

BIO-RETENTION BASIN MAINTENANCE MANAGEMENT PLAN

VANTAGE YATALA INDUSTRIAL DEVELOPMENT STAGE 3 STORMWATER BASIN

ADDRESS

Lot 504 Homestead Drive, Stapylton Qld 4207

REAL PROPERTY DESCRIPTION

BAL Lot 504 SP329485

PREPARED FOR

FPI Queensland Pty Ltd

June 2025



gassman
development
perspectives

project coordination
urban + regional planning
landscape + urban design
engineering services
environmental management
visualisation + spatial services
surveying services
advisory services

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1.0 INTRODUCTION

Gassman Development Perspectives (GDP) has been engaged by FPI Queensland Pty Ltd (Client) to prepare a Stormwater Bio-basin Maintenance Management Plan over land situated at Lot 504 Homestead Drive, Stapylton Qld 4207 (BAL Lot 504 SP329485) (the 'subject site').

This report has been prepared for submission to City of Gold Coast Council (Council) in response to Council Approval Condition Number 35 for Reconfiguring a Lot application over BAL Lot 504 SP329485 (Council ref. COM/2023/82, dated 22 March 2024).

Condition 35 read as follow:

35 Bioretention basin maintenance management plan (specific condition)

a Prepare and implement a bioretention basin maintenance management plan (MMP) prior to the commencement of the use. The MMP must be prepared by a Registered Professional Engineer Queensland (RPEQ) specialising in stormwater management in accordance with City Plan Policy SC6.12 Land Development Guidelines and with reference to the Water by Design document Maintaining Vegetated Stormwater Assets, Version 1 February 2012 and be approved by the Council.

b The MMP must include, but not necessarily be limited to, the following key information:

- i Design intent and description of the device(s).*
- ii The location and specific dimensions of the device(s).*
- iii Approved / designed water quality objectives.*
- iv Water quality monitoring procedures.*
- v Monitoring frequency.*
- vi Specifications and procedures for device(s) maintenance.*
- vii Plant and equipment access details for maintenance activities.*
- viii Maintenance activity schedule defining frequency, area (m²) per maintenance zone, hours, staff, plant and equipment, approximate costs per rotation, and per annum.*
- ix Performance indicators / intervention levels / triggers for reactive maintenance.*
- x Any necessary preventative maintenance measures.*
- xi Acceptable solutions for specific items, i.e., acceptable plant species substitutions based on availability, hydraulic conductivity, water quality objectives, etc.*
- xii Approximate lifecycle maintenance costs.*

2.0 BIO-RETENTION BASIN DETAILS

2.1 LOCATION AND SITE CHARACTERISTICS

The three Bioretention Basins are situated in north, east and South of the subject site.

The subject site is bounded by existing Stage 2 Vantage Yatala industrial development to the north, Christensen Road and existing industrial uses to the west and south and City of Gold Coast Council's land fill facility to the east.. Refer to Figure 2.1 below.

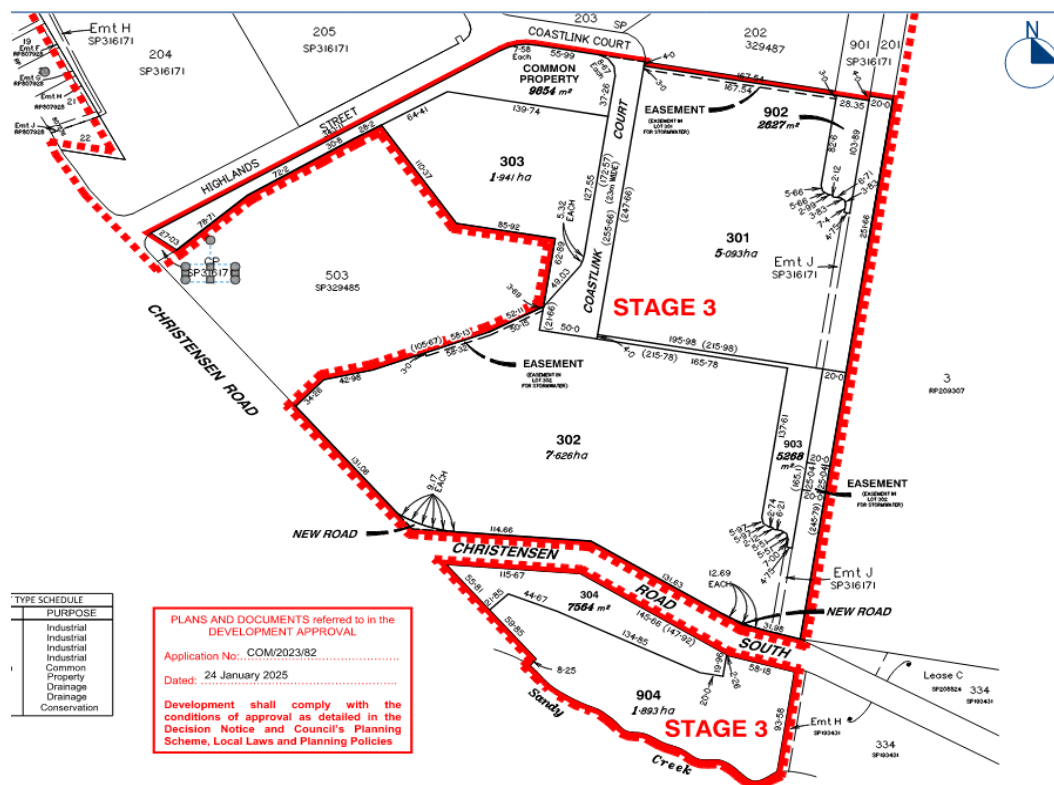


Figure 2.1: CoGC-approved ROL Plan

The current total area of the site is 66.387Ha of which Stage 3 makes up 17.405Ha (refer Figure 2.1.2 above). Included in the Stage 3 area is 4.819Ha of land acquired from the existing Amgrow site.

The subject site is zoned "Low Impact Industry, Future Precinct" and "Medium Impact Industry, Future Precinct" under Council's current City Plan for which Stage 3 sits wholly within the "Medium Impact Industry, Future Precinct". The current proposal involves creating further industrial lots behind approved Stage 2 within the subject site which will require large scale bulk earthworks necessary to facilitate clear and flat earthwork pads suitable for this land use. Please refer to **Appendix A** for the Council-approved reconfiguration of lot plan.

The subject site is located within the extent of the Flood Overlay as defined in Council's City Plan Interactive Mapping – Version 5, 6 and 7

2.2 DESIGN INTENT AND DESCRIPTION

The bio-retention basins for the subject site was designed in accordance with Bio-retention Technical Design Guidelines (2014) with the properties as outlined in Table 2.2.1 below. Outlet structures within the basins were designed to ensure an extended detention depth of 300mm over the filter media.

Parameter	Value
Geofabric Lining to Base	Yes
Hydraulic Conductivity (normal analysis)	200 mm per hour
Orthophosphate Content	30 mg per kg
Filter Media's TN Content	400 mg per kg
Vegetation Properties	Basin to be vegetated with effective nutrient removal plants

Table 2.2.1: Properties of adopted Bio-retention Basin

Table 2.2.2 below details design specifications for the bio-retention basins.

Parameter	Value
Catchment	LPoD-1
Type	Detention basin (in ground)
Internal Batter Slope on Basin Sides	1 in 3
Basin Floor RL	12.500m AHD <i>graded flat</i>
Basin Embankment / Crown R.L	14.000m AHD
Basin Transverse Weir Crest RL	13.500m AHD
Freeboard to Crown (1% AEP WSL)	0.312m
Detention Volume Depth	1.188m to 1% AEP WSL (<i>measured from floor / IL of basin</i>)
Detention Volume to <i>lowest</i> Crown	1,620m ³ to RL 14.000m (<i>not including 0.30m extended detention volume of 208.3m³</i>)
Detention Volume to 1% AEP WSL	1,164m ³ to RL 13.688m (<i>not including 0.30m extended detention volume of 208.3m³</i>)
Detention Volume to Weir Crest	921m ³ to RL 13.500m (<i>not including 0.30m extended detention volume of 208.3m³</i>)
Low Flow Outlets	1 / 600mm x 600mm grated field inlet pit connected to a low flow outlet pipe (450mm diameter at 1.0%) <i>Top of grate levels set at 0.300m above basin floor at RL 12.800m AHD (typical and unless noted otherwise)</i> 1 / 600mm x 600mm grated field inlet pit connected to a low flow outlet pipe (450mm diameter at 1.0%) <i>Top of grate levels set at 0.800m above basin floor at RL 13.300AHD (typical and unless noted otherwise)</i> <i>With 240mm orifice at RL 12.800m AHD</i>
High Flow Outlets	10-metre-wide broad crested transverse weir <i>1.00m above basin floor at RL 13.500m AHD</i> <i>1.70 discharge coefficient for transverse weir</i> 1 / 450mm RCP laid at max. grade of 1.0%

Parameter	Value
Catchment	LPoD-2
Type	Detention basin (in ground)
Internal Batter Slope on Basin Sides	1 in 3
Basin Floor RL	14.700m AHD <i>graded flat</i>
Basin Embankment / Crown R.L	16.500m AHD
Basin Transverse Weir Crest RL	16.200m AHD
Freeboard to Crown (1% AEP WSL)	0.311m
Detention Volume Depth	1.489m to 1% AEP WSL (<i>measured from floor / IL of basin</i>)
Detention Volume to <i>lowest</i> Crown	4,190m ³ to RL 16.500m (<i>not including 0.30m extended detention volume of 432m³</i>)
Detention Volume to 1% AEP WSL	3,211m ³ to RL 16.189m (<i>not including 0.30m extended detention volume of 432m³</i>)
Detention Volume to Weir Crest	3,243m ³ to RL 16.200m (<i>not including 0.30m extended detention volume of 432m³</i>)
Low Flow Outlets	1 / 900mm x 900mm grated field inlet pit connected to a low flow outlet pipe (450mm diameter at 1.0%) <i>Top of grate levels set at 0.300m above basin floor at RL15.000m AHD (typical and unless noted otherwise)</i> 1 / 900mm x 900mm grated field inlet pit connected to a low flow outlet pipe (450mm diameter at 1.0%) <i>Top of grate levels set at 0.700m above basin floor at RL15.400AHD (typical and unless noted otherwise)</i> <i>With 230mm orifice at RL15.000m AHD</i>
High Flow Outlets	10-metre-wide broad crested transverse weir <i>1.00m above basin floor at RL13.500m AHD</i> <i>1.70 discharge coefficient for transverse weir</i> 2 / 450mm RCP laid at max. grade of 1.0%

Parameter	Value
Catchment	LPoD-3
Type	Detention basin (in ground)
Internal Batter Slope on Basin Sides	1 in 3
Basin Floor RL	11.500m AHD <i>graded flat</i>
Basin Embankment / Crown R.L	13.000m AHD
Basin Transverse Weir Crest RL	12.700m AHD
Freeboard to Crown (1% AEP WSL)	0.292m
Detention Volume Depth	1.208m to 1% AEP WSL (<i>measured from floor / IL of basin</i>)
Detention Volume to lowest Crown	378m ³ to RL 13.000m (<i>not including 0.30m extended detention volume of 37m³</i>)
Detention Volume to 1% AEP WSL	289m ³ to RL 12.708m (<i>not including 0.30m extended detention volume of 37m³</i>)
Detention Volume to Weir Crest	287m ³ to RL 12.700m (<i>not including 0.30m extended detention volume of 37m³</i>)
Low Flow Outlets	1 / 1050 Manhole connected to a low flow outlet pipe (375mm diameter at 1.0%) <i>Top of Lid levels set at 1.20m above basin floor at RL12.700m AHD (typical and unless noted otherwise)</i> <i>With 140mm orifice at RL11.800m AHD and, 120mm orifice at RL12.200m AHD and, 100mm orifice at RL12.500m AHD</i>
High Flow Outlets	10-metre-wide broad crested transverse weir <i>1.00m above basin floor at RL13.500m AHD</i> <i>1.70 discharge coefficient for transverse weir</i>

Table 2.2.2: Summary of Design Parameters of Proposed Detention Systems (Stage 3)

3.0 STORMWATER QUALITY

Stormwater quality analysis has been undertaken using MUSIC software to confirm the adequacy of proposed Stormwater Quality Improvement Devices (SQIDs) required to meet the State Planning Policy's (SPP) Water Quality Objectives (WQOs) and the pollutant removal targets set by City of Gold Coast. A suitable treatment strategy addressing the typical pollutant types generated during construction and operation of an industrial development are outlined within this section of reporting.

3.1 POLLUTANTS OF CONCERN

A broad range of pollutants are typically generated during industrial development operational phases. Pollutants may include:

- Litter / gross pollutants
- Sediment
- Toxic materials
- Heavy metals
- Hydrocarbons
- Nutrients (i.e. nitrogen & phosphorous)
- Pathogens / faecal coliforms
- Oxygen demanding substance
- Surfactants
- Acid or alkaline substances
- Organochlorines & organophosphates
- Thermal pollution

3.2 STORMWATER QUALITY OBJECTIVES (OPERATIONAL PHASE)

City of Gold Coast have set stormwater quality objectives with the intent of "protecting receiving water quality by limiting the quantity (loads) of stormwater pollutants discharged into receiving waters from development such as that proposed over the subject site. These are summarised in Table 4.10 of SC6.11.4 Stormwater Drainage and Water Sensitive Urban Design standards of Council's City Plan Version 7, and outlined below:

Pollutant	Load Reduction Objective (in mean annual load)
Gross Pollutants (>5mm)	90%
Total Suspended Solids (TSS)	80%
Total Phosphorous (TP)	60%
Total Nitrogen (TN)	45%

Table 3.2: GCCC's Stormwater Quality Objectives (source: City Plan v7, Schedule 6.11.4)

3.3 PROPOSED STORMWATER QUALITY AND MANAGEMENT STRATEGY

Development over the subject site has the potential to introduce increased pollutant loads and concentrated stormwater runoff into existing downstream waterways. To mitigate any potential increase in the export of pollutants from the subject site, suitable stormwater treatment devices will be utilised throughout the developed area as part of the integrated design of the road and stormwater drainage networks.

3.4 WATER QUALITY MONITORING

Visual inspection of sediment and water quality control mechanisms will be carried out during (where possible) and after major rain events;

- A NATA registered laboratory shall conduct testing of the Total Suspended Solids, Turbidity and pH content of discharge from the sediment basins. Testing shall be conducted prior to dewatering the settling zone, during prolonged rainfall, a minimum of once every day until discharge stops. Testing is to occur as long as the basins are in operation;
- The contractor shall ensure, where possible, that water has drained from the settling zone of the basin, and preferably the sediment storage zone, prior to the next rainfall event that causes runoff. The sediment basins should be dewatered within 5 days of rainfall including testing and treatment; and

Water quality monitored in accordance with Section 7.5 of the Best Practice Erosion & Control (IECA Australasia, November 2008) and compared with water quality objectives. A monitoring report must be prepared and retained at the site office and made available to Council's inspectors upon request. The applicant must notify Council's Contributed Assets Section and Department of Environment and Heritage Protection of any non-compliance to water quality objectives and the corrective actions taken by the Applicant within 48 hours of the non-compliance.

4.0 GENERAL BASIN MAINTENANCE

4.1 REQUIREMENTS AND PROCEDURES

(Adoption Guidelines for Stormwater, CRC for Water Sensitive Cities, 2015)

Routine maintenance is important to ensure that biofilters function effectively in the long term. Regular inspections (or monitoring) are required to continually assess if the system is performing well against its objectives, and to detect issues that may require maintenance attention, before it develops to the point of requiring more significant and costly works to rectify. Both monitoring and maintenance are required for successful operation. The overall purpose is to maintain optimal functionality of the system to achieve water quality and hydrological performance targets.

City of Gold Coast Council requires that inlet and outlet structures are carefully monitored for erosion and build up of pollutant materials. Also, the proposed basin includes a sediment forebay which shall be inspected on a regular basis for removal of debris build up.

General bioretention basin maintenance shall typically include:

- Assessment of basin condition to identify sediment build up and/or erosion, recification of damage to basin, and declogging of the bioretention basin, including replacement of vegetation where required;
- Removal of weeds and dead vegetation and replacement with ne planting according toe design specifications;
- Inspection of inflow and overflow structures for blockage and damage;
- Sediment removal from basin vegetation areas;
- Sediment forebay maintenance and clearing of sediment deposits;
- Pest monitoring and control.
- Regular watering of vegetation until plants are established and actively growing;

(Council of The City of Gold Coast Planning Scheme Policies)

All maintenance activities must be specified in a maintenance plan (and associated maintenance inspection forms) to be documented and submitted to Council as part of the Development Approval process. Maintenance personnel and asset managers will use this plan to ensure the bioretention basins continue to function as designed.

Council of The City of Gold Coast Planning Scheme Policies require inspections and maintenance to be carried out every 1 – 6 months, dependant on the bioretention basin size and complexity.

The required maintenance procedures includes a Bioretention Basin Maintenance Checklist (Refer **Appendix D**) for which inspection records are to be kept.

4.2 PLANT AND EQUIPMENT ACCESS

The bio-retention basin design incorporates safe and suitable vehicular and personnel access to facilitate maintenance.

4.3 MAINTENANCE ACTIVITY SCHEDULE

(Adoption Guidelines for Stormwater, CRC for Water Sensitive Cities, 2015)

Routine maintenance activities aim to support ongoing biofilter function. If conducted effectively and in a timely manner, maintenance will prevent any escalation of problems and avoid the need for costly rectification or system resets. Typical maintenance tasks and frequencies are outlined in *Table 4.3* below.

FILTER MEDIA		
Maintenance task	Explanation	Frequency
Sediment and accumulation / clogging	Inspect for the accumulation of an impermeable surface layer, ponding of water for more than a few hours following rain, or widespread moss growth	3 monthly After rain
Holes, erosion or scour	Check for erosion, scour or preferential flow pathways, particularly near inflow point/s and batter slopes	3 monthly After rain
Filter media surface porosity	Inspect for accumulation of an impermeable layer on the filter media and areas of increased sediment deposition, particularly near inlet/s	3 monthly After rain
Damage	Check for damage to the profile from vehicles, signs of pedestrian traffic across the filter surface, such as worn pathways	6 monthly
Litter control	Check for accumulation of litter, particularly in sediment pits, inlets, outlets and overflows	3 monthly As desired for aesthetics
Moss growth	Inspect for moss growth. Moist systems or those with deep shading of the surface may have excessive moss growth across the surface	6 monthly During wettest months
VEGETATION		
Establishment	Additional monitoring and maintenance works are required to ensure a healthy and diverse vegetation cover develops, and that stormwater flows move through the system as the design intended. New seedlings will require regular watering and irrigation, protection from high sediment loads and high flows.	High frequency on first 3 months After large rain Bimonthly in wetter months Up until 2 years
Plant health and covering	Inspect plants for signs of disease, dieback, pest infection, stunted growth or senescent plants and assess the degree of plant cover across the surface. Provide watering or irrigation to support plants through long, dry periods.	3 monthly As desired for aesthetics During long dry spells

Weeds	Check for weeds and remove as they emerge	3 monthly As desired for aesthetics
Pruning and harvesting (if feasible)	Consider occasional use of harvesting plants to permanently remove nutrients and heavy metals stored in aboveground plant material, and to promote new plant growth and further nutrient and metal uptake. Pruning may also benefit aesthetics	Once or twice a year
DRAINAGE		
Inlet pits/zones, overflow pits, grates	Ensure inflow areas and grates over pits are clear of litter and debris and in good and safe condition. Remove sediment from pits and entry sites	Monthly and occasionally after rain
Underdrain	Ensure that underdrain pipes are not blocked, to allow the system to drain as designed and prevent waterlogging of the plants and filter media	6 monthly After rain
Sediment forebay /Pre-treatment zone	Removal of accumulated sediment and debris	Twice a year
Raised outlet	Check that the weir/up-turned pipe is clear of debris	6 monthly After rain
OTHER ROUTINE TASKS		
Inspection after rainfall	Occasionally observe the biofilter after a rainfall event to check infiltration. Identify signs of poor drainage such as prolonged ponding on the filter media surface	Twice a year after rain

Table 4.3: Inspections and maintenance (Source: *Adoption Guidelines for Stormwater Biofiltration Systems*, CRC for Water Sensitive Waters, 2015)

5.0 PERFORMANCE INDICATORS

An inspection assessment is to be undertaken using performance indicators in order to record the condition of an asset. Please refer to Table 5.0 that guides if a performance indicator is not compliant and what maintenance measures are to be taken.

What to Look For	Performance Indicator
SURROUNDS	
Damaged or removed structure e.g. traffic bollards	No damage that poses a risk to public safety or structural integrity
DETENTION AREA	
Erosion	Minor erosion only that does pose a risk to public safety or structural integrity and would not worsen if left untended
Depression or Mounds	No surface depression or mounds > 100mm
Isolated Pools of Water	No isolated pools/depression that could provide mosquito habitate
Litter	No litter
Vegetation	Minimum 95% vegetation cover (minimal bare patches)
	Average Plant height > 500mm
	Plants healthy and free from disease
	Excessive Plant growth
Weeds	No declared weeds (or declared weeds are controlled) <10% cover of invasive/pest plant species.
BIORETENTION BASIN	
Erosion/scouring	Minor erosion only that does not pose a risk to public safety or structural integrity and would not worsen if left unattended.
Crust of fine sediment	No surface crushing
Depression or Mounds	No surface depression or mounds > 100mm.
Hydraulic conductivity and permeability	Filter media if draining freely, whereby water is not ponded on the surface for more than 12 hours after rainfall and there is no obvious impermeable or clay-like surface on the filter media.
Underdrains/clean out points	Clean out points not damaged and end caps securely in place.
Litter	No litter.
Unusal odours, colours or substances (oil and grease)	None detected.
Vegetation	Minimum 95% vegetation cover (minimal bare patches).
	Average Plant height > 500mm.
	Plants healthy and free form disease.
Algal or moss growth	Maximum 10% of surface covered with algae
	No moss growth.

Weeds	No declared weeds (or declared weeds are controlled) <10% cover of invasive/pest plant species.
OUTLET	
Erosion	Outlet is structurally sound and there is no evidence of erosion or subsidence/settlement.
Damaged or removed structure e.g. pit lids or grates	No damage that poses a risk to public safety or structural integrity.
Sediment, litter debris	No blockage.
Outlet free draining	No downstream impediments to the release of water and no evidence of malfunction.

Table 5.0: Performance Indicators (Source: *Water by design*, Maintaining Vegetated Stormwater Assets version 1, February)

6.0 PREVENTATIVE MAINTENANCE MEASURES

Please refer to Table 6.0 that outlines defect or failure and preventative maintenance for bioretention systems.

Defect or Failure	Preventative Maintenance
Ponding Water on surface or reduce filtration rate	Structural collapse as a result of using incorrect media or poor installation
Scour and short-circuiting of flow at outlet pit	Under-drains that are not sealed into outlet pit can result in flow short – circuiting down the side of pit and scouring filter media, the transition layer and the drainage layer.
	Erosion of the bio-retention batters. Filter cloth is not extended up to the batters of the bioretention system resulting in scour down the outside edge of the filter cloth.
Scour and short-circuiting at the edge of bioretention system	When the conceptual design does not allow space for batters and designers are forced to put vertical walls. This provides a risk of flow scouring where the wall is extended down the side of the filter media at the interface with the wall.
Scour around the high-flow weir	If the weir crest and grouted rock protection is not extended up the batters of the bioretention system. Scour may occur around the edge of weir as flows will skirt the weir.
Failure of the bioretention bunds	The bunds can fail if they are constructed too low.
Failure of Plants	Plants may fail to thrive if the filter media does not meet specifications, particularly for water-hold capacity and organic content.
	Unsuitable watering during establishment of plants.
	Not right amount of fertiliser or mulch during establishment.
	Poor plant spacing less than five to six plants per m ² .
	Excessive weed cover

Table 6.0: Preventative Maintenance (Source: *Water by design*, Consturciton and Establishment Guidelines: Swales, Bioretention Systems and Wetlands version 1.1, April 2010)

7.0 PLANTS INSTALLATION AND ESTABLISHMENT

7.1 PLANT INSTALLATION

For the bio basin to perform effectively healthy plant growth is needed. It will help with pollutant removal and preserve a specified porosity in filter media. As the depth of filter media is 600mm, installation of tree species is not suitable. Only native groundcovers and shrubs should be considered appropriate. Its necessary vegetation installation to provide a cover of 90% within two growing seasons in accordance to the following densities:

Plant Type	Installation
Ground covers	Six plant per m ²
Shrubs	One plant per 2 – 20 m ²

Table 7.1.1: Plant Planting Densities

It is recommended to plant a minimum of six plant species of local origin for bio diversity and local climate compatibility. Selecting plant species should be based on the following norms:

- local ecology and landscape suitability
- expected wetting and drying regime suitability
- Bio-retention performance objective compatibility

Minimum 50% of bioretention filter area should be planted with core species listed in Table 7.1.2 obtained from Table 19 of the Water by Design Bioretention Technical Guidelines (2014) and the rest of species based on the conditions discussed above. A mulch layer of depth 100 mm should be considered to the bio basin batter to help with soil moisture and weeds suppression, along with jute netting pinned to help stabilised the batter and contain mulch.

Species Name	Common Name	Type
Carex appressa	Tall Sedge	Groundcover sedge
Ficinia nodosa	Knobby Club-sedge	Groundcover sedge
Imperata cylindrica	Blady Grass	Groundcover grass
Lepidosperma laterale	Variable Sword-sedge	Groundcover sedge
Lomandra hystrix	River Mat-rush	Groundcover herb
Lomandra longifolia	Spiny-headed Mat-rush	Groundcover herb
Poa labillardieri	Common Tussock Grass	Groundcover grass
Themeda australis	Kangaroo Grass	Groundcover grass
Callistemon sieberi	River Bottlebrush	Shrub
Leptospermum livensidgei	Olive Tea-tree	Shrub
Melaleuca thymifolia	Thyme Honey Myrtle	Shrub

Table 7.1.2: Bioretention Basin Plant Species (Source: *Water by design*, Bioretention Technical Design Guidelines version 1.1, October 2014)

7.2 PLANT ESTABLISHMENT

The plant in the bioretention areas before going to maintenance phase will undergo period of early establishment. Establishment of healthy plant within bioretention will require control of both weed control and watering. The first two years is the most important period for the vegetation maintenance. During these two years plants will establish and grow to maturity. It is significant during this period to control weed growth which is achieved through optimal planting densities.

For successful growth of vegetation within bioretention system the first four months of watering is critical. Watering frequency should be adopted and modified depending on rainfall, maturity of plant and water holding capacity of the soil. Please refer to *Table 7.2* for vegetation watering frequency.

Watering Frequency	
Week 1-12	2 times/weekly
Weeks 13-52	1 time/weekly in summer and 1 time /fortnightly in winter
Weeks 53-104	1 time/fortnightly

Table 7.2: Vegetation Watering Frequency

8.0 MAINTENANCE COSTS

8.1 SCHEDULED MAINTENANCE

8.2 LIFECYCLE COSTS

(Adoption Guidelines for Stormwater, CRC for Water Sensitive Cities, 2015)

Estimated costs from the life cycle of biofiltration systems are summarised in *Table 8.2*. Factors driving differences in cost include:

- System size and complexity;
- Site characteristics;
- Catchment characteristics;
- Experience of personnel, and;
- Flexibility of the design.

Stage	Source	Estimated typical cost
		Bioretention basin
Establishment	<i>Water Sensitive Urban Design Life Cycle Costing – Data Analysis Report</i> Melbourne Water (2013)	~ 2-5 times routine costs
Maintenance	<i>Water Sensitive Urban Design Life Cycle Costing – Data Analysis Report</i> Melbourne Water (2013)	In-house & case studies data: 700 m ² plus – \$3-\$4/yr/m ²
	<i>Guide to the Cost of Maintaining Bioretention Systems</i> Water by Design (2015)	• Precinct-scale (100-800m²) - Understorey vegetation only: \$5/yr/m² • Canopy and understorey: <\$1/yr/m² • Large systems (>800m²) – Understorey vegetation only: ≥\$5/yr/m² • Canopy and understorey: ≥ \$1/yr/m² (cost per m² filter media, excludes administration costs)
	<i>A Business Case for Best Practice Urban Stormwater Management: Case Studies</i> Water by Design (2010b)	Establishment maintenance (first 2 years) - \$15/m ² /yr (including landscaping cost of \$2.50/m ² /yr) – weeding, replanting, sediment removal Ongoing maintenance - \$5/m ² /yr

Renewal	<i>What does it cost to build a water quality treatment system?</i> Knights et al. (2010)	Estimate 20-40% of original construction cost (based on cost of excavation and replacement of filter media, re-planting), but not including cost of disposal of potentially contaminated media, nor any structural rectification works to correct poor design or construction.
---------	--	---

Table 8.2: Life cycle cost estimates for biofiltration (Source: Adoption Guidelines for Stormwater, CRC for Water Sensitive Cities, 2015)

Appendix A – Reconfiguraton of Lot Stamped Approved Plan (COM/2023/82)

Revision No:
F

Appendix B – Stormwater Layout and Bioretention Basin Stamped Approved Plans

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

ROADWORKS AND
DRAINAGE LAYOUT
PLAN SHEET 1 OF 5

B	08/02/24	FOOTPATH AMENDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

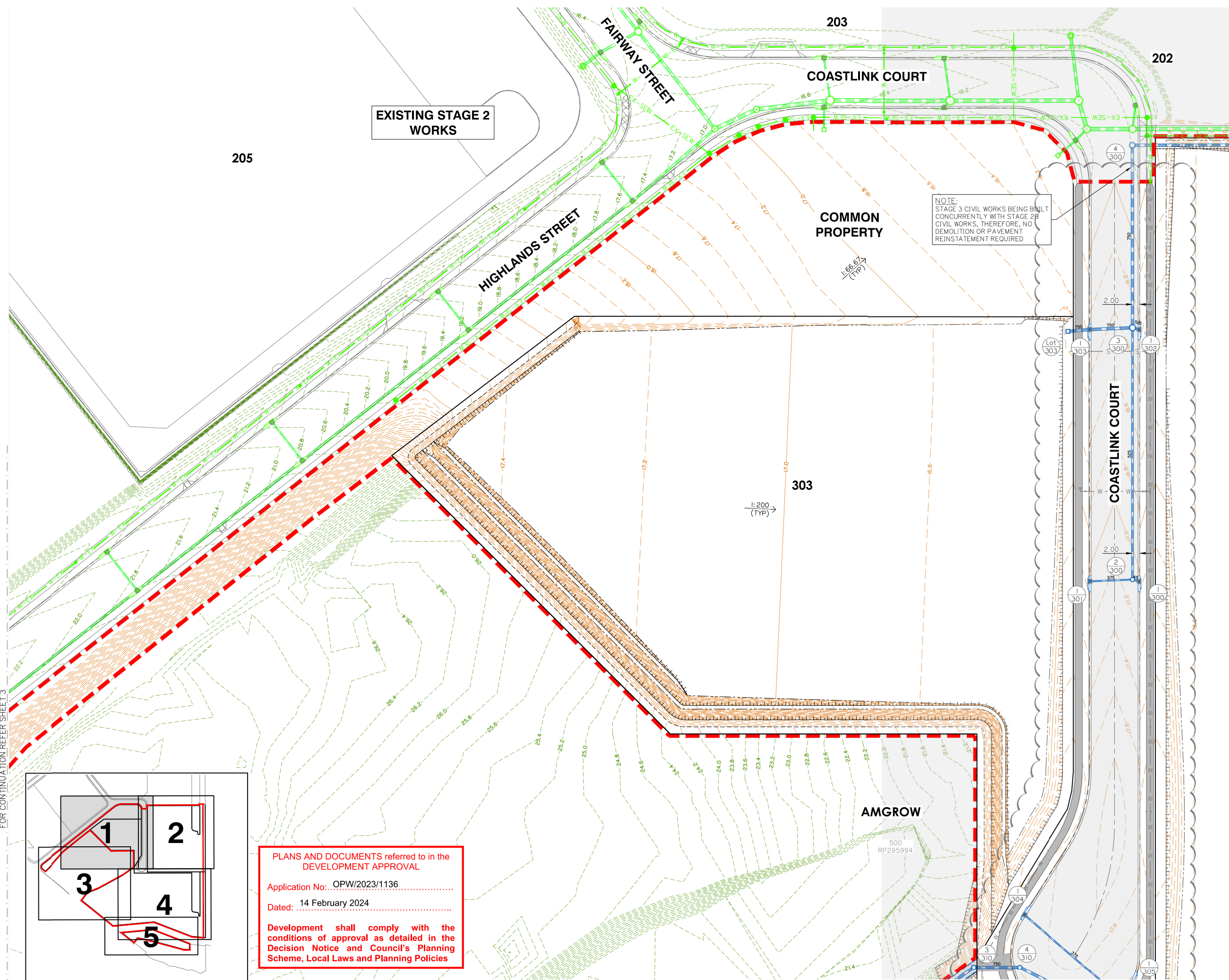
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1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.	5941	Revision	
Designed:	JH	Drafted:	JH
Approved:			MG
RPEQ			16939
Signed:			
Date:			28/09/2023
Drawing No:	5941 ENG CW3 410	Revision	B



FOR CONTINUATION REFER SHEET 3

FOR CONTINUATION REFER SHEET 2

FOR CONTINUATION REFER SHEET 3

ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 5

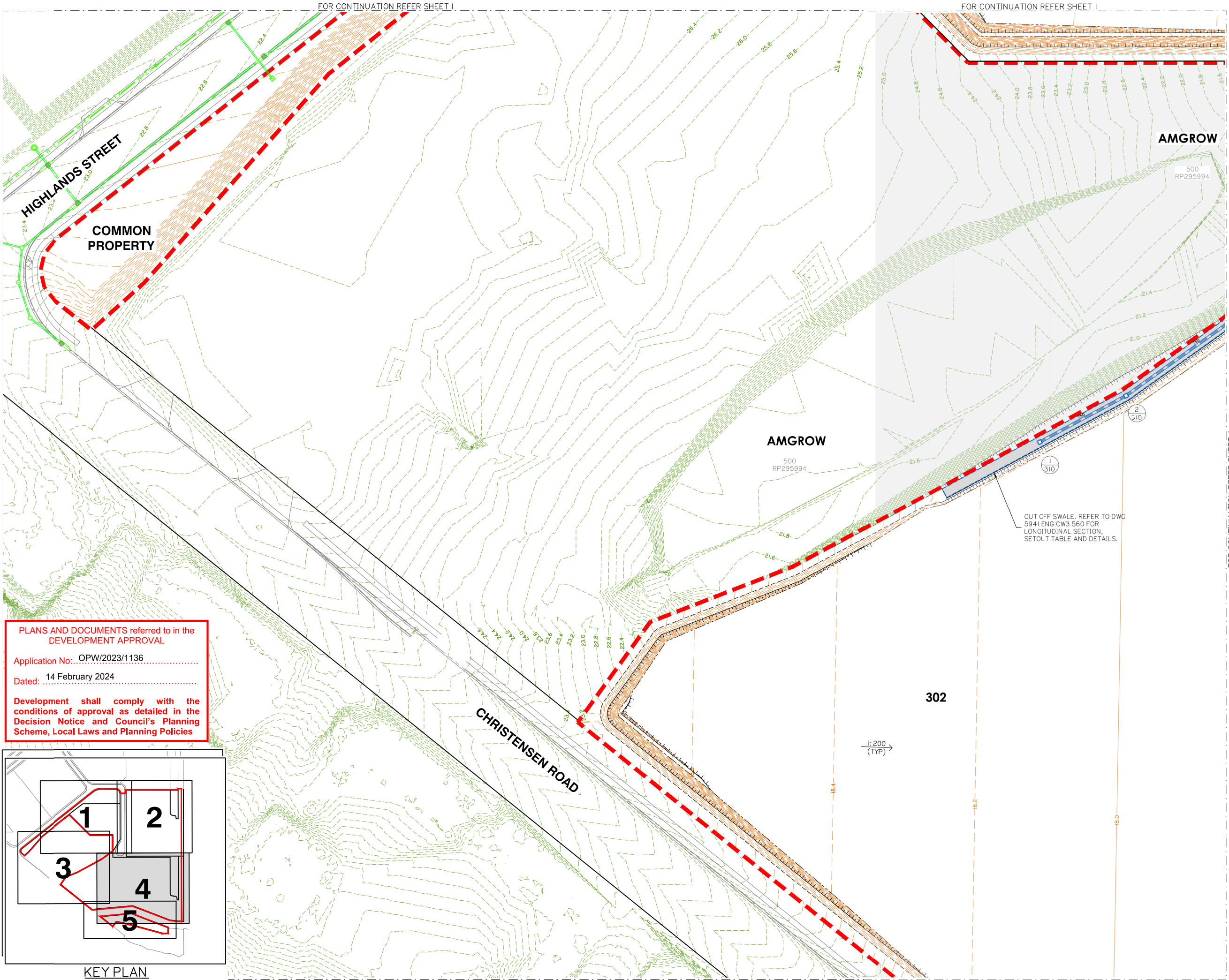
KEY PLAN
NOT TO SCALE

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the
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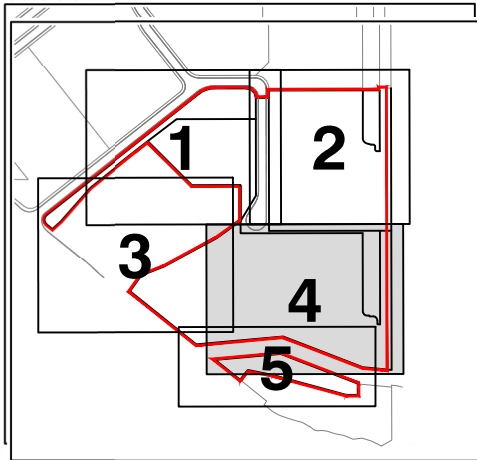


PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

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Client:



FPI QUEENSLAND PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD DRIVE, STAPYLTON QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 3 OF 5

Rev	Date	Description	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

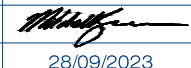
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A3 REDUCED

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PROJECT NORTH POINT

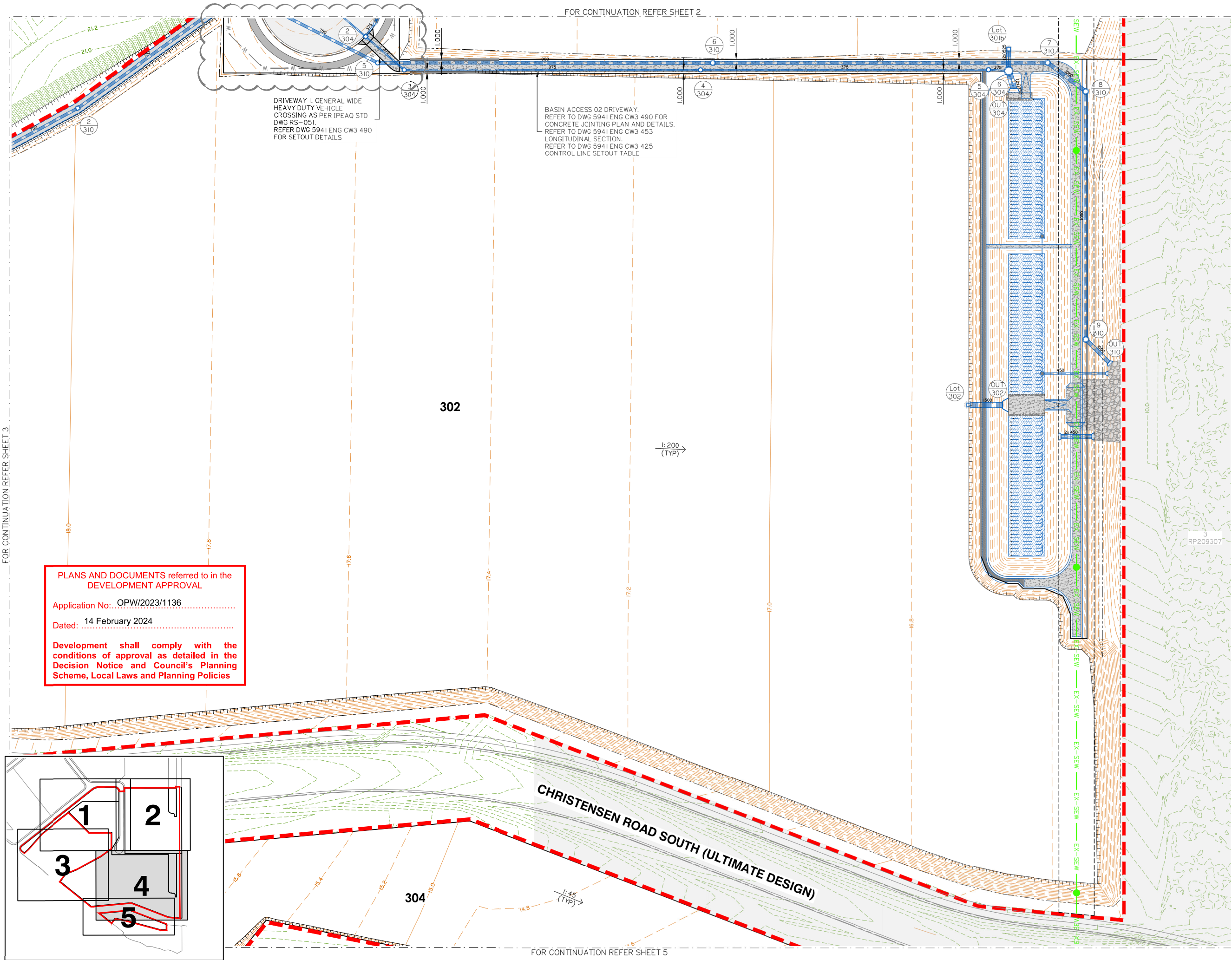


Project No:	5941
Designed:	JH
Drafted:	JH
Approved:	MG
RPEQ:	16939
Signed:	
Date:	28/09/2023

Drawing No: 5941 ENG CW3 412

Revision: A

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FOR CONTINUATION REFER SHEET 3

FOR CONTINUATION REFER SHEET 2

FOR CONTINUATION REFER SHEET 5

DRIVEWAY I. GENERAL WIDE
HEAVY DUTY VEHICLE
CROSSING AS PER IPEAQ STD
DWG RS-051.
REFER DWG 5941 ENG CW3 490
FOR SETOUT DETAILS

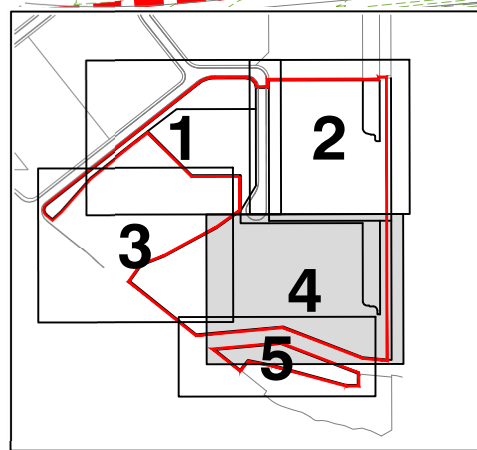
BASIN ACCESS 02 DRIVEWAY.
REFER TO DWG 5941 ENG CW3 490 FOR
CONCRETE JOINTING PLAN AND DETAILS.
REFER TO DWG 5941 ENG CW3 453
LONGITUDINAL SECTION.
REFER TO DWG 5941 ENG CW3 425
CONTROL LINE SETOUT TABLE

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

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KEY PLAN
NOT TO SCALE

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planning | environment | landscape | engineering | survey
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Gold Coast | 76 Business Street, Yatala QLD | PO Box 392, Beenleigh 4207

Client:

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Project:

VANTAGE YATALA
STAGE 3

Site Address:

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DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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ROADWORKS AND
DRAINAGE LAYOUT
PLAN SHEET 4 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

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1:500 (A1) 1:1000 (A3)

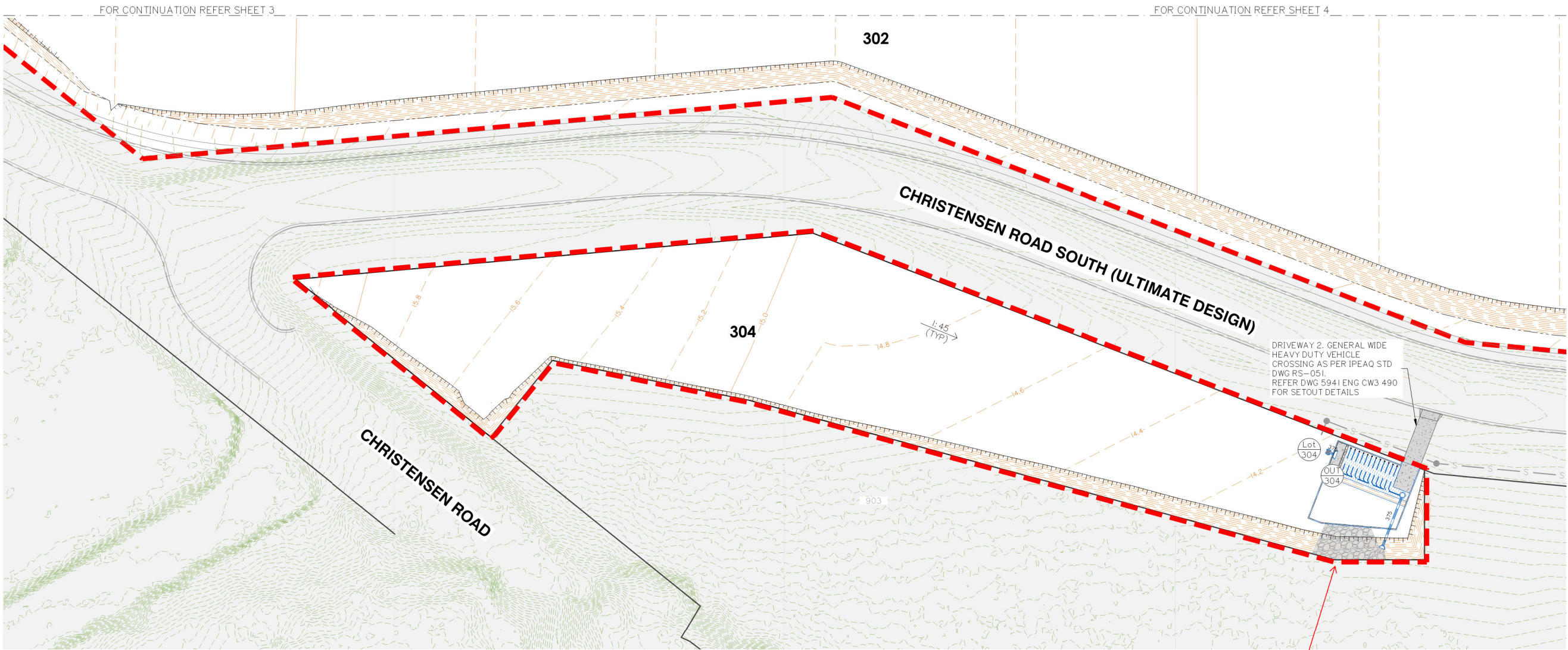
PROJECT NORTH POINT

Project No.: 5941

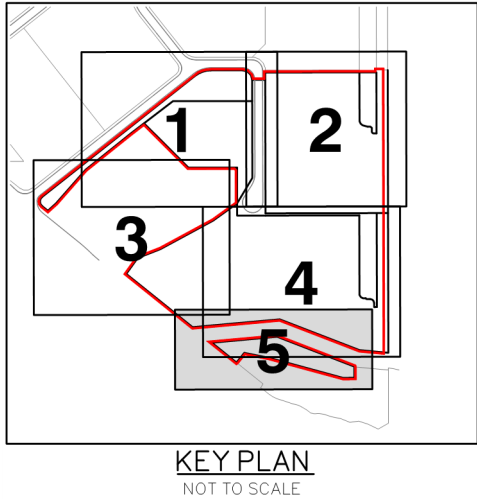
Designed: JH
Approved: MG
RPEQ: 16939
Signed:
Date: 28/09/2023

Drawing No.: 5941 ENG CW3 413
Revision: C

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Basin 3 is private and does not form part of this approval.



Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
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Drawing Title:

ROADWORKS AND
DRAINAGE LAYOUT
PLAN SHEET 5 OF 5

B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	JH	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

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A3 REDUCED

Scale:

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1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



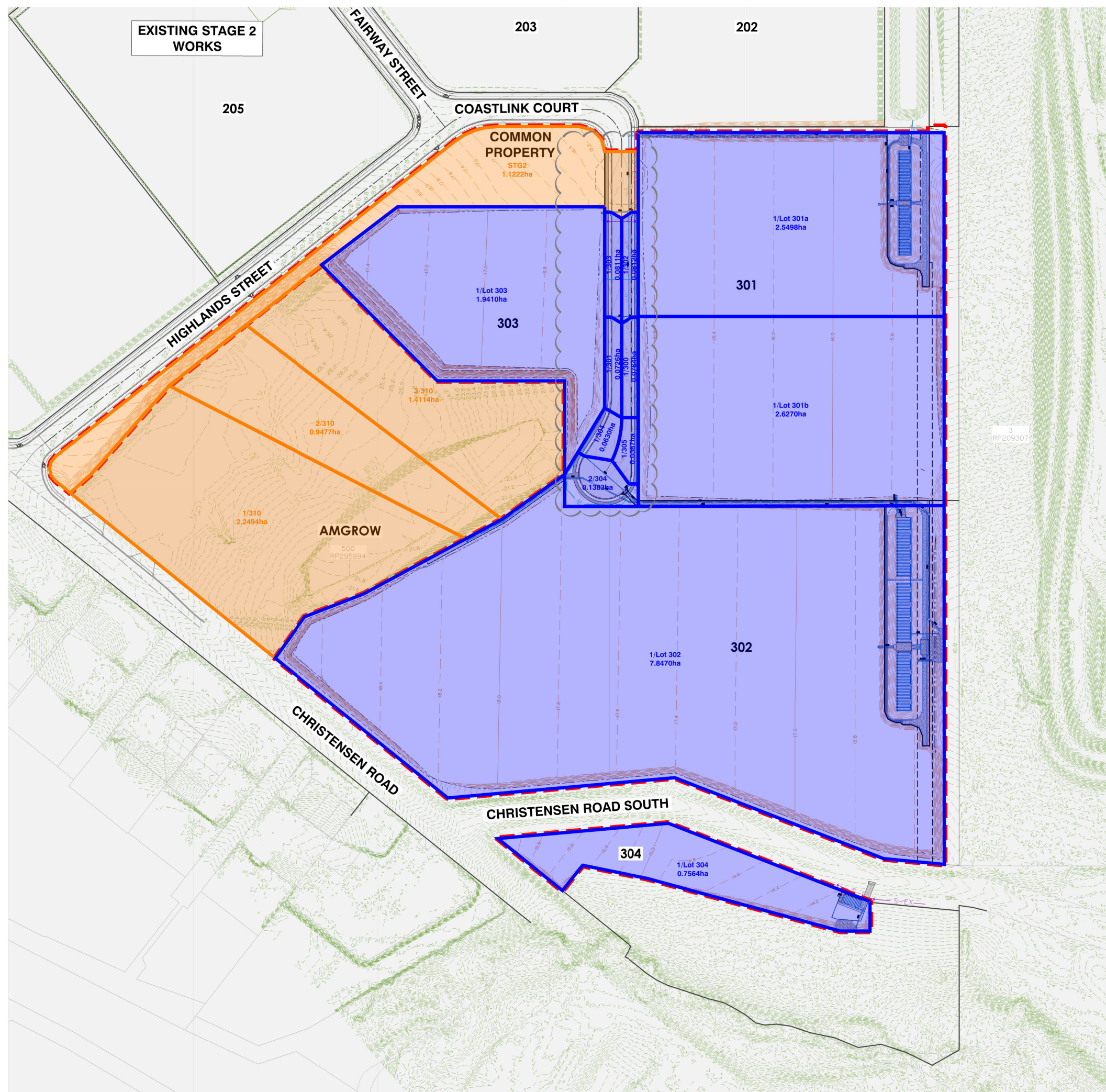
Project No.	5941	Revision	B
Designed:	JH	Drafted:	JH
Approved:	MG		
RPEQ	16939		
Signed:			
Date:	28/09/2023		
Drawing No:	5941 ENG CW3 414		

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Application No.: OPW/2023/1136

Dated: 14 February 2024

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STORMWATER DRAINAGE CATCHMENT PLAN

STORMWATER CATCHMENT TABLE

CATCHMENT	AREA (ha)
1/300	0.0764
1/301	0.0726
1/302	0.0812
1/303	0.0811
1/304	0.0630
2/304	0.1383
1/305	0.0578
1/310	2.2494
2/310	0.9477
3/310	1.4114
1/Lot301a	2.5498
1/Lot301b	2.6270
1/Lot302	7.8470
1/Lot303	1.9410
1/Lot304	0.7564
STG2	1.1222



Client:



Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
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Drawing Title:

STORMWATER DRAINAGE CATCHMENT PLAN

C	08/02/24	FOOTPATH AMENDED	JH	MG	
B	06/11/23	LAYOUT UPDATED	ML	MG	
A	25/05/23	ORIGINAL ISSUE	JH	MG	
Rcv	Date	Description	DPM	CHK	

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



0 25 50 75 100m
1:1250 (A1) 1:2500 (A3)

PROJECT NORTH POINT



Project No. 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

16939

Signed:

Michael Kane

Date:

28/09/2023

Drawing No:

Revision

5941 ENG CW3 500

C

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

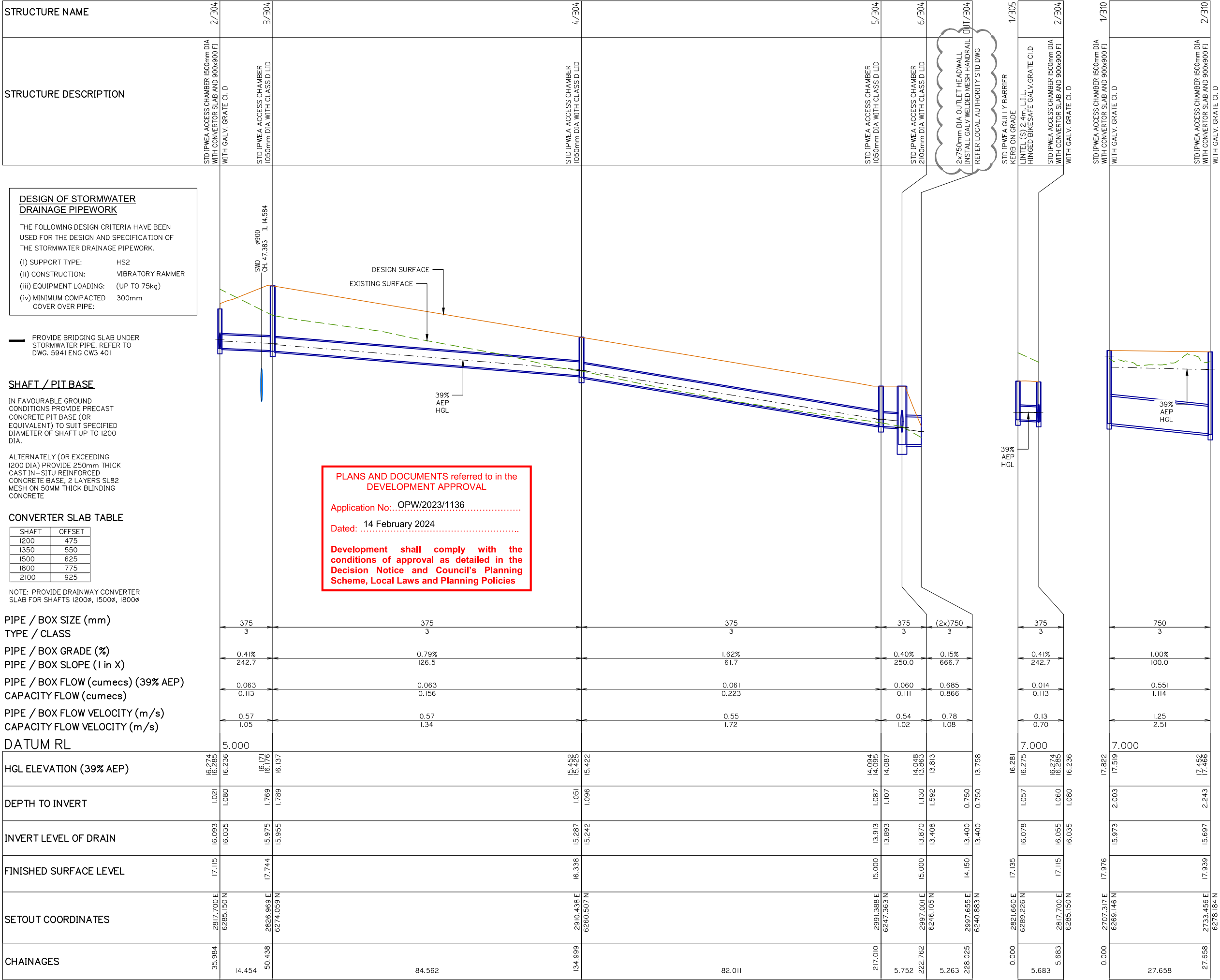
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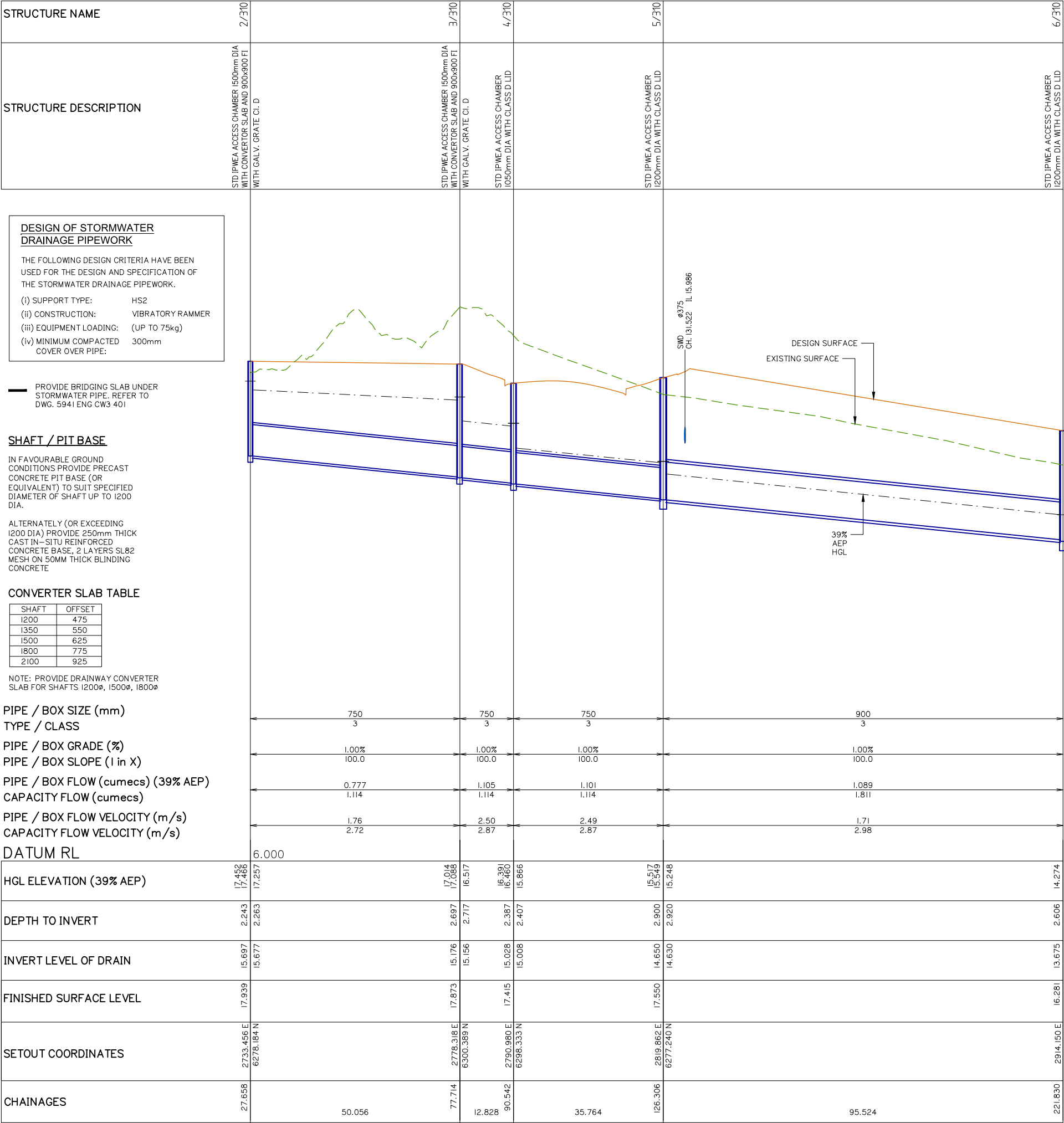
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Application No: OPW/2023/1136

Dated: 14 February 2024

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STRUCTURE NAME	6/310
STRUCTURE DESCRIPTION	STD IPWEA ACCESS CHAMBER 1200mm DIA WITH CLASS D LID

DESIGN OF STORMWATER DRAINAGE PIPEWORK

THE FOLLOWING DESIGN CRITERIA HAVE BEEN USED FOR THE DESIGN AND SPECIFICATION OF THE STORMWATER DRAINAGE PIPEWORK.

(i) SUPPORT TYPE: HS2
(ii) CONSTRUCTION: VIBRATORY RAMMER
(iii) EQUIPMENT LOADING: (UP TO 75kg)
(iv) MINIMUM COMPACTED COVER OVER PIPE: 300mm

— PROVIDE BRIDGING SLAB UNDER STORMWATER PIPE. REFER TO DWG. 5941 ENG CW3 401

SHAFT / PIT BASE

IN FAVOURABLE GROUND CONDITIONS PROVIDE PRECAST CONCRETE PIT BASE (OR EQUIVALENT) TO SUIT SPECIFIED DIAMETER OF SHAFT UP TO 1200 DIA.

ALTERNATELY (OR EXCEEDING 1200 DIA) PROVIDE 250mm THICK CAST IN-SITU REINFORCED CONCRETE BASE, 2 LAYERS SL82 MESH ON 50mm THICK BLINDING CONCRETE

CONVERTER SLAB TABLE

SHAFT	OFFSET
1200	475
1350	550
1500	625
1800	775
2100	925

NOTE: PROVIDE DRAINWAY CONVERTER SLAB FOR SHAFTS 1200ø, 1500ø, 1800ø

PIPE / BOX SIZE (mm)
TYPE / CLASS
PIPE / BOX GRADE (%)
PIPE / BOX SLOPE (l in x)
PIPE / BOX FLOW (cumecs) (39% AEP)
CAPACITY FLOW (cumecs)
PIPE / BOX FLOW VELOCITY (m/s)
CAPACITY FLOW VELOCITY (m/s)

DATUM RL 2.000

HGL ELEVATION (39% AEP)

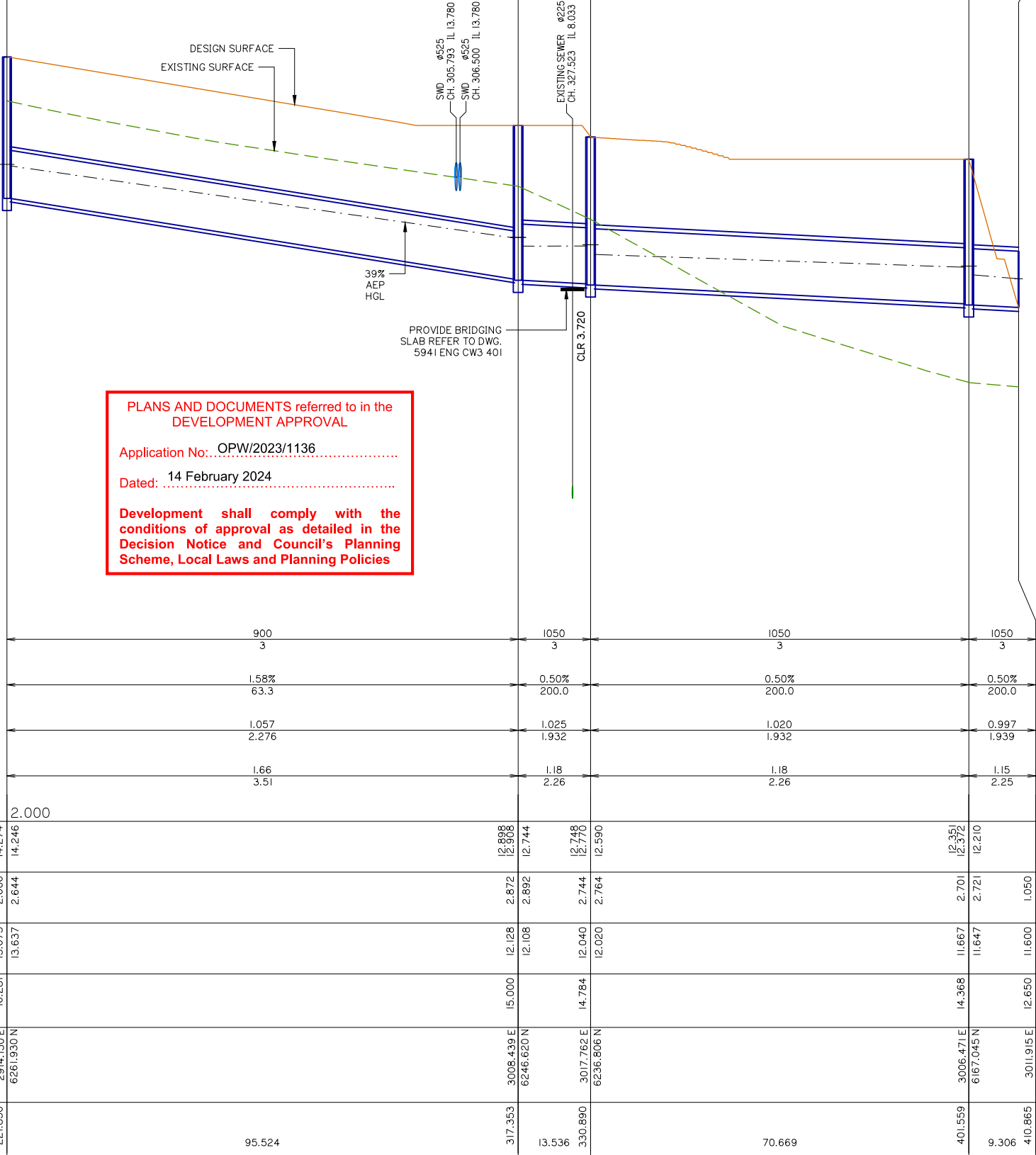
DEPTH TO INVERT

INVERT LEVEL OF DRAIN

FINISHED SURFACE LEVEL

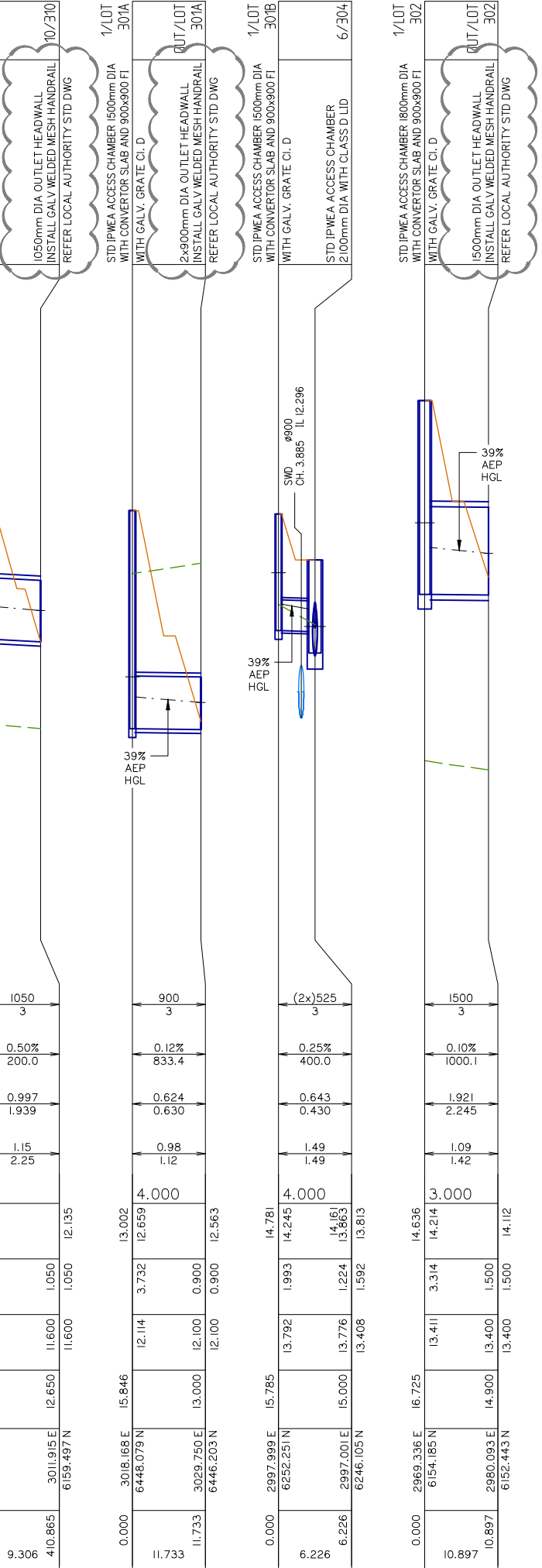
SETOUT COORDINATES

CHAINAGES



LINE310

STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 5 OF 6



LINE Lot 301a LINE Lot 301b LINE Lot 302

Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST
Level Datum: AHD
Meridian: PSM:
RL:

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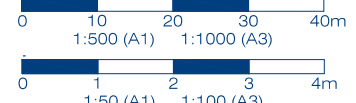
Drawing Title:

STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 5 OF 6

Rev	Date	Description	JH	MG
C	08/02/24	NOTE AMENDED	JH	MG
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES
A1 UNREDUCED
A3 REDUCED

Scale:



PROJECT NORTH POINT

Project No: 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 514	Revision: C

**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: OPW/2023/1136

Dated: 14 February 2024

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est 1985

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Ook Coast | 78 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

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Site Address:
LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:	
Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
Meridian:	
PSM:	
RL:	

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Drawing Title:

STORMWATER DRAINAGE
CALCULATION TABLE
SHEET 1 OF 2

[illegible]

Scale:

PROJECT NORTH POINT

Project No. 5941

Designed: JH	Drafted: JH
--------------	-------------

Approved:	MG

RPEQ	16939
Signed:	

Signed:	
Date:	28/09/2023

Drawing No:	Revision
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5941 ENG CW3 550 B

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**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: OPW/2023/1136

Dated: 14 February 2024

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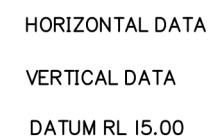
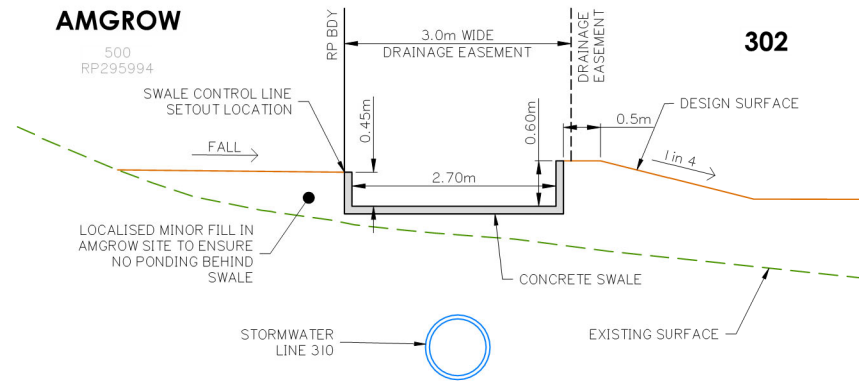
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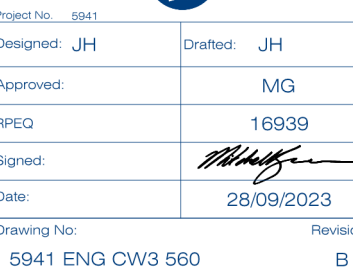
**Development shall comply with the
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PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	2678.027	6260.605	18.467	70°55'32.00"
	10.000	2687.478	6263.873	18.453	70°55'32.00"
	20.000	2696.929	6267.141	18.440	70°55'32.00"
	30.000	2706.380	6270.409	18.427	70°55'32.00"
	40.000	2715.831	6273.677	18.413	70°55'32.00"
IP 2	50.000	2725.282	6276.945	18.400	70°55'32.00"
	58.035	2732.876	6279.571	18.389	
	60.000	2734.637	6280.443	18.387	63°40'02.00"
	70.000	2743.599	6284.878	18.373	63°40'02.00"
	80.000	2752.562	6289.314	18.360	63°40'02.00"
	90.000	2761.524	6293.750	18.347	63°40'02.00"
	100.000	2770.486	6298.186	18.334	63°40'02.00"
IP 3	110.000	2779.449	6302.622	18.320	63°40'02.00"
	110.140	2779.574	6302.684	18.320	63°40'02.00"

[illegible]

AI HORZ SCALE I: 500
AI VERT SCALE I: 50

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

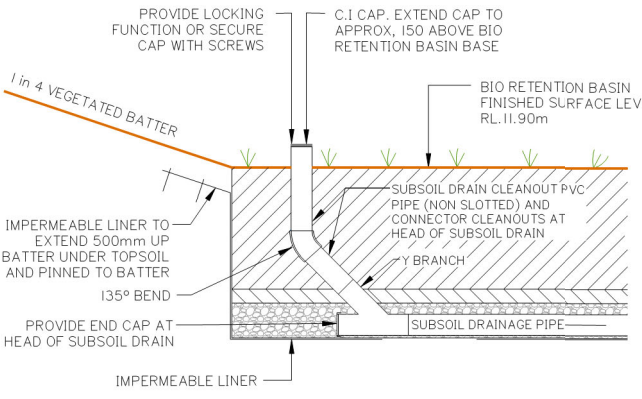
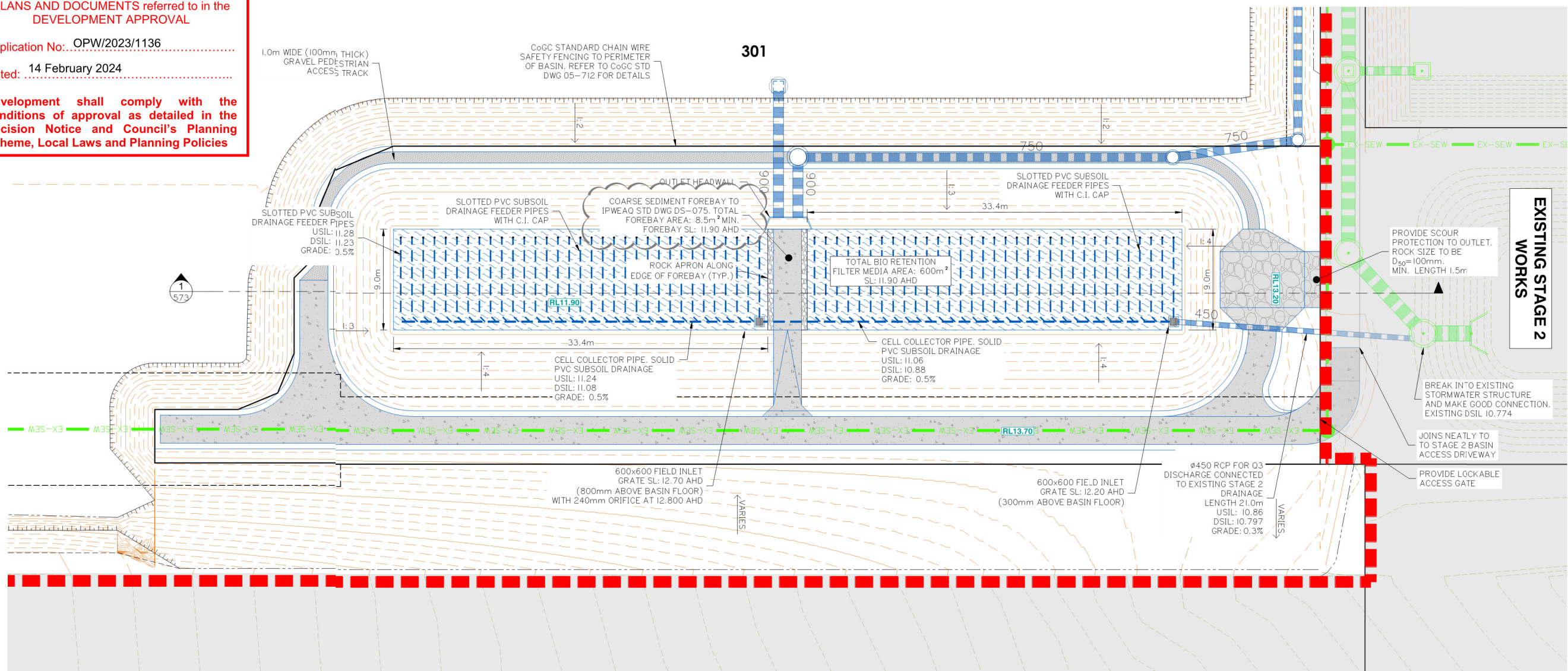


PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

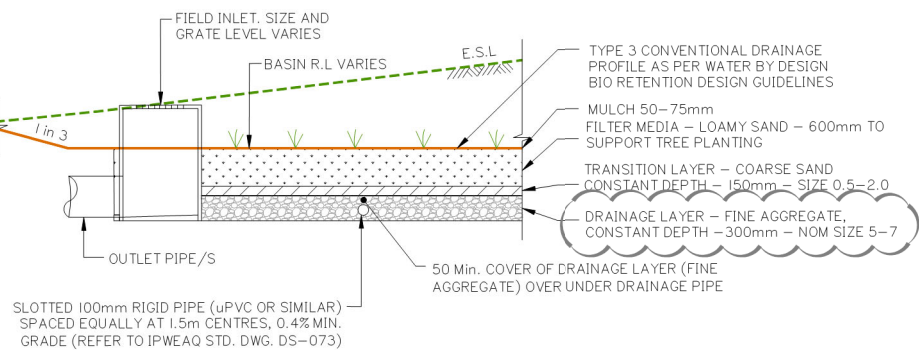
Application No.: OPW/2023/1136

Dated: 14 February 2024

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SUBSOIL DRAIN CLEANOUT – IN BASIN
NOT TO SCALE



TYPICAL BIO-RETENTION BASIN DETAIL
N.T.S

WATER SURFACE LEVEL TABLE

EVENT (ARI)	LEVEL (AHD)
Q1	12.871
Q2	12.984
Q5	13.099
Q10	13.148
Q20	13.260
Q50	13.341
Q100	13.388

BIO RETENTION I – COARSE SEDIMENT FOREBAY SIZING GUIDE CALCULATIONS

$$V_s = A_c \times R \times L_0 \times F = 2.525 \text{ m}^3$$
$$R = 1 - \left[1 + \frac{1}{n} \times \frac{V_s}{0.7 A_c} \right]^{-n}$$
$$0.8 = 1 - \left[1 + \frac{0.10}{0.5 \times 0.30 A_c} \right]^{-0.5} \quad A_c = 36 \text{ m}^2$$
$$D_s = \frac{V_s}{A_c} \quad D_s = \frac{2.5248}{36.00} = 0.070 \text{ m}$$

OPTIMIZATION OF MINIMUM FOREBAY SIZE:

$$D_s = 0.3 \text{ m} \quad A_c = \frac{2.5248 \text{ m}^3}{0.3} = 8.419 \text{ m}^2$$

CALCULATED FOR 1 FOREBAY AT 8.419m².

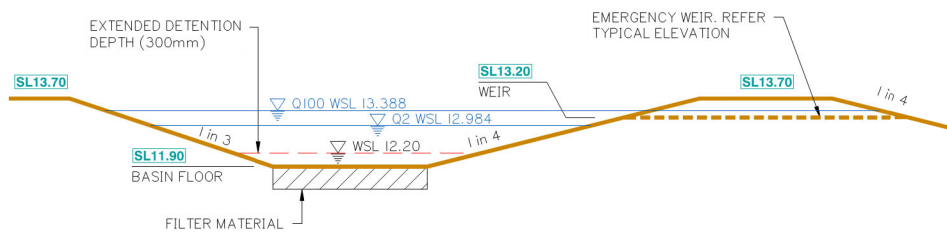
$$V_s = 2.5248 \text{ m}^3 \text{ (Works Above)}$$
$$A_c = 5.263 \text{ ha (Refer Catchment Plans)}$$

UNMITIGATED POST-DEVELOPMENT FLOW

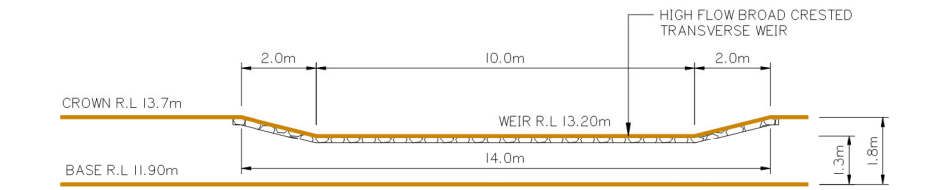
$$Q = 0.3 \text{ m}^3/\text{s} \text{ (3 month ARI)}$$
$$V_s = 0.1 \text{ m/s (Recommended for Imm Particle)}$$
$$R = 0.8 \text{ (Recommended 80% Capture)}$$
$$L_0 = 0.6 \text{ (From Healthy Waterways Guide)}$$
$$n = 0.5 \text{ (Recommended Turbulence)}$$
$$F_c = 1.0 \text{ (Frequency of Clean Out / Yr)}$$

REFER TO BIO RETENTION TECHNICAL DESIGN GUIDELINES FOR FURTHER INFORMATION

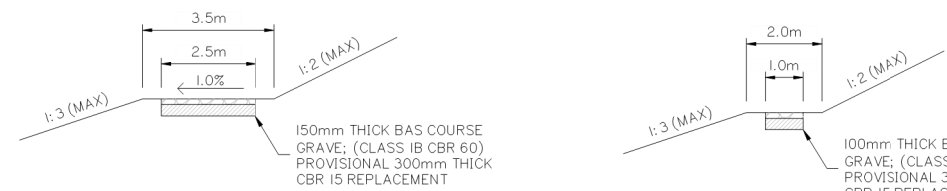
NOTE:
1. FOR GENERAL DRAWING LEGENDS, REFER TO SHEET 004
2. FOR GENERAL NOTES, REFER TO SHEETS 002 AND 003



BASIN I PROFILE
NOT TO SCALE



BASIN I EMERGENCY WEIR ELEVATION
SCALE 1:100



TYPICAL SECTION
MAINTENANCE ACCESS TRACK FOR VEHICLES
SCALE 1:100

TYPICAL SECTION
MAINTENANCE ACCESS TRACK FOR PEDESTRIANS
SCALE 1:100

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Drawing Title: OPERATIONAL PHASE BIO RETENTION BASIN 1 LAYOUT PLAN

Rev	Date	Description	DRN	CHK
D	08/02/24	FOREBAY DETAILS ADDED	JH	MG
C	08/01/24	NOTES ADDED	JH	MG
B	06/11/23	LAYOUT UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES
A1 UNREDUCED
A3 REDUCED

Scale: 0 4 8 12 16m
1:200 (A1) 1:400 (A3)

PROJECT NORTH POINT

Project No.: 5941	
Designed: JH	Drafted: JH
Approved: MG	
RPEQ: 16939	
Signed: [Signature]	
Date: 28/09/2023	
Drawing No.: 5941 ENG CW3 570	Revision: D

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

STAGE 3

Site Address:

**LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207**

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

**OPERATIONAL PHASE
BIO RETENTION BASIN 2
LAYOUT PLAN**

Rev	Date	Description	DRN	CHK
D	08/02/24	FOREBAY DETAILS ADDED	JH	MG
C	08/01/24	NOTES ADDED	JH	MG
B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

Rev Date Description DRN CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

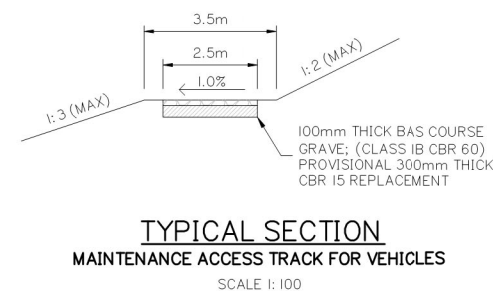
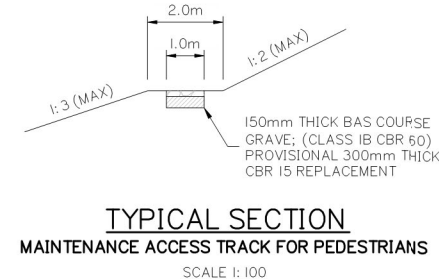
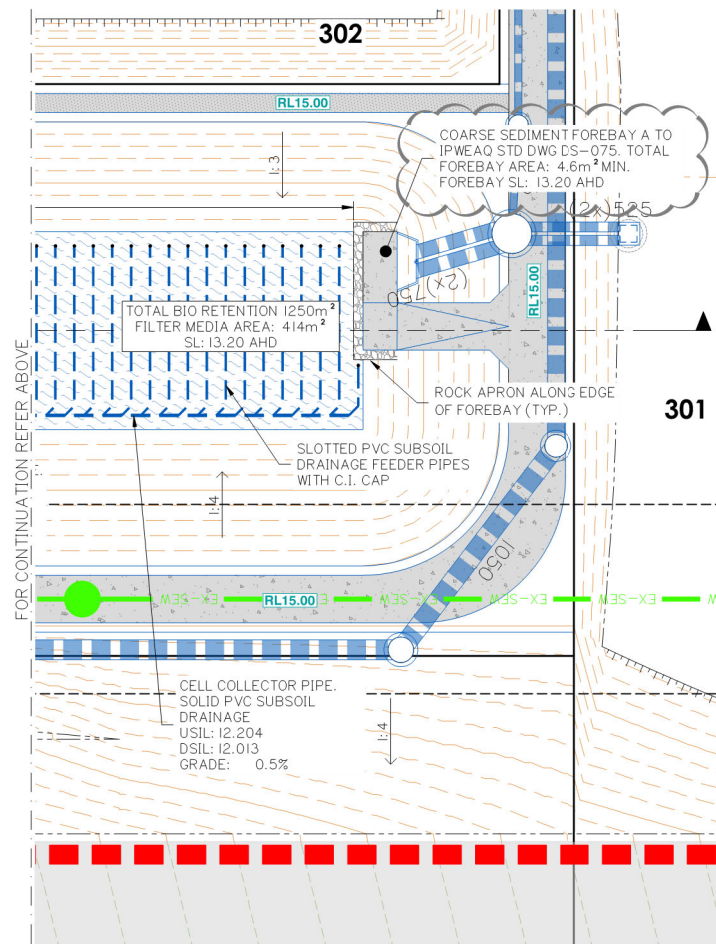
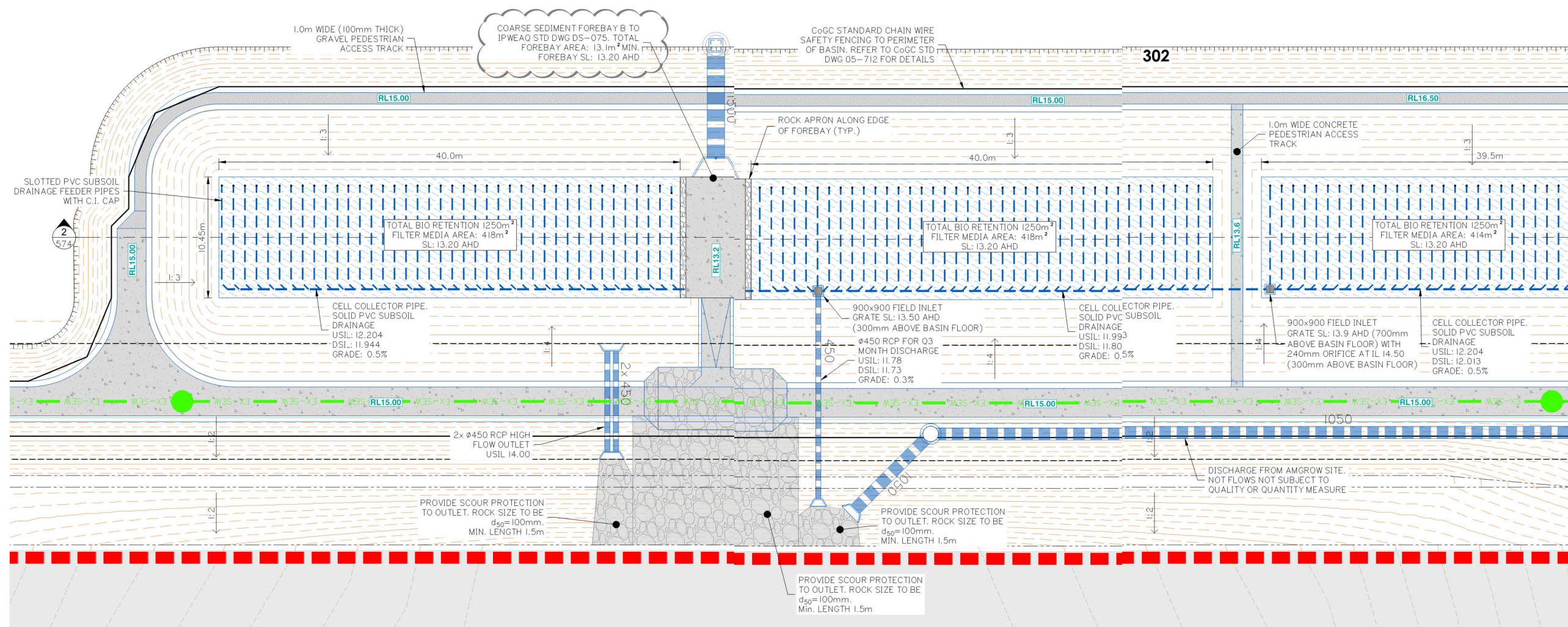
A1 UNREDUCED
A3 REDUCED



PROJECT NORTH POINT



Project No.: 5941	
Designed: JH	Drafted: JH
Approved: MG	
RPEQ: 16939	
Signed:	
Date: 28/09/2023	
Drawing No: 5941 ENG CW3 571	Revision: D



WATER SURFACE LEVEL TABLE

EVENT (ARI)	LEVEL (AHD)
Q1	14.932
Q2	14.079
Q5	14.225
Q10	14.333
Q20	14.440
Q50	14.580
Q100	14.689

- NOTE:**
- FOR GENERAL DRAWING LEGENDS, REFER TO SHEET 004
 - FOR GENERAL NOTES, REFER TO SHEETS 002 AND 003
 - REFER TO DWG 570 FOR TYPICAL FILTER MEDIA DETAILS

BIO RETENTION 2 – COARSE SEDIMENT FOREBAY SIZING GUIDE CALCULATIONS

$$V_s = A_c \times R \times L_o \times F = 5.286 \text{ m}^3$$
$$R = 1 - \left[1 + \frac{1}{n} \times \frac{V_s}{Q/A_c} \right]^{-n}$$
$$0.8 = 1 - \left[1 + \frac{0.10}{0.307/A_c} \right]^{-0.5} \quad A_f = 75.6 \text{ m}^2$$
$$D_s = \frac{V_s}{A_f} \quad D_s = \frac{5.286}{36.00} = 0.070 \text{ m}$$

OPTIMIZATION OF MINIMUM FOREBAY SIZE:

$$D_s = 0.3 \text{ m} \quad A_f = \frac{5.286 \text{ m}^3}{0.3} = 17.621 \text{ m}^2$$

CALCULATED FOR 2x FOREBAYS: 17.621m² (TOTAL)

CONTRIBUTING CATCHMENTS:
FOREBAY A: 2.863ha (26% OF TOTAL CATCHMENT)
FOREBAY B: 8.15ha (74% OF TOTAL CATCHMENT)

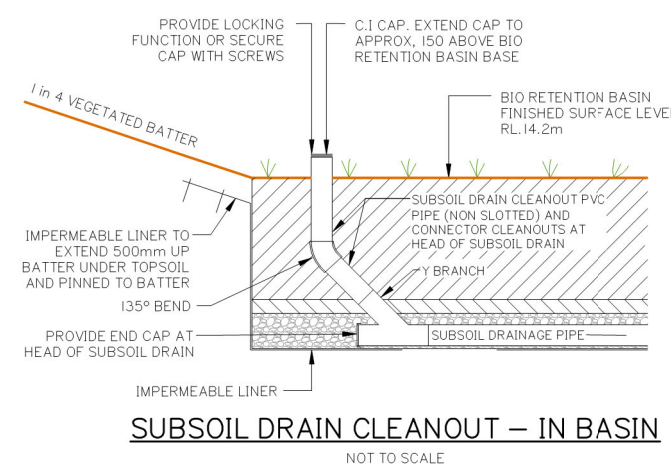
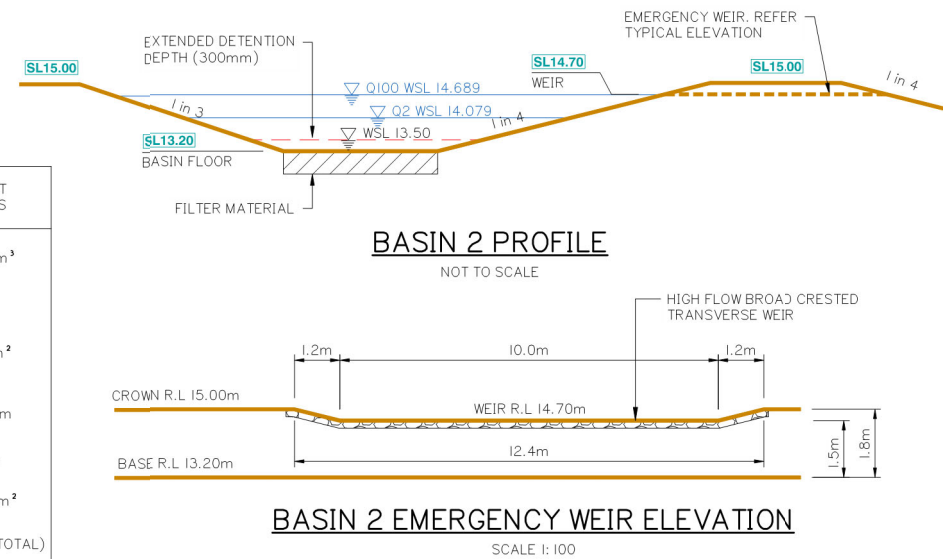
MINIMUM FOREBAY SIZE FOR CONTRIBUTING CATCHMENTS:
FOREBAY A: 4.6m² (MIN)
FOREBAY B: 13.1m² (MIN)

$$V_s = 5.286 \text{ m}^3 \quad (\text{Workings Above})$$
$$A_c = 11.013 \text{ ha} \quad (\text{Refer Catchment Plans})$$

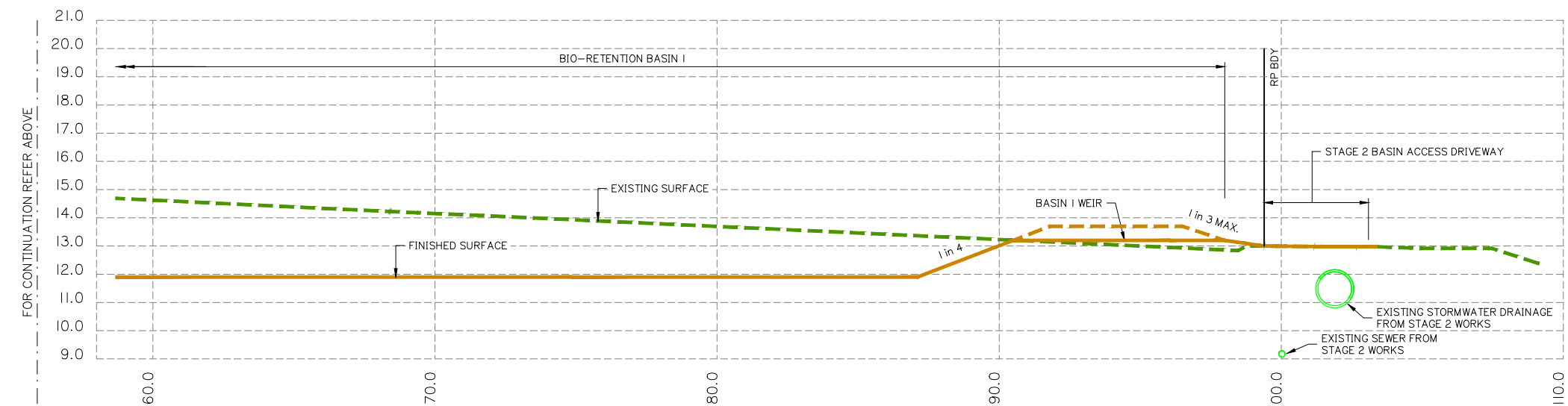
UNMITIGATED POST-DEVELOPMENT FLOW
 $Q = 0.4776 \text{ m}^3/\text{s}$ (3 month ARI)

$$V_s = 0.1 \text{ m}^3/\text{s} \quad (\text{Recommended for Imm Particle})$$
$$R = 0.8 \quad (\text{Recommended 80\% Capture})$$
$$L_o = 0.6 \quad (\text{From Healthy Waterways Guide})$$
$$n = 0.5 \quad (\text{Recommended Turbulence})$$
$$F_c = 1.0 \quad (\text{Frequency of Clean Out / Yr})$$

REFER TO BIO RETENTION TECHNICAL DESIGN GUIDELINES FOR FURTHER INFORMATION



OPERATIONAL PHASE BIO RETENTION BASIN 2 LAYOUT PLAN



SECTION I

SCALE: 570

I: 100 HORIZ.

