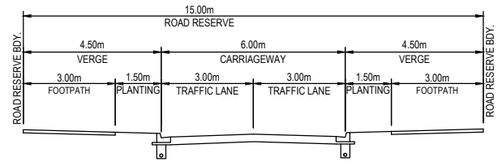
URBAN ACCESS STREET
17.5m ROAD RESERVE



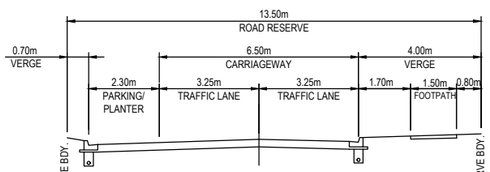
GREEN LINK ACCESS STREET (No Parking Bays)
17.5m ROAD RESERVE



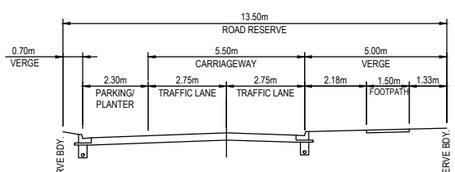
STANDARD ACCESS STREET - (7.5m CARRIAGEWAY)
15.5-16m ROAD RESERVE



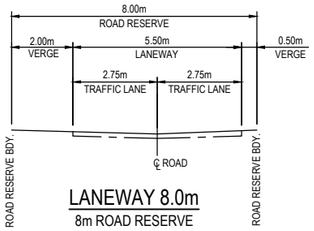
HUB LINK
15m ROAD RESERVE



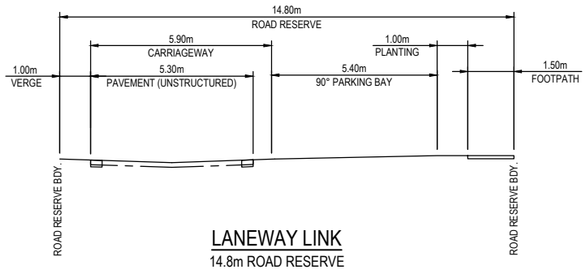
ESPLANADE ACCESS STREET (6.5m CARRIAGEWAY)
13.5m ROAD RESERVE



ESPLANADE ACCESS STREET (5.5m CARRIAGEWAY)
13.5m ROAD RESERVE



LANEWAY 8.0m
8m ROAD RESERVE



LANEWAY LINK
14.8m ROAD RESERVE

Stockland AURA

FILE: 17-000934.3011-DA04.dwg DATE: 16-04-2018 TIME: 13:42
Xref's: x 17-000934.69 - TITLE X-17-000934 - CEMP -ROADS USR: Joshua Price

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	BG	BG	01.12.17	
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:100 1 5 0 1 2 3 4 5 A1
1:200 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
1 Innovation Parkway, Birtinya, QLD
Ph (07) 5436 7888

APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

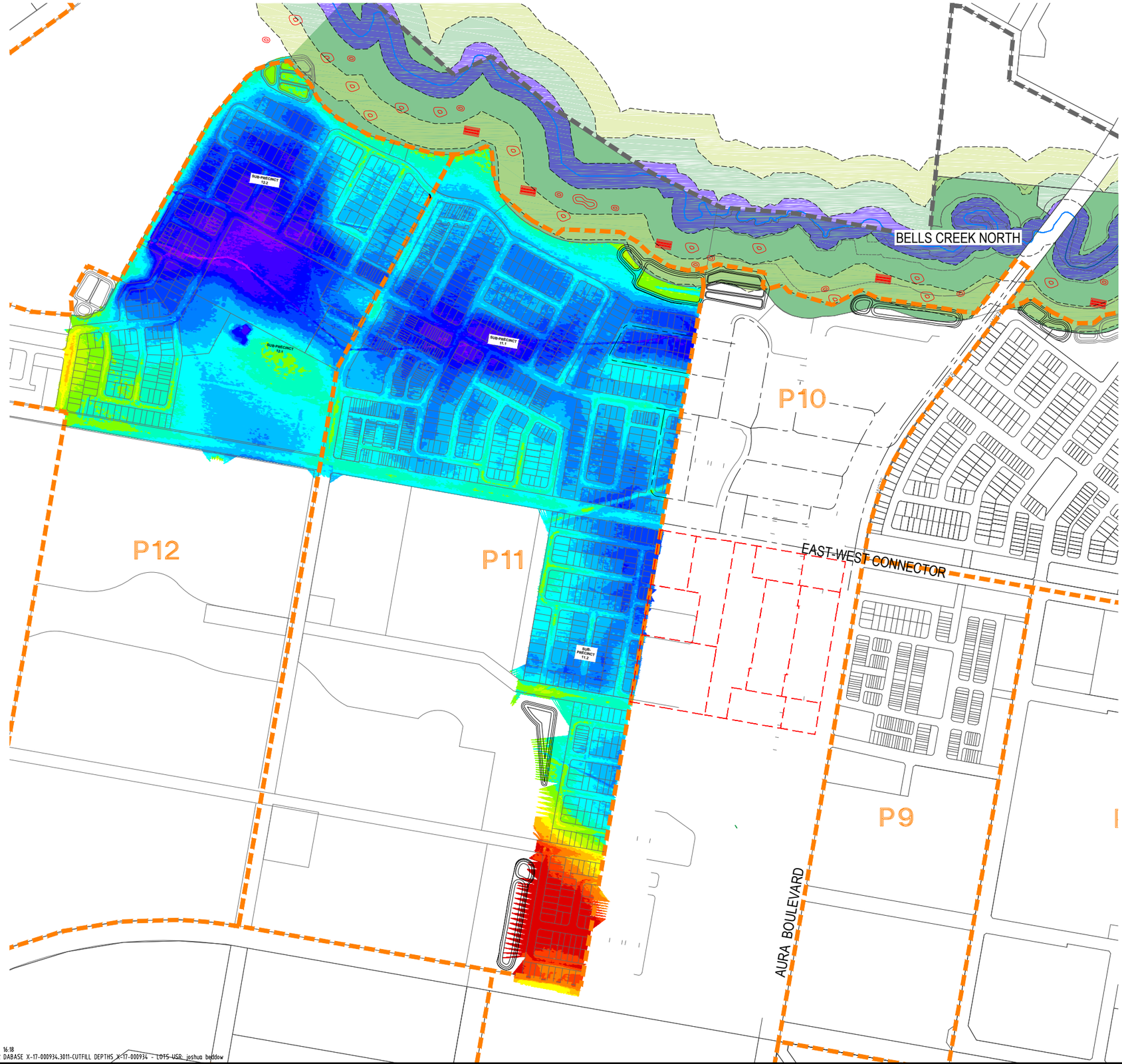
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DRAWING TITLE
PROPOSED ROAD CROSS SECTIONS

DRAWING NUMBER
17-000934.3011-DA04

ISSUE



LEGEND

- OVER 3.0m OF CUT
- 3.0m - 2.5m OF CUT
- 2.5m - 2.0m OF CUT
- 2.0m - 1.5m OF CUT
- 1.5m - 1.0m OF CUT
- 1.0m - 0.5m OF CUT
- 0.5m - 0.0m OF CUT
- 0.0m - 0.5m OF FILL
- 0.5m - 1.0m OF FILL
- 1.0m - 1.5m OF FILL
- 1.5m - 2.0m OF FILL
- 2.0m - 2.5m OF FILL
- 2.5m - 3.0m OF FILL
- 3.0m - 3.5m OF FILL
- 3.5m - 4.0m OF FILL
- 4.0m - 4.5m OF FILL
- 4.5m - 5.0m OF FILL
- OVER 5.0m OF FILL

Stockland AURA

FILE: 17-000934.3011-DA05.dwg DATE: 04-12-2017 TIME: 16:18
Xref's: x 17-000934.3011 - TITLE X-17-000934 - P11-12 DABASE X-17-000934.3011-CUTFILL DEPTHS X-17-000934 - LOTS-USR: joshua beddow

ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	BG	BG	01.12.17	
B				
C				
D				
E				
F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:4000 4 2 0 4 8 12 16 20 A1
1:8000 A3

MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

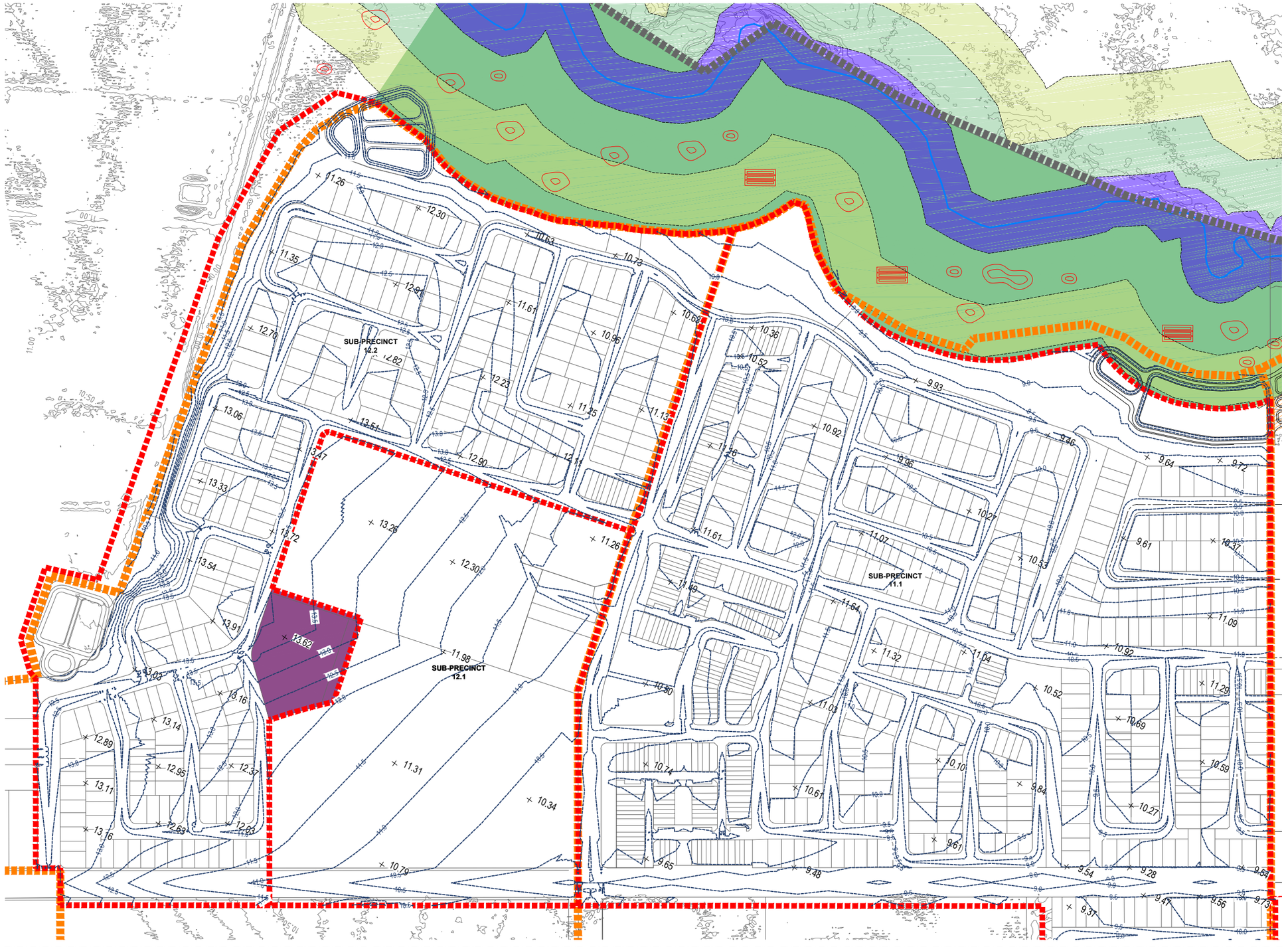
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DRAWING TITLE
CUT FILL
DEPTH RANGES
PLAN

DRAWING NUMBER 17-000934.3011-DA05

ISSUE -



FOR CONTINUATION REFER SHEET 2

NOTES:

1. REFER 17-0009343011-DA07 FOR NOTES.

LEGEND

- 8.48 — EXISTING SURFACE CONTOURS
- 8.48 — PROPOSED SURFACE CONTOURS
- × 8.48 — FINISHED SURFACE LEVEL
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- ENGLOBO LOT
- PROPOSED LIMIT OF WORKS

Stockland AURA

FILE: 17-000934_3011-DA06.dwg DATE: 04-12-2017 TIME: 16:49
Xref's: X-17-000934 - P11-12 DABASE x 17-000934_3011 - TITLE X 17-000934_3011 - Existing Cont X-17-000934 - LOTS USR: joshua beddow

FIRST ISSUE	CALCS	DRAWN	DATE
	BG	BG	01.12.17

AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:2000 1:4000 20 10 0 20 40 60 80 100 A1 A3

MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
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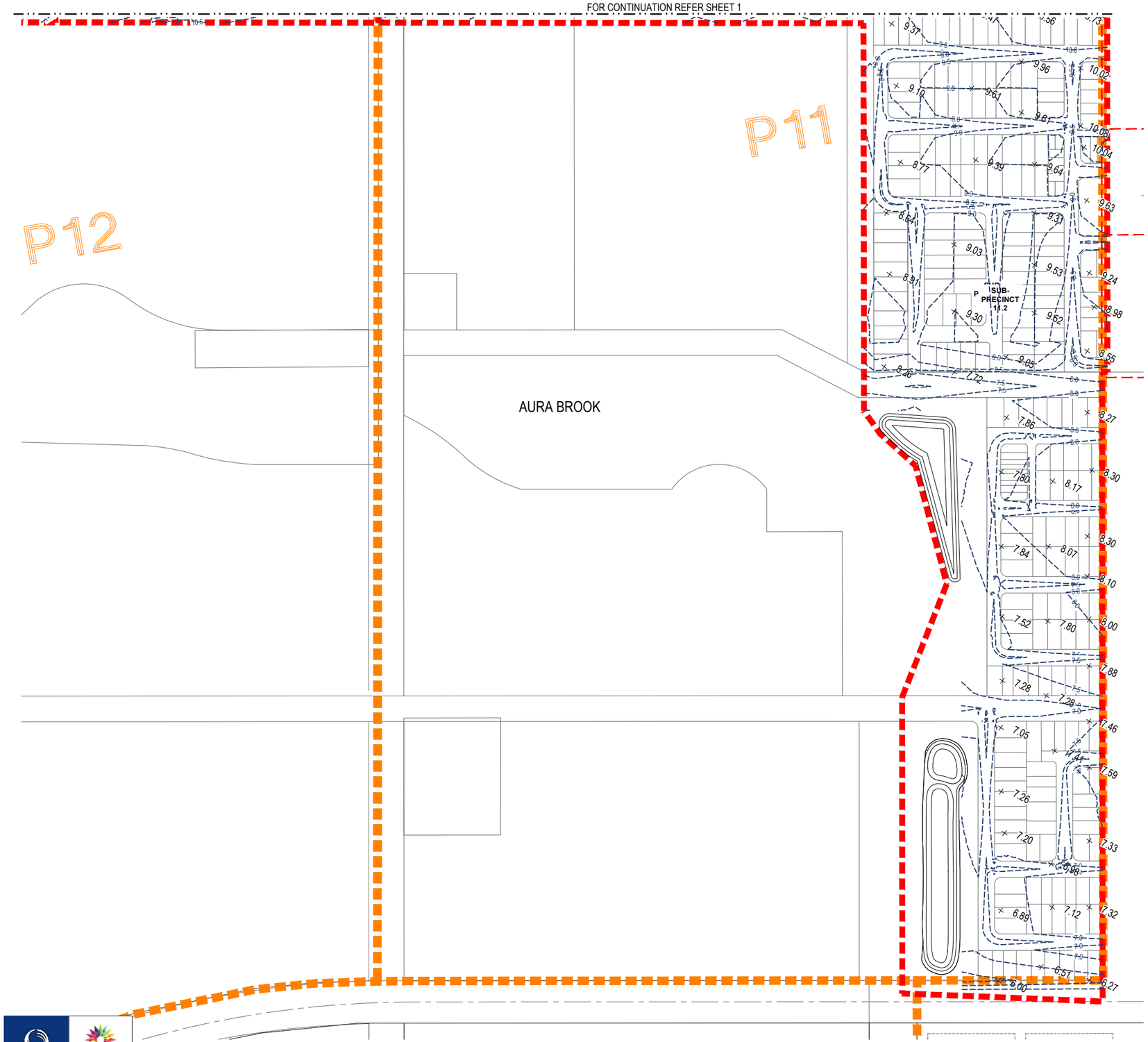
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DRAWING TITLE
BULK EARTHWORKS
DETAIL PLAN
SHEET 1 OF 2

DRAWING NUMBER 17-000934.3011-DA06

ISSUE



EARTHWORKS NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING SERVICES WITH THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. THE CONTRACTOR SHALL REMOVE ALL STRUCTURES, DEBRIS AND FENCES FROM THE SITE TO THE SATISFACTION OF THE SUPERINTENDENT.
3. EXISTING SURFACE IS TO BE CLEAR OF VEGETATION MATTER PRIOR TO THE START OF FILLING.
4. FILL IS TO BE OF GOOD QUALITY AND FREE OF UNSUITABLE MATERIAL.
5. NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT DURING CONSTRUCTION. SIMILARLY, THE FINISHED SURFACE LEVELS MAY BE ADJUSTED BY THE WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION AFTER AMENDED DRAWINGS HAVE BEEN APPROVED BY COUNCIL.
6. ALL EXCAVATION AND FILLING SHALL BE CONSTRUCTED TO THE REQUIREMENTS OF AS3798-2007 AND IN ACCORDANCE WITH THE CURRENT COUNCIL AND CALIBRE SPECIFICATIONS.
7. LEVEL 1 CERTIFICATION IS REQUIRED ON ALL LOTS IN ACCORDANCE WITH AS3798-2007.
8. ALL DRAINAGE STRUCTURES ARE BE PRESERVED FROM THE EFFECTS OF STRUCTURAL LOADING GENERATED BY THE EARTHWORKS.
9. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
10. ALL EARTHWORKS TO BE CONSTRUCTED WITH REFERENCE TO DOUGLAS PARTNERS GEOTECHNICAL REPORT (AUGUST,2017)
11. GROUNDWATER MODELLING BY JACOBS ENGINEERING GROUP.
12. CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN BY CALIBRE (ISSUE C OCTOBER, 2017).
13. EARTHWORKS STRATEGY BY CALIBRE (NOVEMBER,2017)

LEGEND

- 8.48 — EXISTING SURFACE CONTOURS
- 8.48 - - - PROPOSED SURFACE CONTOURS
- × 8.48 FINISHED SURFACE LEVEL
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- PROPOSED LIMIT OF WORKS

Stockland AURA

FILE: 17-000934_3011-DA07.dwg DATE: 04-12-2017 TIME: 16:27
Xref's: X-17-000934 - P11-12 DABASE x 17-000934_3011 - TITLE X-17-000934 - LOTS USR: joshua beddow

FIRST ISSUE	CALCS	DRAWN	DATE
	BG	BG	01.12.17

AMENDMENTS: A, B, C, D, E, F — AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:2000 1:4000 20 10 0 20 40 60 80 100 A1 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
1 Innovation Parkway, Birtinya, QLD
Ph (07) 5436 7888

APPROVED
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

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STOCKLAND DEVELOPMENTS PTY LTD

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PRECINCT 11 & 12

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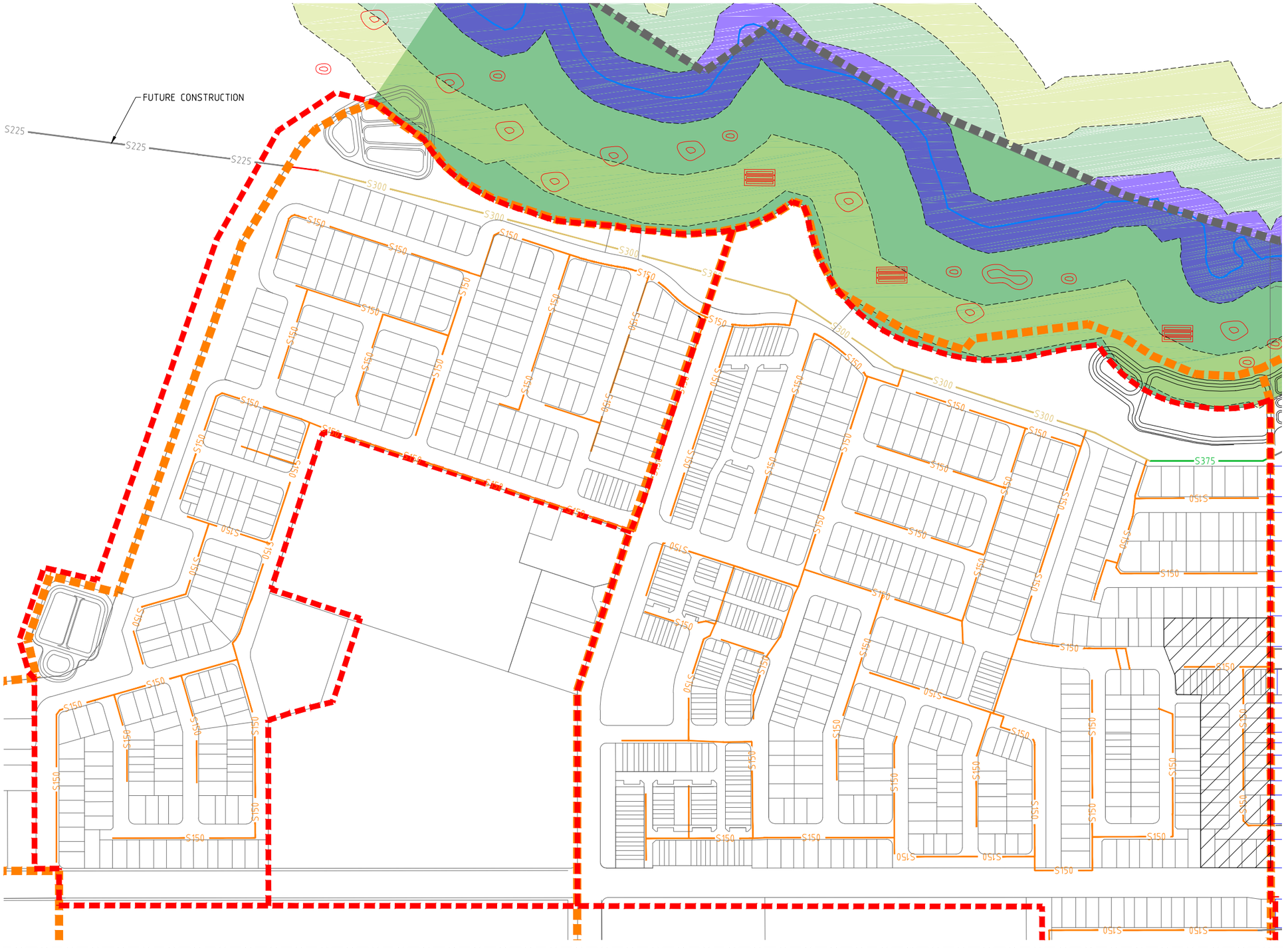
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DRAWING TITLE
BULK EARTHWORKS DETAIL PLAN SHEET 2 OF 2

DRAWING NUMBER
17-000934.3011-DA07

ISSUE



NOTES:

1. REFER 17-0009343011-DA07 FOR NOTES.

LEGEND

- S150 — PROPOSED Ø150 SEWER MAIN
- S225 — PROPOSED Ø225 SEWER MAIN
- S300 — PROPOSED Ø300 SEWER MAIN
- S375 — PROPOSED Ø375 SEWER MAIN
- S450 — PROPOSED Ø450 SEWER MAIN
- S750 — PROPOSED Ø750 SEWER MAIN
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- ENGLOBO LOT
- SERVICED IN P10
- PROPOSED LIMIT OF WORKS
- END OF LINE STORMWATER QUALITY BASIN

Stockland AURA

FILE: 17-000934.3011-DA08.dwg DATE: 03-04-2018 TIME: 17:11
Xref's: X-17-000934 - P11-12 DABASE x 17-000934.3011 - TITLE X-17-000934 - LOTS USR: Joshua Price

AMENDMENTS	FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
	A	BG	BG	01.12.17	
	B	DB	JP	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
	C				
	D				
	E				
	F				

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:2000 20 10 0 20 40 60 80 100 A1
1:4000 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
1 Innovation Parkway, Birtinya, QLD
Ph (07) 5436 7888

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STOCKLAND DEVELOPMENTS PTY LTD