I: 100 VERT.



Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

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Drawing Title:

BIO RETENTION BASIN
SECTIONS
SHEET 1 OF 2

A	25/05/23	ORIGINAL ISSUE	JH	MC	
Rev	Date	Description	DRN	CHK	
DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.			A1 UNREDUCED		
CULVERT AND PIPE SIZES IN MILLIMETRES			A3 REDUCED		

Scale:

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

PROJECT NORTH POINT

Project No. 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 573	
Revision: A	

**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: OPW/2023/1136

Dated: 14 February 2024

**Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies**

Client:



Project:
**VANTAGE YATALA
STAGE 3**

Site Address:
**LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207**

RPD:
Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST
Level Datum: AHD
Meridian:
PSM:
RL:

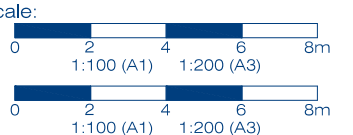
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Drawing Title:
**BIO RETENTION BASIN
SECTIONS
SHEET 2 OF 2**

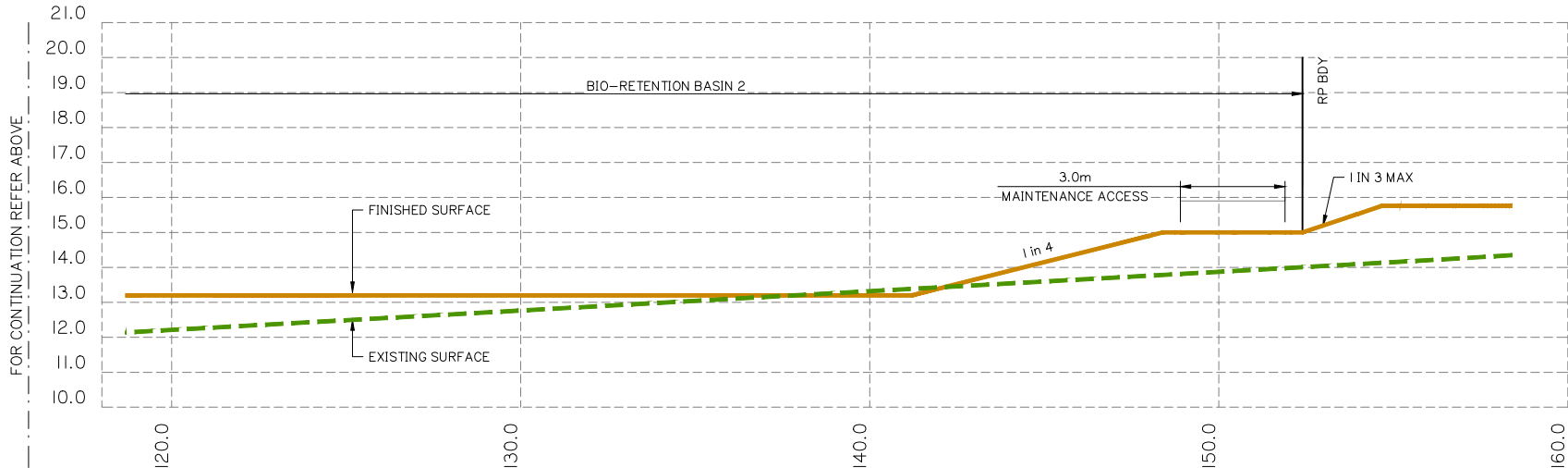
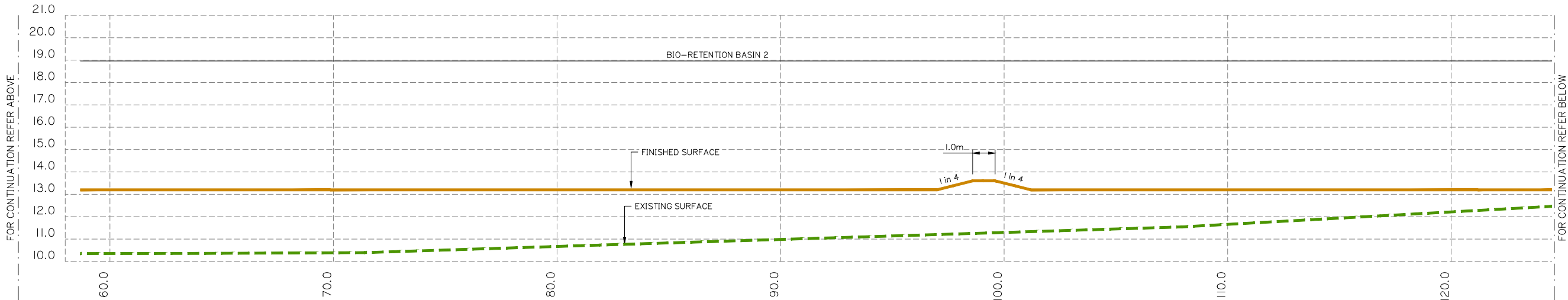
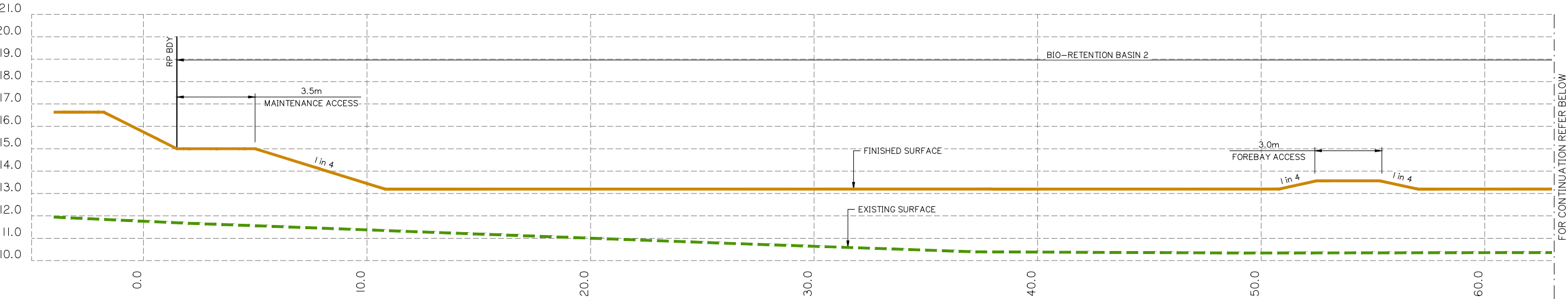
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES
A1 UNREDUCED
A3 REDUCED



PROJECT NORTH POINT

ect No: 5941	
signed: JH	Drafted: JH
proved:	MG
EQ	16939
igned:	
te:	28/09/2023
rawing No:	Revision
5941 ENG CW3 574	B



SECTION 2
SCALE:
H: 100 HORIZ.
V: 100 VERT.

**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**
Application No: OPW/2023/1136
Dated: 14 February 2024
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Project: VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:	
Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
Meridian:	
PSM:	
RL:	

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Drawing Title:

BIO RETENTION BASIN
FOREBAY SETOUT PLAN

B	06/11/23	LAYOUT UPDATED	ML	MG	
A	25/05/23	ORIGINAL ISSUE	JH	MG	
Rev	Date	Description	DRN	CHK	
DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE CULVERT AND PIPE SIZES IN MILLIMETRES			A1 UNREDUCED A3 REDUCED		

Scale:



0 4 8 12 16m

1:200 (A1) 1:400 (A3)

PROJECT NORTH POINT



Project No: 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 575	
Revision: B	

FOREBAY SETOUT TABLE

POINT	EASTING	NORTHING	LEVEL (AHD)
01	3030.675	6445.598	11.900
02	3031.075	6448.066	11.900
03	3039.959	6446.627	11.900
04	3039.559	6444.159	11.900
05	2995.647	6238.362	13.200
06	2995.935	6240.138	13.200
07	3002.105	6239.137	13.200
08	3001.816	6237.361	13.200
09	2981.276	6149.618	13.200
10	2982.108	6154.751	13.200
11	2992.423	6153.080	13.200
12	2991.592	6147.947	13.200
13	2916.039	5990.062	12.700
14	2919.072	5995.228	12.700
15	2920.788	5994.221	12.700
16	2917.758	5989.054	12.700

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

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BIO RETENTION BASIN FOREBAY SETOUT PLAN

Appendix C – Approved Civil and Landscape OPW Plan

CIVIL OPERATIONAL WORKS

VANTAGE YATALA - STAGE 3



planning | environment | landscape | engineering | survey
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Gold Coast | 76 Business Street, Yatala QLD | PO Box 392, Beenleigh 4207

DRAWING INDEX		
DRAWING No.	REV No.	DRAWING TITLE
5941 ENG CW3 001	E	DRAWING INDEX AND LOCALITY PLAN
5941 ENG CW3 002	A	GENERAL NOTES SHEET 1 OF 2
5941 ENG CW3 003	A	GENERAL NOTES SHEET 2 OF 2
5941 ENG CW3 004	A	LEGEND
5941 ENG CW3 005	B	KEY LAYOUT PLAN
5941 ENG CW3 010	B	EXISTING SURFACE LAYOUT PLAN
5941 ENG CW3 100	A	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
5941 ENG CW3 110	C	SEDIMENT AND EROSION CONTROL PLAN SHEET 1 OF 5
5941 ENG CW3 111	C	SEDIMENT AND EROSION CONTROL PLAN SHEET 2 OF 5
5941 ENG CW3 112	B	SEDIMENT AND EROSION CONTROL PLAN SHEET 3 OF 5
5941 ENG CW3 113	C	SEDIMENT AND EROSION CONTROL PLAN SHEET 4 OF 5
5941 ENG CW3 114	B	SEDIMENT AND EROSION CONTROL PLAN SHEET 5 OF 5
5941 ENG CW3 310	A	CONSTRUCTION PHASE SEDIMENT BASIN 1 LAYOUT
5941 ENG CW3 311	B	CONSTRUCTION PHASE SEDIMENT BASIN 2 LAYOUT
5941 ENG CW3 312	B	CONSTRUCTION PHASE SEDIMENT BASIN 3 LAYOUT
5941 ENG CW3 313	A	CONSTRUCTION PHASE SEDIMENT BASIN TYPICAL SECTIONS
5941 ENG CW3 380	B	OVERALL SERVICES LAYOUT PLAN SHEET 1 OF 5
5941 ENG CW3 381	C	OVERALL SERVICES LAYOUT PLAN SHEET 2 OF 5
5941 ENG CW3 382	A	OVERALL SERVICES LAYOUT PLAN SHEET 3 OF 5
5941 ENG CW3 383	C	OVERALL SERVICES LAYOUT PLAN SHEET 4 OF 5
5941 ENG CW3 384	B	OVERALL SERVICES LAYOUT PLAN SHEET 5 OF 5
5941 ENG CW3 400	B	ROADWORKS AND DRAINAGE TYPICAL DETAILS SHEET 1 OF 3
5941 ENG CW3 401	A	ROADWORKS AND DRAINAGE TYPICAL DETAILS SHEET 2 OF 3
5941 ENG CW3 402	B	ROADWORKS AND DRAINAGE TYPICAL DETAILS SHEET 3 OF 3
5941 ENG CW3 410	B	ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 5
5941 ENG CW3 411	C	ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 2 OF 5
5941 ENG CW3 412	A	ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 3 OF 5
5941 ENG CW3 413	C	ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 4 OF 5
5941 ENG CW3 414	B	ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 5 OF 5
5941 ENG CW3 420	B	CONTROL LINE LAYOUT PLAN SHEET 1 OF 2
5941 ENG CW3 421	B	CONTROL LINE LAYOUT PLAN SHEET 2 OF 2
5941 ENG CW3 425	B	CONTROL LINE SETOUT TABLES
5941 ENG CW3 450	A	COASTLINK COURT LONGITUDINAL SECTION
5941 ENG CW3 451	B	BASIN ACCESS 01 LONGITUDINAL SECTION
5941 ENG CW3 452	B	BASIN ACCESS 01a LONGITUDINAL SECTION
5941 ENG CW3 453	C	BASIN ACCESS 02 LONGITUDINAL SECTION
5941 ENG CW3 454	C	BASIN ACCESS 02 AND 02a LONGITUDINAL SECTIONS
5941 ENG CW3 470	C	ROADWORKS CROSS SECTIONS SHEET 1 OF 5
5941 ENG CW3 471	C	ROADWORKS CROSS SECTIONS SHEET 2 OF 5
5941 ENG CW3 472	C	ROADWORKS CROSS SECTIONS SHEET 3 OF 5
5941 ENG CW3 473	C	ROADWORKS CROSS SECTIONS SHEET 4 OF 5
5941 ENG CW3 474	C	ROADWORKS CROSS SECTIONS SHEET 5 OF 5
5941 ENG CW3 480	B	CUL-DE-SAC PLAN AND SETOUT TABLE
5941 ENG CW3 481	A	CUL-DE-SAC LONGITUDINAL SECTION
5941 ENG CW3 490	C	VEHICLE CROSSING AND ACCESS DRIVEWAY LAYOUT PLAN
5941 ENG CW3 500	C	STORMWATER DRAINAGE CATCHMENT PLAN
5941 ENG CW3 510	B	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 6
5941 ENG CW3 511	C	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 6
5941 ENG CW3 512	C	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 3 OF 6
5941 ENG CW3 513	B	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 4 OF 6
5941 ENG CW3 514	C	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 5 OF 6
5941 ENG CW3 515	C	STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 6 OF 6
5941 ENG CW3 550	B	STORMWATER DRAINAGE CALCULATION TABLE SHEET 1 OF 2
5941 ENG CW3 551	B	STORMWATER DRAINAGE CALCULATION TABLE SHEET 2 OF 2
5941 ENG CW3 560	B	SWALE LAYOUT AND DETAILS PLAN
5941 ENG CW3 570	D	OPERATIONAL PHASE BIO RETENTION BASIN 1 LAYOUT PLAN
5941 ENG CW3 571	D	OPERATIONAL PHASE BIO RETENTION BASIN 2 LAYOUT PLAN
5941 ENG CW3 572	D	OPERATIONAL PHASE BIO RETENTION BASIN 3 LAYOUT PLAN
5941 ENG CW3 573	A	BIO RETENTION BASIN SECTIONS SHEET 1 OF 2
5941 ENG CW3 574	B	BIO RETENTION BASIN SECTIONS SHEET 2 OF 2
5941 ENG CW3 575	B	BIO RETENTION BASIN FOREBAY SETOUT PLAN
5941 ENG CW3 610	B	SEWER RETICULATION LAYOUT PLAN SHEET 1 OF 4
5941 ENG CW3 611	A	SEWER RETICULATION LAYOUT PLAN SHEET 2 OF 4
5941 ENG CW3 612	A	SEWER RETICULATION LAYOUT PLAN SHEET 3 OF 4
5941 ENG CW3 613	B	SEWER RETICULATION LAYOUT PLAN SHEET 4 OF 4
5941 ENG CW3 630	B	SEWER RETICULATION LONGITUDINAL SECTIONS
5941 ENG CW3 700	A	WATER RETICULATION NOTES AND DETAILS
5941 ENG CW3 710	B	WATER RETICULATION LAYOUT PLAN
5941 ENG CW3 800	A	SIGNS AND LINEMARKING NOTES AND DETAILS
5941 ENG CW3 810	C	SIGNS AND LINEMARKING LAYOUT PLAN
5941 ENG CW3 900	B	SWEPT PATH ANALYSIS PLAN

STANDARD DRAWINGS			
DRAWING No.	REV.	ASSOCIATION	DRAWING TITLE
DS-010	F	IPWEA	ACCESS CHAMBER – STORMWATER ACCESS CHAMBER DETAILS – 1050 TO 2100 DIA
DS-015	C	IPWEA	ACCESS CHAMBER – MANHOLE FRAME – ROADWAY AND NON ROADWAY – 1050 TO 2100 DIA
DS-018	C	IPWEA	ACCESS CHAMBER – MANHOLE RISER DETAILS
DS-019	C	IPWEA	ACCESS CHAMBER – MANHOLE ROVER (ROADWAY)
DS-020	C	IPWEA	ACCESS CHAMBER – MANHOLE ROVER (NON ROADWAY)
DS-021	C	IPWEA	ACCESS CHAMBER – MANHOLE COVER CONCRETE INFILL (PEDESTRIAN TRAFFIC) 1050 TO 2100 DIA
DS-030	F	IPWEA	EXCAVATION, BEDDING & BACKFILL – RIGID & FLEXIBLE DRAINAGE PIPES
DS-031	D	IPWEA	EXCAVATION, BEDDING & BACKFILL PRECAST – BOX CULVERTS
DS-040	E	IPWEA	SEDIMENT CONTROL – SEDIMENT CONTROL DEVICES – SEDIMENT FENCE, ENTRY/EXIT SEDIMENT TRAP
DS-041	E	IPWEA	SEDIMENT CONTROL – SEDIMENT CONTROL DEVICES – KERB AND FIELD INLET, CHECK DAMS & STRAW BALES
DS-050	E	IPWEA	DRAINAGE PITS – FIELD INLET TYPE 1 AND TYPE 2
DS-061	B	IPWEA	DRAINAGE PITS – KERB INLET – PRECAST LINTEL DETAILS
DS-062	D	IPWEA	DRAINAGE PITS – KERB INLET – GRATE AND FRAME
DS-063	C	IPWEA	DRAINAGE PITS – KERB INLET – LIP IN LINE – GENERAL ARRANGEMENT
DS-065	I	IPWEA	PATHWAYS – CONCRETE PATHWAY CONSTRUCTION DETAILS
DS-073	A	IPWEA	BIORETENTION DRAINAGE PROFILE – TYPE 3 – CONVENTIONAL
DS-075	A	IPWEA	LARGE BIORETENTION SEDIMENT FOREBAY
DS-076	A	IPWEA	BIORETENTION WEIR
DS-078	A	IPWEA	BIORETENTION STANDARD NOTES
GS-041	D	IPWEA	FENCING – CHAIN WIRE SECURITY FENCING
RS-049	E	IPWEA	VEHICLE CROSSING – RESIDENTIAL DRIVEWAYS – PLAN 1 OF 2
RS-050	G	IPWEA	VEHICLE CROSSING – RESIDENTIAL DRIVEWAYS – PLAN 2 OF 2
RS-080	F	IPWEA	KERB AND CHANNEL – PROFILES AND DIMENSIONS – INCLUDING EDGE RESTRAINTS, MEDIAN & CHANNEL
RS-090	J	IPWEA	KERB RAMPS – RAMPED PEDESTRIAN
RS-091	F	IPWEA	KERB RAMPS – RAMPED AND CUT THROUGH TREATMENTS – FOR PEDESTRIAN CROSSINGS, SLIP LANES AND MEDIANS
RS-094	F	IPWEA	KERB RAMPS – LOCATIONS AND CONFIGURATIONS
RS-130	F	IPWEA	ROAD FURNITURE – STREET NAME SIGN AND LOCATION (FINGERBOARD)
RS-131	G	IPWEA	ROAD FURNITURE – TRAFFIC SIGN INSTALLATION DETAILS
RS-140	F	IPWEA	SUBSOIL DRAINS – DETAILS AND LOCATION
RS-142	F	IPWEA	SUBSOIL DRAINS – ACCESS POINTS
SDI033	K	DTMR	KERB AND CHANNEL
SDI304	N	DTMR	PIPE CULVERTS – WINGWALLS, HEADWALLS AND APRON FOR PIPE DIA 750 TO 2400
02-003	2	CoGC	TYPICAL CROSS SECTIONS – COLLECTOR STREETS – PLAN 2 OF 2
02-005	I	CoGC	PUBLIC UTILITY PLANT CORRIDOR ALLOCATIONS IN PUBLIC ROAD VERGES
02-601	I	CoGC	NEW ROADS – SERVICE CONDUIT CROSSINGS
02-602	I	CoGC	ROAD CROSSING – TRENCH RESTORATION – FLEXIBLE PAVEMENTS
03-008	I	CoGC	FIELD INLET AND INTER-ALLOTMENT DRAINAGE PIT
03-101	I	CoGC	STORMWATER ACCESS CHAMBER 1050 DIA TO 1500 DIA
03-102	I	CoGC	STORMWATER ACCESS CHAMBER 1050 DIA TO 1500 DIA ROOF SLABS
03-201	I	CoGC	EXCAVATION AND BEDDING OF CONCRETE STORMWATER PIPES
05-014	I	CoGC	CHAIN WIRE FENCING – 1.8m HIGH

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1136
Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

SURVEY CONTROL DETAILS	
LEVEL DATUM	AHD
MERIDIAN	IS260952
PSM	I72620
PSM COORDINATES	LOCAL GRID
RL (m)	–



Source: qldglobe.information.qld.gov.au

LOCALITY PLAN

1:8000 (A1)

CLIENT



FPI QUEENSLAND
PTY. LTD.

VantageYatala

SITE ADDRESS

LOT 504 on SP329485
LOT 504 HOMESTEAD DRIVE
STAPYLTON QLD 4207

ISSUED FOR APPROVAL

DWG NO.5941 ENG CW3 001 - E

FEBRUARY 2024

1. CONTRACT DOCUMENTATION
ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION AND CoGC STANDARD DRAWINGS AND SPECIFICATIONS.
2. DATUM
LEVELS SHOWN ON THE PLANS ARE A.H.D.
3. SURVEY SETOUT
THE SURVEY SET OUT INFORMATION TO ALLOW THE CONTRACTOR TO ACCURATELY SET OUT THE WORKS HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR. THE CONTRACTOR IS NOT TO SCALE FROM THESE PLANS AS A MEANS OF OBTAINING SETOUT INFORMATION.
4. EXISTING SURVEY CONTROL STATIONS
IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT EXISTING SURVEY CONTROL STATIONS ARE NOT DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES. SHOULD THE CONTRACTOR IDENTIFY ANY CONFLICT BETWEEN EXISTING SURVEY CONTROL AND THE REQUIRED CONSTRUCTION ACTIVITIES THE SUPERINTENDENT IS TO BE NOTIFIED IMMEDIATELY.
5. EXISTING SERVICES
THE LOCATION OF EXISTING SERVICES WHERE SHOWN ON THE PLANS ARE INDICATIVE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT SERVICE AUTHORITIES TO ASCERTAIN THE EXACT LOCATION OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORKS AND TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO THE EXISTING SERVICES.
6. SITE ACCESS
THE CONTRACTOR SHALL ONLY GAIN ACCESS TO THE SITE VIA ACCESS LOCATIONS APPROVED BY THE SUPERINTENDENT. FREEDOM OF ACCESS TO OTHER WORK AREAS ON THE SITE SHALL BE MAINTAINED AT ALL TIMES.
7. PROVISION FOR TRAFFIC
PROVISION FOR TRAFFIC ON LOCAL ROADS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND CoGC COUNCIL REQUIREMENTS.
8. WORK EXTENT
THE CONTRACTOR IS TO RESTRICT ACTIVITIES TO THOSE AREAS DESIGNATED AS WORKS AREAS UNDER THE CONTRACT. AT NO TIME IS THE CONTRACTOR TO ENTER ADJOINING PROPERTIES OR CONTRACT AREAS WITHOUT THE WRITTEN AUTHORISATION OF THE SUPERINTENDENT.
9. TESTING
ALL TESTING IS TO BE CARRIED OUT BY AN APPROVED N.A.T.A TESTING AUTHORITY IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND REQUIREMENTS OF CoGC COUNCIL.
10. "AS CONSTRUCTED" SURVEY
"AS CONSTRUCTED" SURVEY SHALL BE CARRIED OUT BY THE PRINCIPAL'S SURVEYOR AS WORK PROCEEDS. THE CONTRACTOR IS TO PROVIDE ADEQUATE NOTICE TO THE PRINCIPAL'S SURVEYOR ON WHEN THIS IS REQUIRED TO ENSURE COMPLIANCE WITH THE REQUIREMENTS OF CoGC COUNCIL.
11. MAINTENANCE OF SITE CONDITION
AT THE COMPLETION OF WORKS THE SITE IS TO BE LEFT IN A CLEAN AND TIDY CONDITION TO THE SATISFACTION OF THE SUPERINTENDENT AND CoGC.

1. **PRECEDENCE**
EARTHWORKS SPECIFICATION PREPARED BY PROJECT GEOTECHNICAL ENGINEER TO TAKE PRECEDENCE OVER STANDARD COUNCIL EARTHWORKS NOTES.
2. **TOPSOIL STRIPPING**
TOPSOIL SHALL BE STRIPPED ACROSS THE ENTIRE LIMIT OF THE EARTHWORKS CUT AND FILL AREAS AND SHALL BE STOCKPILED IN A LOCATION APPROVED BY THE SUPERINTENDENT. THE EXISTING STRATA IS TO BE TREATED IN ACCORDANCE WITH THE SPECIFICATION PRIOR TO PLACING ANY FILL.
3. **EARTHWORKS LEVELS**
EARTHWORKS LEVELS SHOWN ON THE DRAWING ARE TO FINISHED SURFACE LEVELS AND INCLUDE 100mm OF TOPSOIL. THE CONTRACTOR SHALL VERIFY BENCH MARK LEVELS AND ADVISE THE SUPERINTENDENT OF ANY DISCREPANCY BEFORE COMMENCEMENT OF CONSTRUCTION.
4. **UNDESIRABLE MATERIAL**
THE ENTIRE SITE/WORK AREAS SHALL BE CLEARED OF ALL UNDESIRABLE MATTER. THIS SHALL INCLUDE DEAD TIMBER, GRASS, OLD FOUNDATIONS, CONCRETE, MASONRY REMAINS, GARBAGE, DEBRIS AND ALL OTHER OBSTRUCTIONS TO THE WORKS UNLESS NOTED OTHERWISE. HOLES LEFT BY THE REMOVAL OF ANY OF THE ABOVE SHALL BE FILLED WITH APPROVED COMPACTED MATERIAL WITH PROPERTIES AT LEAST SIMILAR TO INSITU SOILS.
5. **COMPACTION STANDARD**
FILL MATERIAL SHALL BE COMPACTED TO THE FOLLOWING STANDARD, WHERE DRY DENSITY RATIO IS DETERMINED IN ACCORDANCE WITH AS 1289 USING STANDARD COMPACTION METHODS.
 - a. 100% DRY DENSITY RATIO IN COHESIVE MATERIAL OR 80% IN COHESIONLESS MATERIAL FOR ROAD SUBGRADE.
 - b. 98% DRY DENSITY RATIO IN COHESIVE MATERIAL OR 65% IN COHESIONLESS MATERIAL FOR ALL AREAS OTHER THAN THE ROADWAY AND BUILDING PADS.
 - c. 98% DRY DENSITY RATIO IN COHESIVE MATERIAL OR 70% IN COHESIONLESS MATERIAL FOR BUILDING PADS.
6. **PAVEMENT DEPTHS**
EARTHWORKS VOLUMES DO NOT INCLUDE DESIGN PAVEMENT DEPTHS AS INDICATED ON THE TYPICAL BULK EARTHWORKS ROAD SECTION.
7. **TESTING**
ALL EARTHWORKS TO BE CARRIED OUT UNDER LEVEL 1 SUPERVISION IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS 3798 UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A TESTING AUTHORITY.
8. **ROCK**
THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR EARTHWORKS RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT DOCUMENT.
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THE

- a. ERECT SITE SIGNAGE, CONSTRUCT ENTRY AND EXIT POINT AS INDICATED CONSTRUCT VEHICLE WASH-DOWN AREA AND ASSOCIATED SILT MANAGEMENT DEVICES.
- b. CONSTRUCT SITE OFFICE AND STORAGE COMPOUND AREA
- c. ERECT SILT FENCE AT LOW POINTS OF THE SITE AS DEMONSTRATED
- d. ERECT TEMPORARY TREE PROTECTION FENCING FOR VEGETATION TO BE RETAINED IN ACCORDANCE WITH AN OPW (TREE CLEARING) APPROVAL OR IN ACCORDANCE WITH AS4970 PROTECTION OF TREES ON DEVELOPMENT SITE.
- e. CONSTRUCT ROCK CHECK DAMS AND SILT FENCE DOWN STREAM OF BASIN.
- f. CONSTRUCT BASIN TO FULL DEPTH.
- g. CONSTRUCT BALANCE OF BASIN IN CONJUNCTION WITH CLEARING AND BULK EARTHWORKS OPERATIONS.
- h. BASIN TO BE UTILISED AS A TEMPORARY SEDIMENT BASIN. DO NOT FILL IN FILTRATION MATERIAL UNTIL CONSTRUCTION OF DEVELOPMENT IS COMPLETE.

2. CLEARING AND BULK EARTHWORKS
THERE SHALL BE NO CLEARING OF PROTECTED SITE VEGETATION WITHOUT AN APPROVED TREE CLEARING PLAN WHICH SHALL BE IN ACCORDANCE WITH AS4970.
SILT FENCE, SAND BAGS AND EARTH RILLS WITHIN ROADS TO BE ERECTED AS INDICATED OR REQUIRED DURING CLEARING & EARTHWORKS.
SUPERINTENDENT TO CONFIRM THE EXTENT OF CLEARING PRIOR TO COMMENCEMENT OF WORKS.

3. CONSTRUCTION OF SEWER/ROOFWATER / STORMWATER SERVICES
EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH AND TO PROTECT PIPE WORK AND DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS.
TOPSOIL AND GRASS SEED AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER AND ROOFWATER DRAINAGE CONSTRUCTION.
DEPRESS GROUND AROUND TEMPORARY FIELD INLETS TO CREATE SILT POND.

4. CONSTRUCTION – SEDIMENT BASINS
SEDIMENT BASIN TO BE CONSTRUCTED TO THE EARTHWORK PROFILES SHOWN.
STORMWATER OUTLET PIPES TO BE TEMPORARY BLOCKED OFF UNTIL DECOMMISSIONING OF SEDIMENT BASIN (SUBSEQUENT TO CONSTRUCTION OF ALL STAGES).
PLACE SPOIL FROM SEDIMENT BASIN INTO ALLOCATED AREAS AS ENGINEERED FILL IN ACCORDANCE WITH THE STAGING ORDER.
SEDIMENT BASIN SHALL ONLY BE REMOVED AFTER APPROVAL BY SUPERINTENDENT AND COUNCIL.

5. CONSTRUCTION – STOCKPILING
TEMPORARY SILT FENCE TO BE ERECTED 5m FROM TOE OF BATTER ON LOW SIDE OF STOCKPILING.
STOCKPILE SITE TO BE CLEARED OF ADJACENT PROPERTY BOUNDARIES SO AS NOT TO CAUSE NUISANCE TO ADJOINING PROPERTIES.
NO STOCKPILES ARE TO BE LOCATED WITHIN THE DRIP ZONE OR STRUCTURAL ROOT ZONE OF ANY RETAINED VEGETATION.

6. CONSTRUCTION – ROADWORKS
SILT FENCES TO ALLOTMENTS TO BE ERECTED.
KERB INLET PROTECTION TO BE PROVIDED TO ALL GULLIES.

7. CONSTRUCTION – ALLOTMENTS
TOPSOIL AND SEED ALLOTMENTS.
SILT FENCES TO ALLOTMENTS TO BE RE-ERECTED.
COVERS TO GULLY GRATES TO BE REMOVED IF THE SUPERINTENDENT INDICATE THE GRASS STRIKE IS SUFFICIENT (80% WITHIN 30 CALENDAR DAYS OF FINAL ALLOTMENT RIMMING).

8. POST CONSTRUCTION – ALLOTMENTS
TOPSOIL AND GRASS SEED ALL ALLOTMENTS.
COVERS TO GULLY GRATES TO BE REMOVED IF THE SUPERINTENDENT INDICATES THE GRASS STRIKE IS SUFFICIENT (80% WITHIN 30 CALENDAR DAYS OF FINAL ALLOTMENT TRIMMING).

9. POST CONSTRUCTION – BASIN
BASIN TO CONTINUE ACTING AS SEDIMENT BASIN UNTIL COMPLETION OF ALL STAGES.

10. POST CONSTRUCTION – ROAD RESERVES
TOPSOIL AND TURFING IS TO BE PROVIDED BEHIND KERB.

11. MAINTENANCE (PRE TO POST CONSTRUCTION)
THE SILT FENCES ARE TO BE INSPECTED WEEKLY.
ANY REPAIRS REQUIRED ARE TO BE EFFECTED IMMEDIATELY.
SILT AFTER RAIN IS TO BE CLEANED FROM STREETS AND ALLOTMENTS IMMEDIATELY AND CORRECTIVE ACTION TAKEN TO AVOID A RE-OCCURRENCE OF THE FAILURE.



HES BASIN GENERAL NOTES

AUTO DOSER

1.

PROVIDED AS EITHER 'FLOC BOX' OR 'IFOD-RAIN' DOSING UNIT OR APPROVED EQUIVALENT TO MANUFACTURERS SPECIFICATION.
2.

DOSER AND SUPPLY OF FLOCCULANT TO BE PROVIDED ON LEVEL PAD 4mX4m WITHIN 10m OF DOSING POINT.
3.

ALL-WEATHER ACCESS TRACK TO BE PROVIDED TO DOSER.
4.

FLOCCULANT PROVIDED AS TURBICLEAR (ACH) OR APPROVED EQUIVALENT. IF ALTERNATIVE FLOCCULANT USED THEN THE BASIN SIZE IS TO BE INCREASED ACCORDING TO JAR SETTLEMENT TEST (REFER TO TABLE BELOW).

JAR SETTLEMENT AFTER 15 MINS	MULTIPLICATION FACTOR TO SETTLING ZONE
(mm)	VOLUME
50	x3.0
75	x2.0
100	x1.5
150	x1.0

BASIN CONSTRUCTION

MATERIALS

5.

EARTH FILL: CLEAN SOIL WITH EMERSION CLASS 2(I), 3, 4 OR 5 AND FREE OF ROOTS, WOODY VEGETATION, ROCKS AND OTHER UNSUITABLE MATERIAL. SOIL WITH EMERSION CLASS 4 AND 5 MAY NOT BE SUITABLE DEPENDING ON PARTICLE SIZE DISTRIBUTION AND DEGREE OF DISPERSION. CLASS 2 (I) SHOULD ONLY BE USED UPON RECOMMENDATION FROM GEOTECHNICAL SPECIALIST.
6.

SPILLWAY ROCK: HARD, ANGULAR, DURABLE, WEATHER RESISTANT AND EVENLY GRADED ROCK WITH 50% BY WEIGHT LARGER THAN THE SPECIFIED NOMINAL (D50) ROCK SIZE. LARGE ROCK SHOULD DOMINATE, WITH SUFFICIENT SMALL ROCK TO FILL THE VOIDS BETWEEN LARGER ROCK. THE DIAMETER OF THE LARGEST ROCK SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE. THE SPECIFIC GRAVITY SHOULD BE AT LEAST 2.5.
7.

GEOTEXTILE FABRIC: HEAVY DUTY, NEEDLE-PUNCHED, NON-WOVEN CLOTH, MINIMUM 'BIDIM' A24 OR EQUIVALENT.

CONSTRUCTION

8.

NOTWITHSTANDING ANY DESCRIPTION CONTAINED WITH APPROVED PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THEMSELVES AS TO THE NATURE AND EXTENT OF THE SPECIFIED WORKS AND THE PHYSICAL AND LEGAL CONDITIONS UNDER WHICH THE WORKS WILL BE CARRIED OUT. THIS SHALL INCLUDE MEANS OF ACCESS, EXTENT OF CLEARING, NATURE OF THE MATERIALS TO BE EXCAVATED, TYPE AND SIZE OF MECHANICAL PLANT REQUIRED, LOCATION AND SUITABILITY OF WATER SUPPLY FOR CONSTRUCTION AND TESTING PURPOSES, AND ANY OTHER LIKELY MATTERS AFFECTING THE CONSTRUCTION OF THE WORKS.
9.

REFER TO APPROVED PLANS FOR LOCATION, DIMENSIONS, AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
10.

BEFORE STARTING ANY CLEARING OR CONSTRUCTION, ENSURE ALL THE NECESSARY MATERIALS AND COMPONENTS ARE ON THE SITE TO AVOID DELAYS IN COMPLETING THE SEDIMENT BASIN ONCE WORKS BEGIN.
11.

INSTALL REQUIRED SHORT TERM SEDIMENT CONTROL MEASURES DOWNSTREAM OF THE PROPOSED EARTHWORKS TO CONTROL SEDIMENT RUNOFF DURING CONSTRUCTION OF THE BASIN.
12.

THE AREA TO BE COVERED BY THE EMBANKMENT, BORROW PITS AND INCIDENTAL WORKS, TOGETHER WITH AN AREA EXTENDING BEYOND THE LIMITS OF EACH FOR A DISTANCE NOT EXCEEDING FIVE (5) METRES ALL AROUND MUST BE CLEARED OF ALL TREES, SCRUB, STUMPS, ROOTS, DEAD TIMBER AND RUBBISH AND DISPOSED OF IN A SUITABLE MANNER. DELAY CLEARING THE MAIN BASIN AREA UNTIL THE EMBANKMENT IS COMPLETE.
13.

ENSURE ALL HOLES MADE BY GRUBBING WITHIN THE EMBANKMENT FOOTPRINT ARE FILLED WITH SOUND MATERIAL, ADEQUATELY COMPACTED, AND FINISHED FLUSH WITH THE NATURAL SURFACE.
14.

BEFORE CONSTRUCTION OF THE CUT-OFF TRENCH OR ANY ANCILLARY WORKS WITHIN THE EMBANKMENT FOOTPRINT, ALL GRASS GROWTH AND TOPSOIL MUST BE REMOVED FROM THE AREA TO BE OCCUPIED BY THE EMBANKMENT AND MUST BE DEPOSITED CLEAR OF THIS AREA AND RESERVED FOR TOPDRESSING THE COMPLETED EMBANKMENT.

CUT-OFF TRENCH

15.

EXCAVATE A CUT-OFF TRENCH ALONG THE CENTRE LINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 600mm DEEP. THE CUT-OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE OUTLET SPILLWAY CREST. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF THE EXCAVATION AND COMPACTION EQUIPMENT, BUT IN NO CASE LESS THAN 600mm. MAKE THE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:2 (H: V).
16.

ENSURE ALL WATER, LOOSE SOIL, AND ROCK ARE REMOVED FROM THE TRENCH BEFORE BACKFILLING COMMENCES. THE CUT-OFF TRENCH MUST BE BACKFILLED WITH SELECT EARTH-FILL OF THE TYPE SPECIFIED FOR THE EMBANKMENT, AND THIS SOIL MUST HAVE A MOISTURE CONTENT AND DEGREE OF COMPACTION THE SAME AS SPECIFIED FOR THE CORE ZONE.
17.

MATERIAL EXCAVATED FROM THE CUT-OFF TRENCH MAY BE USED IN THE CONSTRUCTION OF THE EMBANKMENT PROVIDED IT IS SUITABLE AND IT IS PLACED IN THE CORRECT ZONE ACCORDING TO ITS CLASSIFICATION.

EMBANKMENT

18.

SCARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING THE FILL.
19.

ENSURE ALL FILL MATERIAL USED TO FORM THE EMBANKMENT MEETS THE SPECIFICATIONS CERTIFIED BY A SOIL SCIENTIST OF GEOTECHNICAL SPECIALIST.
20.

THE FILL MATERIAL MUST CONTAIN SUFFICIENT MOISTURE SO IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. PLACE FILL MATERIAL IN 150 TO 200mm CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL AREA AND THEN COMPACT BEFORE PLACEMENT OF FURTHER FILL.
21.

UNLESS SPECIFIED ON THE APPROVED PLANS, COMPACT THE SOIL AT ABOUT 1% TO 2% WET OPTIMUM AND TO 95% MODIFIED OR 100% STANDARD COMPACTION.
22.

WHERE BOTH DISPERSIVE AND NON-DISPERSIVE CLASSIFIED EARTH-FILL MATERIALS ARE AVAILABLE, NON-DISPERSIVE EARTH-FILL MUST BE USED IN THE CORE ZONE. THE REMAINING CLASSIFIED EARTH-FILL MATERIALS MUST ONLY BE USED AS DIRECTED BY THE SITE SUPERINTENDENT.
23.

WHERE SPECIFIED, CONSTRUCT THE EMBANKMENT TO AN ELEVATION 10% HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING; OTHERWISE FINISHED DIMENSIONS OF THE EMBANKMENT AFTER SPREADING OF TOPSOIL MUST CONFORM TO THE DRAWING WITH A TOLERANCE OF 75mm FROM SPECIFIED DIMENSIONS.
24.

ENSURE DEBRIS AND OTHER UNSUITABLE BUILDING WASTE IS NOT PLACED WITHIN THE EARTH EMBANKMENT.
25.

AFTER COMPLETION OF THE EMBANKMENT ALL LOOSE UNCOMPACTED EARTH-FILL MATERIAL ON THE UPSTREAM AND DOWNSTREAM BATTER MUST BE REMOVED PRIOR TO SPREADING TOPSOIL.
26.

TOPSOIL AND RE-VEGETATE/STABILISE ALL EXPOSED EARTH AS DIRECTED WITHIN THE APPROVED PLANS.

ESTABLISHING THE SETTLING POND

27.

THE AREA TO BE COVERED BY THE STORED WATER OUTSIDE OF THE LIMITS OF THE BORROW PITS MUST BE CLEARED OF RUBBISH. TREES MUST BE CUT DOWN STUMP HIGH AND REMOVED FROM THE IMMEDIATE VICINITY OF THE WORK.
28.

ESTABLISH ALL REQUIRED INFLOW CHUTES AND INLET BAFFLES IF SPECIFIED TO ENABLE WATER TO DISCHARGE INTO THE BASIN IN A MANNER THAT WILL NOT CAUSE SOIL EROSION OR THE RE-SUSPENSION OF SETTLED SEDIMENT.
29.

INSTALL A SEDIMENT STORAGE LEVEL MARKER POST WITH A CROSS MEMBER SET JUST BELOW THE TOP OF THE SEDIMENT STORAGE ZONE (AS SPECIFIED ON THE APPROVED PLANS). USE AT LEAST A 75mm WIDE POST FIRMLY SET INTO THE BASIN FLOOR.
30.

IF SPECIFIED, INSTALL INTERNAL SETTLING POND BAFFLES. ENSURE THE CREST OF THESE BAFFLES IS SET LEVEL WITH, OR JUST BELOW, THE ELEVATION OF THE EMERGENCY SPILLWAY.
31.

INSTALL ALL APPROPRIATE MEASURES TO MINIMISE SAFETY RISK TO ON-SITE PERSONNEL AND THE PUBLIC CAUSED BY THE PRESENCE OF THE SETTLING POND. AVOID STEEP, SMOOTH INTERNAL SLOPES. APPROPRIATELY FENCE THE SETTLING POND AND POST WARNING SIGNS IF UNSUPERVISED PUBLIC ACCESS IS LIKELY OR THERE IS CONSIDERED TO BE AN UNACCEPTABLE RISK TO THE PUBLIC.

SPILLWAY CONSTRUCTION

32.

THE SPILLWAY MUST BE EXCAVATED AS SHOWN ON THE PLANS, AND THE EXCAVATED MATERIAL IF CLASSIFIED AS SUITABLE, MUST BE USED IN THE EMBANKMENT, AND IF NOT SUITABLE IT MUST BE DISPOSED OF INTO SPOIL HEAPS.
33.

ENSURE EXCAVATED DIMENSIONS ALLOW ADEQUATE BOXING-OUT SUCH THAT THE SPECIFIED ELEVATIONS, GRADES, CHUTE WIDTH, AND ENTRANCE AND EXIT SLOPES FOR THE EMERGENCY SPILLWAY WILL BE ACHIEVED AFTER PLACEMENT OF THE ROCK OR OTHER SCOUR PROTECTION MEASURES AS SPECIFIED IN THE PLANS.
34.

PLACE SPECIFIED SCOUR PROTECTION MEASURES ON THE EMERGENCY SPILLWAY. ENSURE THE FINISHED GRADE BLENDS WITH THE SURROUNDING AREA TO ALLOW A SMOOTH FLOW TRANSITION FROM SPILLWAY TO DOWNSTREAM CHANNEL.
35.

IF A SYNTHETIC FILTER FABRIC UNDERLAY IS SPECIFIED, PLACE THE FABRIC DIRECTLY ON THE PREPARED FOUNDATION. IF MORE THAN 1 SHEET OF FILTER FABRIC IS REQUIRED, OVERLAP THE EDGES BY AT LEAST 300mm AND PLACE ANCHOR PINS AT MINIMUM 1m SPACING ALONG THE OVERLAP. BURY THE UPSTREAM END OF THE FILTER FABRIC A MINIMUM 300mm BELOW GROUND AND WHERE NECESSARY, BURY THE LOWER END OF THE FABRIC OR OVERLAP A MINIMUM 300mm OVER THE NEXT DOWNSTREAM SECTION AS REQUIRED. ENSURE THE FILTER FABRIC EXTENDS AT LEAST 1000mm UPSTREAM OF THE SPILLWAY CREST.
36.

TAKE CARE NOT TO DAMAGE THE FABRIC DURING OR AFTER PLACEMENT. IF DAMAGE OCCURS, REMOVE THE ROCK AND REPAIR THE SHEET BY ADDING ANOTHER LAYER OF FABRIC WITH A MINIMUM OVERLAP OF 300mm AROUND THE DAMAGED AREA. IF EXTENSIVE DAMAGE IS SUSPECTED, REMOVE AND REPLACE THE ENTIRE SHEET.
37.

WHERE LARGE ROCK IS USED, OR MACHINE PLACEMENT IS DIFFICULT, A MINIMUM 100mm LAYER OF FINE GRAVEL, AGGREGATE, OR SAND MAY BE NEEDED TO PROTECT THE FABRIC.
38.

PLACEMENT OF ROCK SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER FABRIC. PLACE ROCK SO THAT IT FORMS A DENSE, WELL GRADED MASS OF ROCK WITH A MINIMUM OF VOIDS. THE DESIRED DISTRIBUTION OF ROCK THROUGHOUT THE MASS MAY BE OBTAINED BY SELECTIVE LOADING AT THE QUARRY AND CONTROLLED DUMPING DURING FINAL PLACEMENT.
39.

THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL ROCK OR CLUSTERS OF LARGE ROCKS. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE PROPER DISTRIBUTION OF ROCK SIZES TO PRODUCE A RELATIVELY SMOOTH, UNIFORM SURFACE. THE FINISHED GRADE OF THE ROCK SHOULD BLEND WITH THE SURROUNDING AREA. NO OVER FALL OR PROTRUSION OF ROCK SHOULD BE APPARENT.
40.

ENSURE THAT THE FINAL ARRANGEMENT OF THE SPILLWAY CREST WILL NOT PROMOTE EXCESSIVE FLOW THROUGH THE ROCK SUCH THAT THE WATER CAN BE RETAINED WITHIN THE SETTLING BASIN AT THE ELEVATION NO LESS THAN 50mm ABOVE OF BELOW THE NOMINATED SPILLWAY CREST ELEVATION.