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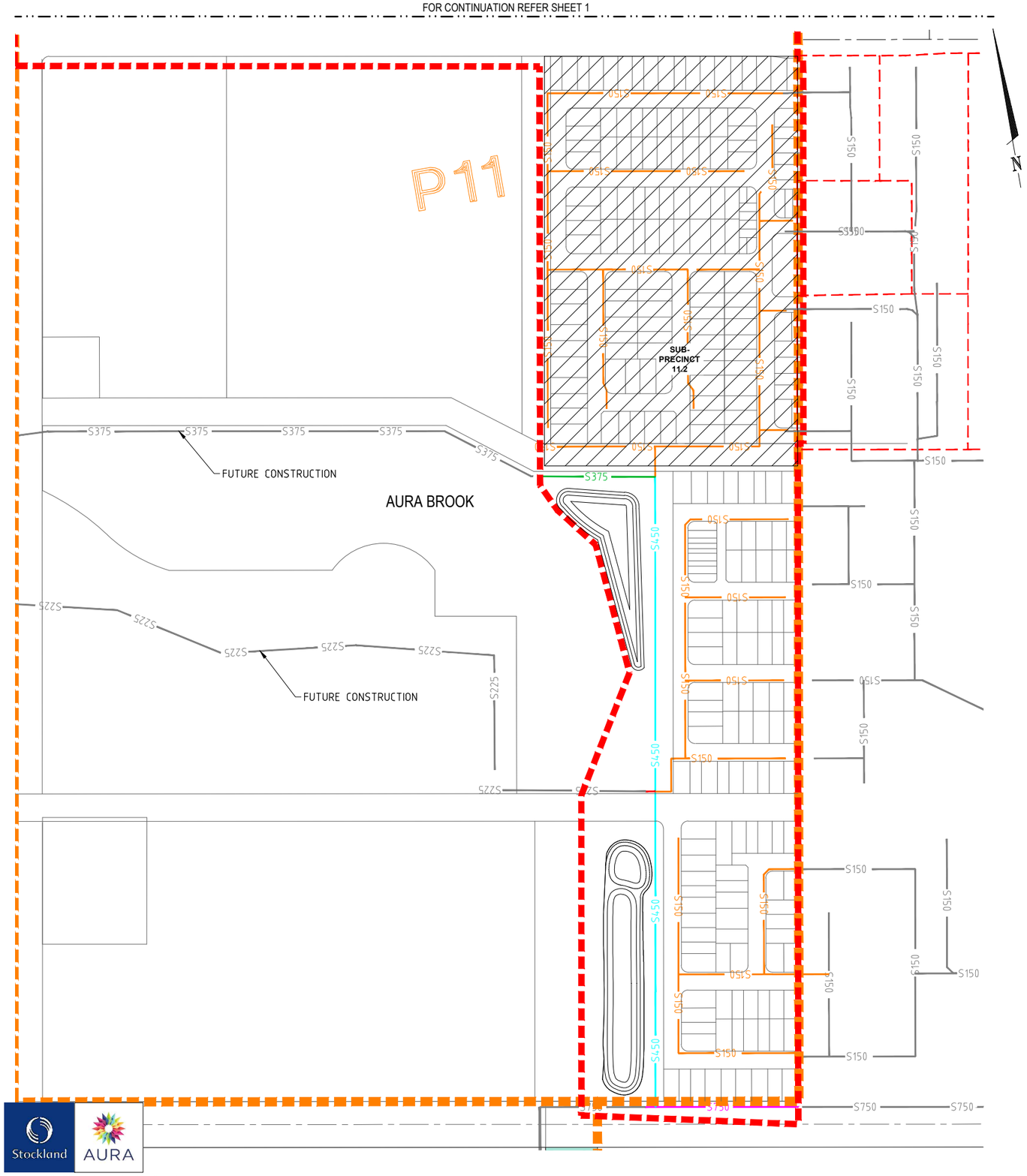
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DRAWING TITLE
SEWER RETICULATION
LAYOUT PLAN
SHEET 1 OF 2

DRAWING NUMBER
17-000934.3011-DA08

ISSUE



SEWERAGE RETICULATION NOTES

1. MAINS TO BE LAID ON 1.75m ALIGNMENT (IN THE ROAD RESERVE) UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT.
2. THE CONTRACTOR SHALL VERIFY FINISHED SURFACE LEVELS AND CONFIRM EXISTING LEVELS WHERE NEW WORK JOINS TO EXISTING BEFORE CONSTRUCTION OF SEWERS AND HOUSE CONNECTIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING OF SEWERS AND SHALL BE CARRIED OUT TO THE REQUIREMENTS OF UNITY WATER.
4. FOR BEDDING OF SEWER LINES REFER SEQ-SEW-1200 SERIES STD DRGS.
5. THE CONTRACTOR IS DIRECTLY RESPONSIBLE FOR THE SETOUT. SHOULD ACTUAL SITE CONDITIONS CONFLICT IN ANY WAY WITH THE DOCUMENTED, THE CONTRACTOR MUST CONTACT THE SUPERINTENDENT FOR CLARIFICATION BEFORE PROCEEDING.
5. SEWERS TO BE LAID ON UNITYWATER STANDARD ALIGNMENTS PER THE SEQ WATER AND SEWERAGE DESIGN AND CONSTRUCTION CODE, WITHIN VERGE UNLESS NOTED OTHERWISE. FRONT AND REAR BOUNDARIES 1.5m OFFSET, 1.0m OFFSET FOR SIDE BOUNDARIES. 1.0m CLEARANCE TO BE MAINTAINED BETWEEN SEWERS AND INTER-ALLOTMENT DRAINAGE LINES.
6. REFER SEQ-SEW-1300 SERIES STANDARD DRAWINGS FOR MANHOLE DETAILS.
7. NO LADDER, STEP IRONS OR LANDINGS ARE PERMITTED WITHIN MANHOLES.
8. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE SPECIFICATIONS AND STANDARDS.
9. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT UNITYWATER AND AUSTRALIAN STANDARDS.
10. THE CONSTRUCTION OF THE SEWERAGE WORKS SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE UNITYWATER SEWERAGE SYSTEM.
11. ALL WORK ASSOCIATED WITH THE LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY UNITYWATER OR AS DIRECTED BY UNITYWATER AT THE DEVELOPER'S COST.
12. ALL PIPE AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
13. EACH ALLOTMENT SHALL BE SERVED BY AN OD110 PE (OR DN100 PVC) PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL, AN OD160 PE (OR DN150 PVC) PROPERTY CONNECTION SHALL BE PROVIDED.
14. PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
15. PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 500mm AND A MAXIMUM OF 750mm PER UNITYWATER REQUIREMENTS.
16. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIAL'S MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATIVE LAYER. IN ALL SUCH CASES, APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY UNITYWATER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
17. WHERE SEWERS HAVE A GRADE OF 1 IN 20 (5%) OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SEQ SEWER CODE.
18. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
19. SEWERS SHALL BE DISUSED/ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ SEWER CODE.
20. BENCH MARK AND LEVELS TO AHD.
21. EXISTING ALLOTMENTS REQUIRING A PROPERTY CONNECTIONS FROM EXISTING SEWERS SHALL BE PROVIDED BY UNITYWATER AT THE DEVELOPER'S COST.
20. ALL NON-METALLIC PIPES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE PIPE BEDDING IN ACCORDANCE WITH STANDARD DRAWINGS SEQ-SEW-1200-2 TO SEQ-SEW-1205-1.
21. CCTV FOOTAGE TO THE REQUIREMENTS OF UNITYWATER AND SEQ CODE TO BE PROVIDED PRIOR TO ON MAINTENANCE.

LEGEND

- S150 — PROPOSED Ø150 SEWER MAIN
- S225 — PROPOSED Ø225 SEWER MAIN
- S300 — PROPOSED Ø300 SEWER MAIN
- S375 — PROPOSED Ø375 SEWER MAIN
- S450 — PROPOSED Ø450 SEWER MAIN
- S750 — PROPOSED Ø750 SEWER MAIN
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- SERVICED IN P10
- PROPOSED LIMIT OF WORKS

Stockland AURA

FILE: 17-000934_3011-DA09.dwg DATE: 03-04-2018 TIME: 17:56
Xref's: X-17-000934 - P11-12 DABASE x 17-000934_3011 - TITLE X-17-000934 - LOTS USR: Joshua Price

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	BG	BG	01.12.17	
B	DB	JP	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:2000 1:4000 20 10 0 20 40 60 80 100 A1 A3

MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
1 Innovation Parkway, Birtinya, QLD
Ph (07) 5436 7888

APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

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STOCKLAND DEVELOPMENTS PTY LTD

PROJECT
AURA
PRECINCT 11 & 12

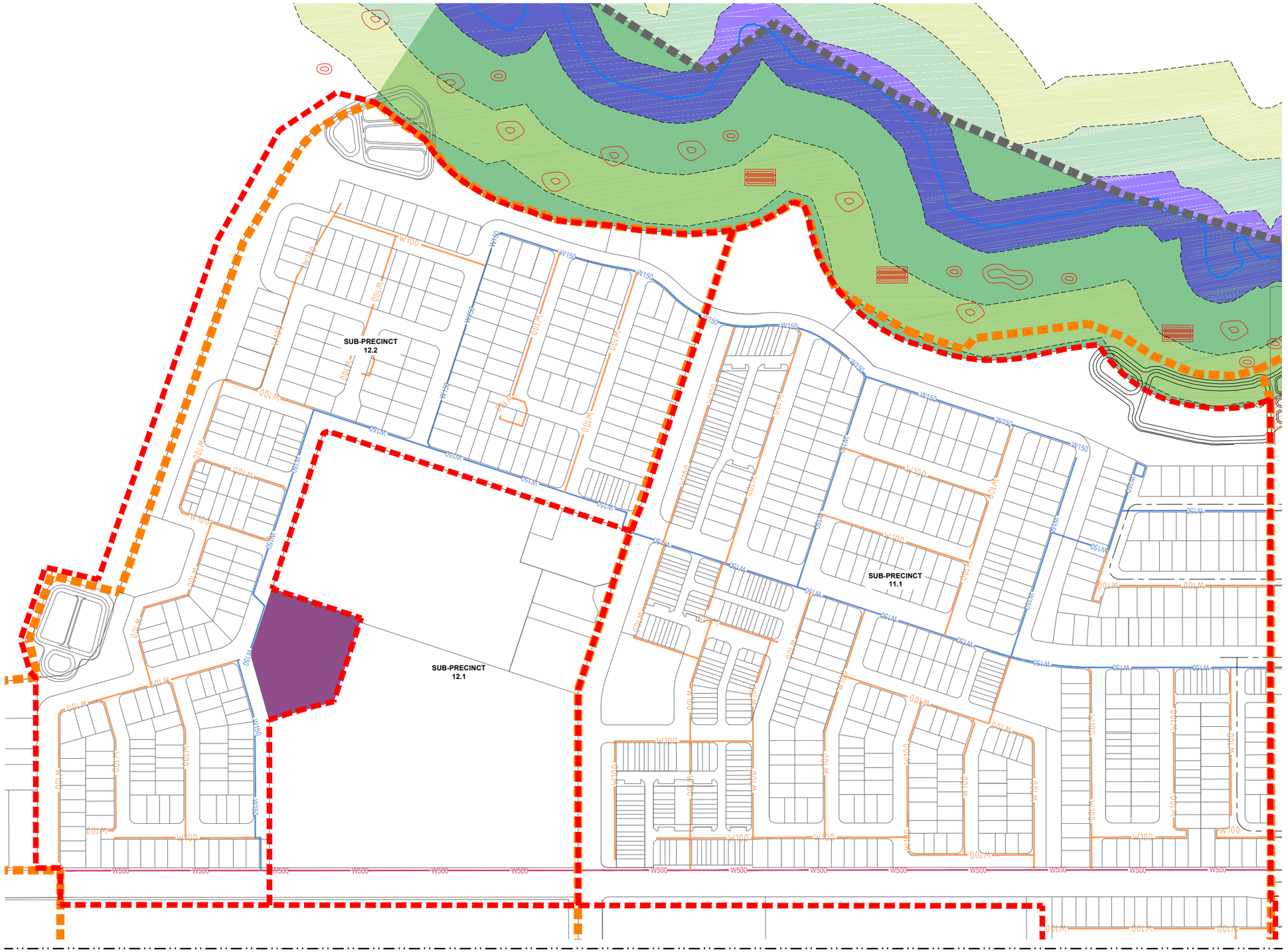
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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

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DRAWING TITLE
SEWER RETICULATION LAYOUT PLAN SHEET 2 OF 2

DRAWING NUMBER 17-000934.3011-DA09

ISSUE



NOTES:

1. REFER 17-0009343011-DA11 FOR NOTES.

LEGEND

- W100 — PROPOSED Ø100 WATER MAIN
- W150 — PROPOSED Ø150 WATER MAIN
- W300 — PROPOSED Ø300 WATER MAIN
- W500 — PROPOSED Ø500 WATER MAIN
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- ENGLOBO LOT
- PROPOSED LIMIT OF WORKS
- END OF LINE STORMWATER QUALITY BASIN

FOR CONTINUATION REFER SHEET 2

Stockland AURA

FILE: 17-000934.3011-DA10.dwg DATE: 04-12-2017 TIME: 16:33
Xref's: X-17-000934 - P11-12 DABASE x 17-000934.3011 - TITLE X-17-000934 - LOTS USR: joshua beddow

AMENDMENTS	FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A		BG	BG	01.12.17	
B					
C					
D					
E					
F					

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:2000 20 10 0 20 40 60 80 100 A1
1:4000 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
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PROJECT
AURA
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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

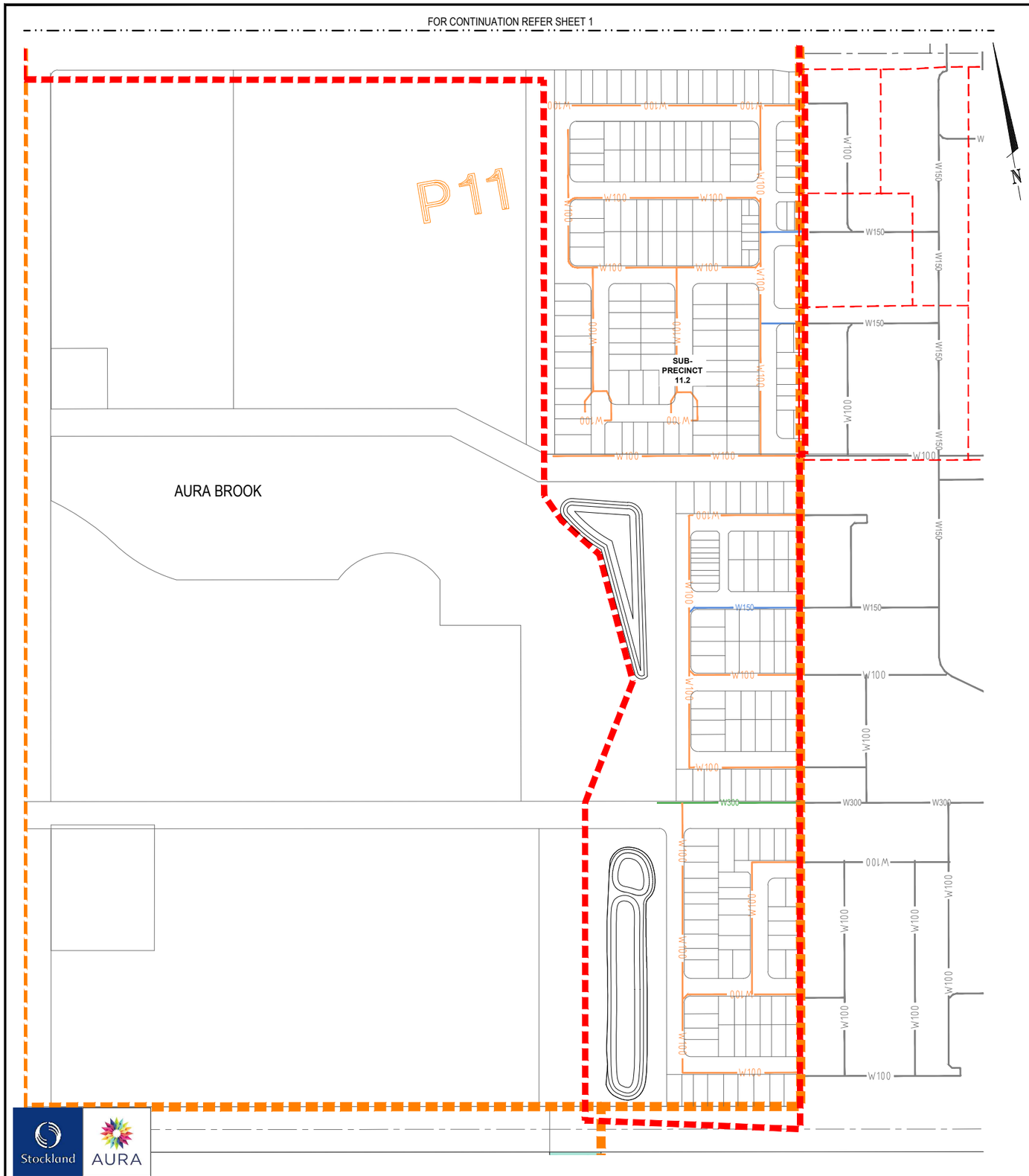
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DRAWING TITLE
WATER RETICULATION
LAYOUT PLAN
SHEET 1 OF 2

DRAWING NUMBER
17-000934.3011-DA10

ISSUE



WATER RETICULATION NOTES

1. ALIGNMENT SUBJECT TO DETAILED DESIGN.
2. ALL D.I.C.L. FITTINGS SHALL BE TO AS 2544 WITH SOCKET ENDS DESIGNED FOR USE WITH P.V.C. OR DUCTILE IRON PIPES AS APPLICABLE.
3. PRESSURE PIPES USED FOR WATER SUPPLY INSTALLATIONS SHALL BE RUBBER RING JOINTED PIPES AND SHALL BE EITHER PVC-O PN16 SN10 TO AS 1477 OR DUCTILE IRON CEMENT LINED CLASS PN20 PIPES TO A.S. 2280.
4. PIPES MUST BE AC/DUCTILE IRON OD COMPATIBLE. OTHER TYPES AND CLASSES OF PIPE SHALL NOT BE INSTALLED.
5. ALL VALVES, HYDRANTS AND MARKERS TO BE INSTALLED IN ACCORDANCE WITH SEQ WATER AND SEWERAGE DESIGN AND CONSTRUCTION CODE SEQ-WAT-1300 SERIES STANDARD DRAWINGS.
6. SERVICE CONDUITS, MAINS AND MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH SEQ-WAT-1100 AND 1200 SERIES STANDARD DRAWINGS.
7. INSTALL 'BLUE RETRO-REFLECTIVE RAISED ROAD MARKERS' (BRRR) OPPOSITE FH'S AND 'YELLOW RETRO-REFLECTIVE RAISED ROAD MARKERS' TO SV'S IN ACCORDANCE WITH SCC GUIDELINES.
8. PROPERTY SERVICE AND WATER METERS SHALL BE INSTALLED IN ACCORDANCE WITH SEW-WAT-1100 SERIES STANDARD DRAWINGS.
9. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT UNITYWATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
10. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
11. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
12. COVER ON MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN SEQ-WAT-1200-2.
13. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE SEQ-WAT STANDARD DRAWINGS.
14. A WATER METER, SUPPLIED AT THE DEVELOPER'S COST, IS TO BE INSTALLED AT THE SERVICE POINT OF EACH LOT IN ACCORDANCE WITH THE UNITYWATER SEQ-WAT STANDARD DRAWINGS.
15. ALL MATERIALS USED IN THE WORK SHALL COMPLY WITH UNITYWATER'S ACCEPTED PRODUCTS AND MATERIALS LIST OR BE APPROPRIATELY SHOWN, LISTED AND DEFINED IN THE ENGINEERING SUBMISSION SO THAT THE ALTERNATIVE PRODUCT OR MATERIAL CAN BE ASSESSED AND IF APPROPRIATE, APPROVED BY THE SEQ-SP.
16. ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS.
17. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING SEQ-WAT-1410-1.
18. THE CONSTRUCTIONS OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.
19. ALL WORK ON EXISTING WATERMAINS TO BE CARRIED OUT BY UNITYWATER AT THE DEVELOPER'S EXPENSE.
20. ALL NON-METALLIC WATER MAINS AND WATER SERVICE LINES SHALL HAVE APPROVED DETECTABLE MARKER TAPE LAID ON TOP OF THE PIPE BEDDING IN ACCORDANCE WITH STANDARD DRAWINGS SEQ-WAT-1200-2 TO SEQ-WAT-1204-1 INCLUDING EXTENDING FROM THE WATER MAIN TO THE METER. WHERE CONDUITS ARE USED THE MARKER TAPE SHALL PASS THROUGH THE CONDUIT WITH THE WATER SERVICE.
21. BRASS KERB MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH SEQ-WAT-1108-1.
22. THRUST RESTRAINT FOR ALL FITTINGS TO BE IN ACCORDANCE WITH STANDARD DRAWING SEQ-WAT-1205-1 TO SEQ-WAT-1207-1.
23. TESTING OF MAINS (INCLUDING PRESSURE, CHLORINATION AND BACTERIAL TESTS) TO BE COMPLETED IN ACCORDANCE WITH SEQ CODE REQUIREMENTS PRIOR TO WORKS BEING ACCEPTED ON MAINTENANCE.
24. WATER MAIN DEPTH OR PIPE CLASS SHALL BE ADJUSTED ACCORDINGLY UNDER ROAD CROSSINGS TO TAKE INTO ACCOUNT CONSTRUCTION PHASE LOADING. WATER MAINS MUST NOT BE LAID WITHIN ROAD PAVEMENT STRUCTURE.

LEGEND

- W100 — PROPOSED Ø100 WATER MAIN
- W150 — PROPOSED Ø150 WATER MAIN
- W300 — PROPOSED Ø300 WATER MAIN
- W500 — PROPOSED Ø500 WATER MAIN
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- PROPOSED LIMIT OF WORKS

Stockland AURA

FILE: 17-000934.3011-DA11.dwg DATE: 04-12-2017 TIME: 16:35
Xref's: X-17-000934 - P11-12 DABASE x 17-000934.3011 - TITLE X-17-000934 - LOTS USR: joshua beddow

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
	BG	BG	01.12.17	
A				
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:2000 20 10 0 20 40 60 80 100 A1
1:4000 A3

MICROFILM No.

PROJECT No.
17-00934.3011

SURVEYOR: RPS Group
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APPROVED
FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

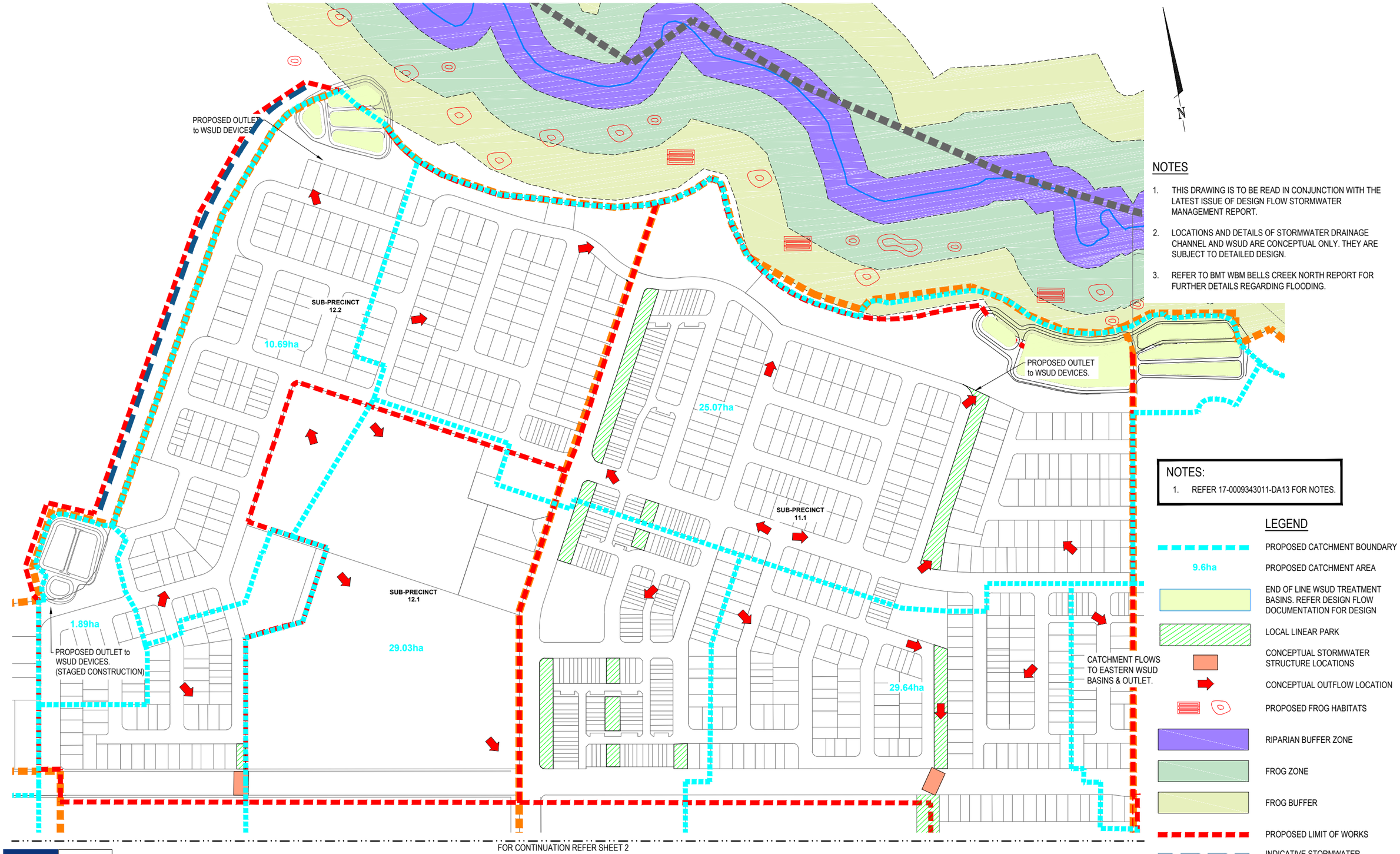
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DRAWING TITLE
WATER RETICULATION
LAYOUT PLAN
SHEET 2 OF 2