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T: 9807 3533 | F: 3287 5461 | www.gassman.com.au
Gold Coast | 76 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian: PSM:
RL:

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Drawing Title:

GENERAL NOTES
SHEET 2 OF 2

A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

Scale:

NOT APPLICABLE

PROJECT NORTH POINT

Project No. 5941	
Designed: JH	Drafted: JH
Approved: MG	
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 003	Revision: A

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No... OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
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Drawing Title:

LEGEND

Rev	Date	Description	JH	MG
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DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

Scale:

NOT TO SCALE

PROJECT NORTH POINT

Project No. 5941

Designed: JH Drafted: JH

Approved: MG

RPEQ 16939

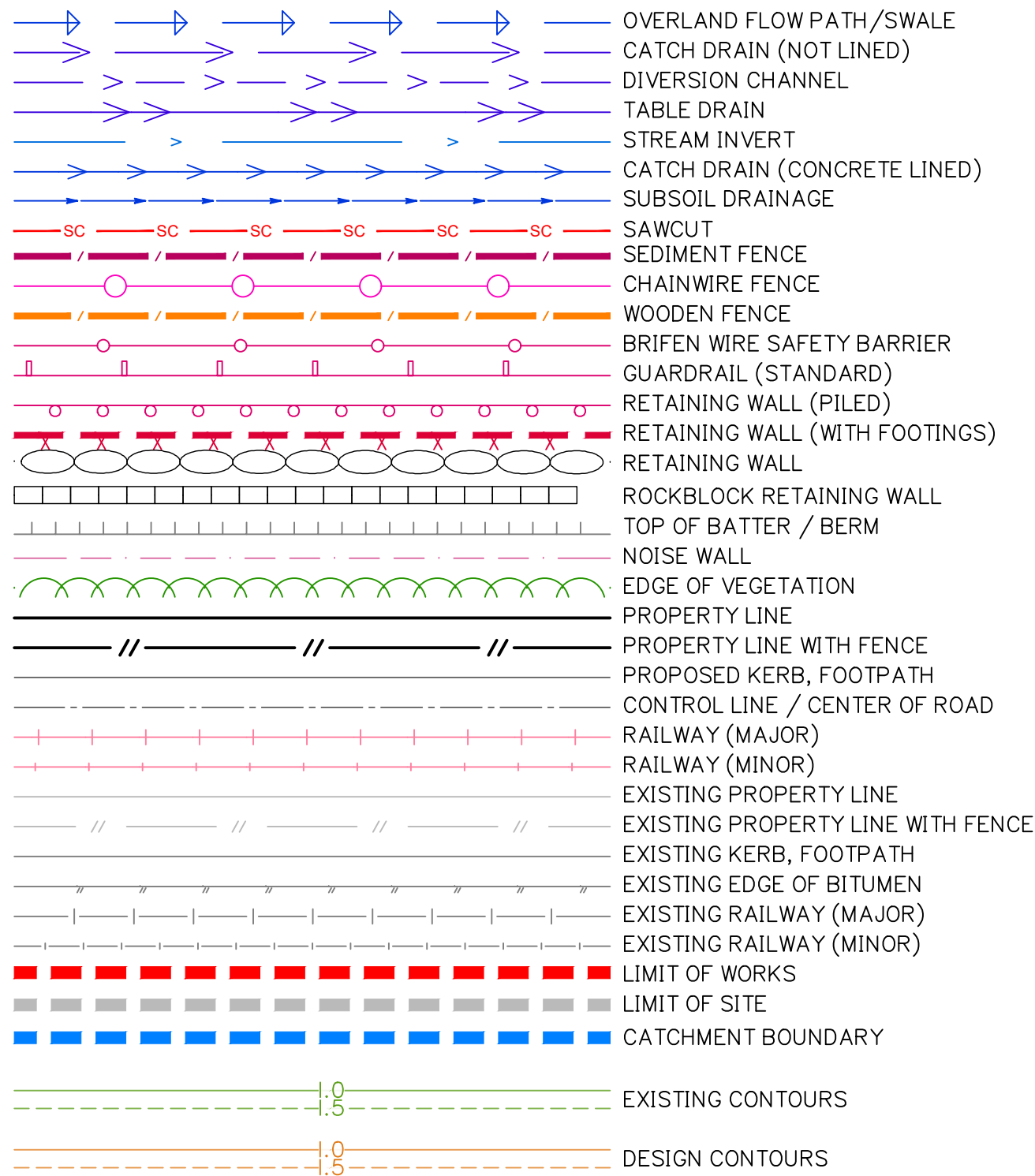
Signed:

Date: 28/09/2023

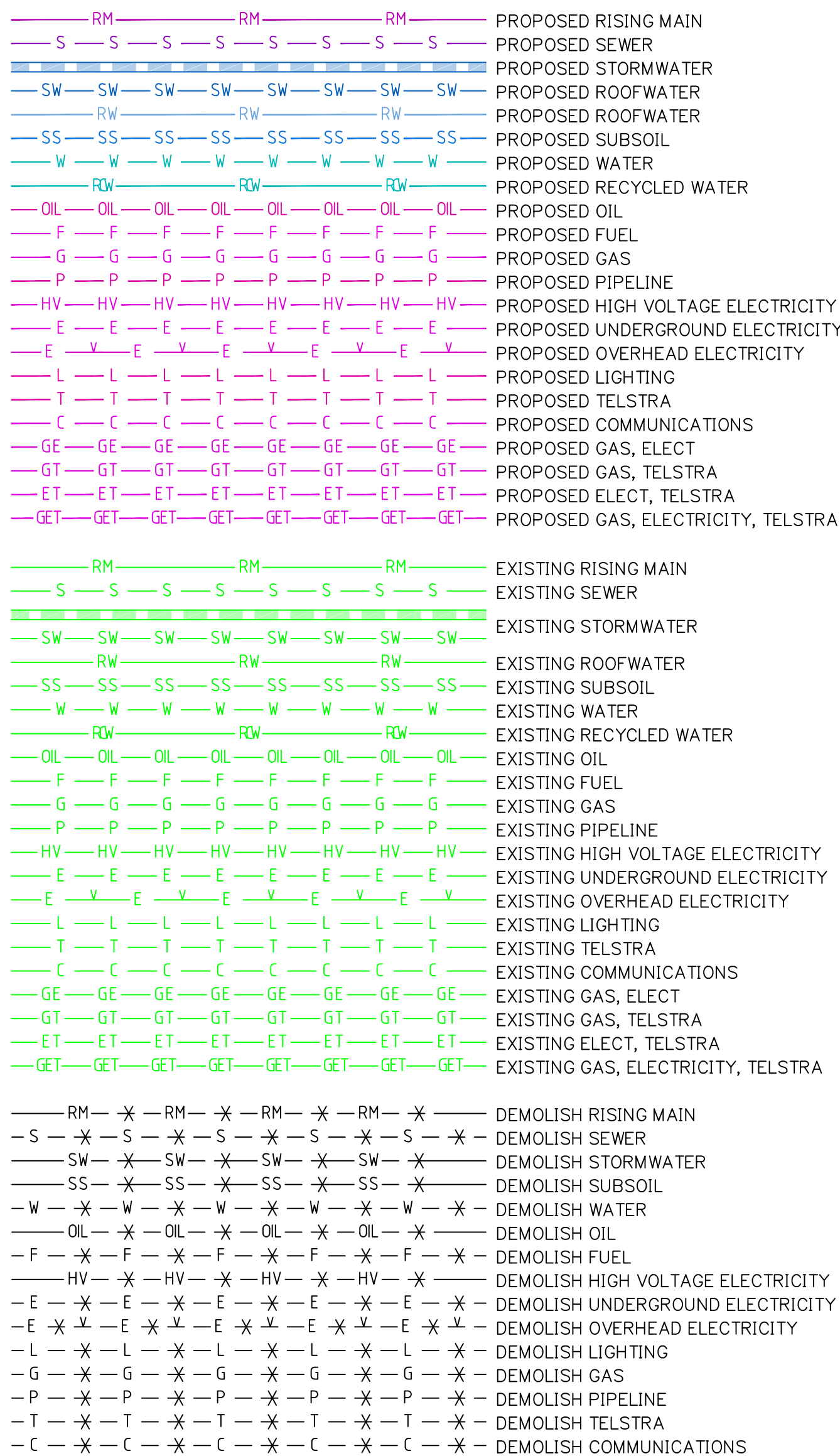
Drawing No: 5941 ENG CW3 004 Revision

A

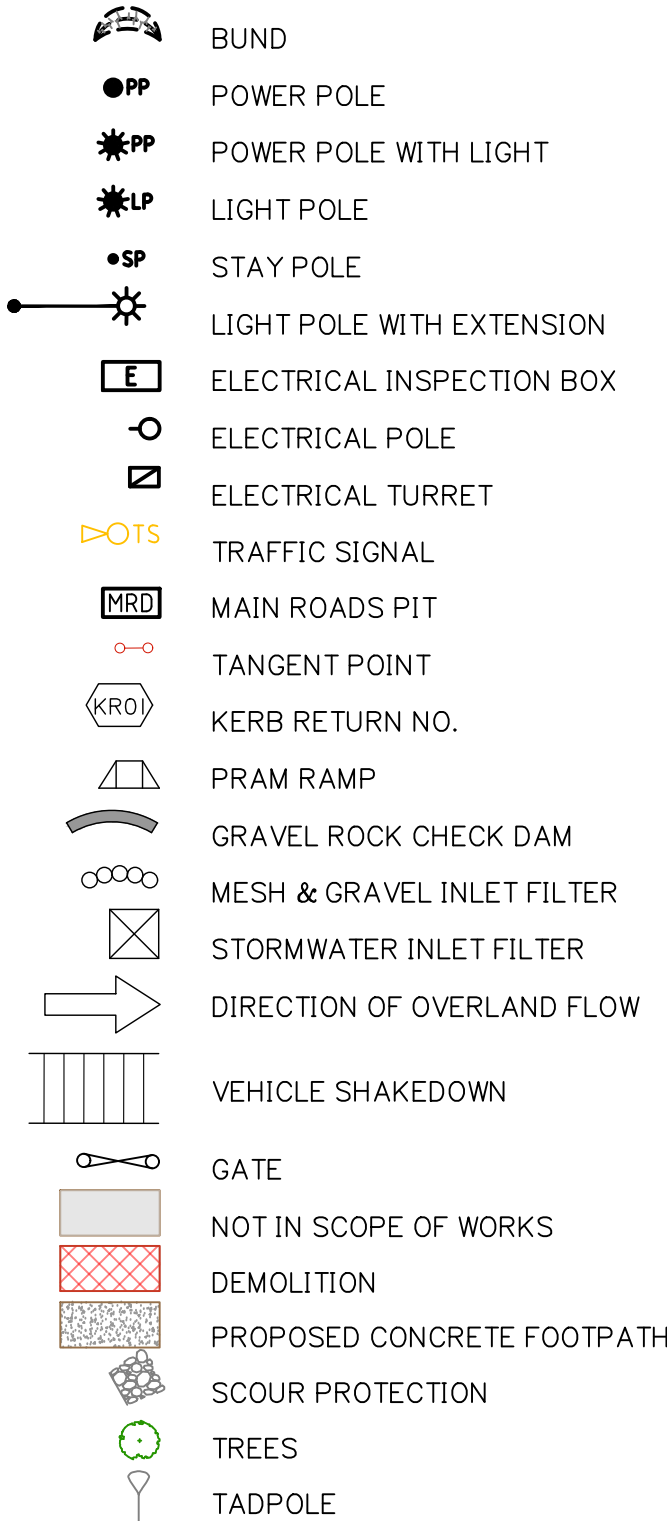
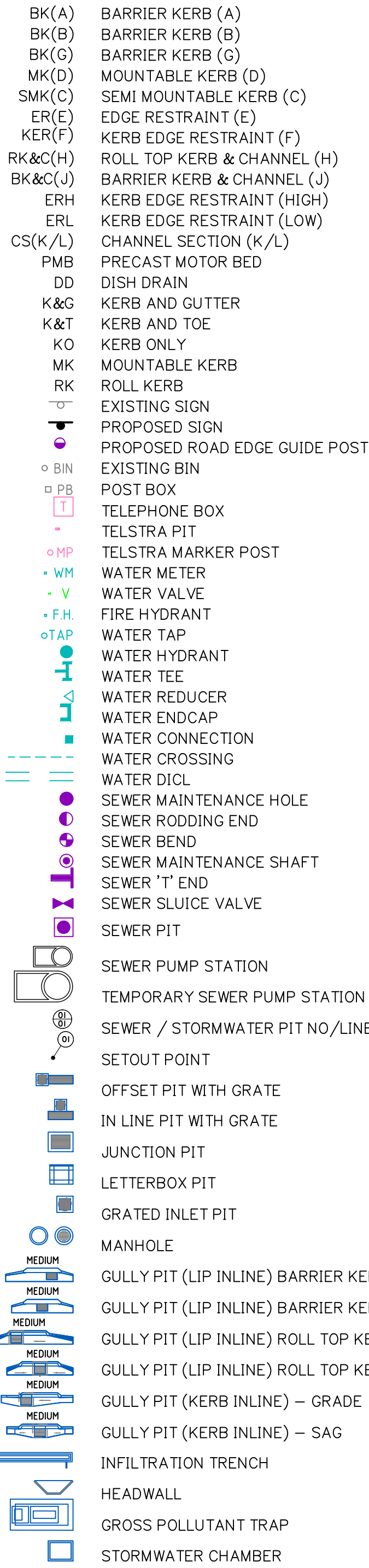
FEATURE LEGEND



SERVICES LEGEND



SYMBOLS



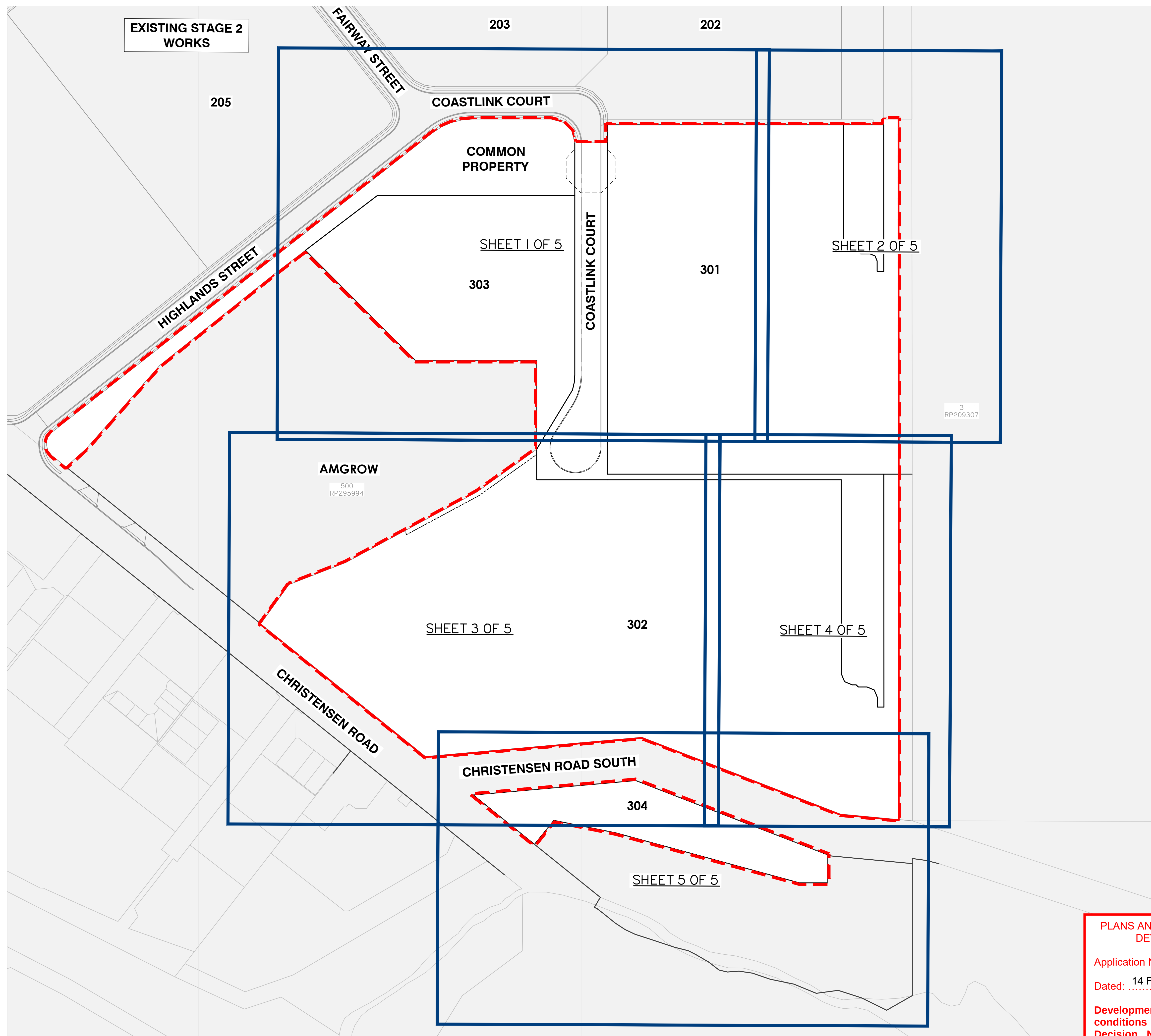
LEGEND

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Date: 14 February 2024

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST

Level Datum: AHD
Meridian:
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RL:

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Drawing Title:

KEY LAYOUT PLAN

B	06/11/23	LOT NUMBER UPDATED		ML	MG
A	25/05/23	ORIGINAL ISSUE		JH	MG
Rev	Date	Description	DRN	CHK	

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



0 25 50 75 100m
1:1250 (A1) 1:2500 (A3)

PROJECT NORTH POINT



Project No. 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

6939

Signed:

Mitchell K...

Date:

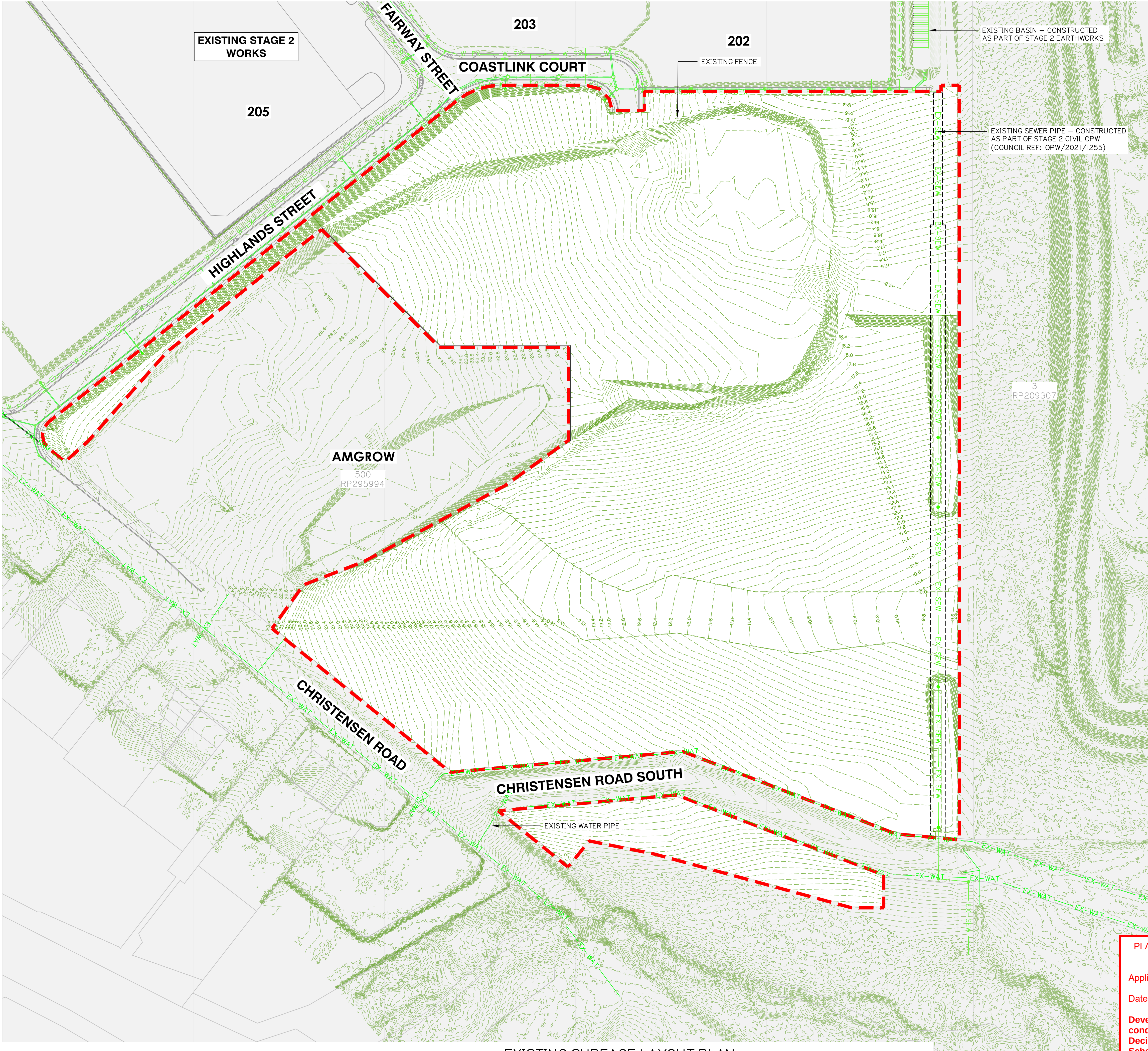
28/09/2023

Drawing No:

Revision

5941 ENG CW3 005

3



EXISTING SURFACE LAYOUT PLAN

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Drawing Title:
**EXISTING SURFACE
LAYOUT PLAN**

B	21/12/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

Scale:
0 25 50 75 100m
1:1250 (A1) 1:2500 (A3)

PROJECT NORTH POINT



Project No.: 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 010	B

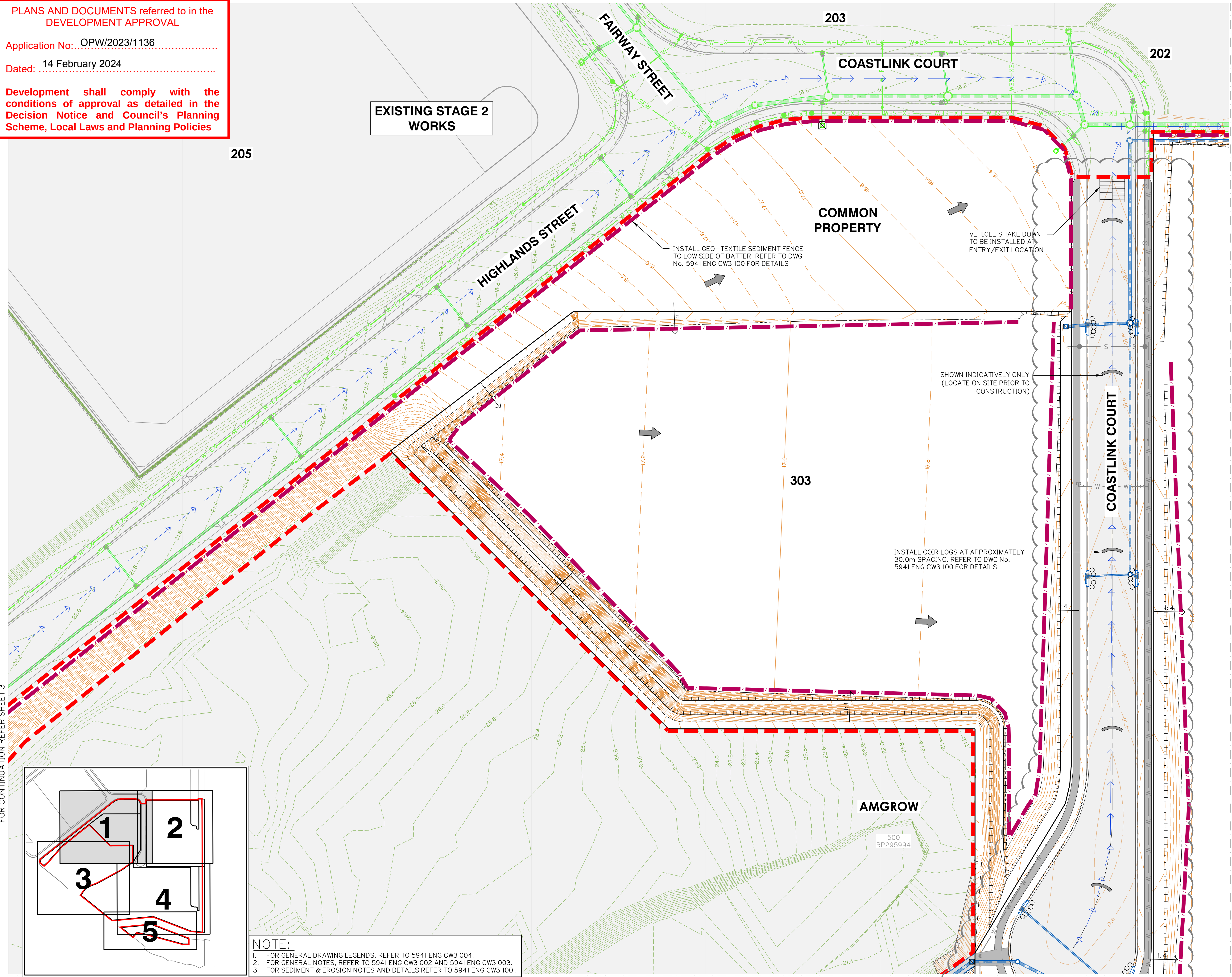
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL
Application No.: OPW/2023/1136
Dated: 14 February 2024
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
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PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

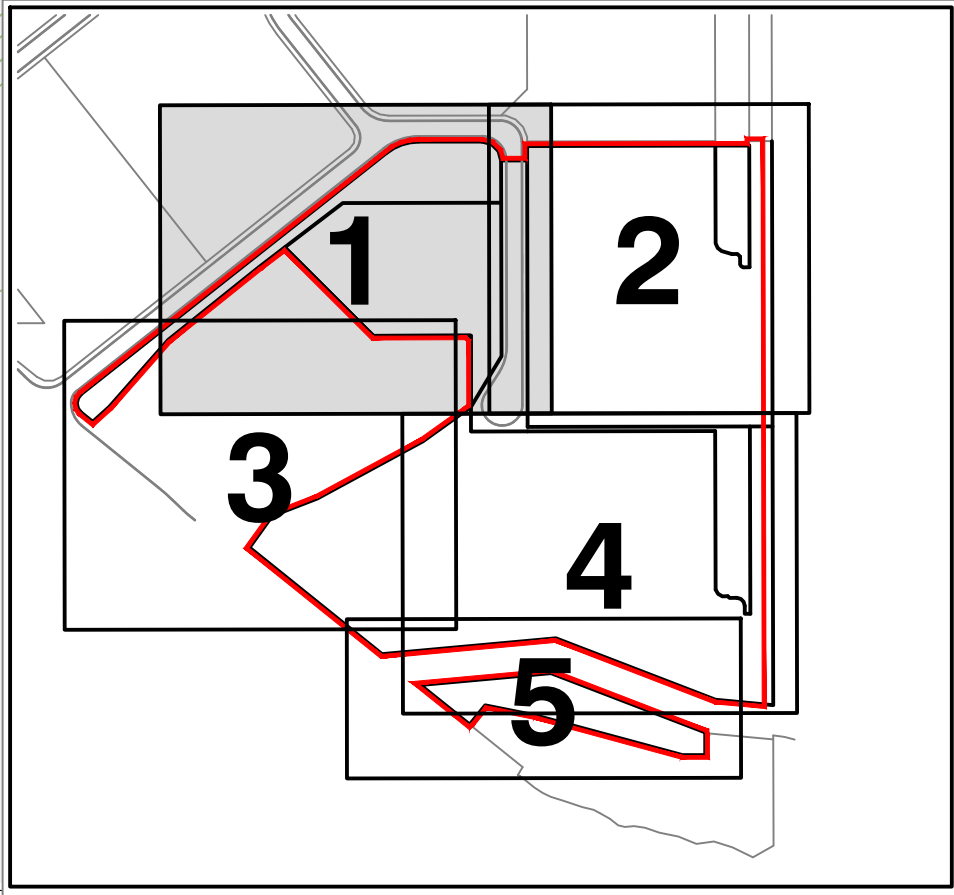
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



FOR CONTINUATION REFER SHEET 3

FOR CONTINUATION REFER SHEET 2

FOR CONTINUATION REFER SHEET 3



NOTE:
1. FOR GENERAL DRAWING LEGENDS, REFER TO 5941 ENG CW3 004.
2. FOR GENERAL NOTES, REFER TO 5941 ENG CW3 002 AND 5941 ENG CW3 003.
3. FOR SEDIMENT & EROSION NOTES AND DETAILS REFER TO 5941 ENG CW3 100.

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
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Drawing Title:

SEDIMENT AND EROSION
CONTROL PLAN
SHEET 1 OF 5

Rev	Date	Description	DRN	CHK
C	08/02/24	FOOTPATH AMENDED	JH	MG
B	21/12/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

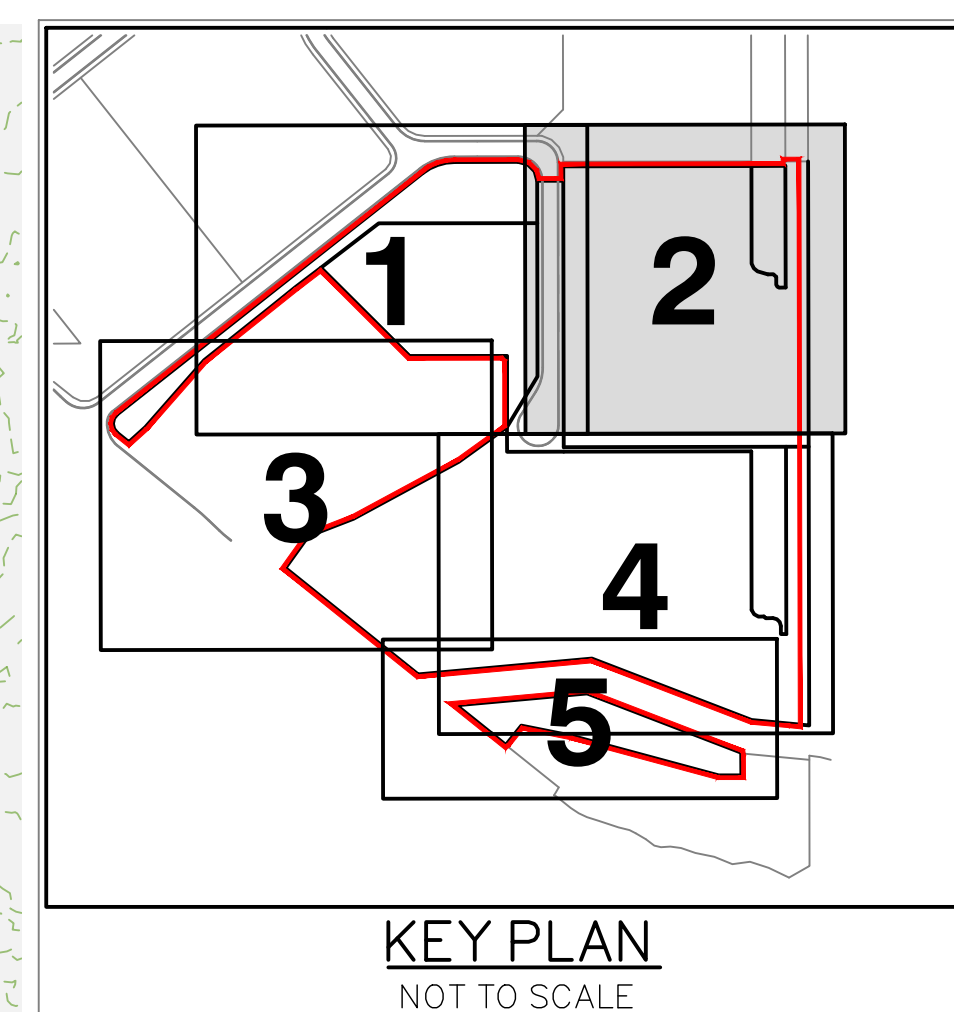
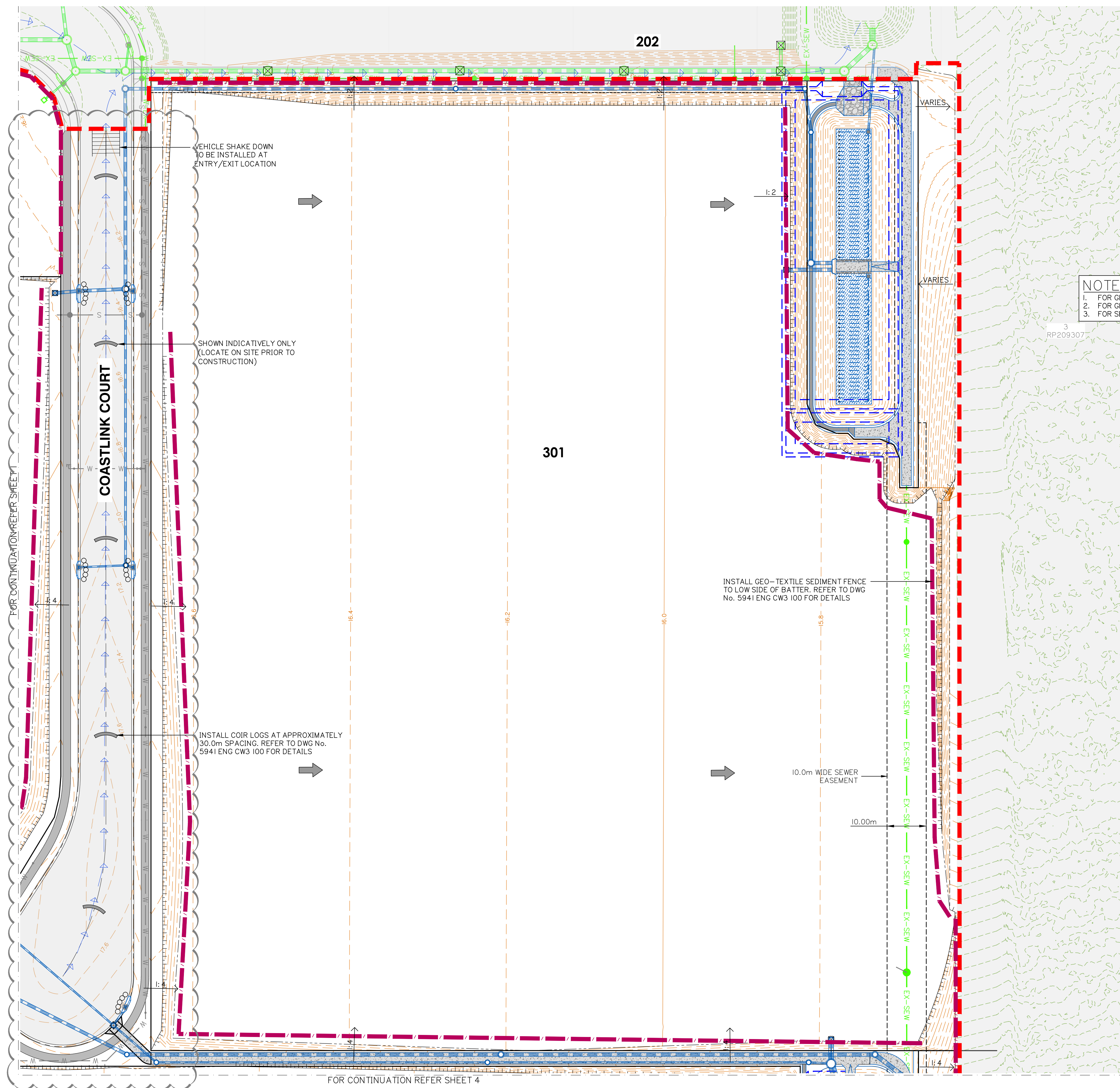
A1 UNREDUCED
A3 REDUCED

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.: 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 110	C



- NOTE:**
1. FOR GENERAL DRAWING LEGENDS, REFER TO 594I ENG CW3 004.
 2. FOR GENERAL NOTES, REFER TO 594I ENG CW3 002 AND 594I ENG CW3 003.
 3. FOR SEDIMENT & EROSION NOTES AND DETAILS REFER TO 594I ENG CW3 100.

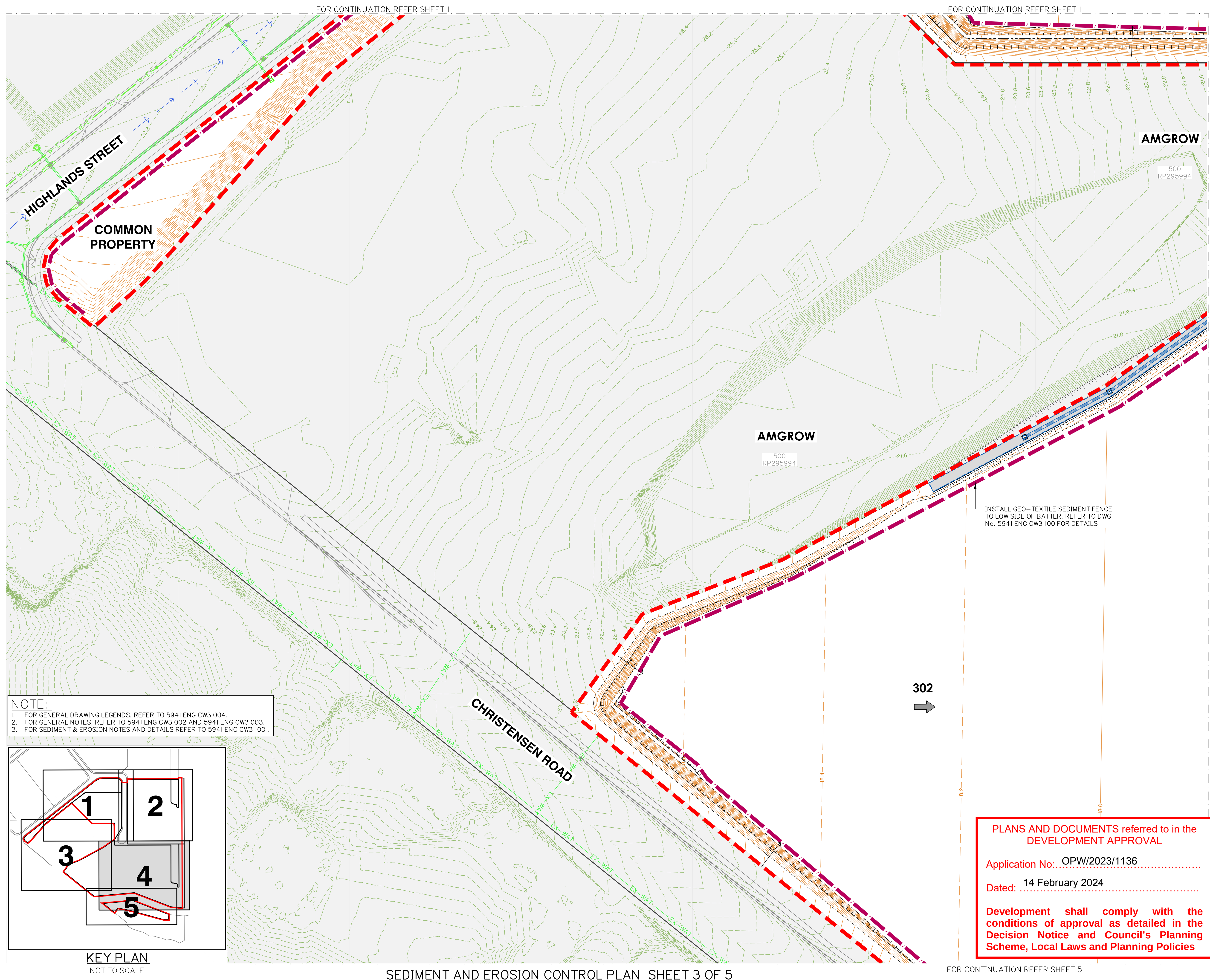
C	08/02/24		FOOTPATH AMENDED	JH	MG
B	21/12/23		LAYOUT UPDATED	ML	MG
A	25/05/23		ORIGINAL ISSUE	JH	MG
Rev	Date		Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

[illegible]

B	21/12/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
ev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:

Scale:



PROJECT NORTH POINT



Project No. 5941

Designed: JH

Drafted: ML

Approved:

MG

RPEQ

6939

Signed:

Michelle K...

Date:

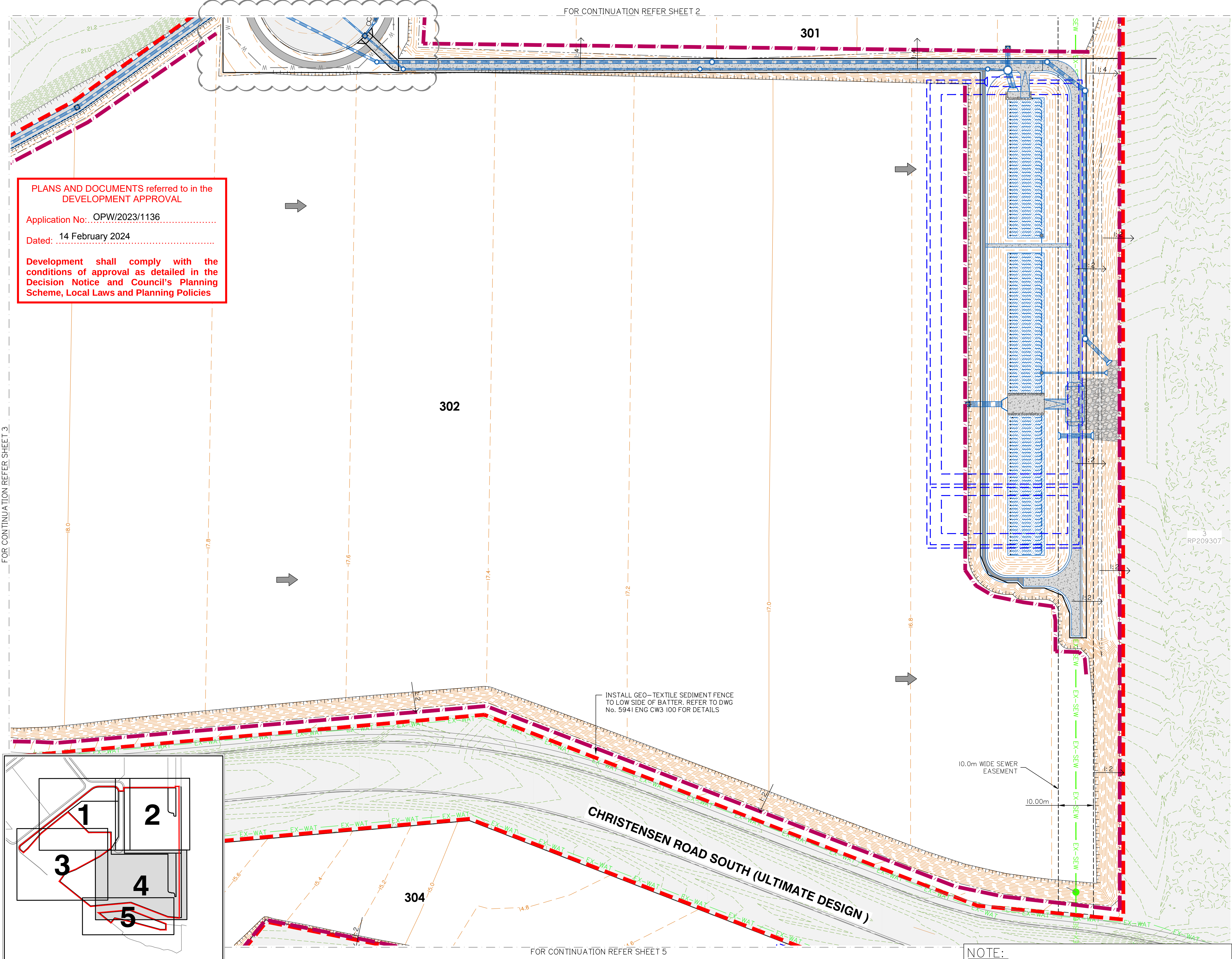
8/09/2023

Drawing No:

5941 ENG CW3 112

Revision

3



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

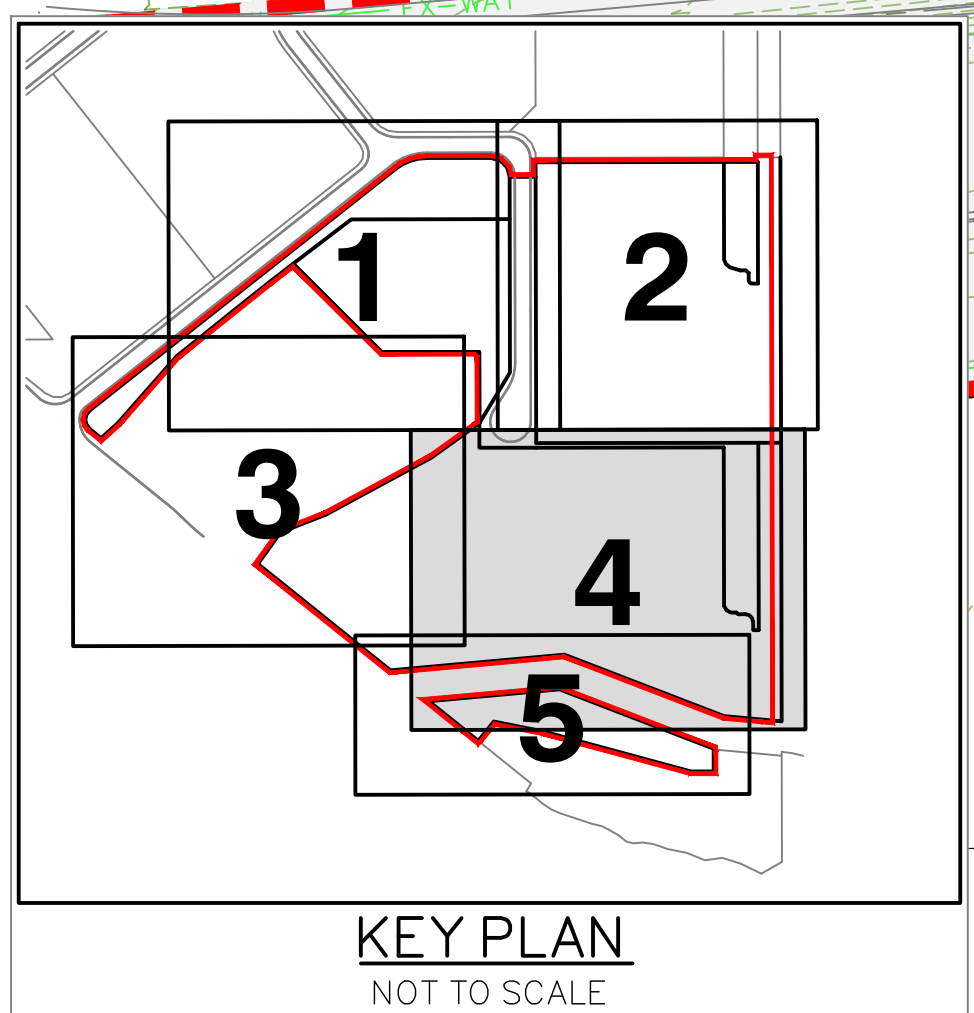
FOR CONTINUATION REFER SHEET 3

FOR CONTINUATION REFER SHEET 2

INSTALL GEO-TEXTILE SEDIMENT FENCE TO LOW SIDE OF BATTER, REFER TO DWG No. 5941 ENG CW3 100 FOR DETAILS

NOTE:

- FOR GENERAL DRAWING LEGENDS, REFER TO 5941 ENG CW3 004.
- FOR GENERAL NOTES, REFER TO 5941 ENG CW3 002 AND 5941 ENG CW3 003.
- FOR SEDIMENT & EROSION NOTES AND DETAILS REFER TO 5941 ENG CW3 100.





est 1985

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Gold Coast | 78 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

Client:



FPI QUEENSLAND PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD DRIVE, STAPYLTON QLD, 4207

RPD:

Lot: 504

Plan: SP329485

Local Authority: CITY OF GOLD COAST

Level Datum: AHD

Meridian: PSM:

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Drawing Title:

SEDIMENT AND EROSION CONTROL PLAN SHEET 4 OF 5

Rev	Date	Description	DRN	CHK
C	08/02/24	FOOTPATH AMENDED	JH	MG
B	21/12/23	LAYOUT UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 10 20 30 40m

1:500 (A1) 1:1000 (A3)

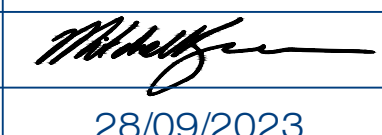
PROJECT NORTH POINT



Project No.: 5941

Designed: JH

Approved: RPEQ

Signed: 

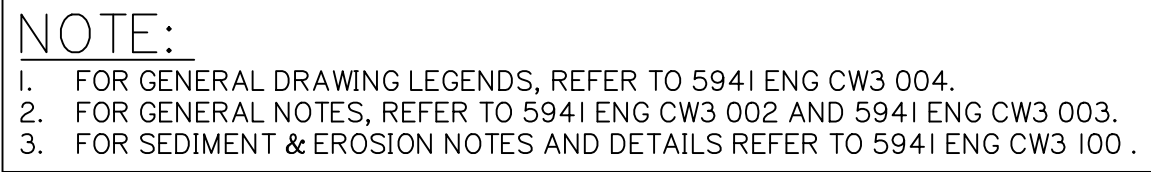
Date: 28/09/2023

Drafted: ML

MG

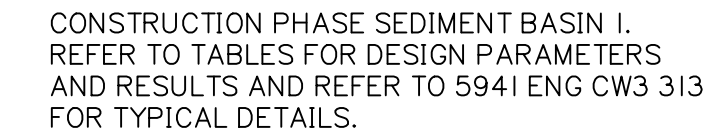
16939

Revision: C



Project No. 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 114	Revision: B

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



1. FOR GENERAL DRAWING LEGENDS, REFER TO 594I ENG CW3 004.
2. FOR GENERAL NOTES, REFER TO 594I ENG CW3 002 AND 594I ENG CW3 003.
3. FOR SEDIMENT & EROSION NOTES AND DETAILS REFER TO 594I ENG CW3 100

		SPILLWAY									
BASIN ID	BASIN DESIGN LIFE	DESIGN ARI	C ₁₀	C	tc	I	Q	HEAD OVER SPILLWAY	SPILLWAY CREST LENGTH	SPILLWAY CREST RL	MIN EMBANKMENT RL
		yr				(mm/hr)	(m³/s)	(m)	(m)	(m)	(m)
No. 1	> 12 MONTHS	1: 20	0.80	0.84	20.00	34.48	0.46	0.50	0.80	13.50	14.45



Site Address:
LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:	
Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
Meridian:	
PSM:	
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Drawing Title:

CONSTRUCTION PHASE
SEDIMENT BASIN 1
LAYOUT

A	25/05/23	ORIGINAL ISSUE	JH	MG
ev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



0 2.5 5.0 7.5 10 12.5m 1:250 (A1) 1:500 (A3)

PROJECT NORTH POINT



Project No. 5941	
Designed: JH	Drafted: JH
Approved:	MG
PEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 310	A

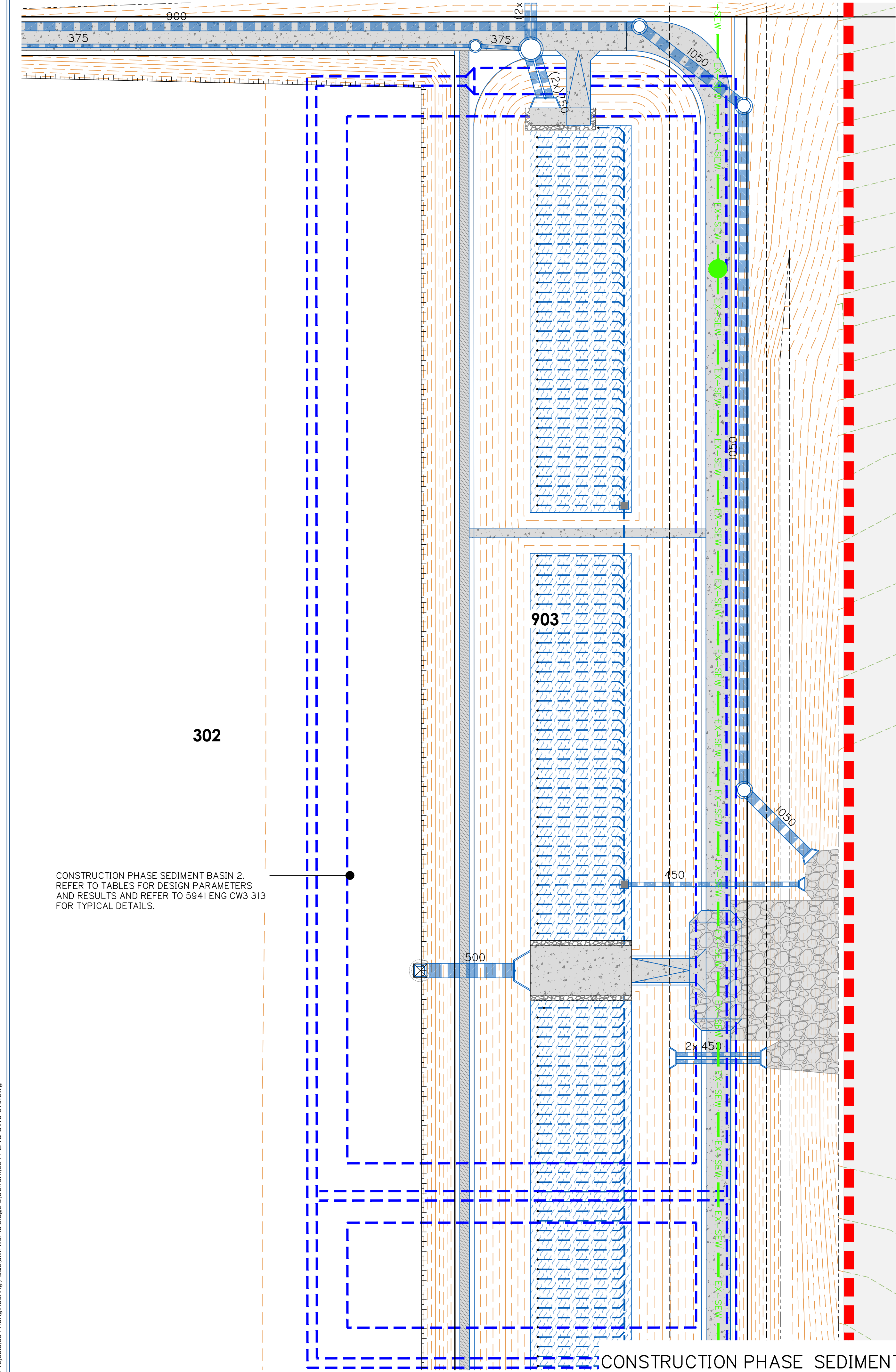
**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: OPW/2023/1136

Dated: 14 February 2024

**Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies**

g:\Projects\5941\Engineering\Acad\civil works stage 3\Current\5941 ENG CW3 310.dwg



CONSTRUCTION PHASE SEDIMENT BASIN 2.
REFER TO TABLES FOR DESIGN PARAMETERS
AND RESULTS AND REFER TO 5941 ENG CW3 313
FOR TYPICAL DETAILS.

SEDIMENT BASIN 2 DESIGN							
BASIN ID	SELECT DURATION OF CATCHMENT DISTURBANCE	IS DEWATERING OF TRENCHES REQUIRED?	EQUIPMENT LEASE OR PURCHASE?	SELECT CATCHMENT SCALE	DO ALL FLOWS ENTER BASIN AT SINGLE POINT?	BASIN TYPE	DOSING EQUIPMENT
No. 2	> 12 MONTHS	NO	LEASE	> 5Ha	NO	TYPE B	IFOD–RAIN

BASIN ID	CATCHMENT AREA	DESIGN EVENT	I_x yr, 24 hr	WATER TEMPERATURE	K_s	SETTLING ZONE DEPTH (D_s)	$W:L$	OPTIMUM LOW–FLOW DECANT RATE	SELECTED LOW–FLOW DECANT RATE (Q_A)	MIN SETTLING ZONE VOLUME (Min V_s)	MIN SETTLING ZONE SURFACE AREA (Min A_s)	LIMITING CRITERIA
	(Ha)	(I: X YEARS)	(mm/hr)	(°C)	(s/m)	(m)	(I: X)	(L/s/Ha)	(L/s/Ha)	(m³)	(m²)	
No. 2	11.01	I	64.2	20	–	0.8	3	–	–	2904.5	–	VOLUME

SPILLWAY											
BASIN ID	BASIN DESIGN LIFE	DESIGN ARI	C_{10}	C	t_c	I	Q	HEAD OVER SPILLWAY	SPILLWAY CREST LENGTH	SPILLWAY CREST RL	MIN EMBANKMENT RL
		yr				(mm/hr)	(m³/s)				
No. 2	> 12 MONTHS	I: 20	0.80	0.84	20.00	34.40	0.46	0.50	0.80	13.50	14.45

BASIN ID	SETTLING ZONE (incl. sediment storage)				FOREBAY				HYDRAULIC CONTROLS			
	VOLUME (m³)	LENGTH (m)	WIDTH (m)	DEPTH (m)	VOLUME (m³)	LENGTH (m)	WIDTH (m)	DEPTH (m)	SPILLWAY CREST LENGTH (m)	SPILLWAY CREST (RL)	EMBANKMENT (RL)	LEVEL SPREADER CREST (RL)
No.2	2940.5	111.7	37.2	0.79	327.4	11.2	37.2	0.79	3.5	16.20	16.95	16.40

NOTE:

- FOR GENERAL DRAWING LEGENDS, REFER TO 5941 ENG CW3 004.
- FOR GENERAL NOTES, REFER TO 5941 ENG CW3 002 AND 5941 ENG CW3 003.
- FOR SEDIMENT & EROSION NOTES AND DETAILS REFER TO 5941 ENG CW3 100.

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

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planning | environment | landscape | engineering | survey
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Gold Coast | 78 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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Drawing Title:

CONSTRUCTION PHASE
SEDIMENT BASIN 2
LAYOUT

B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

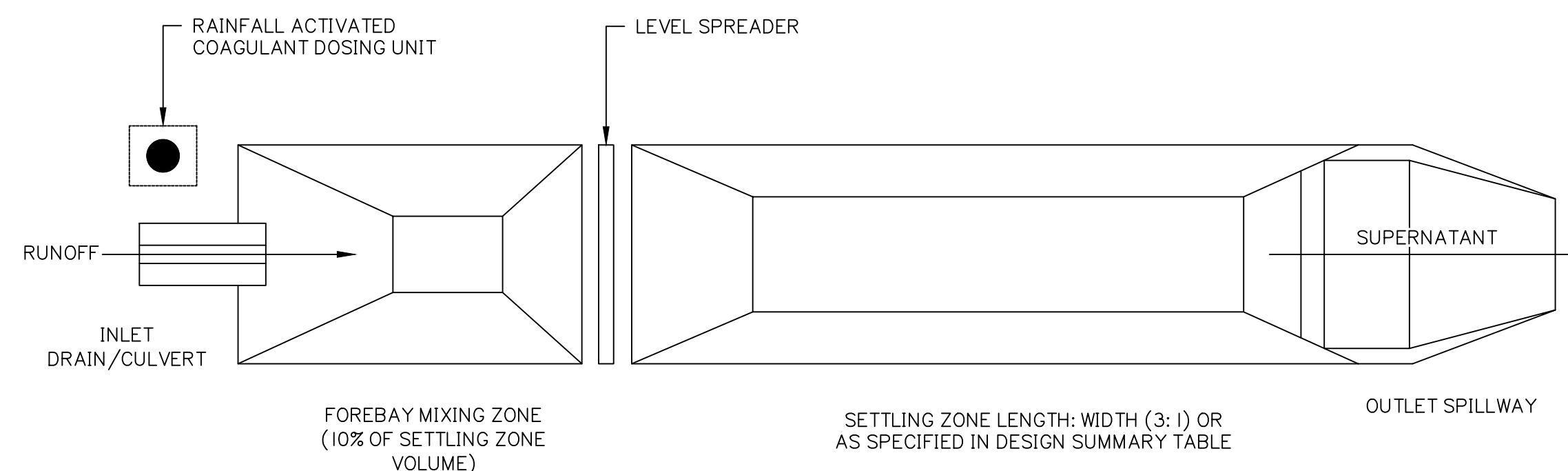
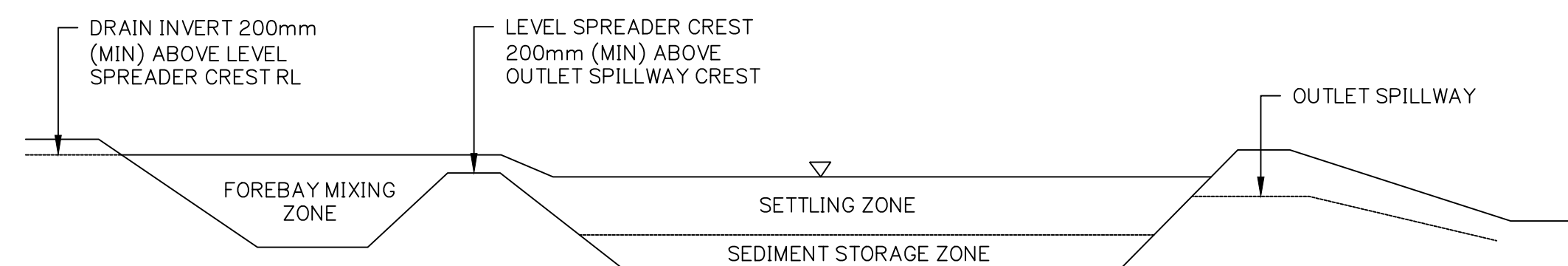
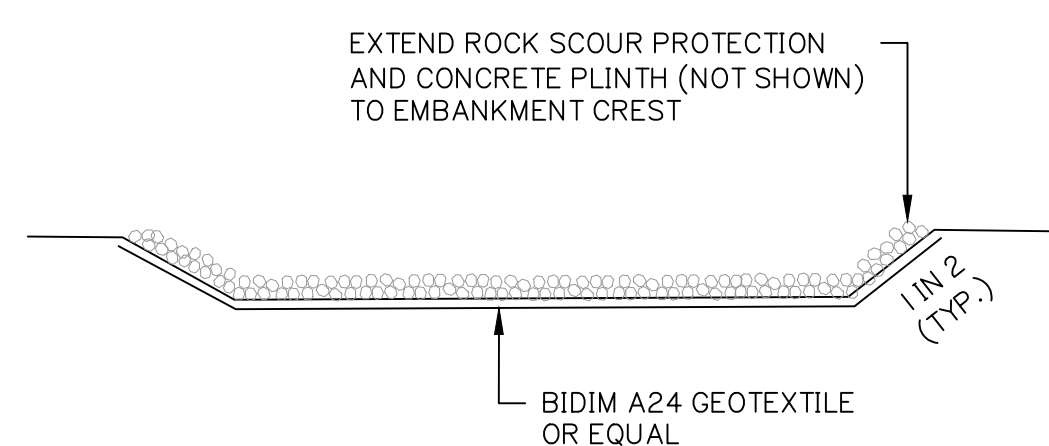
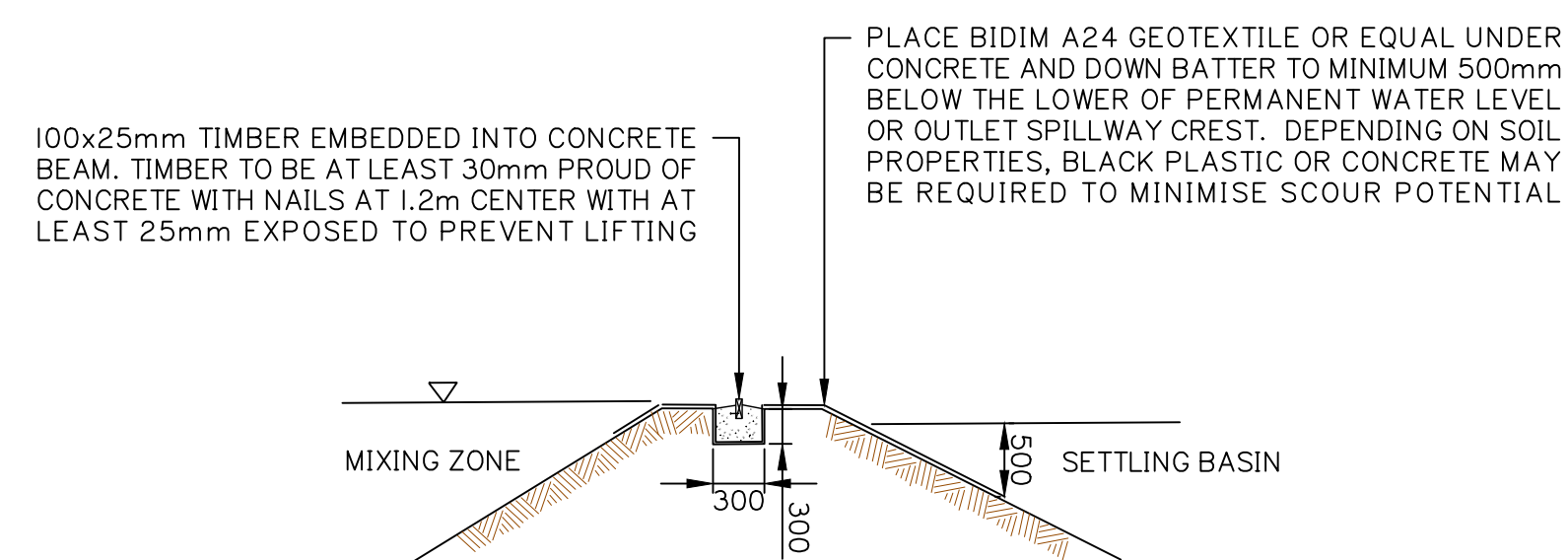
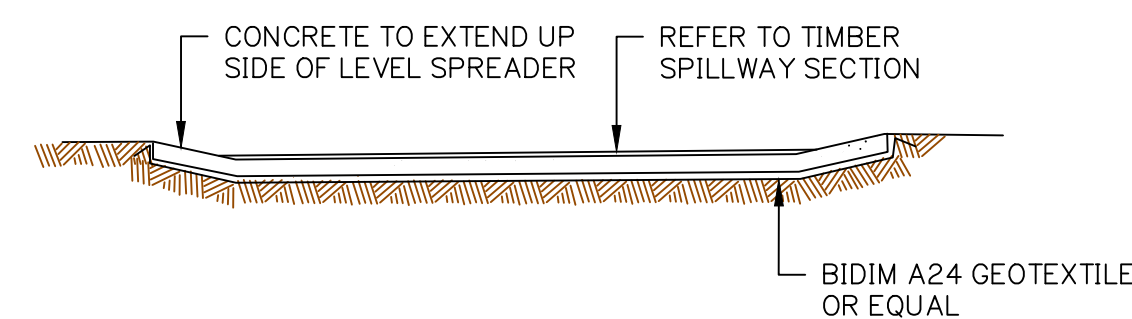
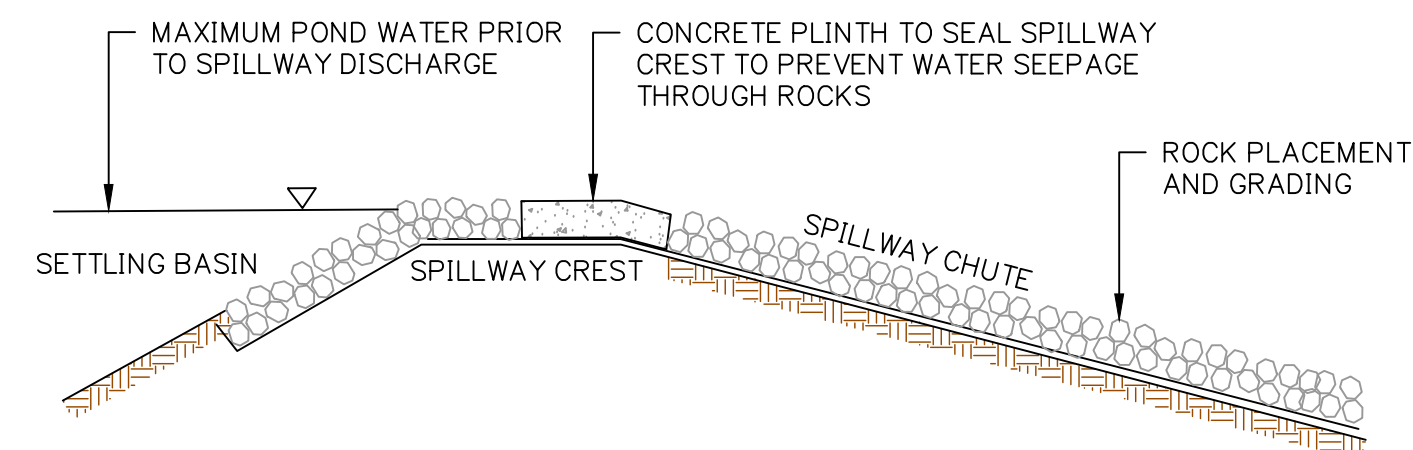
Scale:

0 2.5 5.0 7.5 10 12.5m 1:250 (A1) 1:500 (A3)

PROJECT NORTH POINT



Project No: 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 311	Revision B



CONSTRUCTION PHASE SEDIMENT BASIN TYPICAL SECTIONS

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

CONSTRUCTION PHASE SEDIMENT BASIN TYPICAL SECTIONS

[illegible]

A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK
DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.			A1 UNREDUCED	
CULVERT AND PIPE SIZES IN MILLIMETRES			A3 REDUCED	

NOT APPLICABLE

PROJECT NORTH POINT



Project No. 594

Designed: JH	Drafted: JH
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Approved:	MG
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RPEQ	16939
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Signed:	
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Date:	28/09/2023
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Drawing No:	Revision
5941 ENG CW3 313	A

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

WARNING
BEWARE OF UNDERGROUND SERVICES
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EXISTING STAGE 2 WORKS

HIGHLANDS STREET

FAIRWAY STREET

COASTLINK COURT

COMMON PROPERTY

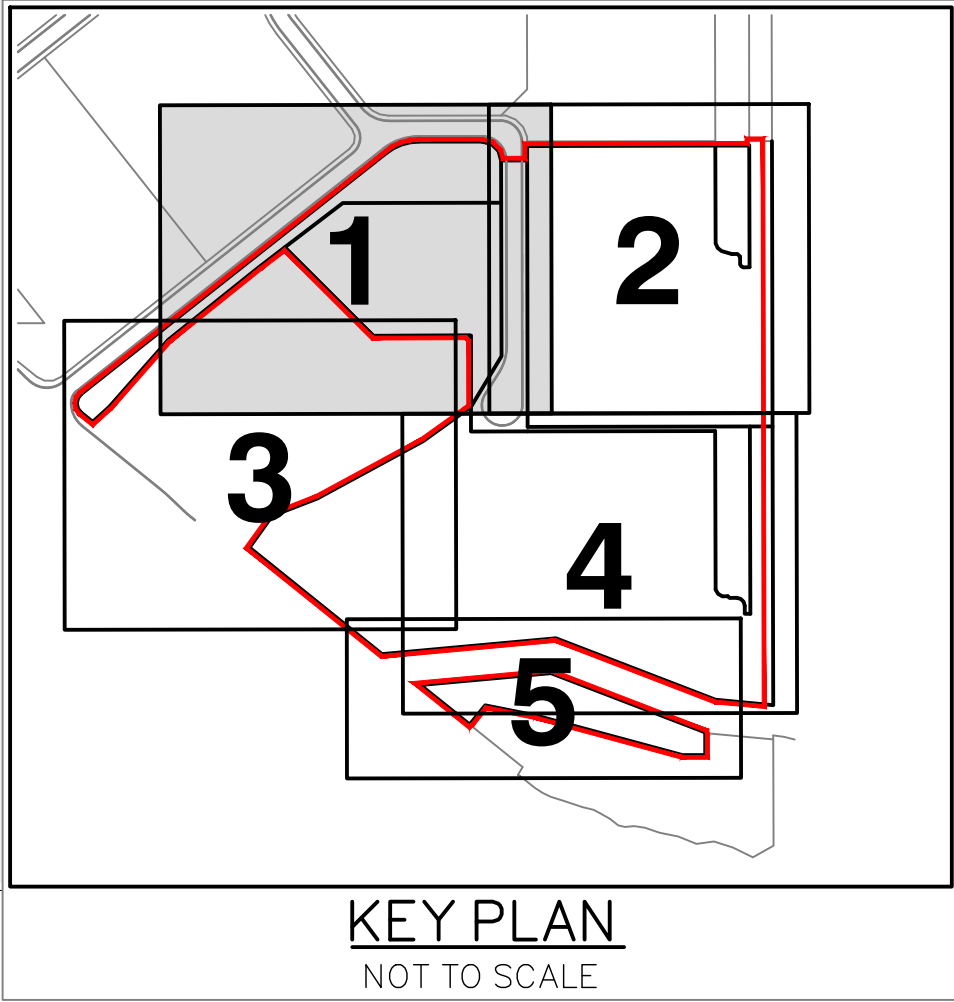
COASTLINK COURT

AMGROW

500
RP295994

NOTE:
STORMWATER INFORMATION AND DETAILS REFER TO SHEET 5941 ENG CW3 410 TO 5941 ENG CW3 414 AND 5941 ENG CW3 500 TO 5941 ENG CW3 575
SEWER INFORMATION AND DETAILS REFER TO SHEET 5941 ENG CW3 610 TO 5941 ENG CW3 630
WATER INFORMATION AND DETAILS REFER TO SHEET 5941 ENG CW3 700 AND 5941 ENG CW3 710

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No: OPW/2023/1136
Dated: 14 February 2024
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



B	08/02/24	FOOTPATH AMENDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

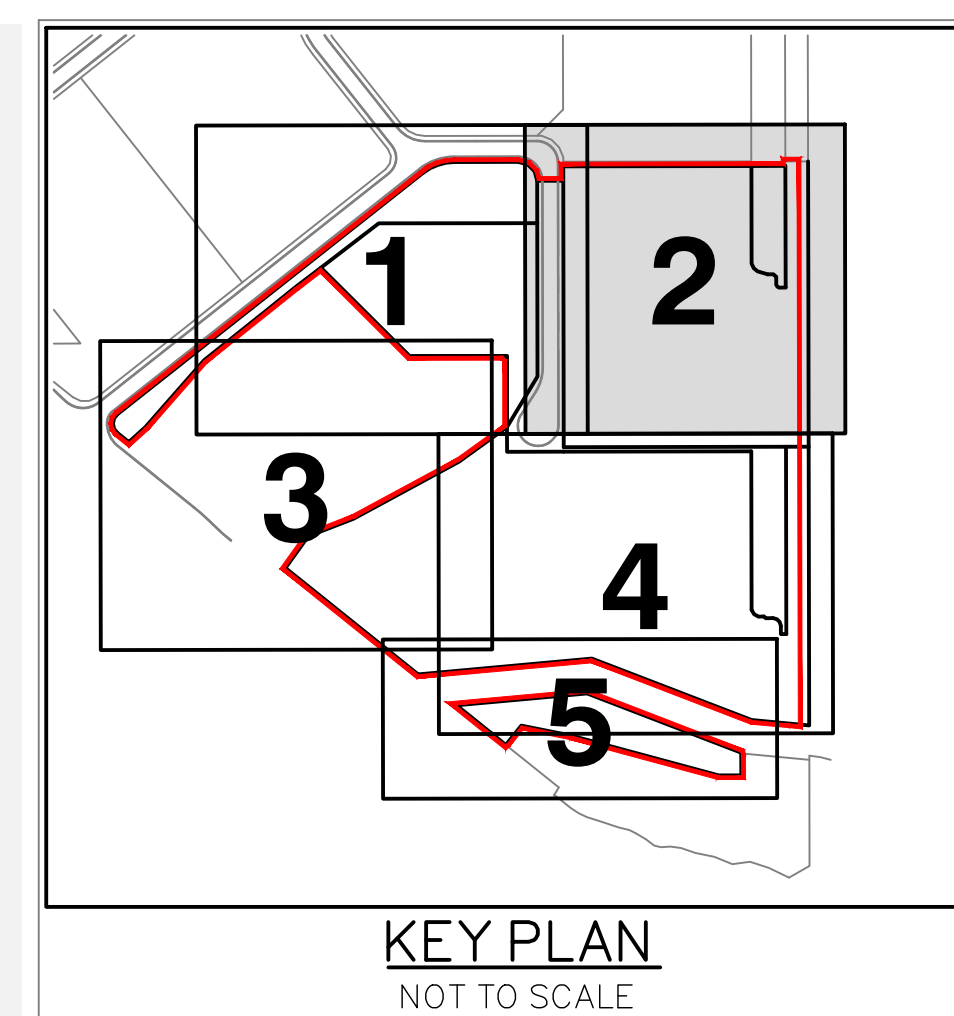
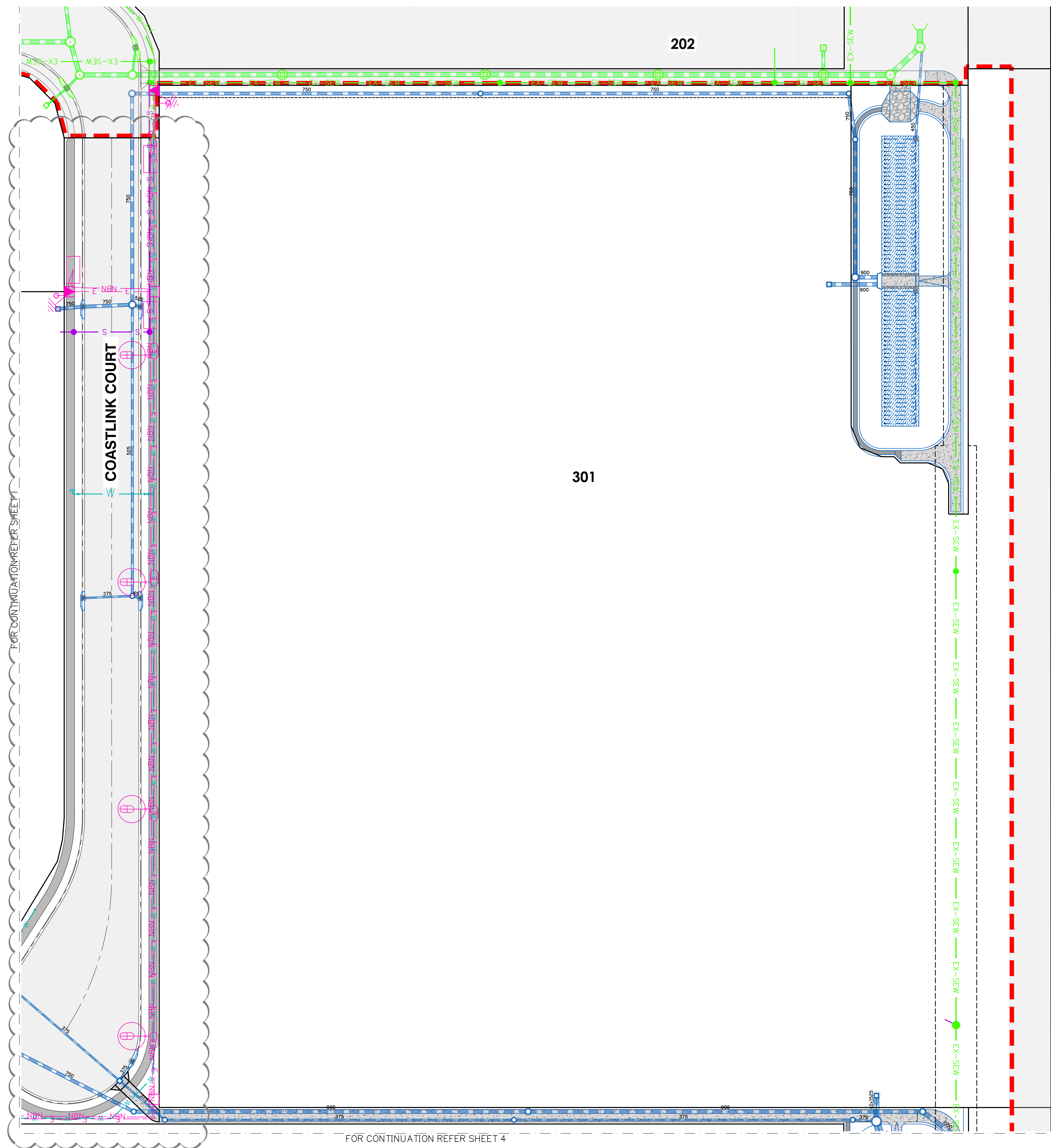
DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.	5941	Revision	
Designed:	JH	Drafted:	JH
Approved:			MG
RPEQ			16939
Signed:			
Date:			28/09/2023
Drawing No:	5941 ENG CW3 380	Revision	B



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NOTE:

STORMWATER INFORMATION AND DETAILS REFER TO SHEET
5941 ENG CW3 410 TO 5941 ENG CW3 414 AND 5941 ENG CW3
500 TO 5941 ENG CW3 575

SEWER INFORMATION AND DETAILS REFER TO SHEET
594I ENG CW3 610 TO 594I ENG CW3 630

WATER INFORMATION AND DETAILS REFER TO SHEET
594I ENG CW3 700 AND 594I ENG CW3 710

3
RP209307

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planning | environment | landscape | engineering | survey

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Gold Coast | 76 Business Street, Yatala QLD | PO Box 392, Beenleigh 4207

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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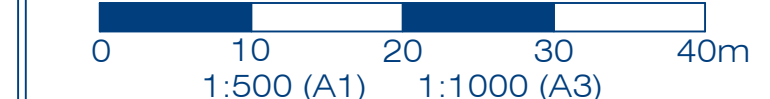
Drawing Title:

OVERALL SERVICES
LAYOUT PLAN
SHEET 2 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MC
B	06/11/23	DESIGN UPDATED	ML	MC
A	25/05/23	ORIGINAL ISSUE	JH	MC
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



PROJECT NORTH POINT



Project No. 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 381	
Revision: C	

Site Address:
LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:	
Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
Meridian:	
PSM:	
RL:	

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Drawing Title:

OVERALL SERVICES
LAYOUT PLAN
SHEET 3 OF 5

[illegible]

A	25/05/23	ORIGINAL ISSUE	JH	MG
ev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.

CULVERT AND PIPE SIZES IN MILLIMETRES

Scale:

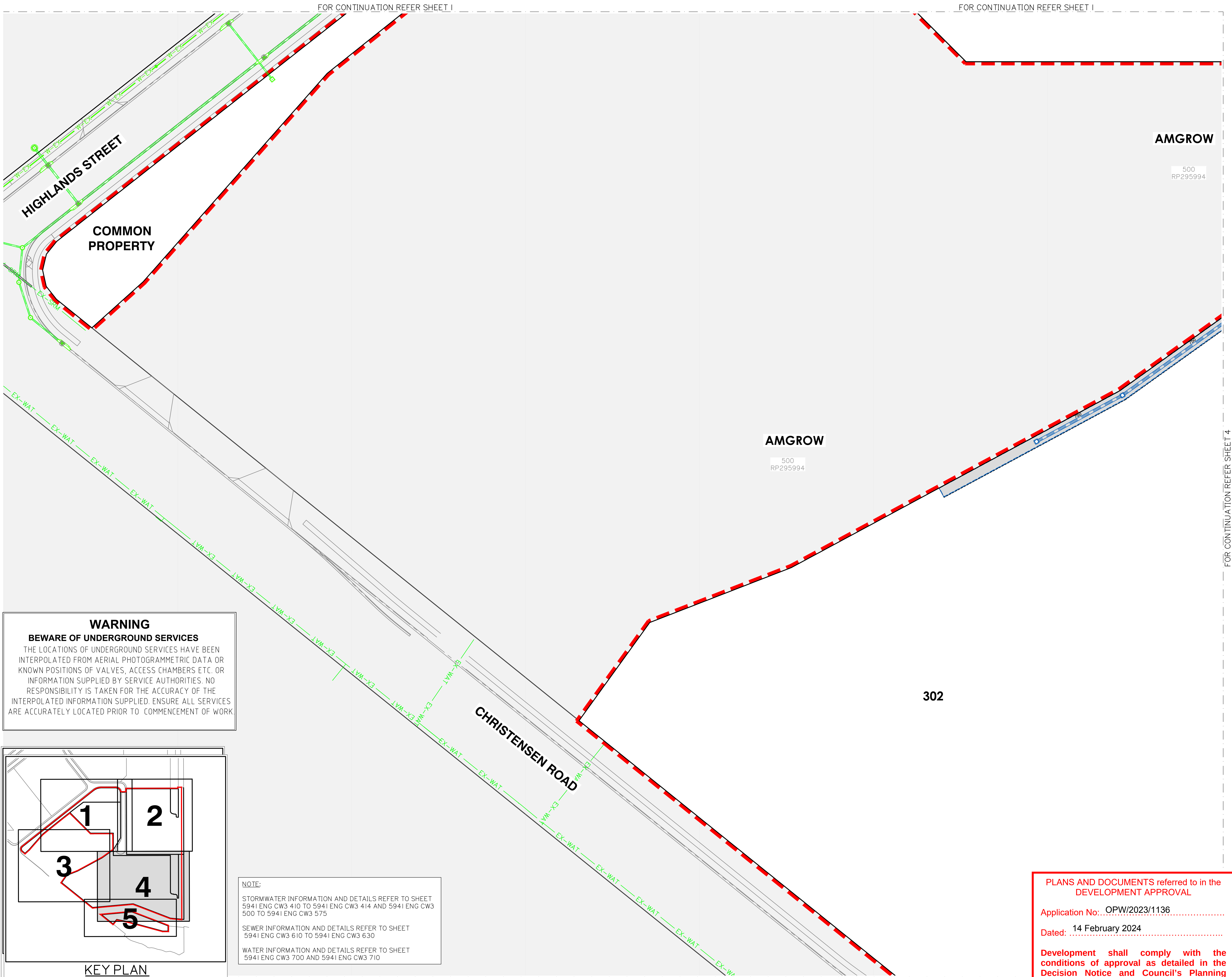
0 10 20 30 40m

1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT

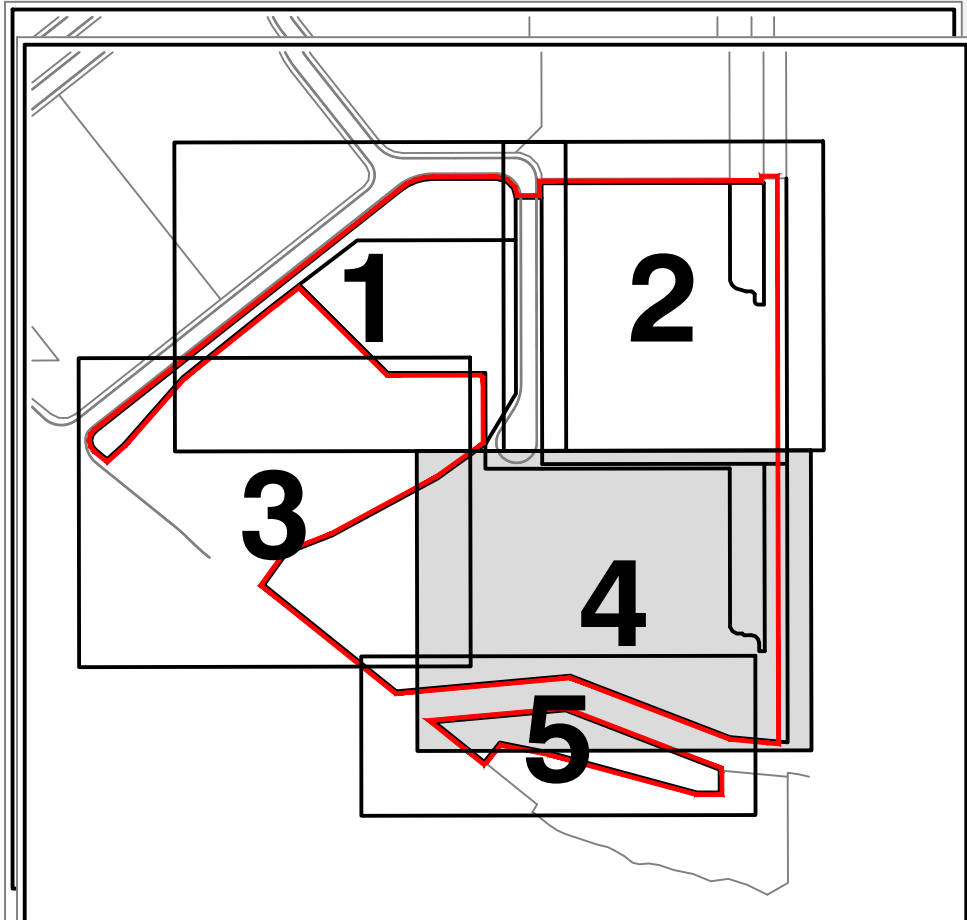


Project No. 5941	
Designed: JH	Drafted: JH
Approved:	MG
PEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 382	A



FOR CONTINUATION REFER SHEET 4

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KEY PLAN
NOT TO SCALE

NOTE:

STORMWATER INFORMATION AND DETAILS REFER TO SHEET
5941 ENG CW3 410 TO 5941 ENG CW3 414 AND 5941 ENG CW3
500 TO 5941 ENG CW3 575

SEWER INFORMATION AND DETAILS REFER TO SHEET
5941 ENG CW3 610 TO 5941 ENG CW3 630

WATER INFORMATION AND DETAILS REFER TO SHEET
5941 ENG CW3 700 AND 5941 ENG CW3 710

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

VANTAGE YATALA STAGE 3

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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OVERALL SERVICES
LAYOUT PLAN
SHEET 4 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
ev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

3941 ENG CWS 383

Revision

FOR CONTINUATION REFER SHEET 3

FOR CONTINUATION REFER SHEET 2

302

3
RP209307

FOR CONTINUATION REFER SHEET 5

OVERALL SERVICES LAYOUT PLAN SHEET 4 OF 5

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NOTE:

STORMWATER INFORMATION AND DETAILS REFER TO SHEET
594I ENG CW3 410 TO 594I ENG CW3 414 AND 594I ENG CW3
500 TO 594I ENG CW3 575

SEWER INFORMATION AND DETAILS REFER TO SHEET
594I ENG CW3 610 TO 594I ENG CW3 630

WATER INFORMATION AND DETAILS REFER TO SHEET
594I ENG CW3 700 AND 594I ENG CW3 710

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

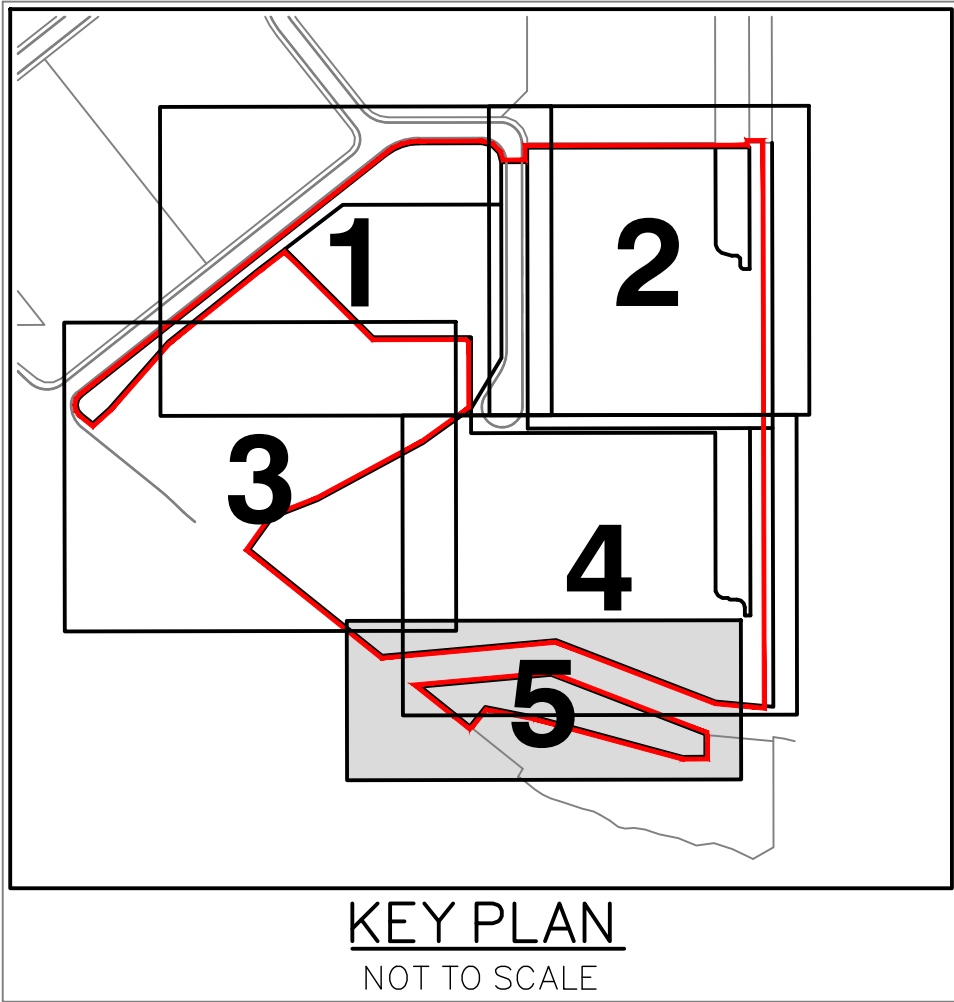
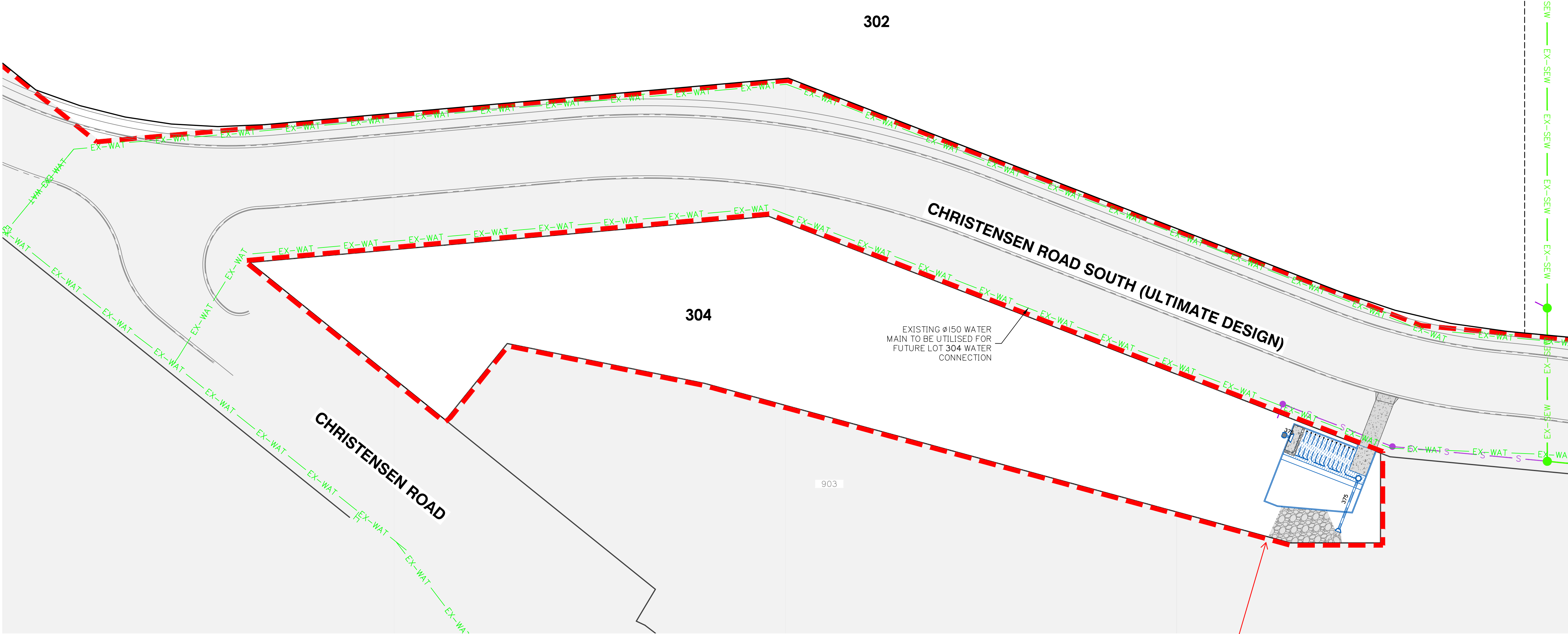
Application No: OPW/2023/1136