DRAWING NUMBER
17-000934.3011-DA11

ISSUE



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LATEST ISSUE OF DESIGN FLOW STORMWATER MANAGEMENT REPORT.
2. LOCATIONS AND DETAILS OF STORMWATER DRAINAGE CHANNEL AND WSUD ARE CONCEPTUAL ONLY. THEY ARE SUBJECT TO DETAILED DESIGN.
3. REFER TO BMT WBM BELLS CREEK NORTH REPORT FOR FURTHER DETAILS REGARDING FLOODING.

NOTES:

1. REFER 17-0009343011-DA13 FOR NOTES.

LEGEND

- PROPOSED CATCHMENT BOUNDARY
- 9.6ha — PROPOSED CATCHMENT AREA
- END OF LINE WSUD TREATMENT BASINS. REFER DESIGN FLOW DOCUMENTATION FOR DESIGN
- LOCAL LINEAR PARK
- CONCEPTUAL STORMWATER STRUCTURE LOCATIONS
- CONCEPTUAL OUTFLOW LOCATION
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- PROPOSED LIMIT OF WORKS
- INDICATIVE STORMWATER OUTLET CHANNEL

FOR CONTINUATION REFER SHEET 2

Stockland AURA

FILE: 17-000934_3011-DA12.dwg DATE: 18-12-2017 TIME: 12:33
Xref's: X-17-000934 - P11-12 DABASE x T7-000934.3011 - TITLE X-17-000934 - LOTS USR: ben gear

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
A	BG	BG	01.12.17	
B	JM	JM	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)

1:2000 1:4000 20 10 0 20 40 60 80 100 A1 A3

MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
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APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

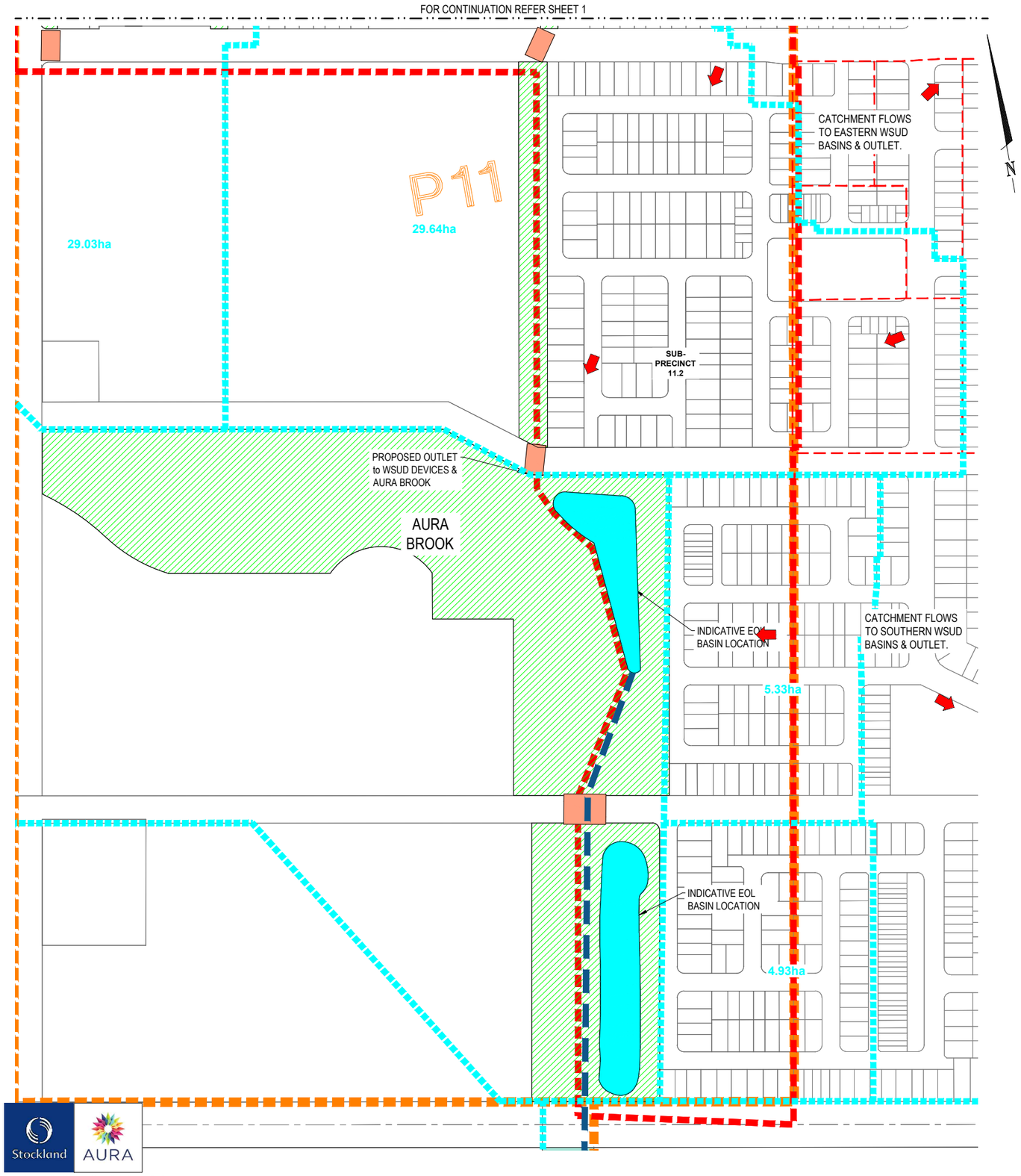
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DRAWING TITLE
STORMWATER CATCHMENT AND LAYOUT PLAN SHEET 1 OF 2

DRAWING NUMBER 17-000934.3011-DA12

ISSUE A



ROADWORKS & DRAINAGE NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
2. CONTRACTOR TO LIAISE WITH ALL THE RELEVANT SERVICE AUTHORITIES TO ASCERTAIN SERVICES PRESENT ON-SITE. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT BY THAT SERVICE AUTHORITY ONLY.
3. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF DEMOLISHING ANY EXISTING STRUCTURES WITHIN THE SITE AREAS.
4. NOT WITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE CROSS SECTIONS, THE ACTUAL LIMITS SHALL BE DETERMINED ON-SITE BY THE SUPERINTENDENT DURING CONSTRUCTION AND SIMILARLY THE FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION AFTER AMENDED DRAWINGS HAVE BEEN APPROVED BY COUNCIL.
5. ALL ALLOTMENT FILL IS TO BE COMPACTED TO THE REQUIREMENTS OF AS3798-2007 AND IN ACCORDANCE WITH CURRENT SCC. SPECIFICATIONS.
6. VERGE AND BATTERS TO HAVE A MINIMUM OF 75mm TOPSOIL AND FULL WIDTH TURF IF ORDERED.
7. MATCH TO EXISTING AC PAVEMENT EXTENSION OR WIDENING TO BE IN ACCORDANCE WITH IPWEA STD DRG RS-170.
8. SUBGRADE TEST RESULTS TO BE FORWARDED TO SUPERINTENDENT FOR DETERMINATION OF BOX DEPTHS PRIOR TO EXCAVATION TESTS SHALL INCLUDE SOAKED CBR AND/OR OTHER TESTS AS REQUESTED BY THE SUPERINTENDENT.THE CONTRACTOR SHALL ALLOW ADEQUATE TIME FOR COUNCIL APPROVAL OF PAVEMENT DESIGN.
9. LEVELS FOR KERB AND CHANNELLING/EDGE OF PAVEMENT CONSTRUCTION ARE AT EQUAL INTERVALS AT LIP OF CHANNEL UNLESS SHOWN OTHERWISE.
10. SIDE DRAINS TO BE CONSTRUCTED UNDER ALL KERBS AND ALL KERB AND CHANNEL AS PER SCC STANDARDS. REFER TO SCC STD DRG RS-140 FOR DETAILS.
11. ALL STORMWATER PIPES UNDER ROADWAYS AND FOOTPATHS SHALL BE CLASS '2' R.C.P R.R.J. UNLESS NOTED OTHERWISE.
12. THE STORMWATER PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY, AND THE CONTRACTOR SHALL ASSESS ANTICIPATED CONSTRUCTION LOADS AND UPGRADE THE PIPE CLASSES, IF NECESSARY, IN ACCORDANCE WITH A.S 3725-1989. AT THE CONTRACTORS COST.
13. ALL LOTS NOT DRAINING TO A PROPERTY PIT TO HAVE 2 KERB ADAPTORS . KERB ADAPTORS SHOWN ARE INDICATIVE ONLY AND ARE TO BE INSTALLED IN ACCORDANCE WITH SCC STD DRG RS-081.
14. CONCRETE FOOTPATHS TO BE INSTALLED BY THE CIVIL CONTRACTOR UNLESS OTHERWISE NOTED. REFER TO SCC STD DRG RS-065 FOR CONSTRUCTION DETAILS.

LEGEND

- PROPOSED CATCHMENT BOUNDARY
- 9.6ha — PROPOSED CATCHMENT AREA
- END OF LINE WSUD TREATMENT BASINS. REFER DESIGN FLOW DOCUMENTATION FOR DESIGN
- PROPOSED CHANNEL ALIGNMENT
- CONCEPTUAL STORMWATER STRUCTURE LOCATIONS
- CONCEPTUAL OUTFLOW LOCATION
- PROPOSED FROG HABITATS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- PROPOSED LIMIT OF WORKS
- INDICATIVE STORMWATER OUTLET CHANNEL

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE LATEST ISSUE OF DESIGN FLOW STORMWATER MANAGEMENT REPORT.
2. LOCATIONS AND DETAILS OF STORMWATER DRAINAGE CHANNEL AND WSUD ARE CONCEPTUAL ONLY. THEY ARE SUBJECT TO DETAILED DESIGN.
3. REFER TO BMT WBM BELLS CREEK NORTH REPORT FOR FURTHER DETAILS REGARDING FLOODING.

Stockland AURA

FILE: 17-000934_3011-DA13.dwg DATE: 18-12-2017 TIME: 12:35
Xref's: X-17-000934 - P11-12 DABASE x 17-000934_3011 - TITLE X-17-000934 - LOTS USR: ben gear

FIRST ISSUE	CALCS	DRAWN	DATE	AMENDMENT DETAILS
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A	JM	JM	03.04.18	AMENDED TO SUIT NEW LOT LAYOUT
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
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MICROFILM No.