Dated: 14 February 2024

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KEY PLAN
NOT TO SCALE

Q:\Projects\5941\engineering\Acad\civil works stage 3\Current\5941 ENG CW3 380.dwg



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NOTE:
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SEWER INFORMATION AND DETAILS REFER TO SHEET 5941 ENG CW3 610 TO 5941 ENG CW3 630
WATER INFORMATION AND DETAILS REFER TO SHEET 5941 ENG CW3 700 AND 5941 ENG CW3 710

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Drawing Title:
**OVERALL SERVICES
LAYOUT PLAN
SHEET 5 OF 5**

B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

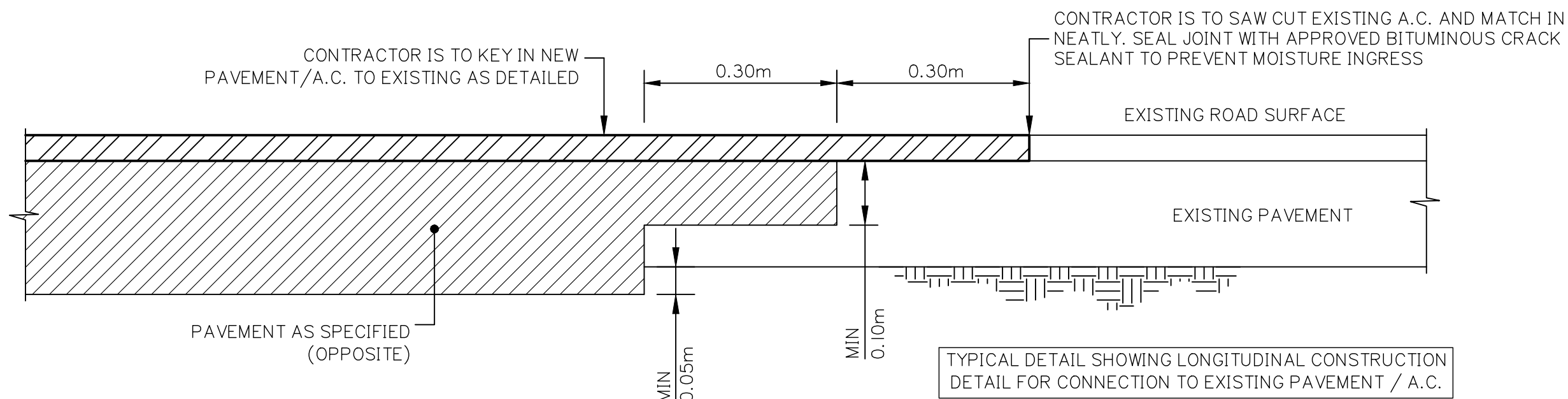
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PROJECT NORTH POINT



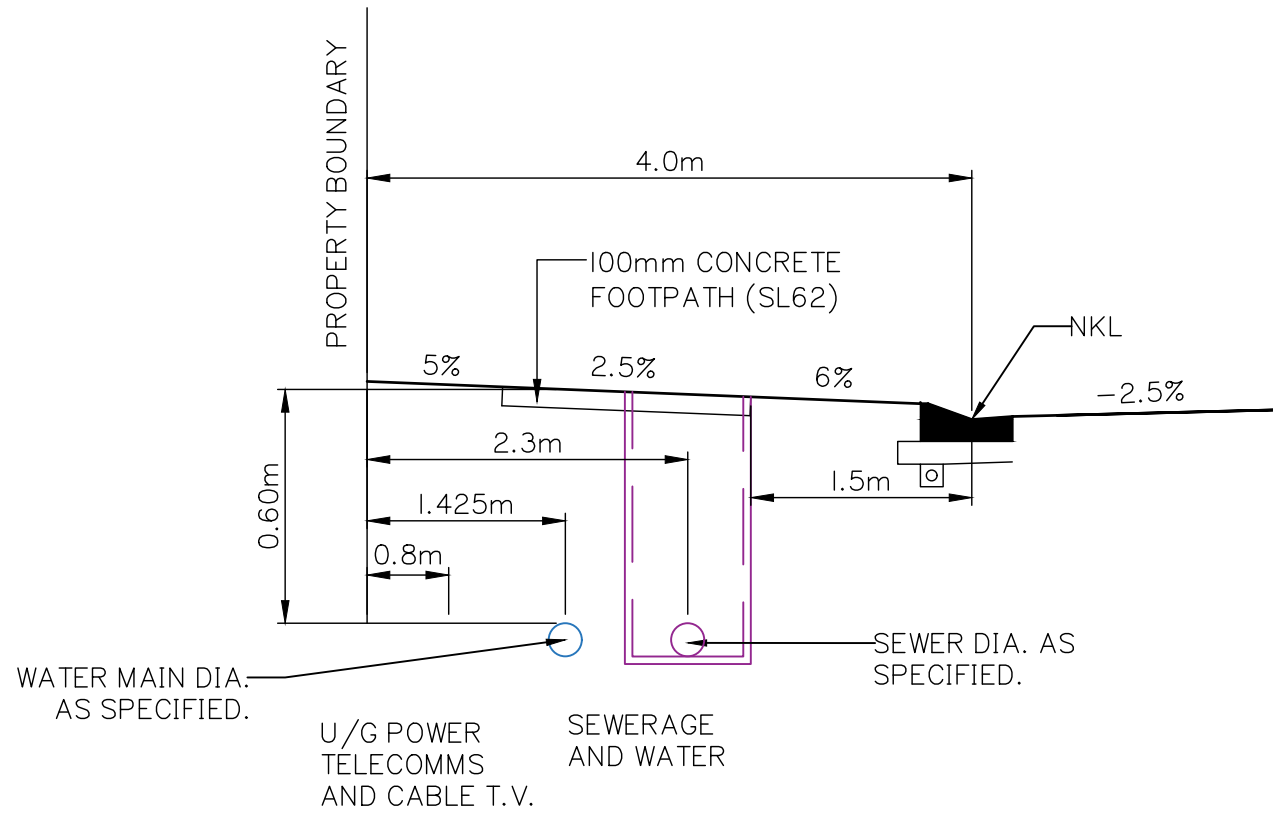
Project No.: 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 384	B

**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**
Application No.: OPW/2023/1136
Dated: 14 February 2024
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
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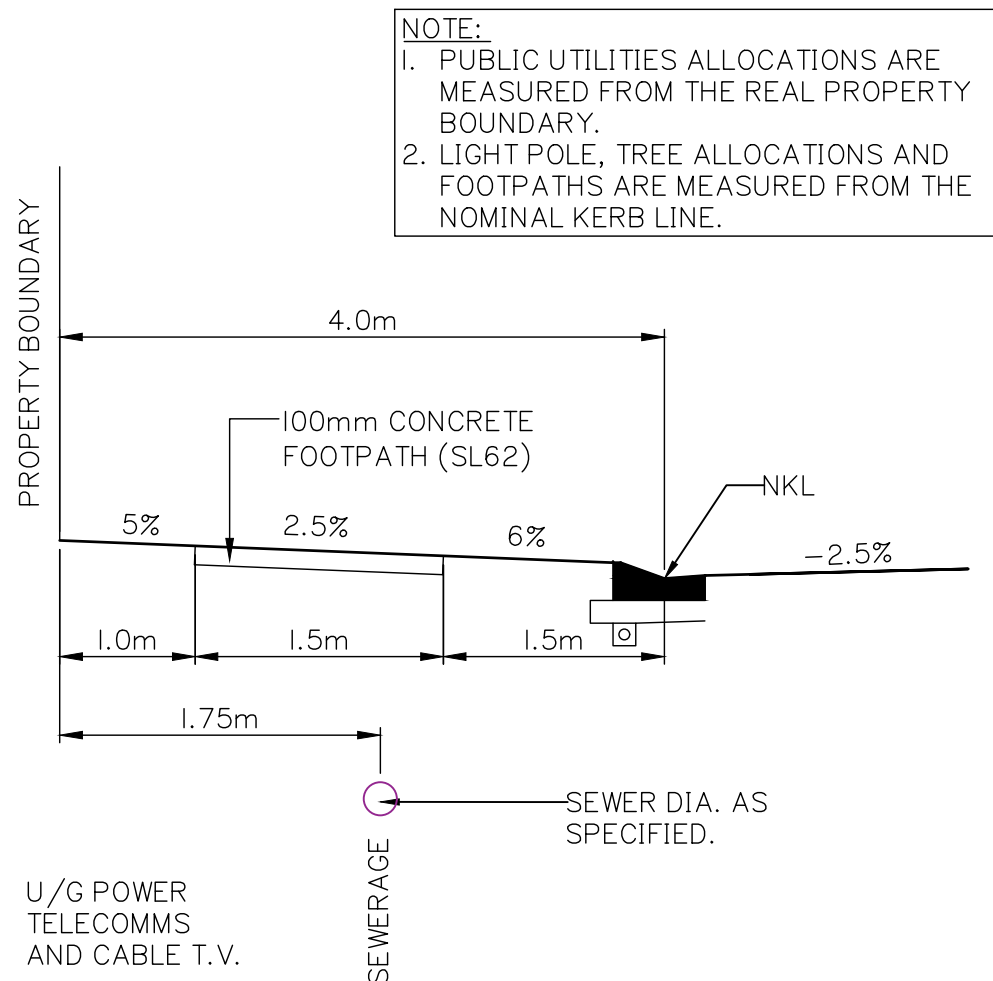
CONNECTION TO EXISTING PAVEMENT

N.T.S



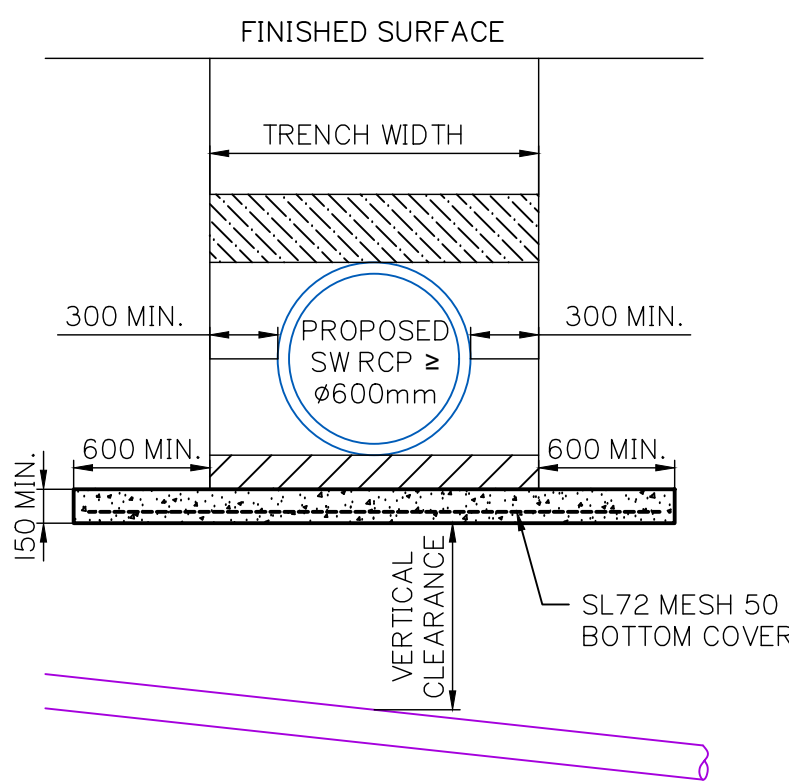
TYPICAL SERVICES POTABLE WATER AND SEWER RETICULATION

SCALE: N.T.S



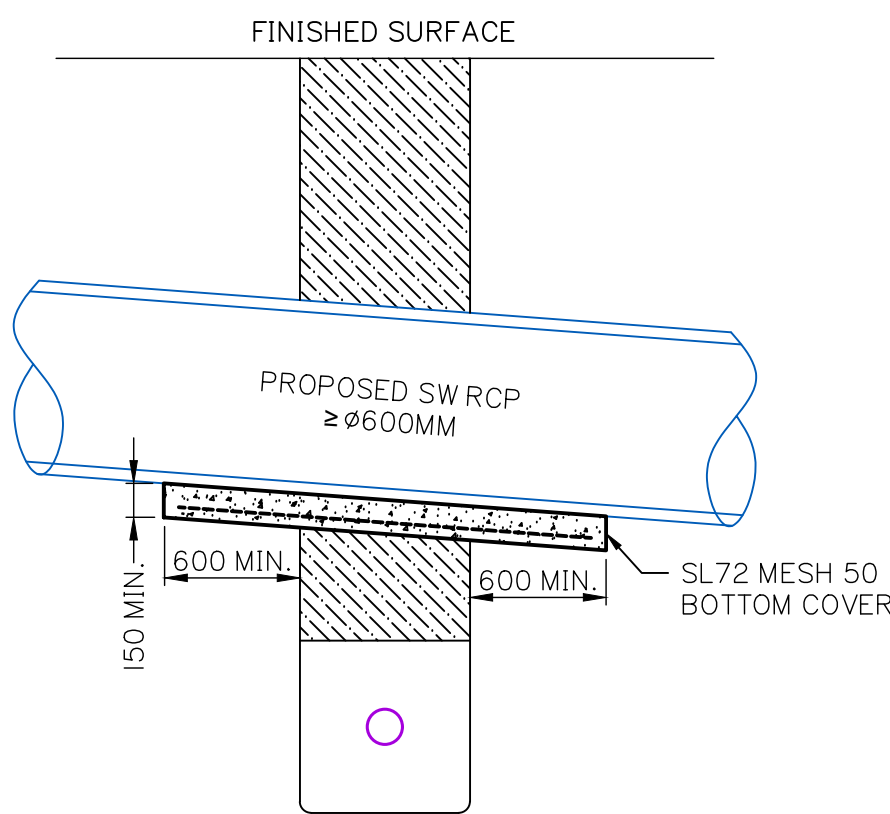
TYPICAL SERVICES SEWER RETICULATION ONLY

SCALE: N.T.S



LONG-SECTION THROUGH SEWER

N.T.S

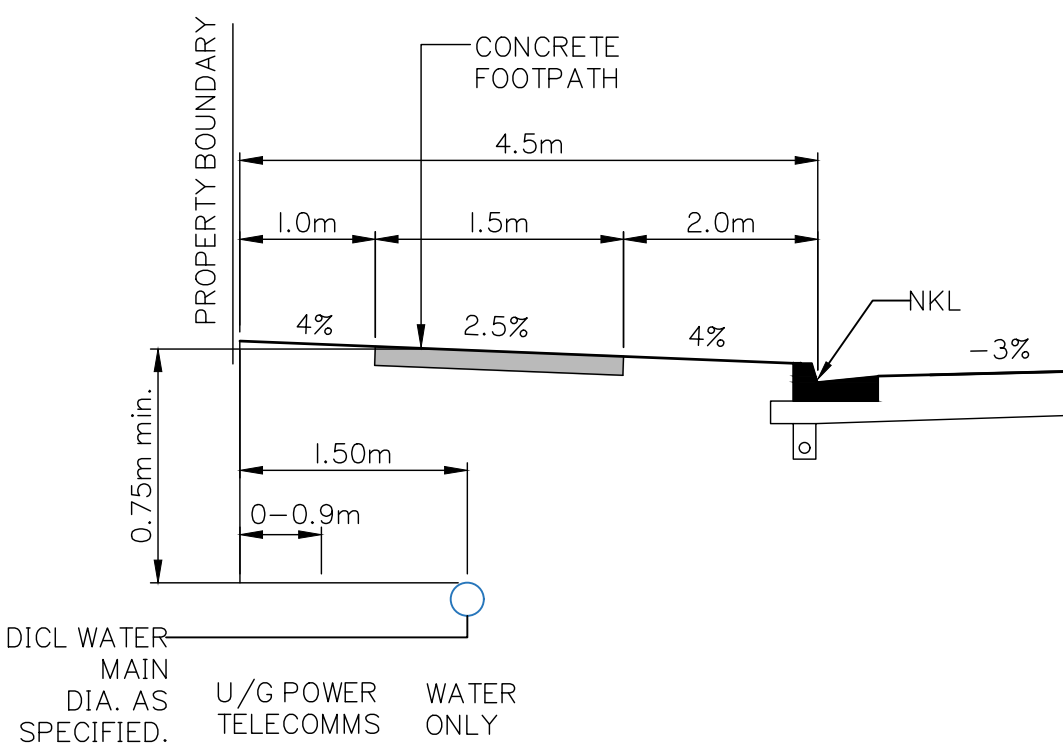


CROSS-SECTION THROUGH SEWER

N.T.S

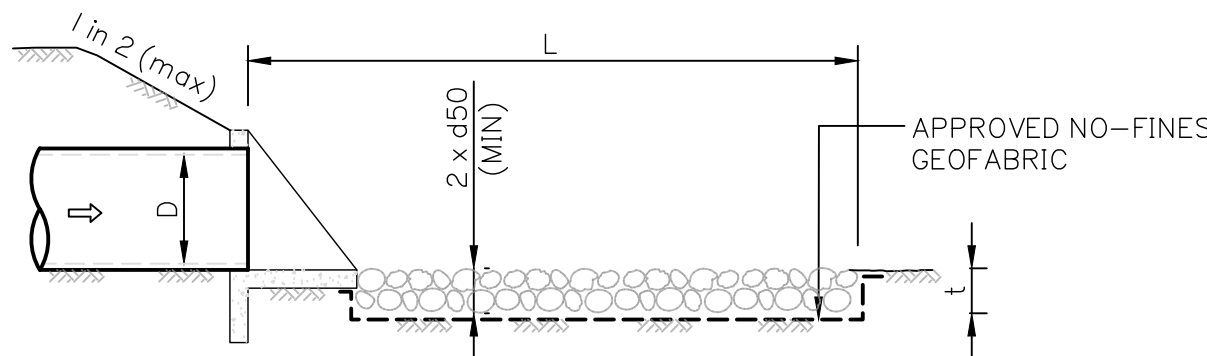
CONCRETE BRIDGING SLAB FOR STORMWATER PIPES $\geq \phi 600$ mm

SCALE: N.T.S



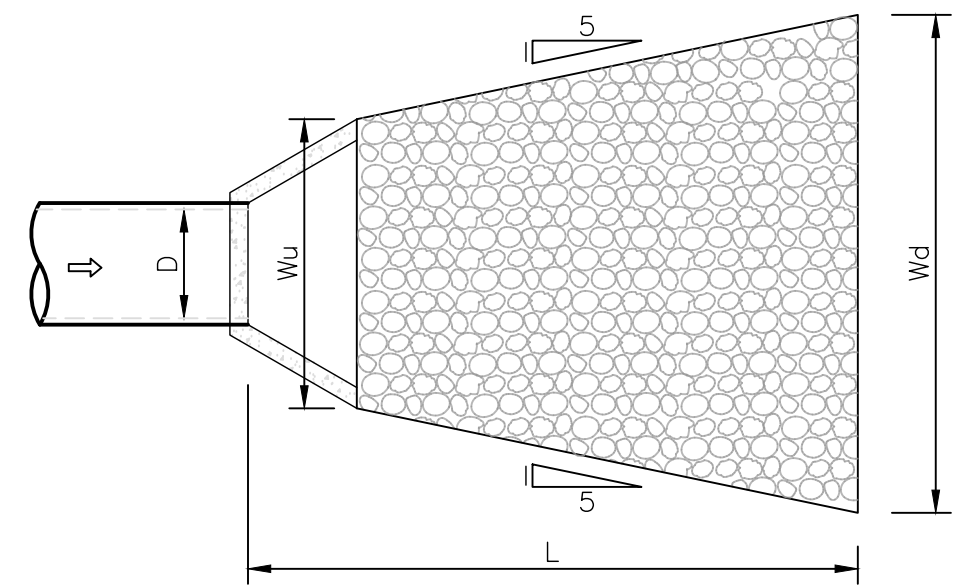
TYPICAL SERVICES IN VERGE POTABLE WATER RETICULATION ONLY

SCALE: N.T.S



TYPICAL STORMWATER OUTLET SECTION

N.T.S



TYPICAL STORMWATER OUTLET PLAN

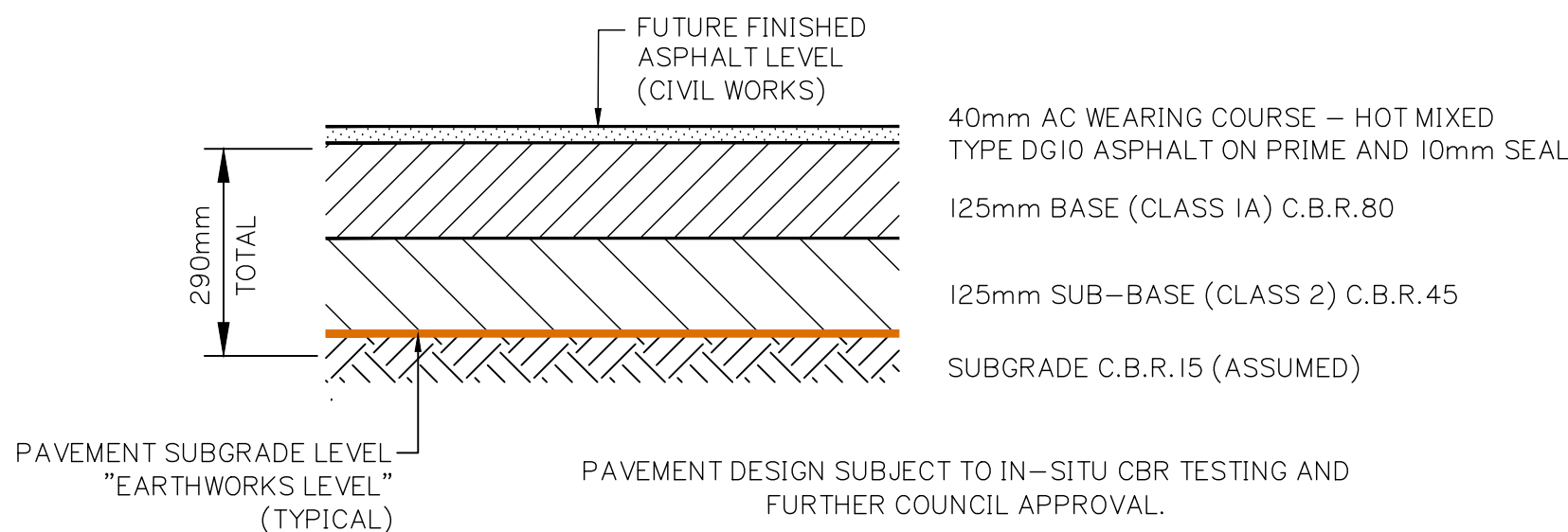
N.T.S

ROCK GRADATION TABLE						
SMALLEST DIMENSION IN (mm)						% OF ROCK SMALLER THAN SIZE SHOWN
150d ₅₀	200d ₅₀	300d ₅₀	400d ₅₀	500d ₅₀	600d ₅₀	
300	380	525	630	750	850	100
200	300	450	550	650	750	50–70
150	200	300	400	500	600	35–50
50	75	100	130	150	175	2–10

ROCK SIZE (M)	ROCK MASS (KG)	MIN. PERCENTAGE OF ROCKS LARGER THAN
0.40	100	0
0.30	35	50
0.15	25	90

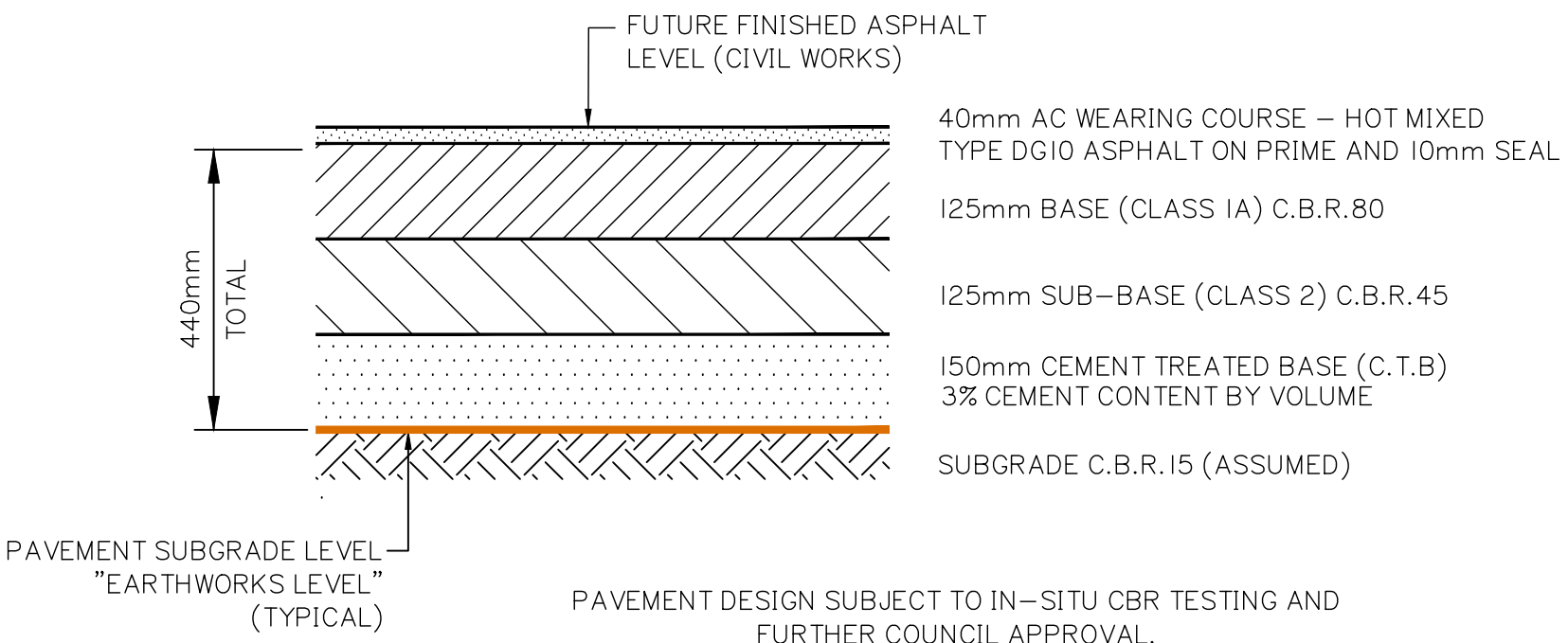
NOTES:

- MINIMUM THICKNESS ROCK PROTECTION: 800mm MIN – UNDERLAY ROCK PROTECTION WITH 'TERRAFIX' XP310 GEOFABRIC OR EQUIVALENT.
- ROCKS SHALL BE DENSE, HARD & DURABLE.
- ANGULAR ROCK TO BE LAYED WITH LARGEST FACE VISIBLE.
- ROCK SIZE TO BE GRADED AS PER TABLE SHOWN.
- REFER ALSO ENERGY DISSIPATION DESIGN CALCULATIONS (ABOVE)



NOMINAL ROAD PAVEMENT DETAIL – IN FILL AREAS INDUSTRIAL COLLECTOR & ACCESS STREET

N.T.S



NOMINAL ROAD PAVEMENT DETAIL – IN CUT AREAS INDUSTRIAL COLLECTOR & ACCESS STREET

N.T.S

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST
Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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Drawing Title:

ROADWORKS AND
DRAINAGE TYPICAL
DETAILS SHEET 2 OF 3

Rev	Date	DESCRIPTION	CHK	DRN
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED A3 REDUCED

Scale:

NOT TO SCALE

PROJECT NORTH POINT



Project No: 5941	Revision
Designed: JH	Drafted: JH
Approved: MG	
RPEQ: 16939	
Signed:	
Date: 28/09/2023	
Drawing No: 5941 ENG CW3 401	Revision A

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST
Level Datum: AHD
Meridian:
PSM:
RL:

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GENERAL NOTES.

Drawing Title:

ROADWORKS AND
DRAINAGE LAYOUT
PLAN SHEET 1 OF 5

B	08/02/24	FOOTPATH AMENDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.: 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

16939

Signed:

Date:

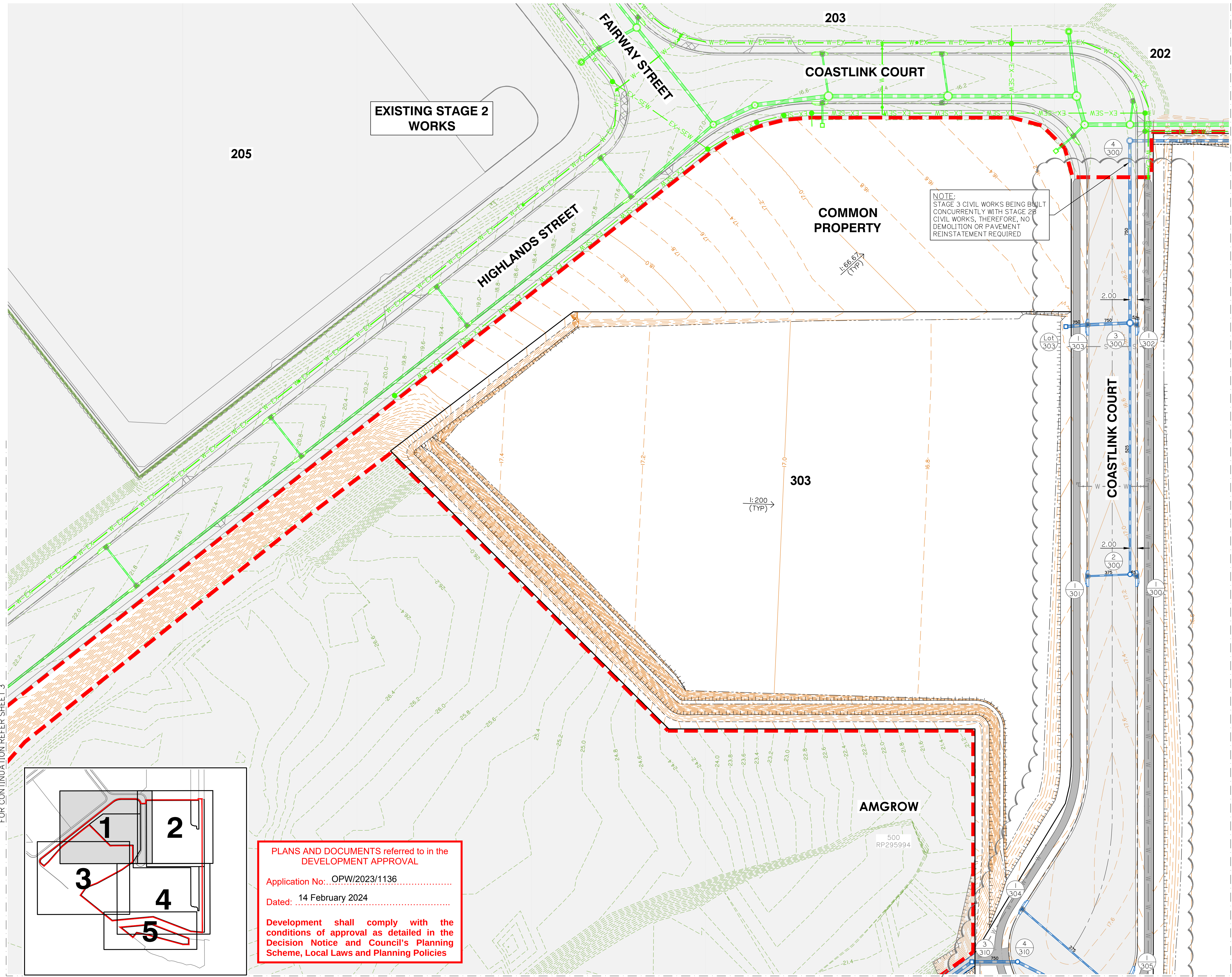
28/09/2023

Drawing No:

5941 ENG CW3 410

Revision

B



FOR CONTINUATION REFER SHEET 3

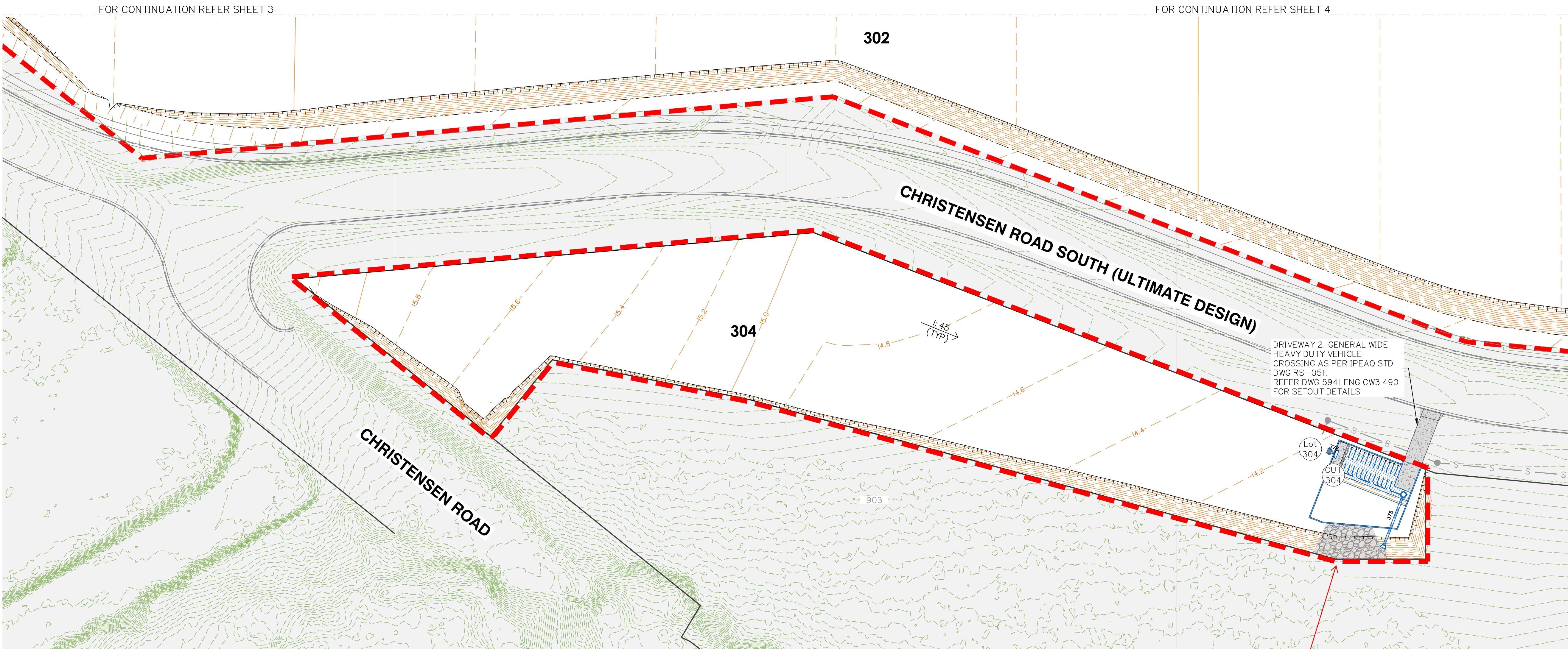
FOR CONTINUATION REFER SHEET 2

FOR CONTINUATION REFER SHEET 3

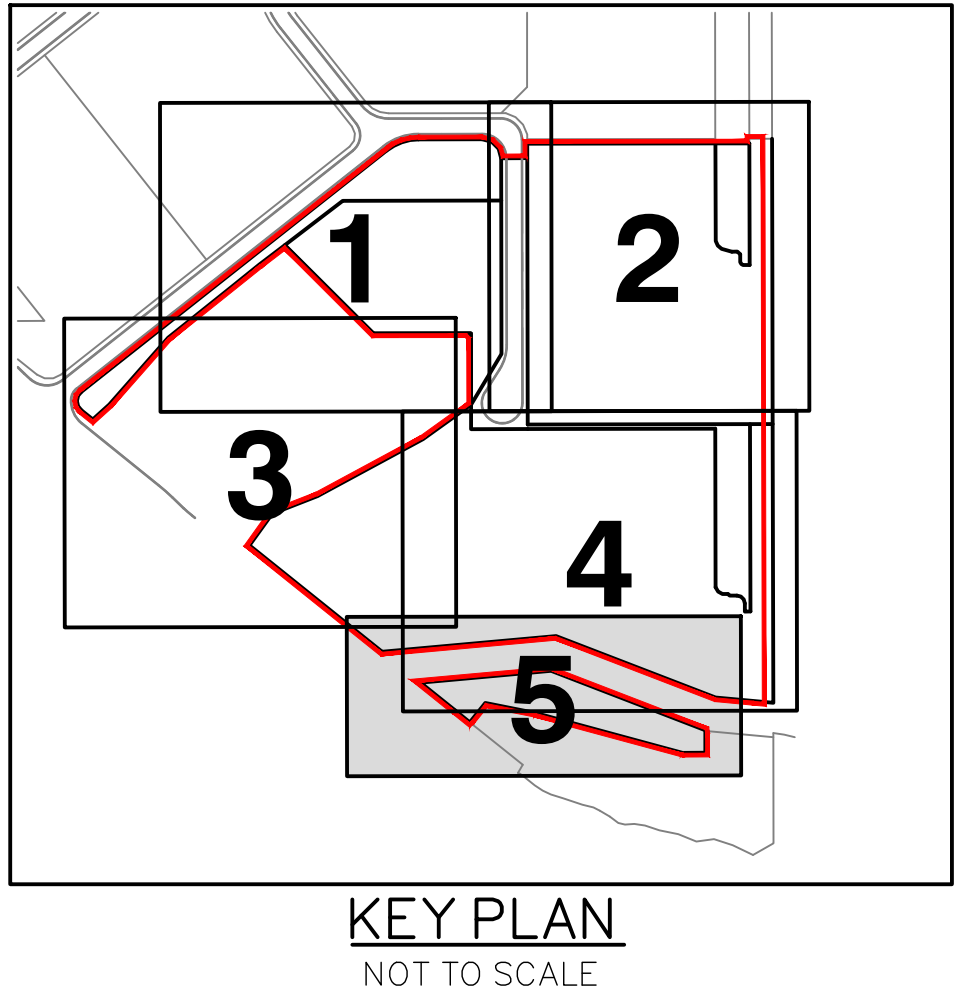
KEY PLAN
NOT TO SCALE

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL
Application No.: OPW/2023/1136
Dated: 14 February 2024
Development shall comply with the
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Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 5



Basin 3 is private and does not form part of this approval.



B	06/11/23	DESIGN UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 10 20 30 40m

1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.:	5941
Designed:	JH
Drafted:	JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No.:	5941 ENG CW3 414
Revision	B

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

g:\Projects\5941\engineering\Acadocivil works stage 3\Current\5941 ENG CW3 420.dwg

COASTLINK COURT – SETOUT TABLE									
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE	STAGE
IP 1	-105.039	2771.372	6552.735	16.713	99°13'15.55"				STAGE 2
	-100.000	2776.345	6551.927	16.662	99°13'15.55"				
	-90.000	2786.216	6550.325	16.562	99°13'15.55"				
	-80.000	2796.087	6548.722	16.462	99°13'15.55"				
	-70.000	2805.958	6547.120	16.362	99°13'15.55"				
	-60.000	2815.828	6545.518	16.262	99°13'15.55"				
	-50.000	2825.699	6543.915	16.162	99°13'15.55"				
	-41.377	2834.211	6542.533	16.076	99°13'15.55"				
	-40.000	2835.563	6542.272	16.062	102°39'05.75"				
	-30.000	2844.547	6538.062	15.971	127°33'46.10"				
IP 2	-23.313	2856.913	6538.848	15.937		R = 23.000	36.127	89°59'51.40"	STAGE 2
	-20.000	2850.922	6530.460	15.929	152°28'26.45"				
	-10.000	2853.501	6520.880	15.940	177°23'06.80"				
CT	-5.250	2853.228	6516.146	15.964	189°13'06.95"				
	0.000	2852.387	6510.964	16.004					
IP 3	10.000	2850.785	6501.093	16.112	189°13'09.83"				
	20.000	2849.183	6491.222	16.224	189°13'09.83"				
	30.000	2847.581	6481.352	16.336	189°13'09.83"				
	40.000	2845.978	6471.481	16.449	189°13'09.83"				
	50.000	2844.376	6461.610	16.561	189°13'09.83"				
	60.000	2842.774	6451.739	16.673	189°13'09.83"				
	70.000	2841.172	6441.868	16.785	189°13'09.83"				
	80.000	2839.570	6431.997	16.897	189°13'09.83"				
	90.000	2837.968	6422.127	17.010	189°13'09.83"				
	100.000	2836.365	6412.256	17.122	189°13'09.83"				
IP 3	110.000	2834.763	6402.385	17.234	189°13'09.83"				STAGE 3
	120.000	2833.161	6392.514	17.346	189°13'09.83"				
	130.000	2831.559	6382.643	17.458	189°13'09.83"				
	140.000	2829.957	6372.773	17.570	189°13'09.83"				
	150.000	2828.355	6362.902	17.683	189°13'09.83"				
	160.000	2826.753	6353.031	17.791	189°13'09.83"				
	170.000	2825.150	6343.160	17.865	189°13'09.83"				
	178.857	2823.731	6334.417	17.895	189°13'09.83"				
	180.000	2823.539	6333.291	17.896	190°10'55.43"				
	190.000	2821.055	6323.613	17.884	198°36'28.49"				
IP 4	198.219	2820.543	6314.772	17.842		R = 68.000	38.722	32°37'36.22"	STAGE 3
	200.000	2817.180	6314.405	17.831	207°02'01.55"				
	210.000	2811.997	6305.863	17.771	215°27'34.61"				
CT	217.580	2807.266	6299.947	17.726	221°50'46.05"				
IP 5	218.080	2806.932	6299.574	17.723	221°50'46.05"				

BASIN ACCESS 01 – SETOUT TABLE									
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE	STAGE
IP 1	0.000	2861.659	6524.401	15.699	99°13'15.46"				STAGE 2
	10.000	2871.530	6522.798	15.720	99°13'15.46"				
	20.000	2881.401	6521.196	15.199	99°13'15.46"				
	30.000	2891.271	6519.593	14.677	99°13'15.46"				
	40.000	2901.142	6517.991	14.155	99°13'15.46"				
	50.000	2911.013	6516.389	13.634	99°13'15.46"				
	60.000	2920.884	6514.786	13.530	99°13'15.46"				
	70.000	2930.755	6513.184	13.480	99°13'15.46"				
	80.000	2940.625	6511.581	13.430	99°13'15.46"				
	90.000	2950.496	6509.979	13.380	99°13'15.46"				
	100.000	2960.367	6508.376	13.330	99°13'15.46"				
	110.000	2970.238	6506.774	13.280	99°13'15.46"				
	120.000	2980.108	6505.172	13.230	99°13'15.46"				
	130.000	2989.979	6503.569	13.180	99°13'15.46"				
	140.000	2999.850	6501.967	13.130	99°13'15.46"				
	150.000	3009.721	6500.364	13.080	99°13'15.46"				
	160.000	3019.592	6498.762	13.030	99°13'15.46"				
	170.000	3029.462	6497.159	12.980	99°13'15.46"				
IP 2	180.000	3039.333	6495.557	12.980	99°13'15.46"				STAGE 2
	190.000	3049.204	6493.955	13.141	99°13'15.46"				
	191.142	3050.331	6493.772	13.195	99°13'15.46"				
	200.000	3056.498	6492.771	13.430		R = 6.250	9.815	89°58'38.81"	
	200.957	3055.579	6487.556	13.619	180°25'38.24"				
	210.957	3055.499	6486.603	13.665	189°11'54.27"				
	220.000	3054.053	6477.676	13.700	189°11'54.27"				
	230.000	3052.455	6467.805	13.700	189°11'54.27"				
	240.000	3050.856	6457.934	13.700	189°11'54.27"				
	250.000	3049.258	6448.062	13.700	189°11'54.27"				
IP 3	260.000	3047.659	6438.191	13.700	189°11'54.27"				STAGE 3
	270.000	3046.061	6428.319	13.700	189°11'54.27"				
	280.000	3044.462	6418.448	13.700	189°11'54.27"				
	290.000	3042.864	6408.577	13.700	189°11'54.27"				
	300.000	3041.265	6398.705	13.700	189°11'54.27"				
	310.000	3039.667	6388.834	13.700	189°11'54.27"				
	320.000	3038.068	6378.962	13.699	189°11'54.27"				
	330.000	3036.469	6369.090	13.698	189°11'54.27"				
	340.000	3034.870	6359.218	13.697	189°11'54.27"				
	350.000	3033.271	6349.346	13.696	189°11'54.27"				

CONTROL LINE SETOUT TABLES

BASIN ACCESS 02 – SETOUT TABLE								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	2817.700	6285.150	17.114	143°15'26.80"			
	10.000	2823.682	6277.137	17.642	143°15'26.80"			
TC	11.163	2824.378	6276.205	17.688	143°15'26.80"			
IP 2	12.123	2824.982	6275.395	17.727		R = -2.500	1.921	44°02'05.33"
CT	13.084	2825.980	6275.233	17.754	99°13'21.47"			
	20.000	2832.807	6274.125	17.639	99°13'21.47"			
	30.000	2842.678	6272.522	17.472	99°13'21.47"			
	40.000	2852.548	6270.919	17.306	99°13'21.47"			
	50.000	2862.419	6269.316	17.140	99°13'21.47"			
	60.000	2872.290	6267.714	16.973	99°13'21.47"			
	70.000	2882.160	6266.111	16.807	99°13'21.47"			
	80.000	2892.031	6264.508	16.641	99°13'21.47"			
	90.000	2901.902	6262.906	16.475	99°13'21.47"			
	100.000	2911.773	6261.303	16.308	99°13'21.47"			
	110.000	2921.643	6259.700	16.142	99°13'21.47"			
	120.000	2931.514	6258.097	15.976	99°13'21.47"			
	130.000	2941.385	6256.495	15.809	99°13'21.47"			
	140.000	2951.256	6254.892	15.643	99°13'21.47"			
	150.000	2961.126	6253.289	15.477	99°13'21.47"			
	160.000	2970.997	6251.687	15.310	99°13'21.47"			
	170.000	2980.868	6250.084	15.144	99°13'21.47"			
	180.000	2990.739	6248.481	15.000	99°13'21.47"			
	190.000	3000.609	6246.878	15.000	99°13'21.47"			
TC	196.917	3007.437	6245.770	15.000	99°13'21.47"			
	200.000	3010.336	6244.766	15.000	118°57'37.43"			
IP 3	203.944	3016.267	6244.336	15.000		R = 8.950	14.055	89°58'32.80"
	210.000	3014.940	6236.471	15.000	182°58'40.90"			
CT	210.972	3014.837	6235.505	15.000	189°11'54.26"			
	220.000	3013.394	6226.593	15.000	189°11'54.26"			
	230.000	3011.795	6216.721	15.000	189°11'54.26"			
	240.000	3010.197	6206.850	15.000	189°11'54.26"			
	250.000	3008.598	6196.978	15.000	189°11'54.26"			
	260.000	3007.000	6187.107	15.000	189°11'54.26"			
	270.000	3005.401	6177.236	15.000	189°11'54.26"			
	280.000	3003.803	6167.364	15.000	189°11'54.26"			
	290.000	3002.204	6157.493	15.000	189°11'54.26"			
	300.000	3000.606	6147.621	14.700	189°11'54.26"			
	310.000	2999.007	6137.750	15.000	189°11'54.26"			
	320.000	2997.409	6127.879	15.000	189°11'54.26"			
	330.000	2995.810	6118.007	15.000	189°11'54.26"			
	340.000	2994.211	6108.136	15.000	189°11'54.26"			
	350.000	2992.613	6098.264	15.000	189°11'54.26"			
	360.000	2991.014	6088.393	15.000	189°11'54.26"			
IP 4	364.619	2990.276	6083.833	15.000	189°11'54.26"			

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

COASTLINK COURT
LONGITUDINAL SECTION

A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

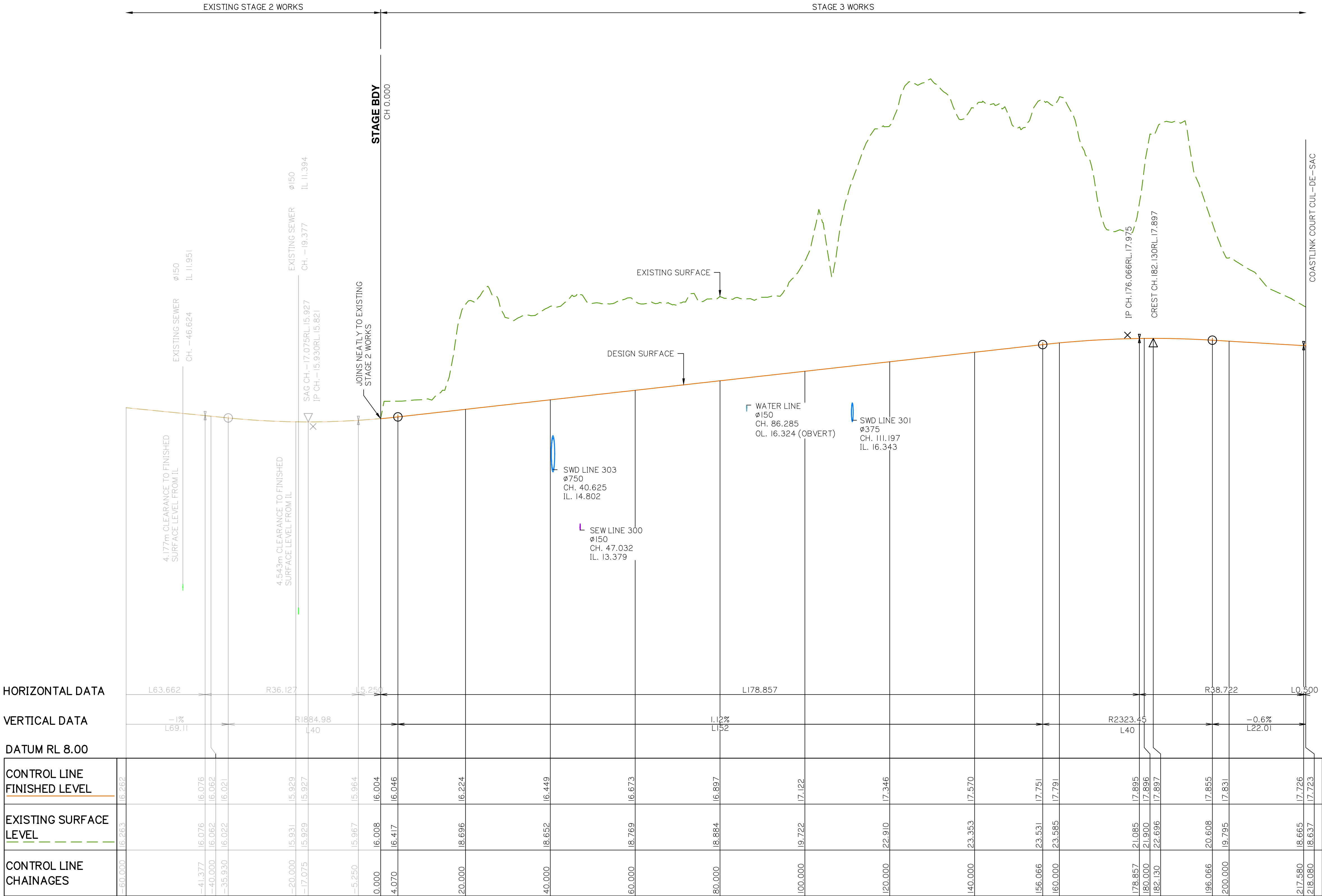
DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)
0 1 2 3 4m
1:50 (A1) 1:100 (A3)

PROJECT NORTH POINT



Project No. 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 450	Revision A



COASTLINK COURT – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500
A1 VERT SCALE 1: 50

COASTLINK COURT LONGITUDINAL SECTION

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

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Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
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RL:

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Drawing Title:

BASIN ACCESS 01
LONGITUDINAL SECTION

B	08/01/24	NOTES ADDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	JH	MG
			DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

0 1 2 3 4m
1:50 (A1) 1:100 (A3)

PROJECT NORTH POINT



Project No.: 5941

Designed: JH

Drafted: ML

Approved:

MG

RPEQ

16939

Signed:

Date:

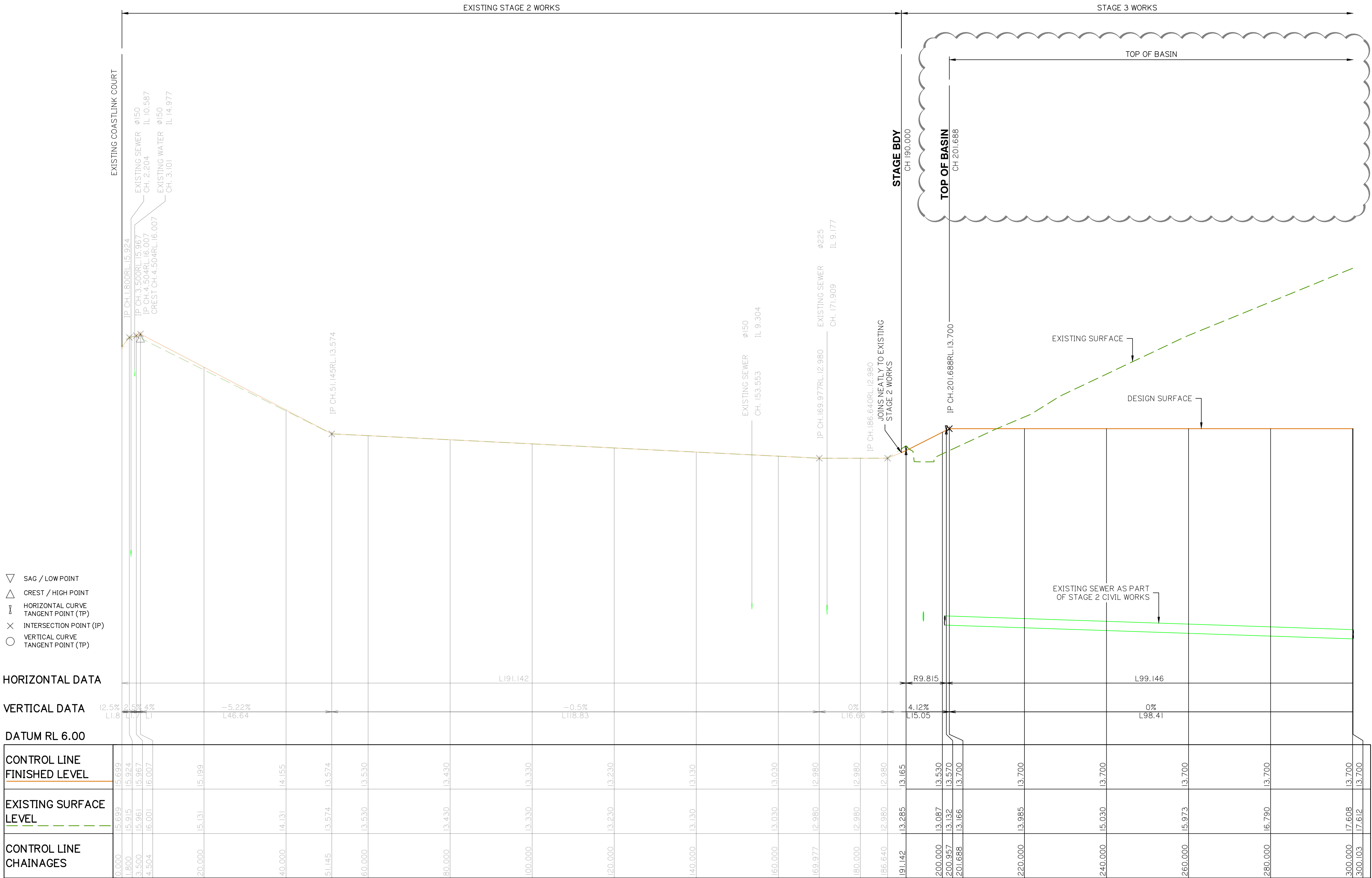
28/09/2023

Drawing No:

Revision

5941 ENG CW3 451

B



BASIN ACCESS 01 – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500
A1 VERT SCALE 1: 50

BASIN ACCESS 01 LONGITUDINAL SECTION

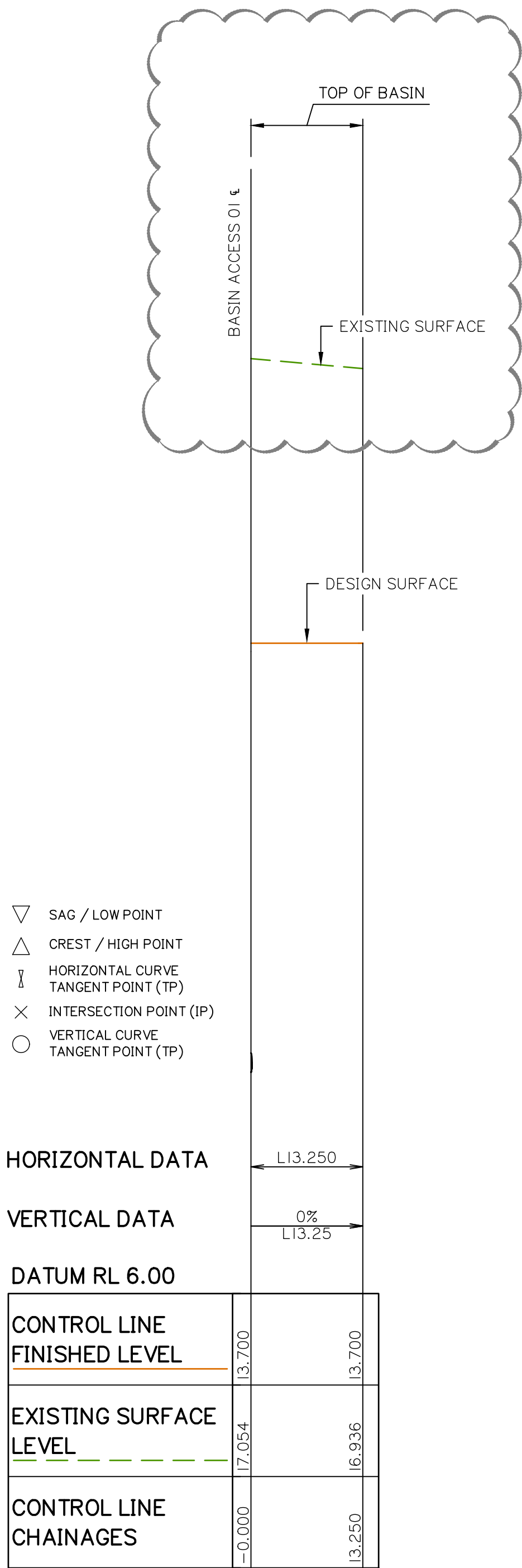
PLANS AND DOCUMENTS referred to in the
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BASIN ACCESS 01a – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500
A1 VERT SCALE 1: 50

BASIN ACCESS 01a LONGITUDINAL SECTION

Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
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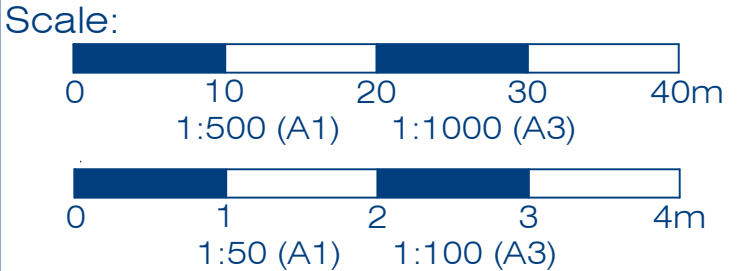
Drawing Title:

BASIN ACCESS 01a
LONGITUDINAL SECTION

B	08/01/24	NOTES ADDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED



PROJECT NORTH POINT



Project No.: 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 452	B

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

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Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

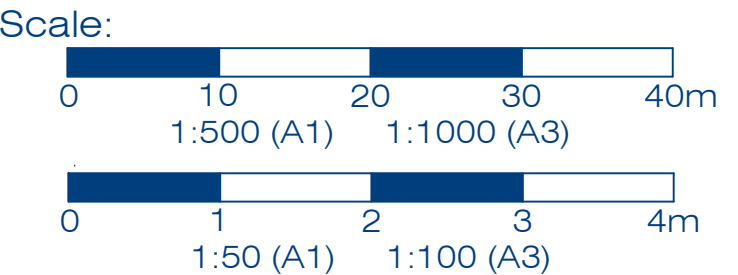
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Drawing Title:

BASIN ACCESS 02 AND 02a
LONGITUDINAL SECTIONS

C	08/01/24	NOTES ADDED	JH	MG
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES A3 REDUCED



PROJECT NORTH POINT



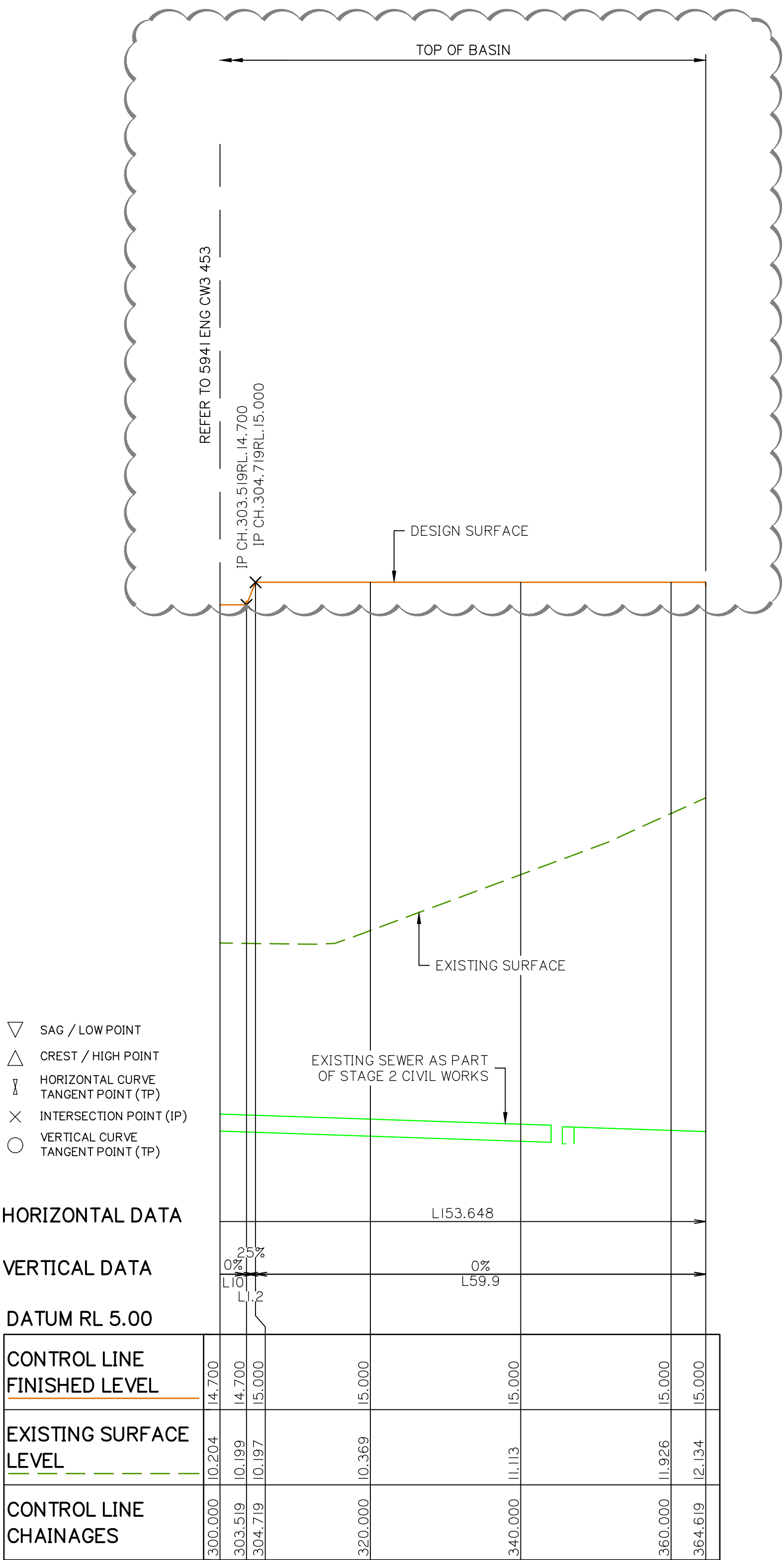
Project No. 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 454	Revision: C

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No:..OPW/2023/1136.....

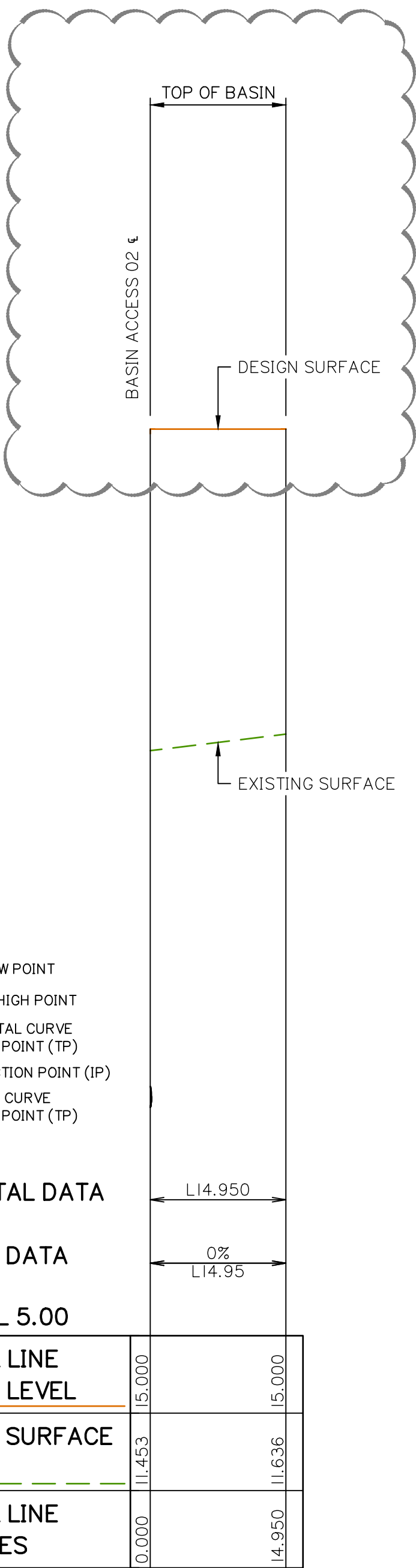
Dated: 14 February 2024.....

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



BASIN ACCESS 02 – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500
A1 VERT SCALE 1: 50



Basin Access 02a – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500
A1 VERT SCALE 1: 50

BASIN ACCESS 02 AND 02a LONGITUDINAL SECTIONS

client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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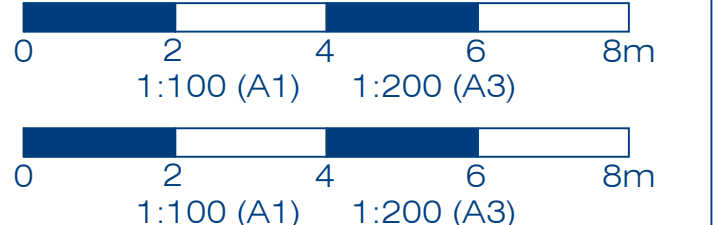
Drawing Title:

ROADWORKS CROSS
SECTIONS SHEET 1 OF 5[illegible]

C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
ev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



PROJECT NORTH POINT



Project No. 5941

Designed: JH

grafted: ML

Approved:

MG

RPEQ

6939

Signed:

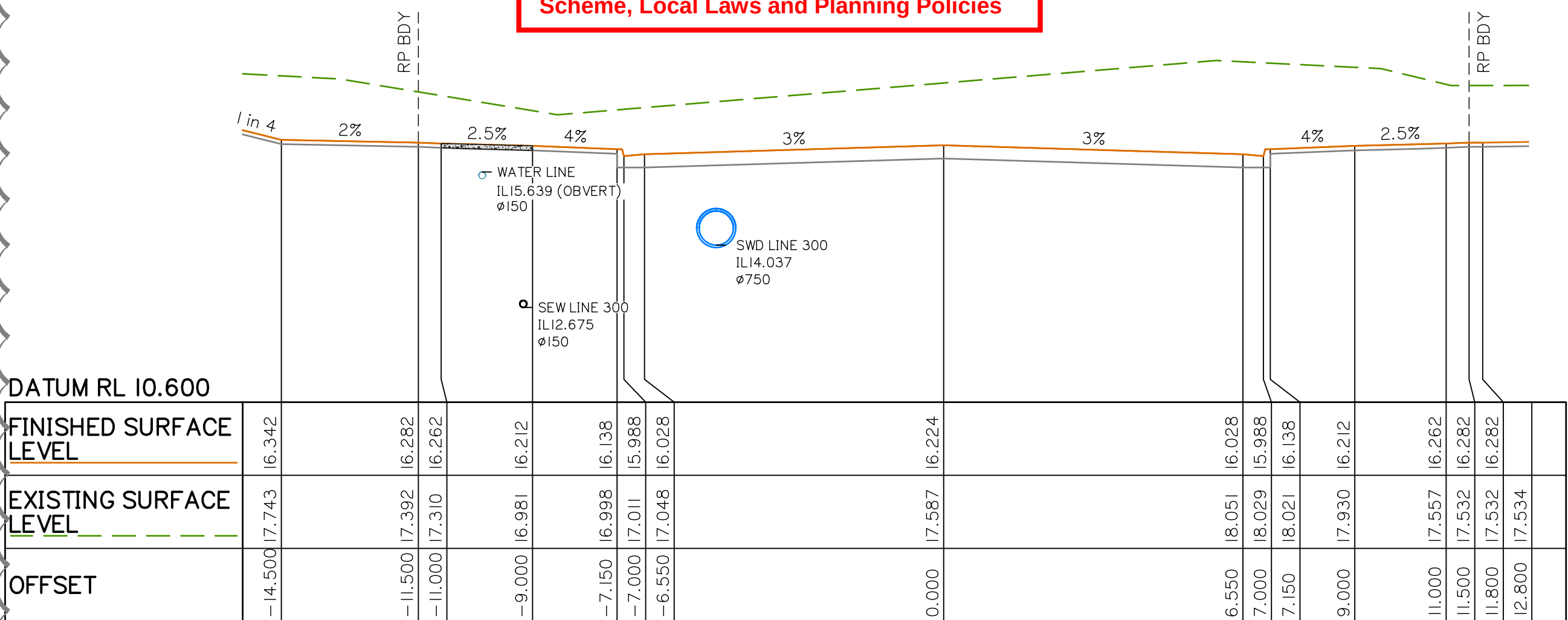
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Date:

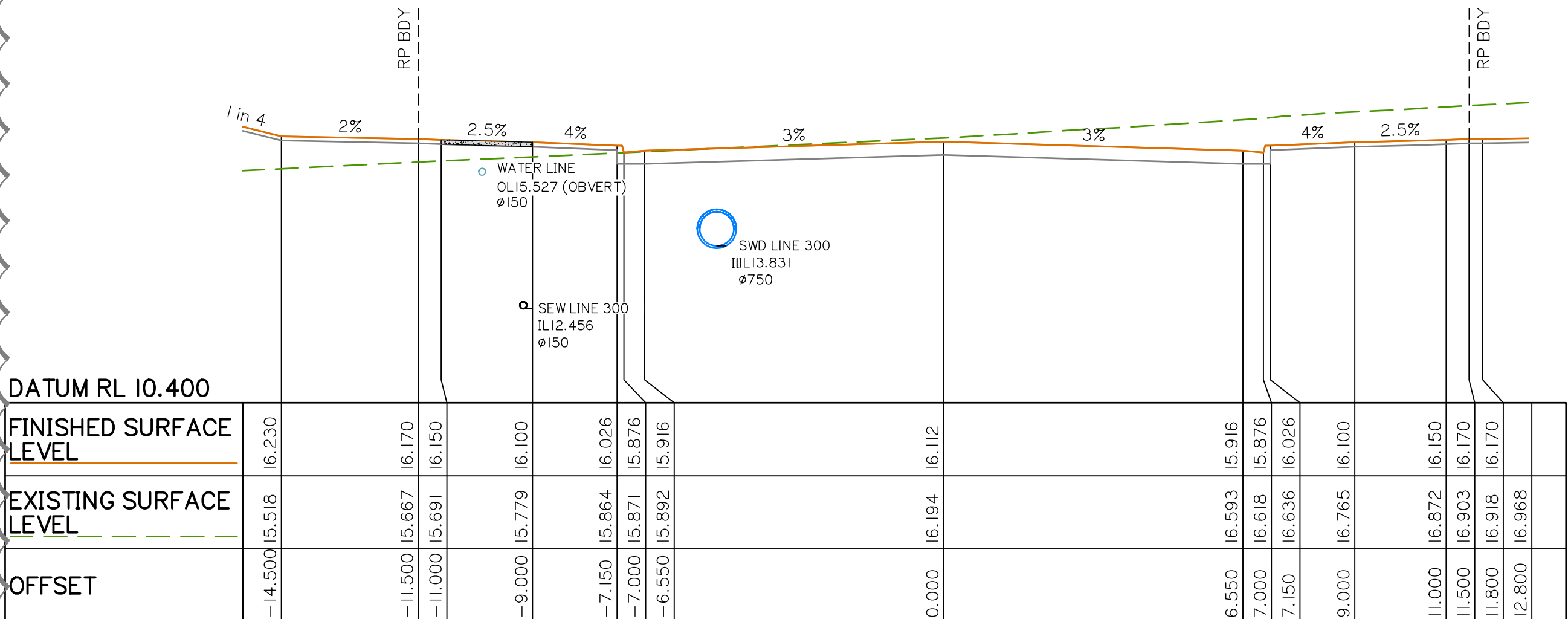
09/2023

Drawing No:
5941 ENG CW3 470

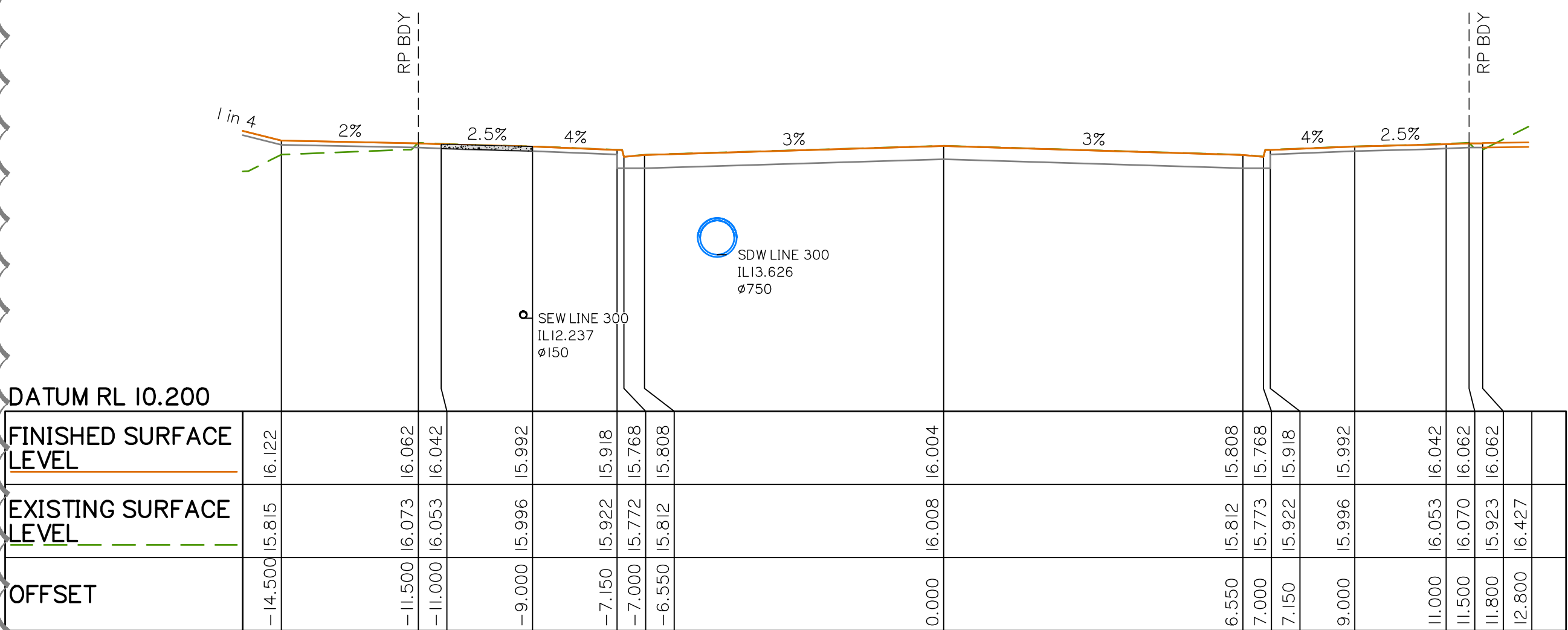
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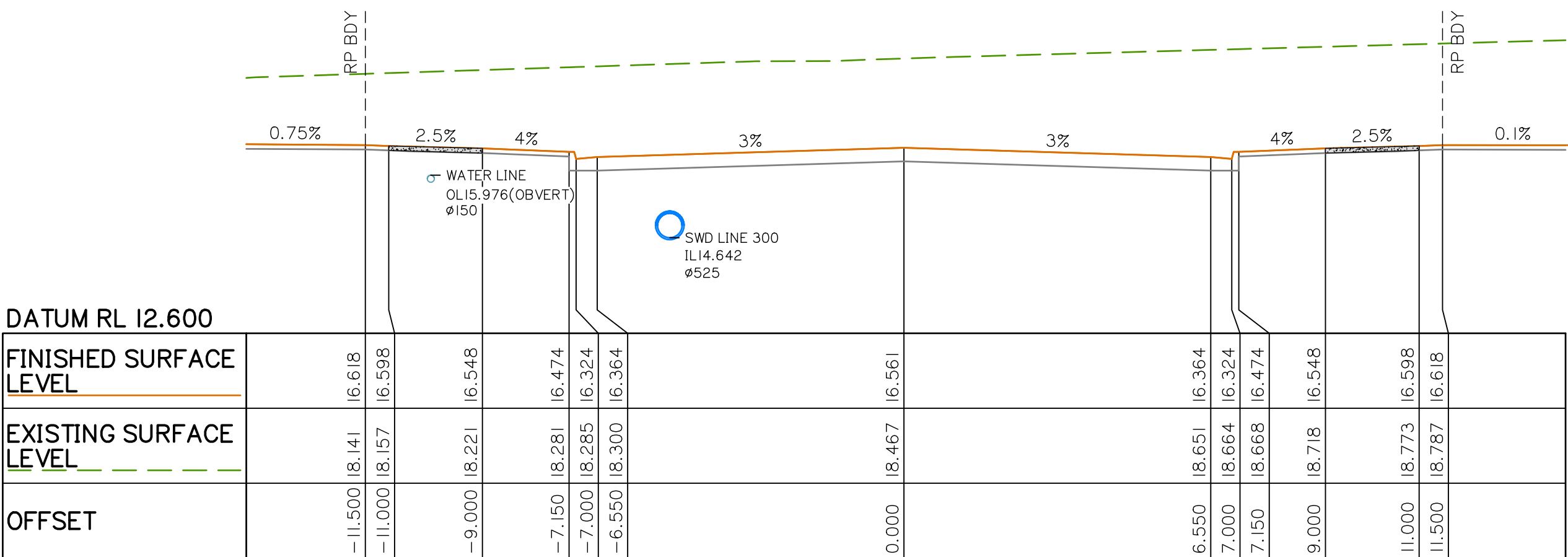
CH 20.000



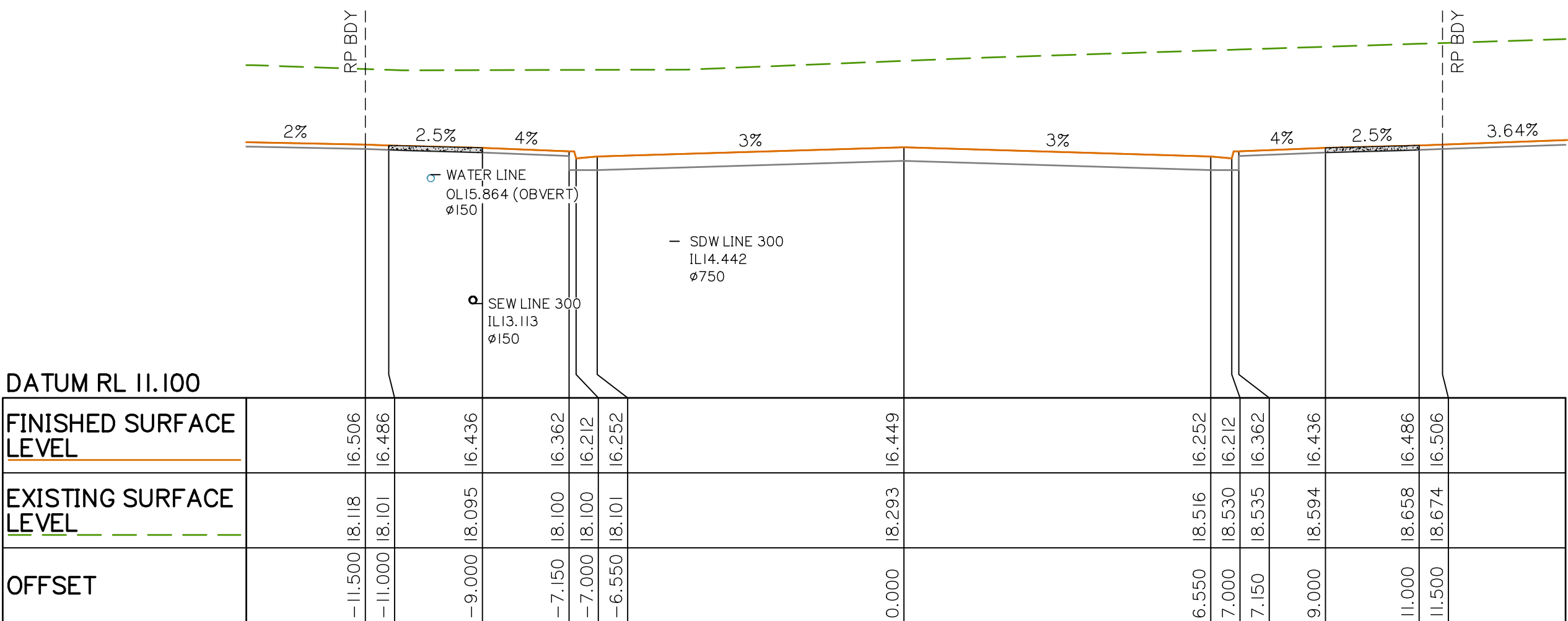
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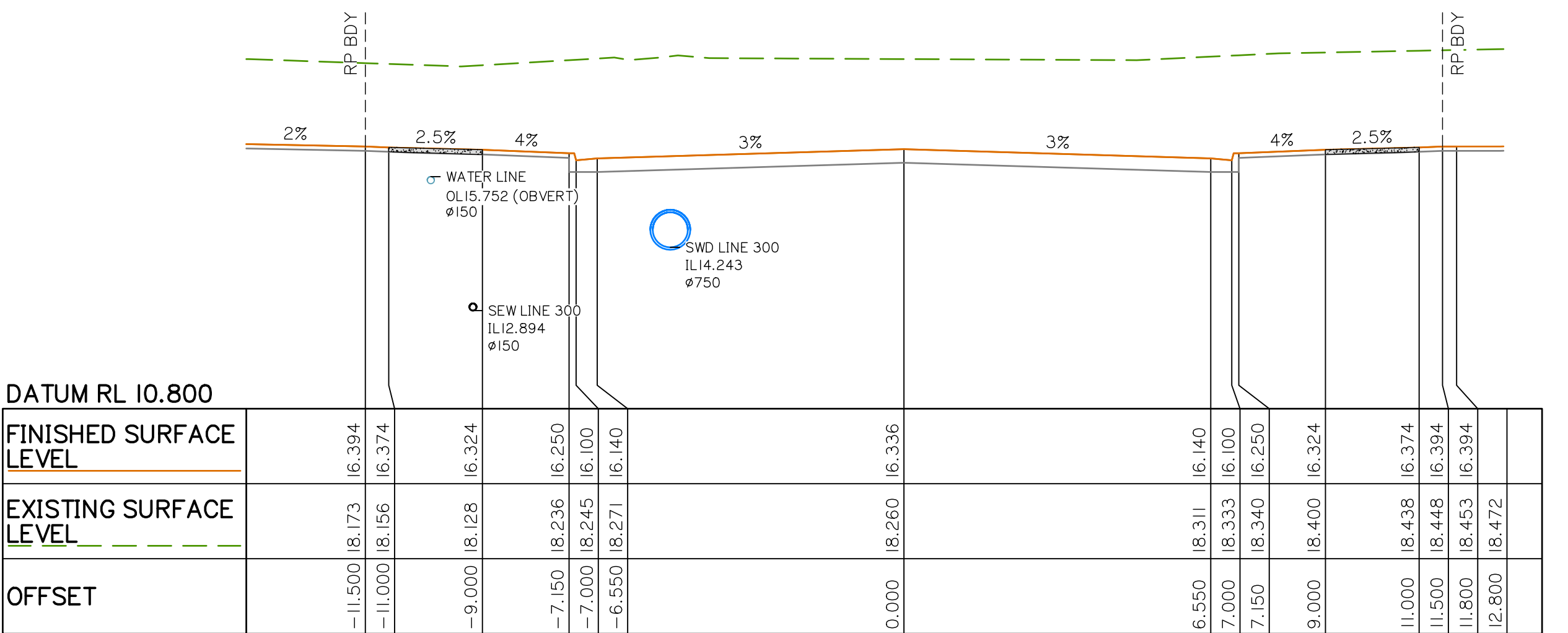
CH 0.000



CH 50.000



CH 40.000



CH 30.000

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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GENERAL NOTES.

Drawing Title:

ROADWORKS CROSS
SECTIONS SHEET 2 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

PROJECT NORTH POINT



Project No.: 5941

Designed: JH

Drafted: ML

Approved:

MG

RPEQ

16939

Signed:

Date:

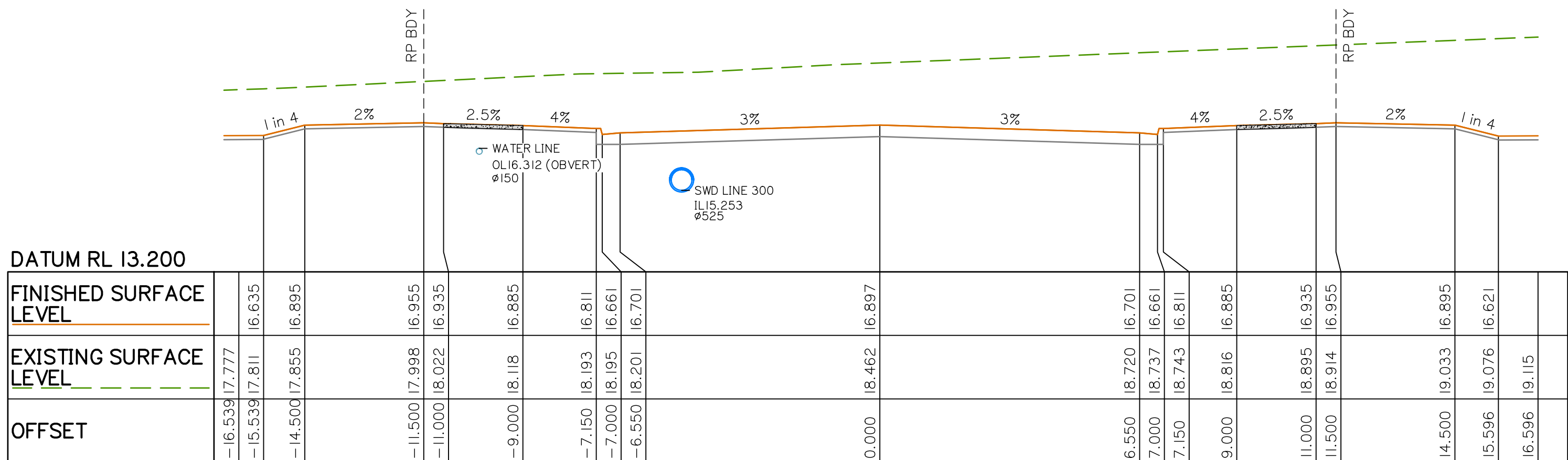
28/09/2023

Drawing No:

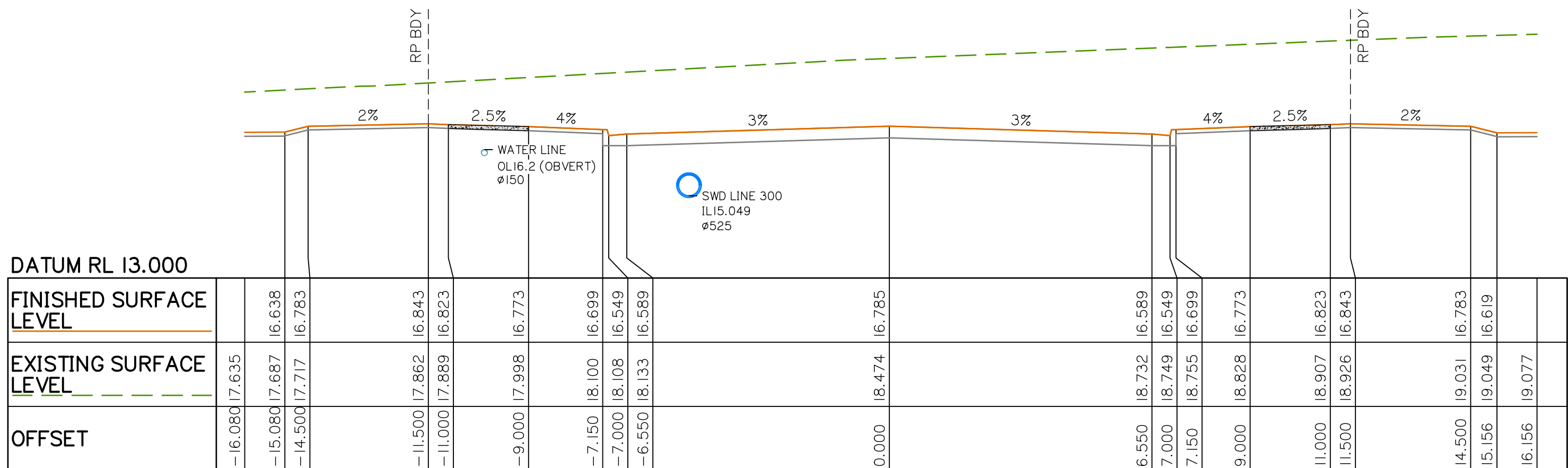
Revision

5941 ENG CW3 471

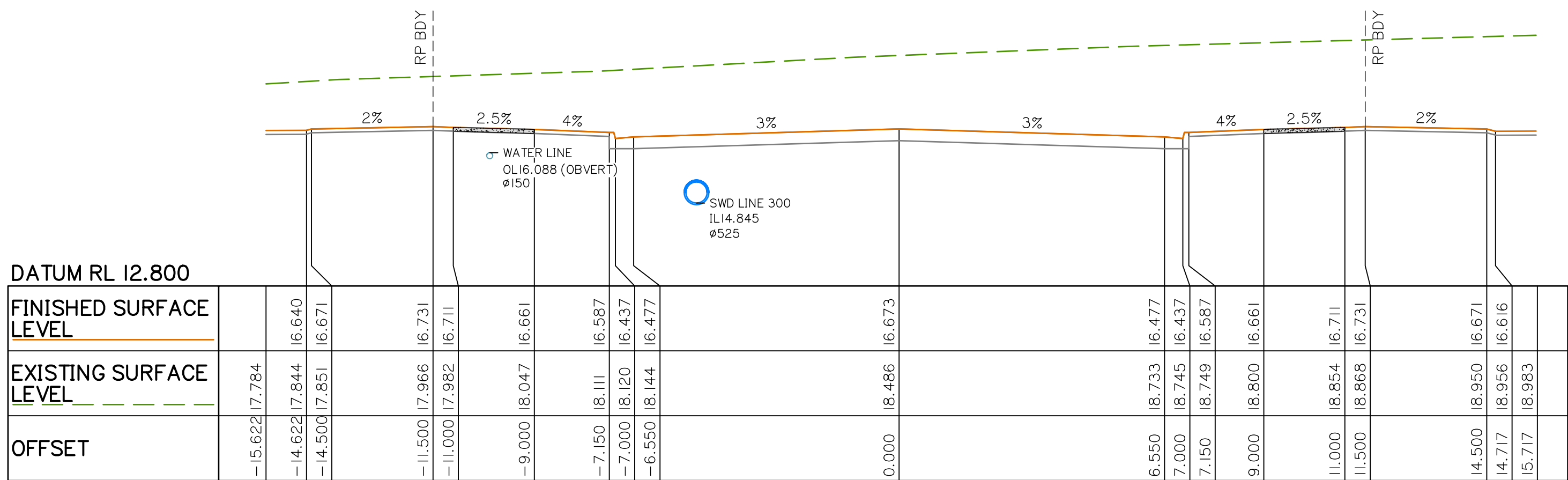
C



CH 80.000



CH 70.000



CH 60.000

ROADWORKS CROSS SECTIONS SHEET 2 OF 5

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

ROADWORKS CROSS
SECTIONS SHEET 3 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

0 2 4 6 8m
1:100 (A1) 1:200 (A3)

PROJECT NORTH POINT



Project No.: 5941

Designed: JH Drafted: ML

Approved: MG

RPEQ 16939

Signed:

Date: 28/09/2023

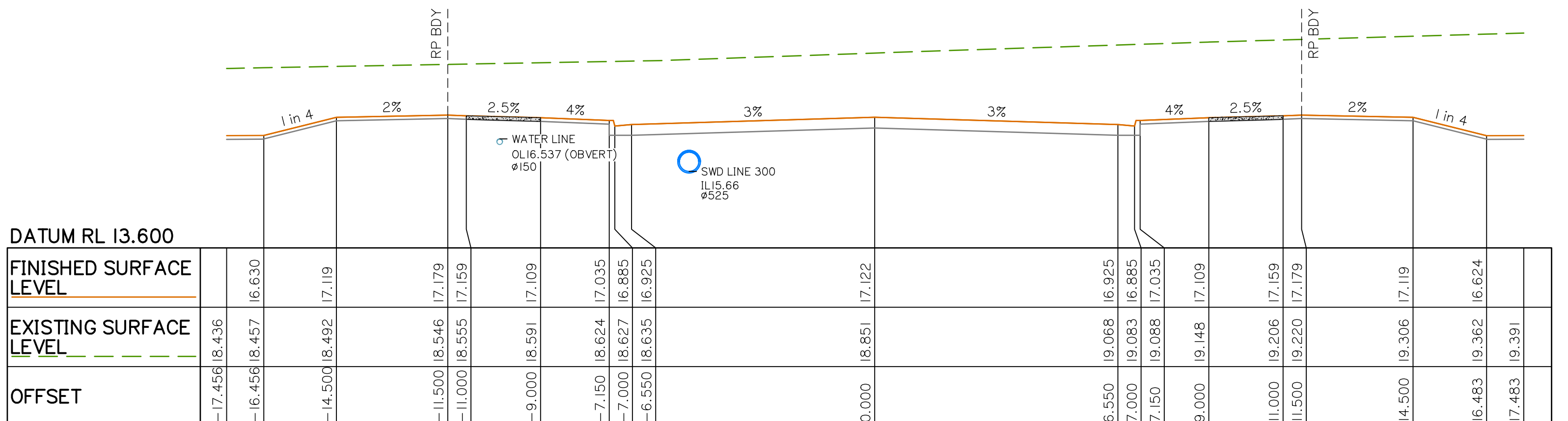
Drawing No: Revision

5941 ENG CW3 472

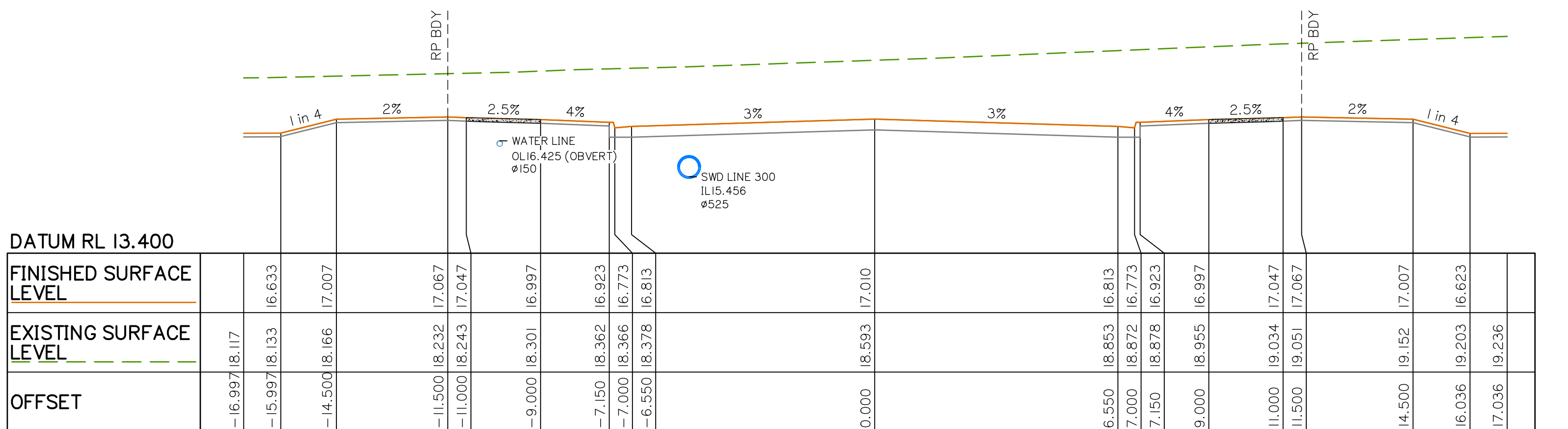
C



CH 110.000



CH 100.000



CH 90.000

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

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Decision Notice and Council's Planning
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FPI QUEENSLAND
PTY. LTD.