PROJECT No. 17-00934.3011

SURVEYOR: RPS Group
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APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT: STOCKLAND DEVELOPMENTS PTY LTD

PROJECT: AURA PRECINCT 11 & 12

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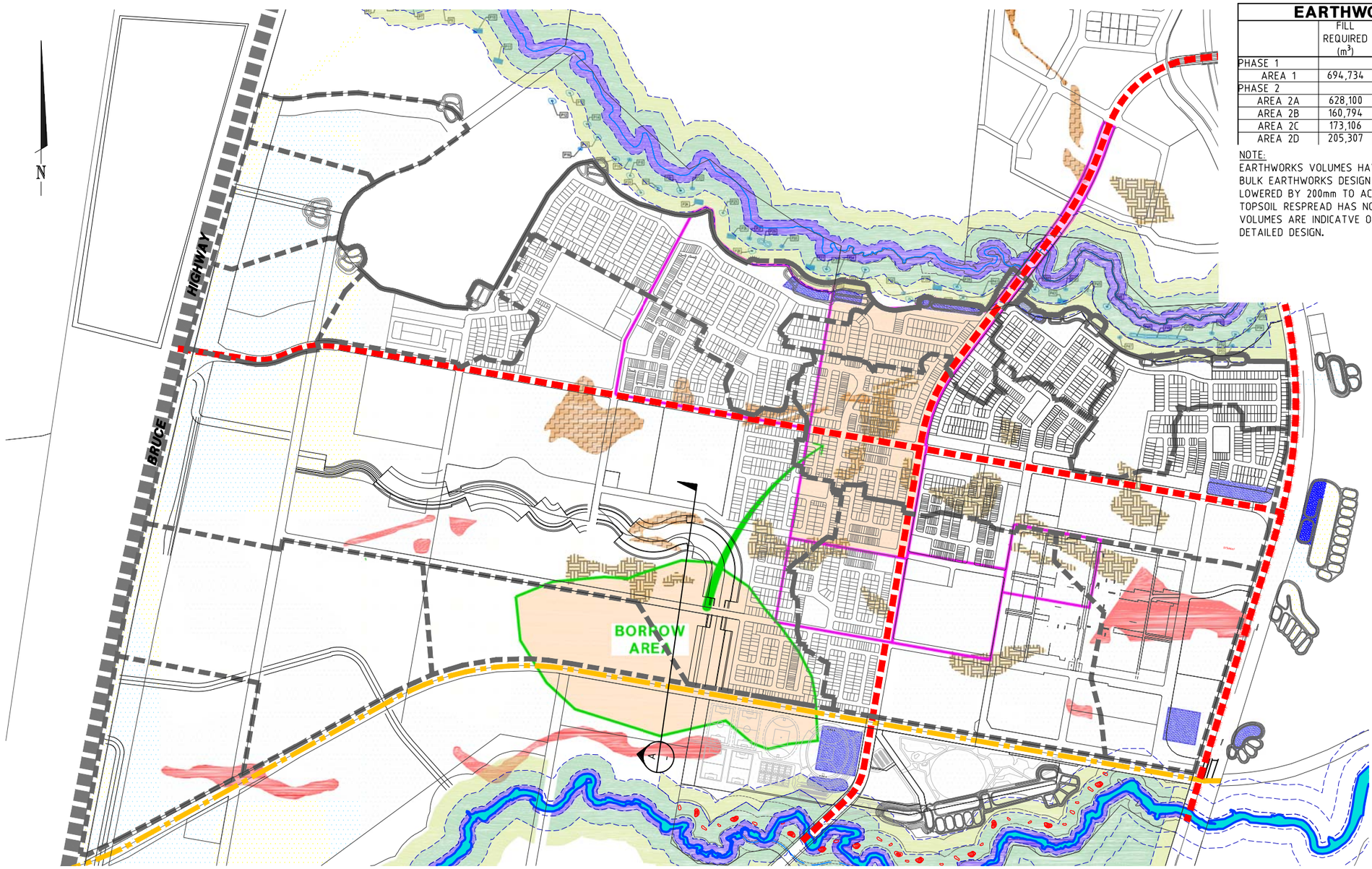
DRAWING TITLE: STORMWATER CATCHMENT AND LAYOUT PLAN SHEET 2 OF 2

DRAWING NUMBER: 17-000934.3011-DA13

ISSUE: A

Appendix B Aura North Central Strategy Plans

STOCKLAND DEVELOPMENT PTY LTD



EARTHWORKS VOLUMES

	FILL REQUIRED (m^3)	CUT AVAILABLE (m^3)	TOPSOIL GENERATED (m^3)	SURFACE AREA (m^2)
PHASE 1				
AREA 1	694,734	1174	75,428	383,436
PHASE 2				
AREA 2A	628,100	4,463	94,500	472,499
AREA 2B	160,794	185	23,199	115,995
AREA 2C	173,106		20,904	104,521
AREA 2D	205,307		13,945	69,727

NOTE:
EARTHWORKS VOLUMES HAVE BEEN CALCULATED BETWEEN THE BULK EARTHWORKS DESIGN SURFACE AND THE NATURAL SURFACE LOWERED BY 200mm TO ACCOUNT FOR THE REMOVAL OF TOPSOIL. TOPSOIL RESPREAD HAS NOT BEEN TAKEN INTO ACCOUNT. THE VOLUMES ARE INDICATVE ONLY AND WILL BE REFINED DURING DETAILED DESIGN.

LEGEND

- OVERALL ESC CATCHMENTS
- MAJOR ROADS
- CAMCOS CORRIDOR
- EROSION AND SEDIMENT CONTROL
- FILL AREA
- BORROW AREA

MATERIAL MOVEMENTS

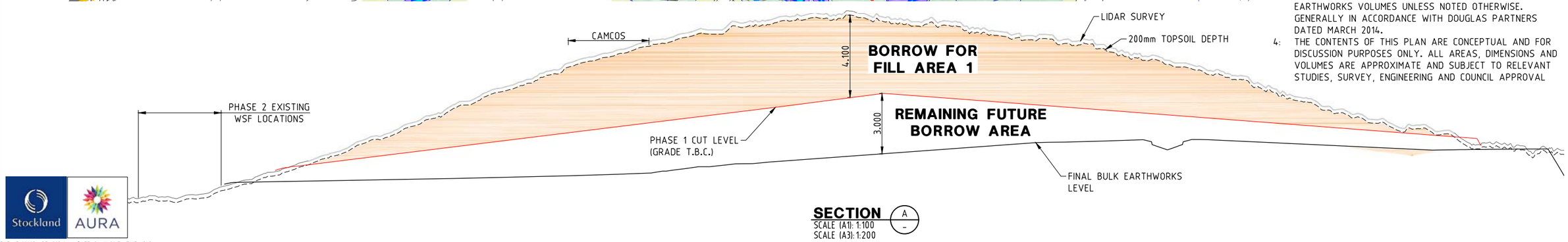
- FILL AREA 1

WSF CONSTRAINTS

- TRANSLOCATED SLABBING LOCATION
- TRANSLOCATED LIVE SOIL LOCATION
- PHASE 2 EXISTING WSF LOCATIONS
- P39 CREATED FROG PONDS

GENERAL NOTES:

1: EXISTING TOPSOIL IS ASSUMED TO BE REMOVED TO A DEPTH OF 200mm FROM EARTHWORKS AREAS AND STOCKPILED PRIOR TO COMMENCEMENT.
2: TOPSOIL RESPREAD IS ASSUMED TO OCCUR AT A DEPTH OF 200mm OVER THE ENTIRE EARTHWORKS AREA UNLESS NOTED OTHERWISE.
3: COMPACTION FACTOR OF 0.85 HAS BEEN APPLIED TO ALL EARTHWORKS VOLUMES UNLESS NOTED OTHERWISE. GENERALLY IN ACCORDANCE WITH DOUGLAS PARTNERS DATED MARCH 2014.
4: THE CONTENTS OF THIS PLAN ARE CONCEPTUAL AND FOR DISCUSSION PURPOSES ONLY. ALL AREAS, DIMENSIONS AND VOLUMES ARE APPROXIMATE AND SUBJECT TO RELEVANT STUDIES, SURVEY, ENGINEERING AND COUNCIL APPROVAL



SECTION A
SCALE (A1): 1:100
SCALE (A3): 1:200

Stockland AURA

FILE: 17-000934-BEW202.dwg DATE: 24-11-2017 TIME: 12:13
Xref's: X-17-000934 - LOTS USR: scott dobson

FIRST ISSUE	CALCS	DRAWN	DATE
	MW	SD	08.11.17

AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
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1:15000 A3

MICROFILM No.

PROJECT No.
17-00934

SURVEYOR: RPS Group
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APPROVED

FOR & ON BEHALF OF CALIBRE CONSULTING (QLD) PTY LTD

CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

PROJECT
AURA
PRECINCTS 6-16

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Brisbane Canberra Melbourne Sydney Singapore Sunshine Coast

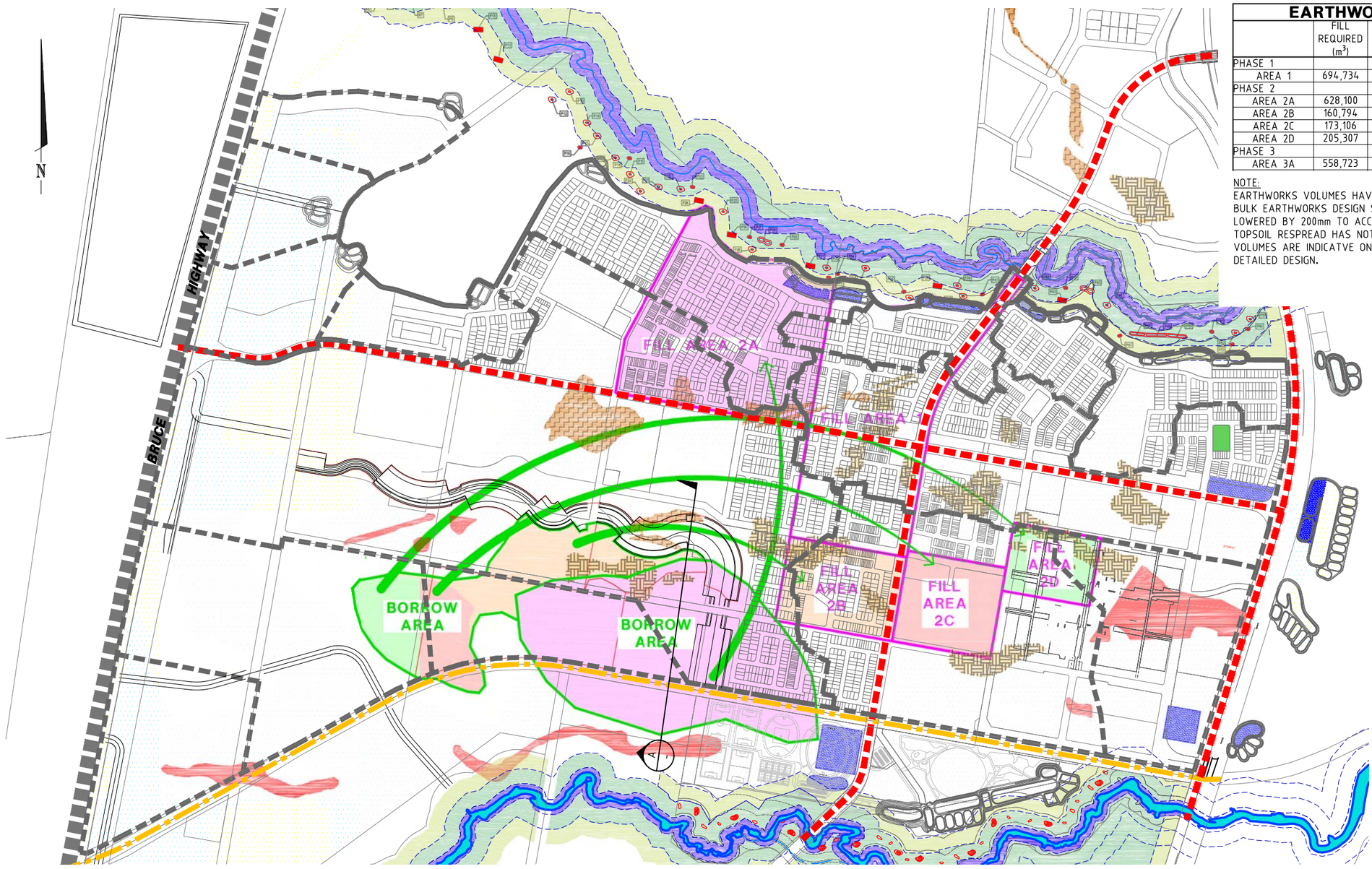
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DRAWING TITLE
BULK EARTHWORKS MATERIAL MOVEMENTS PHASE 1

DRAWING NUMBER
17-000934-BEW202

ISSUE
-



EARTHWORKS VOLUMES

	FILL REQUIRED (m^3)	CUT AVAILABLE (m^3)	TOPSOIL GENERATED (m^3)	SURFACE AREA (m^2)
PHASE 1				
AREA 1	694,734	1174	75,428	383,436
PHASE 2				
AREA 2A	628,100	4,463	94,500	472,499
AREA 2B	160,794	185	23,199	115,995
AREA 2C	173,106		20,904	104,521
AREA 2D	205,307		13,945	69,727
PHASE 3				
AREA 3A	558,723	649	40,893	204,465

NOTE:
EARTHWORKS VOLUMES HAVE BEEN CALCULATED BETWEEN THE BULK EARTHWORKS DESIGN SURFACE AND THE NATURAL SURFACE LOWERED BY 200mm TO ACCOUNT FOR THE REMOVAL OF TOPSOIL. TOPSOIL RESPREAD HAS NOT BEEN TAKEN INTO ACCOUNT. THE VOLUMES ARE INDICATVE ONLY AND WILL BE REFINED DURING DETAILED DESIGN.

LEGEND

- OVERALL ESC CATCHMENTS
- MAJOR ROADS
- CAMCOS CORRIDOR
- EROSION AND SEDIMENT CONTROL
- FILL AREA
- BORROW AREA

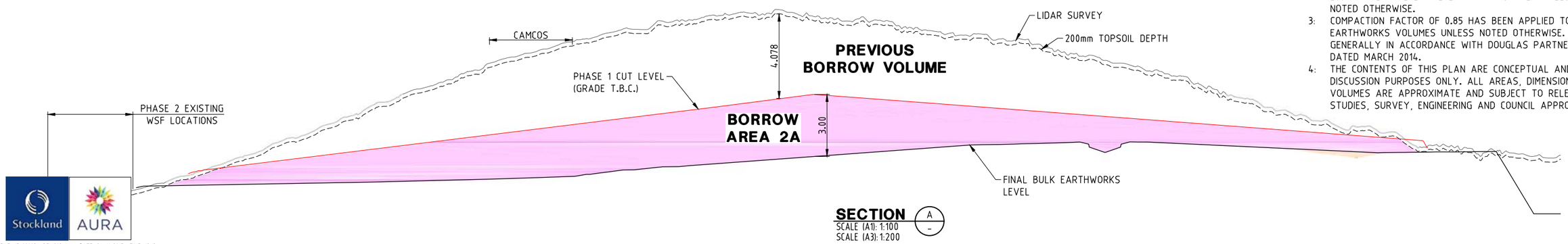
MATERIAL MOVEMENTS

- FILL AREA 2A
- FILL AREA 2B
- FILL AREA 2C
- FILL AREA 2D

WSF CONSTRAINTS

- TRANSLOCATED SLABBING LOCATION
- TRANSLOCATED LIVE SOIL LOCATION
- PHASE 2 EXISTING WSF LOCATIONS
- P39 CREATED FROG PONDS

GENERAL NOTES:
1: EXISTING TOPSOIL IS ASSUMED TO BE REMOVED TO A DEPTH OF 200mm FROM EARTHWORKS AREAS AND STOCKPILED PRIOR TO COMMENCEMENT.
2: TOPSOIL RESPREAD IS ASSUMED TO OCCUR AT A DEPTH OF 200mm OVER THE ENTIRE EARTHWORKS AREA UNLESS NOTED OTHERWISE.
3: COMPACTION FACTOR OF 0.85 HAS BEEN APPLIED TO ALL EARTHWORKS VOLUMES UNLESS NOTED OTHERWISE. GENERALLY IN ACCORDANCE WITH DOUGLAS PARTNERS DATED MARCH 2014.
4: THE CONTENTS OF THIS PLAN ARE CONCEPTUAL AND FOR DISCUSSION PURPOSES ONLY. ALL AREAS, DIMENSIONS AND VOLUMES ARE APPROXIMATE AND SUBJECT TO RELEVANT STUDIES, SURVEY, ENGINEERING AND COUNCIL APPROVAL



SECTION A
SCALE (A1): 1:100
SCALE (A3): 1:200

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FILE: 17-000934-BEW203.dwg DATE: 24-11-2017 TIME: 12:13
Xref's: X-17-000934 - LOTS USR: scott dobson

FIRST ISSUE	CALCS	DRAWN	DATE
	MW	SD	08.11.17

AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:7500 100 50 0 100 200 300 400 A1
1:15000 A3

MICROFILM No.

PROJECT No. 17-00934

SURVEYOR: RPS Group
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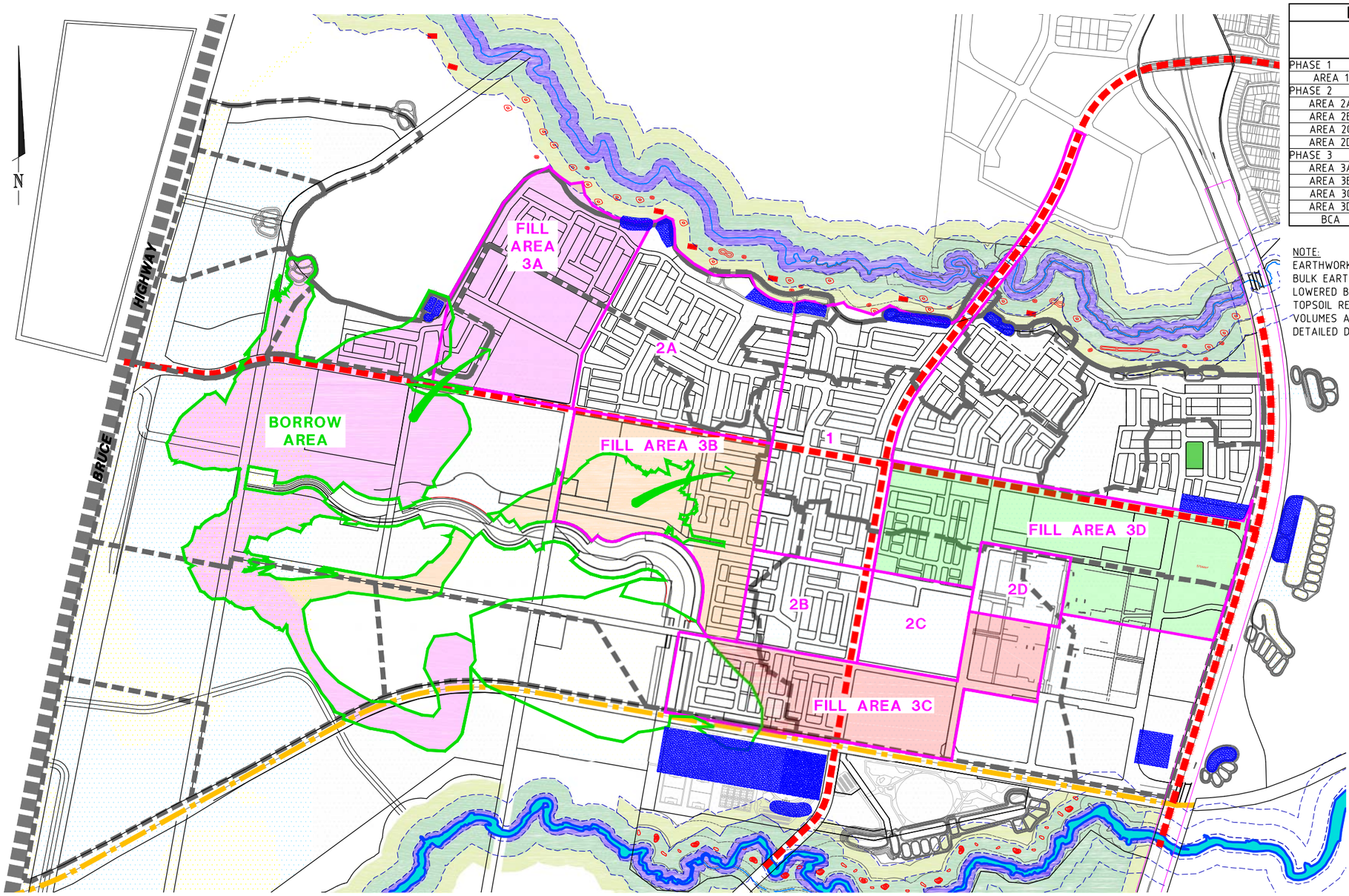
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DRAWING TITLE
BULK EARTHWORKS MATERIAL MOVEMENTS PHASE 2

DRAWING NUMBER 17-000934-BEW203

ISSUE -



EARTHWORKS VOLUMES

	FILL REQUIRED (m^3)	CUT AVAILABLE (m^3)	TOPSOIL GENERATED (m^3)	SURFACE AREA (m^2)
PHASE 1				
AREA 1	694,734	1174	75,428	383,436
PHASE 2				
AREA 2A	628,100	4,463	94,500	472,499
AREA 2B	160,794	185	23,199	115,995
AREA 2C	173,106		20,904	104,521
AREA 2D	205,307		13,945	69,727
PHASE 3				
AREA 3A	558,723	649	40,893	204,465
AREA 3B	198,779	112,169	40,671	203,356
AREA 3C	392,033	295,812	45,830	229,150
AREA 3D	1,062,977		81,430	407,152
BCA	127,131		44,805	224,024

NOTE:
EARTHWORKS VOLUMES HAVE BEEN CALCULATED BETWEEN THE BULK EARTHWORKS DESIGN SURFACE AND THE NATURAL SURFACE LOWERED BY 200mm TO ACCOUNT FOR THE REMOVAL OF TOPSOIL. TOPSOIL RESPREAD HAS NOT BEEN TAKEN INTO ACCOUNT. THE VOLUMES ARE INDICATVE ONLY AND WILL BE REFINED DURING DETAILED DESIGN.

LEGEND

- OVERALL ESC CATCHMENTS
- MAJOR ROADS
- CAMCOS CORRIDOR
- EROSION AND SEDIMENT CONTROL
- FILL AREA
- BORROW AREA

MATERIAL MOVEMENTS

- FILL AREA 3A
- FILL AREA 3B
- FILL AREA 3C *
- FILL AREA 3D *

* FILL MATERIAL FROM AREAS 3C & 3D MUST BE SOURCED FROM OUTSIDE THE IDENTIFIED BORROW AREA

GENERAL NOTES:

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FILE: 17-000934-BEW204.dwg DATE: 08-11-2017 TIME: 15:15
Xref's: USR: ben gear

AMENDMENTS	CALCS	DRAWN	DATE	AMENDMENT DETAILS
FIRST ISSUE	MW	SD	08.11.17	
A				
B				
C				
D				
E				
F				

DESIGN CHECK
DRAWN CHECK

SCALE (METRES)
1:7500 100 50 0 100 200 300 400 A1
1:15000 A3

MICROFILM No.

PROJECT No.
17-00934

SURVEYOR: RPS Group
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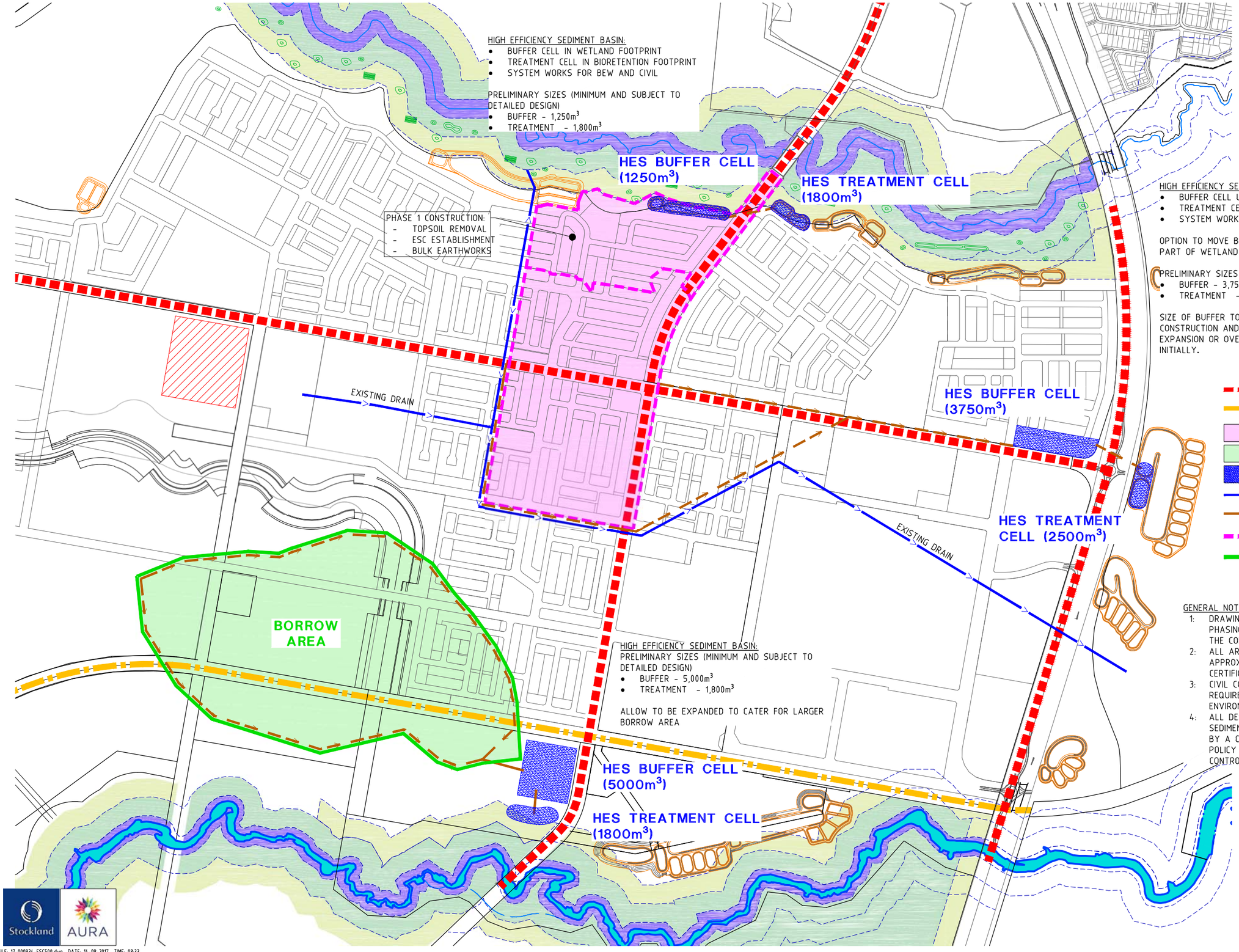
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DRAWING TITLE
BULK EARTHWORKS
MATERIAL MOVEMENTS
PHASE 3

DRAWING NUMBER
17-000934-BEW204

ISSUE
-



GENERAL NOTES:

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FILE: 17-000934-ESC500.dwg DATE: 14-09-2017 TIME: 08:33
Xref's: USR: Tony Dodunski

FIRST ISSUE	CALCS	DRAWN	DATE
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AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:5000 100 50 0 100 200 A1
1:10000 A3

MICROFILM No.

PROJECT No. 17-00934

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CLIENT: STOCKLAND DEVELOPMENTS PTY LTD

PROJECT: AURA PRECINCTS 7-15

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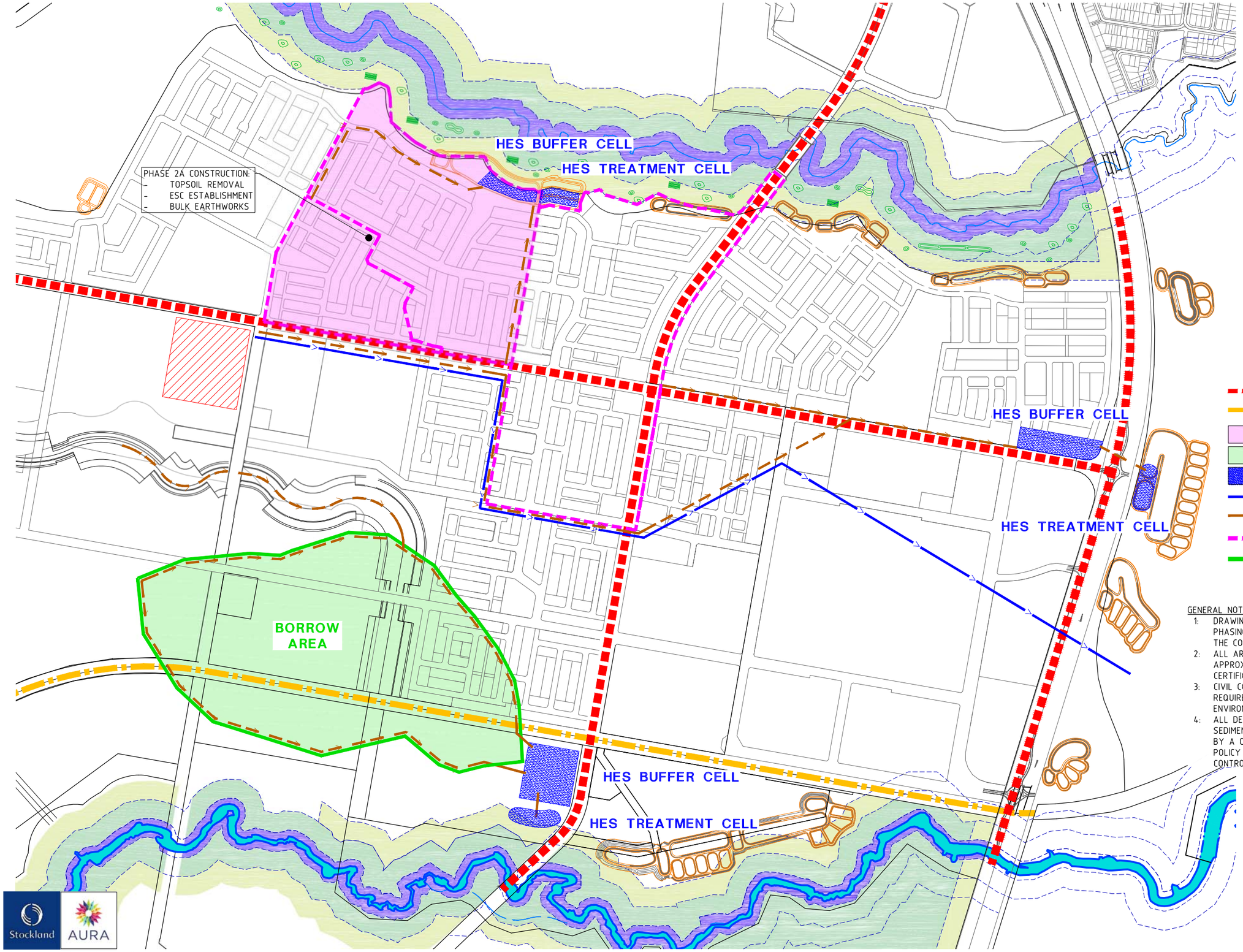
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DRAWING TITLE: EROSION & SEDIMENT CONTROL PHASE 1

DRAWING NUMBER: 17-000934-ESC500

ISSUE: -



LEGEND

- MAJOR ROAD
- CAMCOS CORRIDOR
- WORKS AREA
- EARTHWORKS BORROW AREA
- HES TREATMENT CELL
- CLEAN WATER DRAIN
- DIRTY WATER DRAIN
- FILL AREA
- BORROW AREA
- NOMINATED TOPSOIL STOCKPILE

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	MW	SD	08.11.17

AMENDMENTS: A | B | C | D | E | F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:5000 1:10000 100 50 0 100 200 A1 A3

MICROFILM No.

PROJECT No. 17-00934

SURVEYOR: RPS Group
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DRAWING TITLE
EROSION & SEDIMENT CONTROL
PHASE 2A

DRAWING NUMBER 17-000934-ESC501

ISSUE -

PHASE 2A CONSTRUCTION:
- TOPSOIL REMOVAL
- ESC ESTABLISHMENT
- BULK EARTHWORKS

HES BUFFER CELL

HES TREATMENT CELL

AREA 2A

AREA 1

HES BUFFER CELL

HES TREATMENT CELL

AREA 2D

AREA 2B

AREA 2C

BORROW AREA

PHASE 2B CONSTRUCTION:
- TOPSOIL REMOVAL
- ESC ESTABLISHMENT
- BULK EARTHWORKS

HES BUFFER CELL

HES TREATMENT CELL

N

LEGEND

- MAJOR ROAD
- CAMCOS CORRIDOR
- WORKS AREA
- EARTHWORKS BORROW AREA
- HES TREATMENT CELL
- CLEAN WATER DRAIN
- DIRTY WATER DRAIN
- FILL AREA
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Xref's: USR: Tony Dodunski

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AMENDMENTS: A, B, C, D, E, F

AMENDMENT DETAILS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:5000 100 50 0 100 200 A1
1:10000 A3

MICROFILM No.

PROJECT No.
17-00934

SURVEYOR: RPS Group
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CLIENT
STOCKLAND DEVELOPMENTS PTY LTD

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PRECINCTS 7-15

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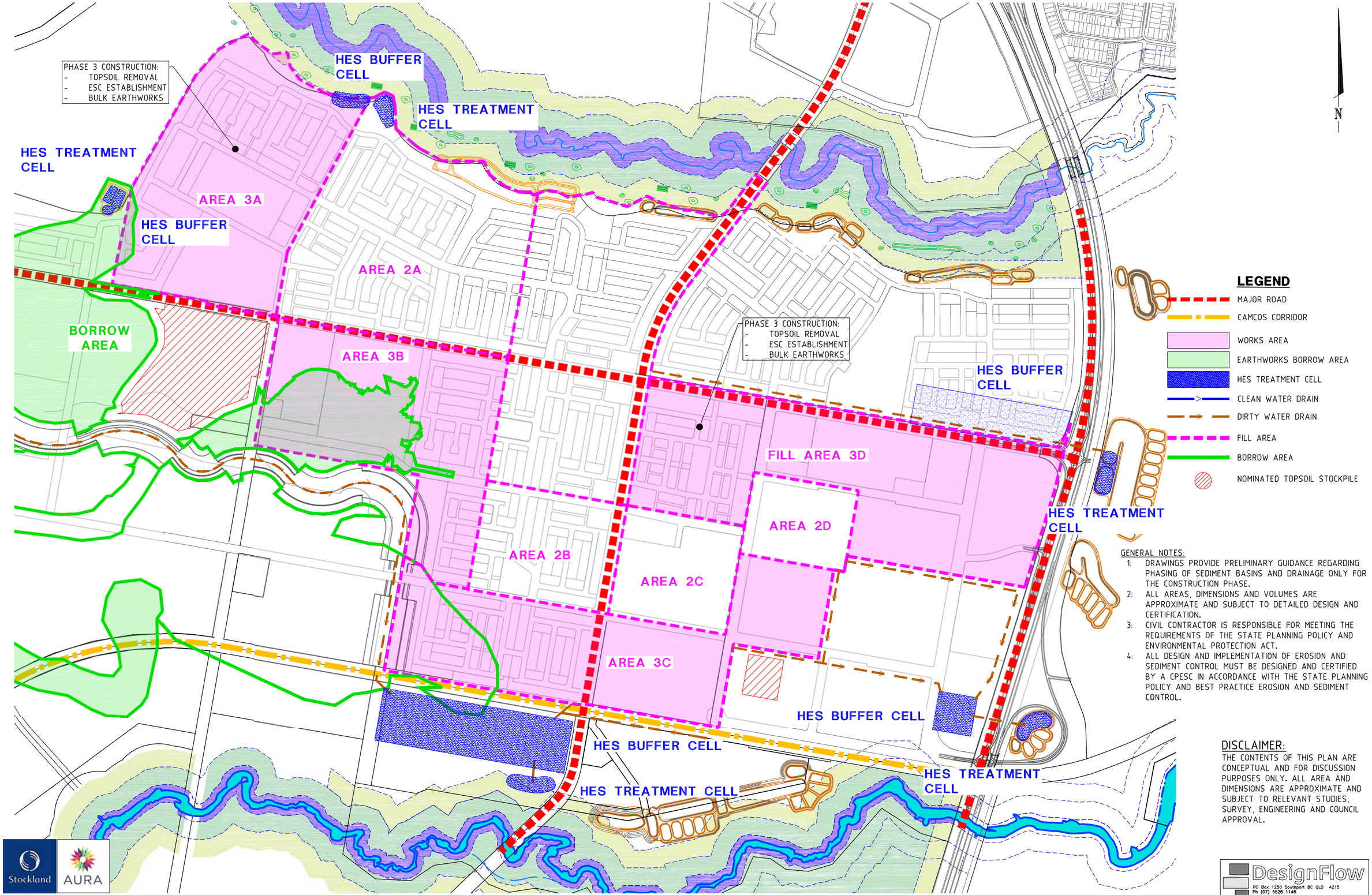
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DRAWING TITLE
EROSION & SEDIMENT CONTROL
PHASE 2B

DRAWING NUMBER
17-000934-ESC502

ISSUE
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GENERAL NOTES:

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A	MW	SD	08.11.17	
B				
C				
D				
E				
F				

AMENDMENTS

DESIGN CHECK

DRAWN CHECK

SCALE (METRES)
1:5000 100 50 0 100 200 A1
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DRAWING TITLE
EROSION & SEDIMENT CONTROL
PHASE 3

DRAWING NUMBER
17-000934-ESC503

ISSUE
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