VANTAGE YATALA STAGE 3

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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Drawing Title:

ROADWORKS CROSS
SECTIONS SHEET 4 OF 5

C	08/02/24	FOOTPATH AMENDED	JH	MG	
B	06/11/23	SECTION UPDATED	ML	MG	
A	25/05/23	ORIGINAL ISSUE	JH	MG	
ev	Date	Description	DRN	CHK	

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:

Scale:



Diagram of a 10m bridge with a 4m span and a 6m span, showing a 1:100 (A1) and 1:200 (A3) scale.

PROJECT NORTH POINT



Designed: JH Drafted: ML

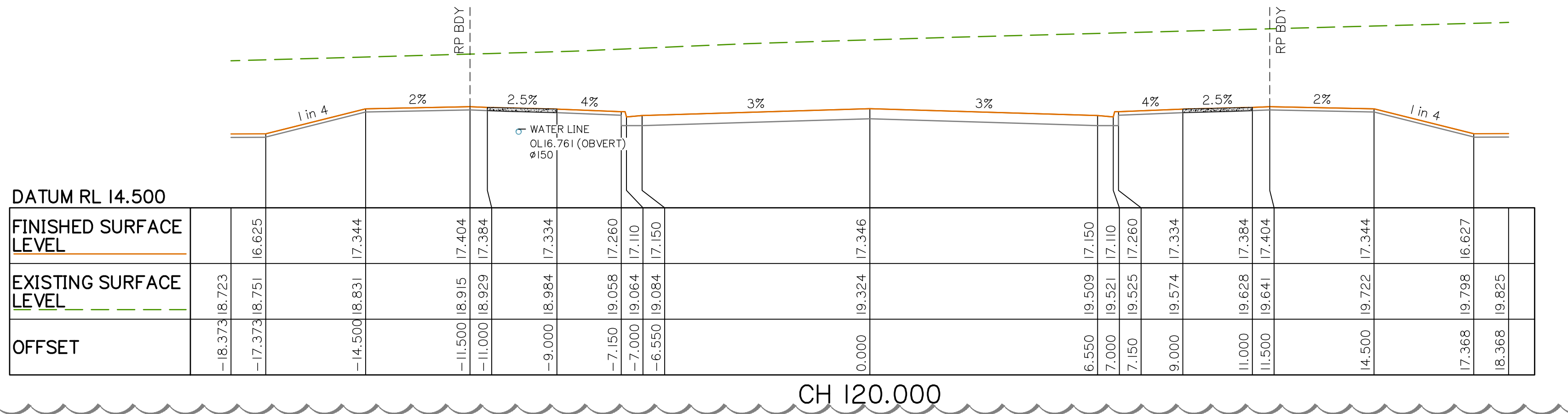
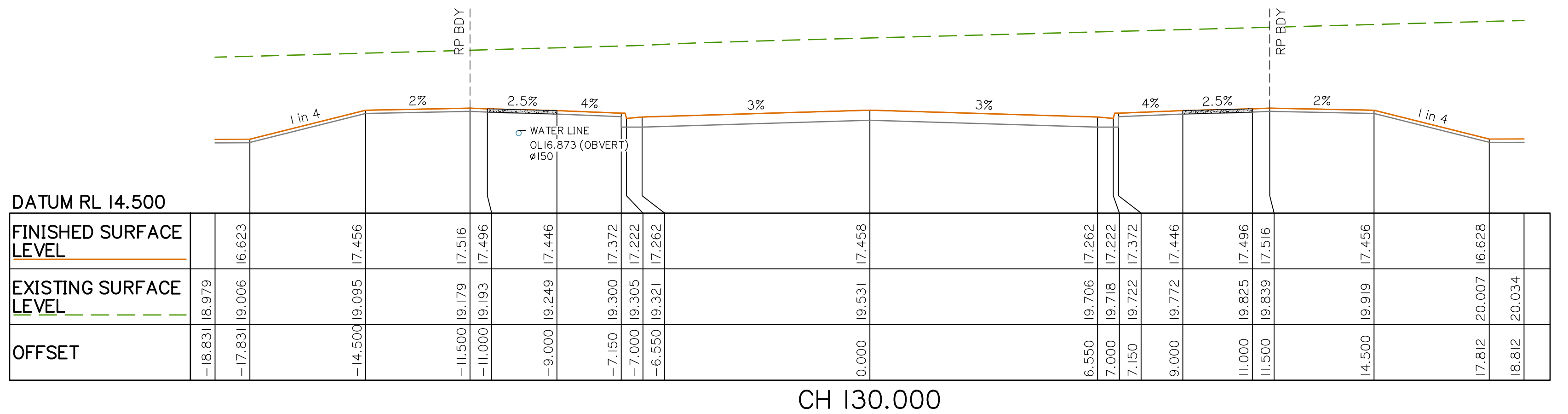
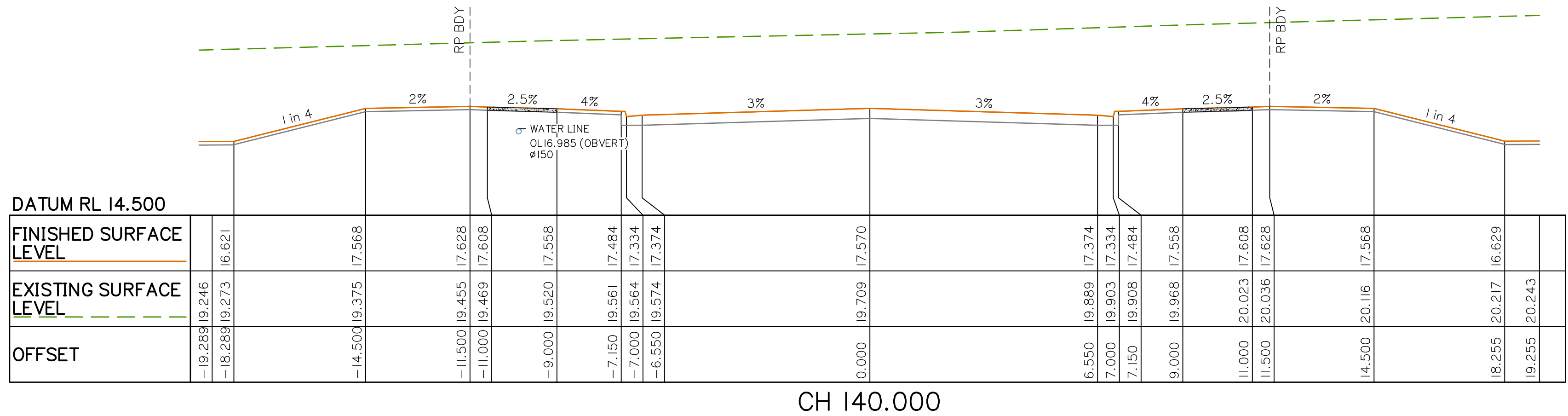
Approved:	MG
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RPEQ	16939
------	-------

Signed: 

Date:	28/09/2023
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Drawing No:	Revision
5941 ENG CW3 473	C



PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

FPI QUEENSLAND
PTY. LTD.

VANTAGE YATALA STAGE 3

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

Level Datum: AHD
Meridian:
PSM:
RL:

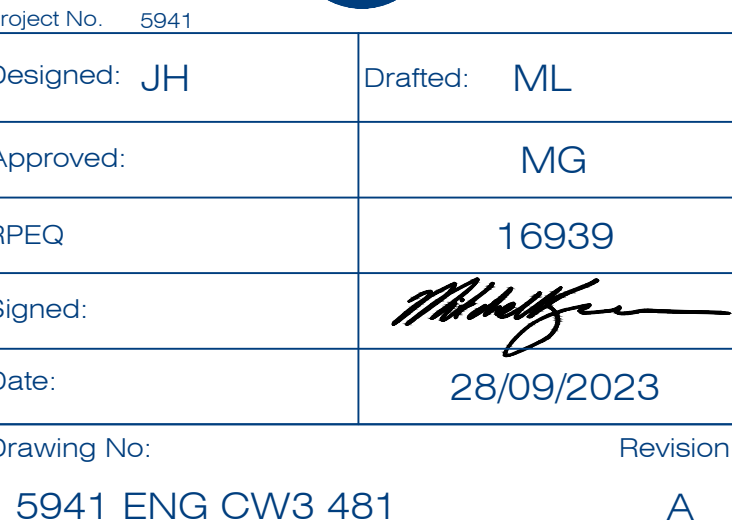
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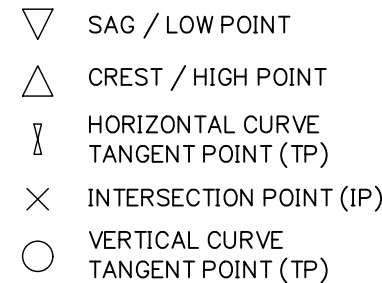
CUL-DE-SAC
LONGITUDINAL SECTION

A Rev	25/05/23 Date	ORIGINAL ISSUE Description	JH DRN	MG CHK
DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.			A1 UNREDUCED	
CULVERT AND PIPE SIZES IN MILLIMETRES			A3 REDUCED	

PROJECT NORTH POINT



Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies.

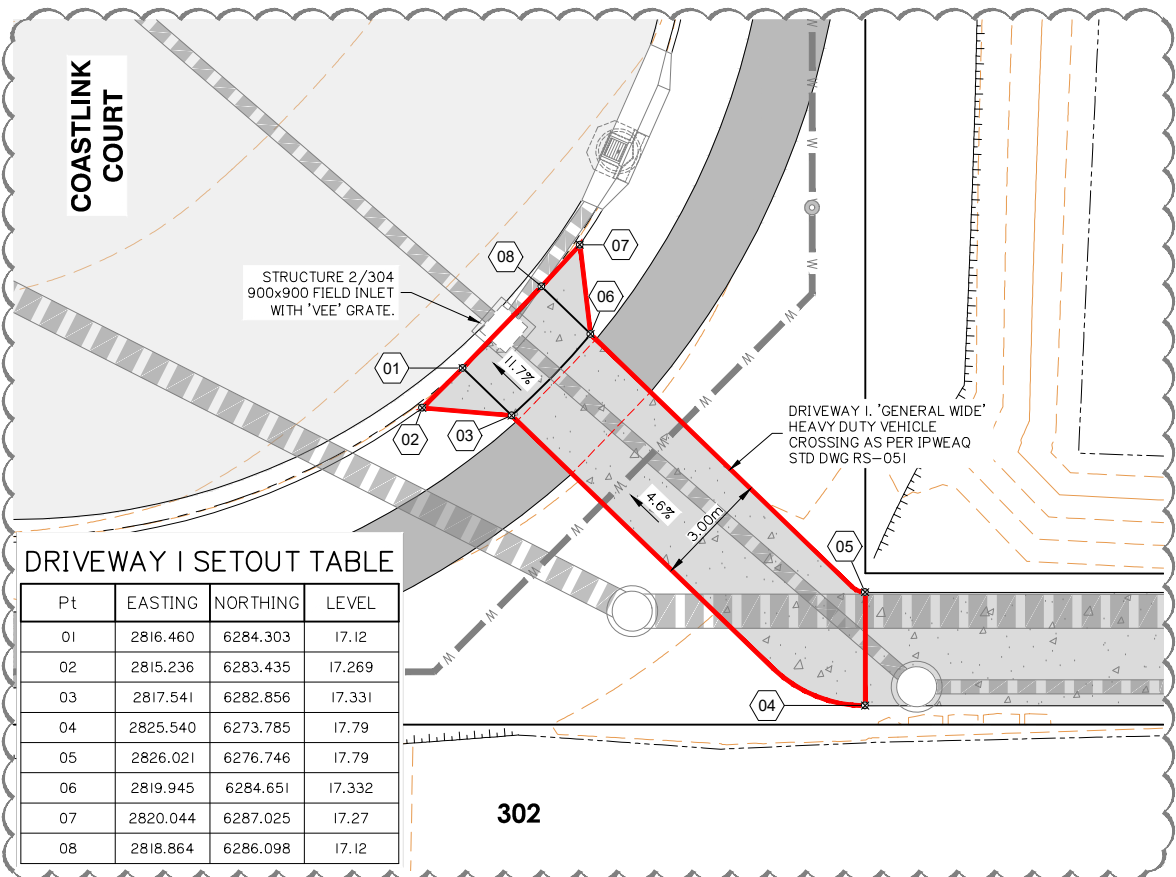


DATUM RL 12.00

CONTROL LINE FINISHED LEVEL	EXISTING SURFACE LEVEL	CONTROL LINE CHAINAGES
	20.332	0.000
	20.295	1.826
	20.857	20.000
	18.489	36.738
	18.413	39.876
	18.405	40.000
	17.675	53.517
	17.485	60.000
	17.528	72.441
	17.807	80.000
	19.532	100.000
	20.065	105.006
	21.821	120.000
	22.434	128.827
	22.445	128.887
	20.593	140.000
	20.562	140.070
	23.874	151.864
	24.259	152.827
	17.635	
	17.628	

AI HORIZ SCALE 1:500
AI VERT SCALE 1:50

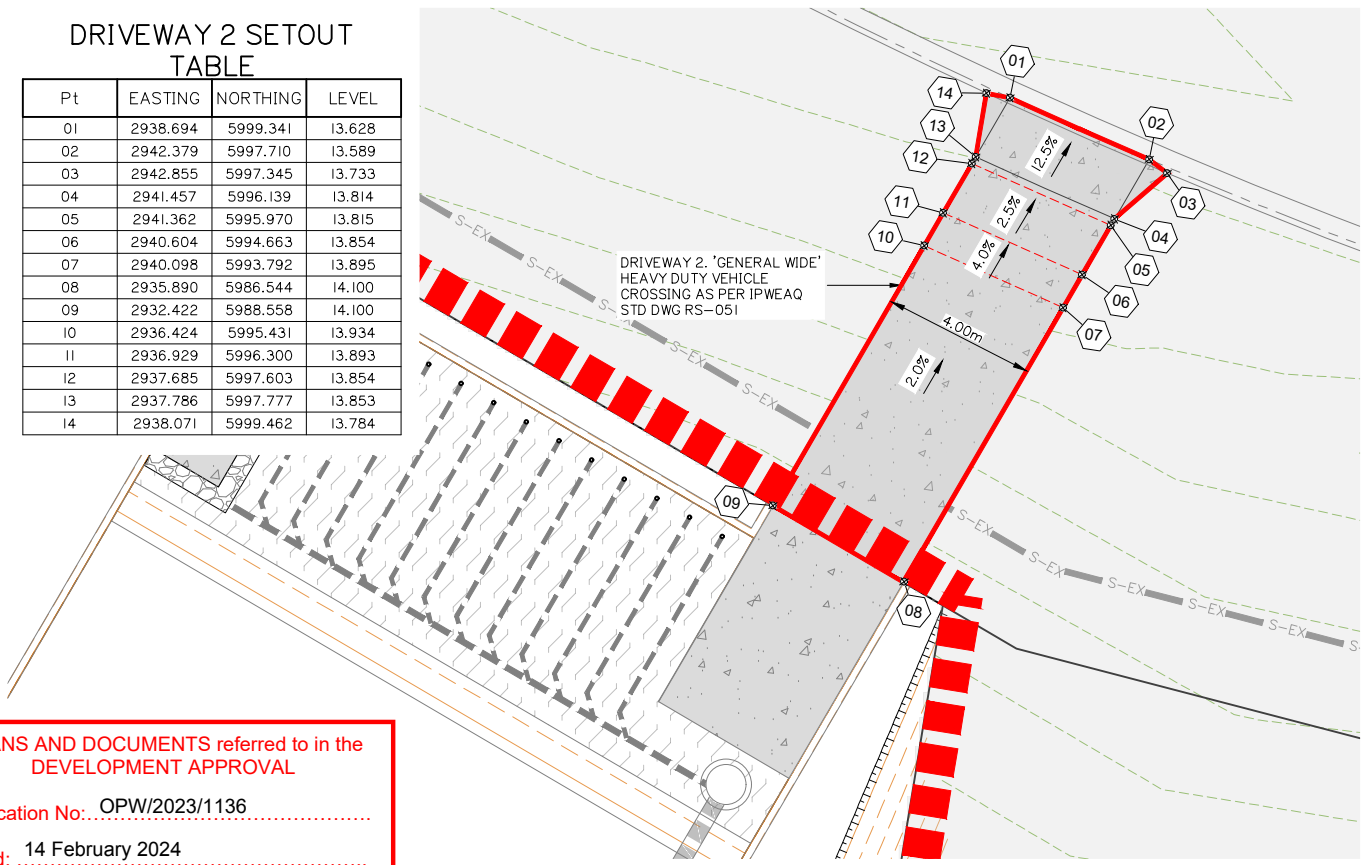
CUL-DE-SAC LONGITUDINAL SECTION



DRIVEWAY 1 SETOUT TABLE			
Pt	EASTING	NORTHING	LEVEL
01	2816.460	6284.303	17.12
02	2815.236	6283.435	17.269
03	2817.541	6282.856	17.331
04	2825.540	6273.785	17.79
05	2826.021	6276.746	17.79
06	2819.945	6284.651	17.332
07	2820.044	6287.025	17.27
08	2818.864	6286.098	17.12

DRIVEWAY 1 SETOUT PLAN
SCALE 1:100

DRIVEWAY 2 SETOUT TABLE			
Pt	EASTING	NORTHING	LEVEL
01	2938.694	5999.341	13.628
02	2942.379	5997.710	13.589
03	2942.855	5997.345	13.733
04	2941.457	5996.139	13.814
05	2941.362	5995.970	13.815
06	2940.604	5994.663	13.854
07	2940.098	5993.792	13.895
08	2935.890	5986.544	14.100
09	2932.422	5988.558	14.100
10	2936.424	5995.431	13.934
11	2936.929	5996.300	13.893
12	2937.685	5997.603	13.854
13	2937.786	5997.777	13.853
14	2938.071	5999.462	13.784



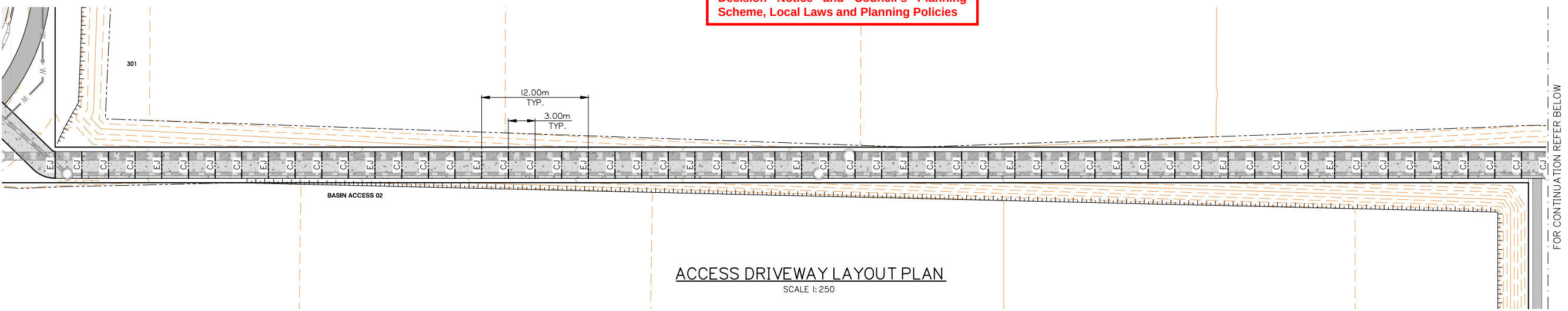
DRIVEWAY 2 SETOUT PLAN
SCALE 1:100

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

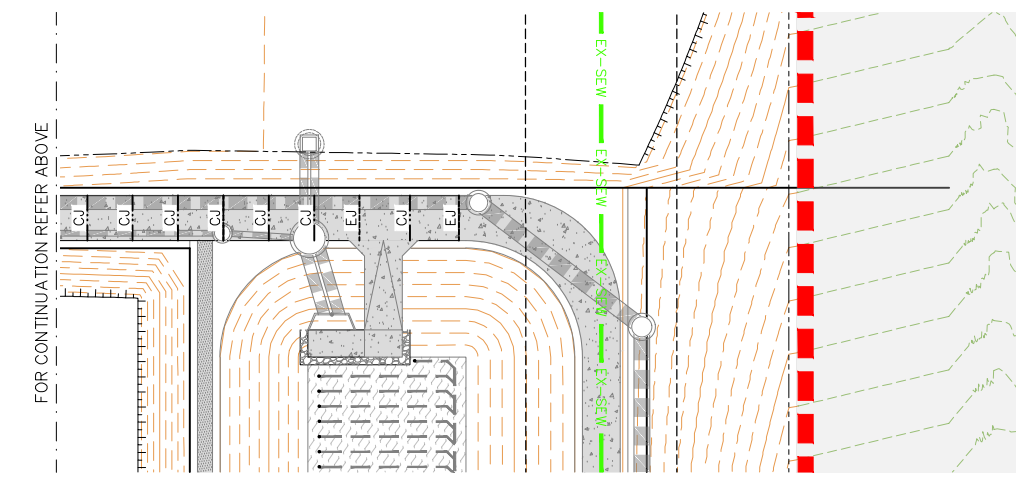
Application No: OPW/2023/1136

Dated: 14 February 2024

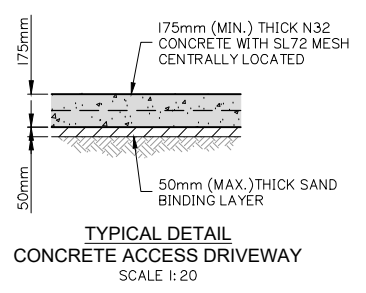
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



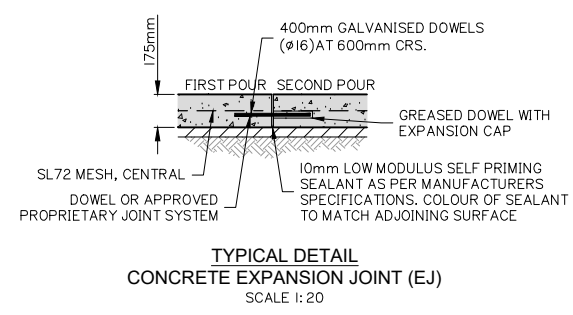
ACCESS DRIVEWAY LAYOUT PLAN
SCALE 1:250



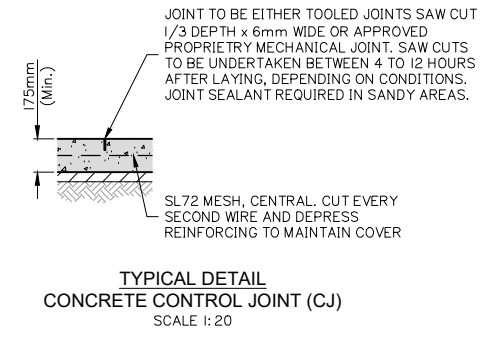
ACCESS DRIVEWAY LAYOUT PLAN
SCALE 1:250



TYPICAL DETAIL
CONCRETE ACCESS DRIVEWAY
SCALE 1:20



TYPICAL DETAIL
CONCRETE EXPANSION JOINT (EJ)
SCALE 1:20



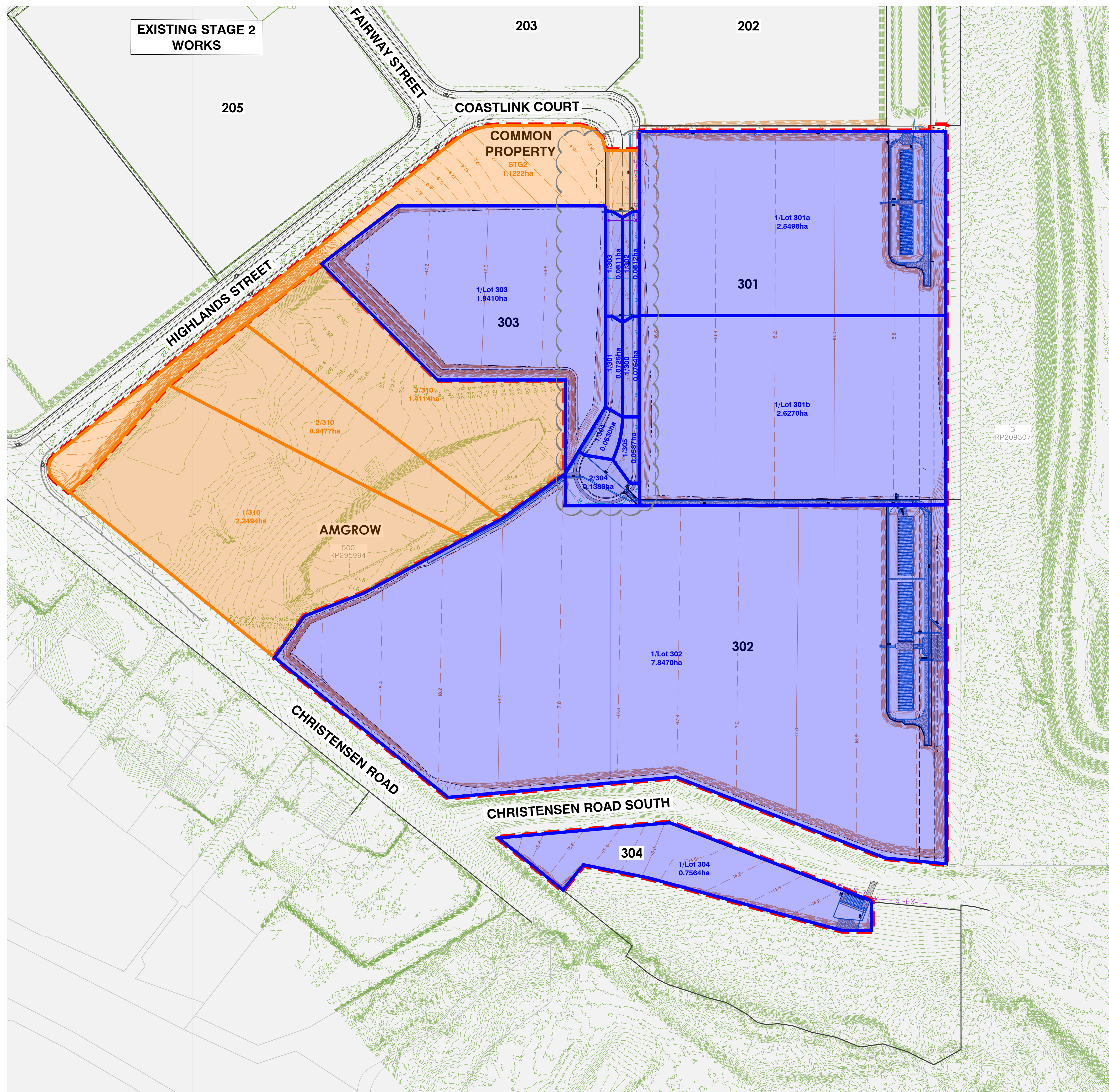
TYPICAL DETAIL
CONCRETE CONTROL JOINT (CJ)
SCALE 1:20

VEHICLE CROSSING AND ACCESS DRIVEWAY LAYOUT PLAN

Rev	Date	Description	DRN	CHK
C	08/02/24	FOOTPATH AMENDED	JH	MG
B	06/11/23	LAYOUT UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE:
CULVERT AND PIPE SIZES IN MILLIMETRES

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)



STORMWATER DRAINAGE CATCHMENT PLAN

STORMWATER CATCHMENT TABLE

CATCHMENT	AREA (ha)
1/300	0.0764
1/301	0.0726
1/302	0.0812
1/303	0.0811
1/304	0.0630
2/304	0.1383
1/305	0.0578
1/310	2.2494
2/310	0.9477
3/310	1.4114
1/Lot301a	2.5498
1/Lot301b	2.6270
1/Lot302	7.8470
1/Lot303	1.9410
1/Lot304	0.7564
STG2	1.1222



Client:



Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot:	504
Plan:	SP329485
Local Authority:	CITY OF GOLD COAST
Level Datum:	AHD
Meridian:	
PSM:	
RL:	

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Drawing Title:

STORMWATER DRAINAGE CATCHMENT PLAN

C	08/02/24	FOOTPATH AMENDED	JH	MG	
B	06/11/23	LAYOUT UPDATED	ML	MG	
A	25/05/23	ORIGINAL ISSUE	JH	MG	
ev	Date	Description	DRN	CHK	

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



PROJECT NORTH POINT



Project No. 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

6939

Signed:

Michelle K...

Date:

28/09/2023

Drawing No:

Revision

5941 ENG CW3 500

C

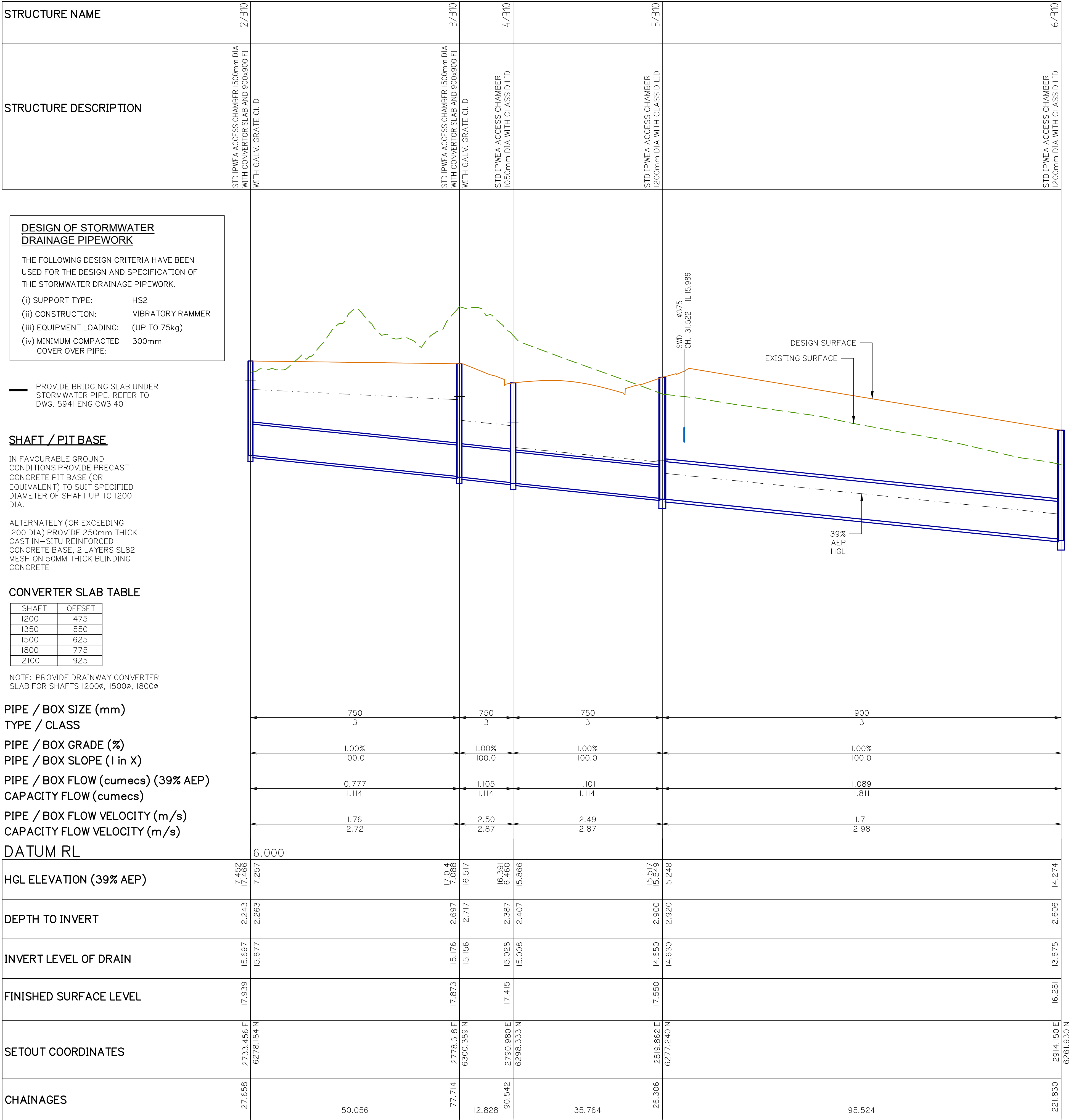
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

g:\Projects\5941\engineering\Asado\civil works stage 3\Current\5941 ENG CW3 510.dwg



LINE310

STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 4 OF 6

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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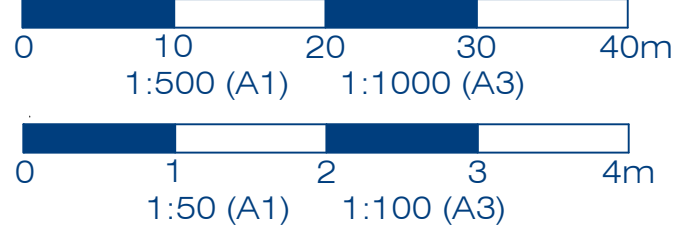
Drawing Title:

STORMWATER DRAINAGE
LONGITUDINAL SECTIONS
SHEET 4 OF 6

B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES
A1 UNREDUCED
A3 REDUCED

Scale:



PROJECT NORTH POINT

Project No. 5941	
Designed: JH	Drafted: ML
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: 5941 ENG CW3 513	
Revision B	

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No:..OPW/2023/1136.....

Dated: 14 February 2024

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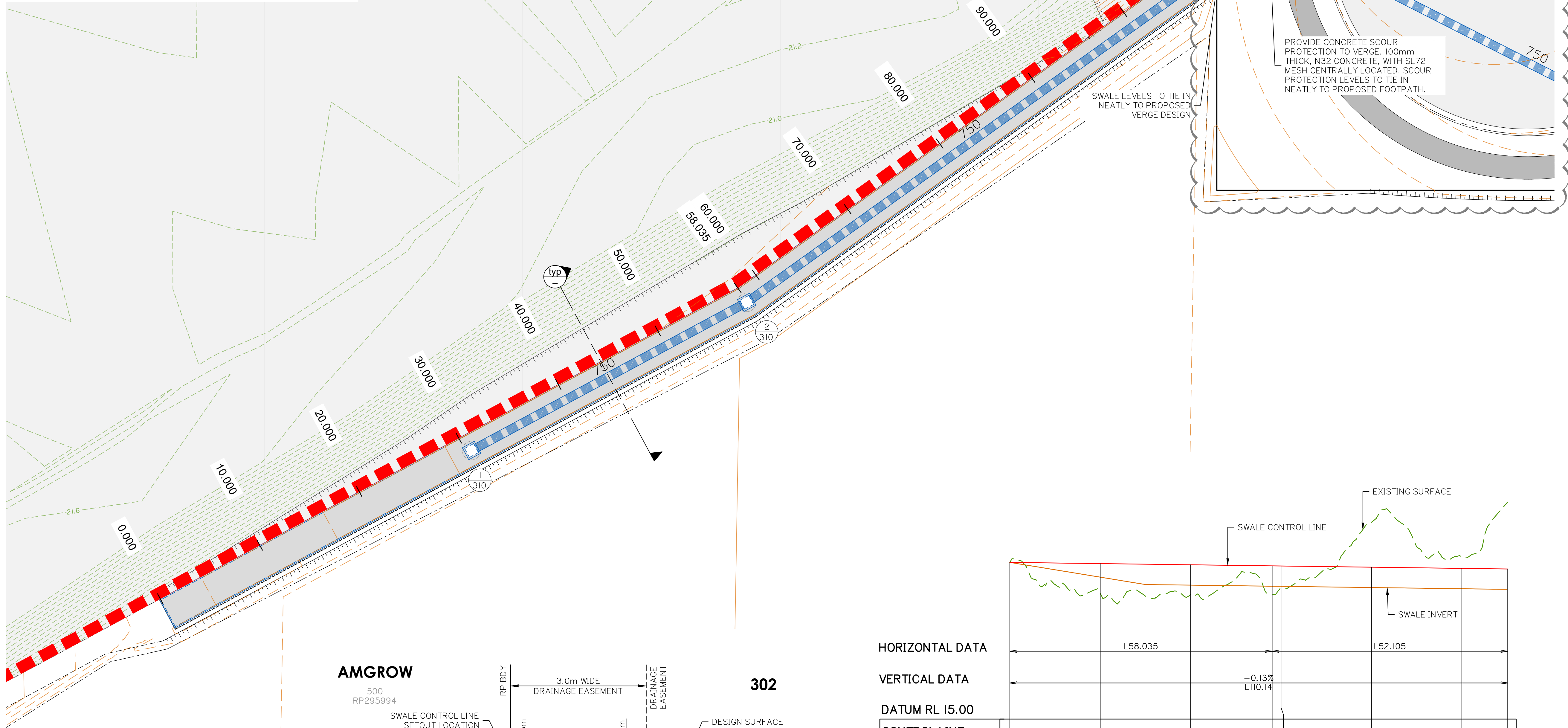


G:\Projects\5941\engineering\Acadocivil works stage 3\Current\5941 ENG CW3 650.dwg

LOCATION				TIME		SUB-CATCHMENT RUNOFF						INLET DESIGN										DRAIN DESIGN										HEADLOSSES										PART FULL				DESIGN LEVELS								
DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT	SUB-CATCHMENT TIME OF CONCENTRATION	RAINFALL INTENSITY	10Y RUNOFF CO-EFFICIENT	CO-EFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EQUVALENT AREA	SUM OF (C*A)	SUB-CATCHMENT DISCHARGE	FLOW IN R&C (INC BYPASS)	ROAD GRADE AT INLET	MINOR FLOW ROAD CAPACITY	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONCENTRATION	RAINFALL INTENSITY	TOTAL (C*A)	MAJOR TOTAL FLOW	MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE Ø Ø DIMENSIONS (CLASS)	FLOW VELOCITY FULL (PIPE GRADE/VELOCITY)	TIME OF FLOW IN REACH	STRUCTURE CHART No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS	VELOCITY HEAD	U/S HEADLOSS COEFFICIENT	U/S PIPE STRUCTURE HEADLOSS	LAT. HEADLOSS CO-EFFICIENT	LAT. PIPE STRUCTURE HEADLOSS	W.S.E CO-EFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEADLOSS (L/S)	DEPTH	VELOCITY	PIPE U/S LL	PIPE D/S LL	PIPE U/S H.G.L	PIPE D/S H.G.L	W.S.E	SURFACE OF R&C INVERT LEVEL	STRUCTURE No.		
Yrs					%	min	mm/h			ha	ha	ha	l/s	l/s	%	l/s		l/s	l/s		min.	mm/h	ha	l/s	l/s	l/s	m	%	mm	m/s	min.			m		m		m		m	m	m	m/s	m		m	m	m	m	m	m	m	m	m
2	100	1/300	1/300 to 2/300			5	0.073	202	124	0.065	19	19	55	W/D =	0	0		0		5	124	0.054	19	10			1.974	0.35	450	3	0.12	169.0	0.986	1/300	0.001	9.7	0.007				0.007	0.61	0.008	0.101	0.7	15.9	15.91	16.01	16	16.02	16.32	17.02	1/300	
2	100	2/300	2/300 to 3/300										W/D =	0	0				5.1	124	0.106	36	37			70.57	2	525	3	0.17	608.0	20.27	2/300	0.001	2.25	0.003	2.71			0.004	1.31	0.968	0.087	1.54	15.9	14.46	16	15.07	16	16.26	17.1	2/300		
2	100	3/300	3/300 to 4/300										W/D =	0	0				5.15	123	1.59	545	8464			51.14	2	750	3	1.23	1575.0	52.5	3/300	0.078	2.25	0.174	2.71			0.21	2.18	0.973	0.304	3.24	14.4	13.42	14.9	13.78	15.11	16.3	3/300			
2	100	4/300	4/300 to 5/300										W/D =	0	0				5.58	121	1.59	537	8306			84.38	0.5	750	3	1.21	788.0	6.567	4/300	0.075	2.09	0.157	2.66			0.2	0.5	0.422	0.454	1.92	13.2	12.75	13.63	13.2	13.83	15.79	4/300			
2	100	5/300	5/300 to 6/300										W/D =	0	0				6.28	118	1.59	523	8042			89.17	0.5	750	3	1.18	788.0	6.567	5/300	0.071	1.94	0.139	2.28			0.163	0.16	0.257	0.447	1.91	12.0	11.6	12.49	12.34	12.65	14.15	4/300			
2	100	6/300	6/300 to 7/300										W/D =	0	0				7.02	115	1.59	508	7768			11.24	0.15	750	3	1.15	431.0	1.078	6/300	0.068	2.24	0.151	2.7			0.183	0.23	0.024	0.75	1.15	11.6	11.56	12.19	12.17	12.38	13.12	6/300			
2	100	7/300	7/300 to 8/300										W/D =	0	0				7.12	115	1.59	507	7731			33.4	0.15	750	3	1.15	431.0	1.078	7/300	0.067	0.75	0.05	0.88			0.059	0.35	0.088	0.75	1.15	11.5	11.49	12.12	12	12.18	13.12	13.7	7/300		
2	100	8/300	8/300 to OUT/300										W/D =	0	0				7.39	113	1.59	501	7626			5.42	0.12	900	3	0.79	630.0	1.26	8/300	0.032	2.09	0.066	2.7			0.085	1.09	0.017	0.609	1.1	11.5	11.46	11.98	11.87	12.02	13.7	8/300			
2	100	OUT/300											W/D =	0	0																		OUT/300														11.87	12.17	12.36	OUT/300				
2	100	1/301	1/301 to 2/300			5	0.069	202	124	0.062	18	18	52	W/D =	0	0		0		5	124	0.052	18	9			11.92	0.4	375	3	0.16	111.0	0.74	1/301	0.001	9.7	0.013				0.013	0.46	0.049	0.102	0.74	16.0	15.95	16.1	16.04	16.11	17.02	1/301		
2	100	1/302	1/302 to 3/300			5	0.077	202	124	0.069	20	20	59	W/D =	0	0		0		5	124	0.058	20	11			1.974	0.35	525	3	0.09	255.0	1.488	1/302	0	9.7	0.004				0.004	0.71	0.008	0.099	0.7	15.0	15.04	15.15	15.13	15.15	16.23	1/302		
2	100	1/303	1/303 to 3/300			5	0.077	202	124	0.069	20	20	59	W/D =	0	0		0		5.05	124	1.437	494	6942			11.92	0.15	750	3	1.12	431.0	1.078	1/303	0.064	0.54	0.035	0.59			0.037	0.85	0.041	0.75	1.12	14.8	14.79	15.33	15.23	15.37	16.23	1/303		
2	100	1/304	1/304 to 2/304			5	0.06	202	124	0.053	15	15	46	W/D =	0	0		0		5	124	0.045	15	7			35.98	0.93	375	3	0.14	170.0	2.635	1/304	0.001	9.7	0.01				0.01	0.68	0.27	0.076	0.95	16.4	16.09	16.52	16.27	16.53	17.45	1/304		
2	100	2/304	2/304 to 3/304			5	0.131	202	124	0.117	34	34	100	W/D =	0	0		0		5.3	123	0.185	63	114			14.45	0.41	375	3	0.57	113.0	0.772	2/304	0.017	2.33	0.039	2.94			0.049	0.45	0.061	0.201	1.05	16.0	15.98	16.24	16.17	16.29	17.12	2/304		
2	100	3/304	3/304 to 4/304										W/D =	0	0				5.42	122	0.185	63	114			84.56	0.79	375	3	0.57	156.0	2.054	3/304	0.017	2.02	0.033	2.35			0.039	0.81	0.665	0.166	1.34	16.0	15.29	16.14	15.45	16.18	17.74	3/304			
2	100	4/304	4/304 to 5/304										W/D =	0	0				6.12	119	0.185	61	110			82.01	1.62	375	3	0.55	223.0	6.021	4/304	0.016	0.2	0.003				0.003	1.62	1.329	0.134	1.72	15.2	13.91	15.42	14.09	15.43	15.58	16.34	4/304		
2	100	5/304	5/304 to 6/304										W/D =	0	0				6.81	116	0.185	60	106			5.752	0.4	375	3	0.54	111.0	0.74	5/304	0.015	0.43	0.006	0.49			0.007	0.69	0.026	0.196	1.02	13.9	13.87	14.09	14.05	14.1	14.33	15	5/304		
2	100	6/304	6/304 to OUT/304										W/D =	0	0				5.05	124	1.993	685	13351			5.263	0.15	(2x)750	3	0.78	866.0	2.165	6/304	0.031	1.39	0.043	1.62			0.05	1.05	0.018	0.505	1.08	13.4	13.4	13.81	13.76	13.86	14.11	15	6/304		
2	100	OUT/30																																																				

SWALE CL SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	2678.027	6260.605	18.467	70°55'32.00"
	10.000	2687.478	6263.873	18.453	70°55'32.00"
	20.000	2696.929	6267.141	18.440	70°55'32.00"
	30.000	2706.380	6270.409	18.427	70°55'32.00"
	40.000	2715.831	6273.677	18.413	70°55'32.00"
IP 2	50.000	2725.282	6276.945	18.400	70°55'32.00"
	58.035	2732.876	6279.571	18.389	
	60.000	2734.637	6280.443	18.387	63°40'02.00"
	70.000	2743.599	6284.878	18.373	63°40'02.00"
	80.000	2752.562	6289.314	18.360	63°40'02.00"
	90.000	2761.524	6293.750	18.347	63°40'02.00"
IP 3	100.000	2770.486	6298.186	18.334	63°40'02.00"
	110.000	2779.449	6302.622	18.320	63°40'02.00"
	110.140	2779.574	6302.684	18.320	63°40'02.00"



AMGROW

500
RP295994

SWALE CONTROL LINE
SETOUT LOCATION

FALL

LOCALISED MINOR FILL IN
AMGROW SITE TO ENSURE
NO PONDING BEHIND
SWALE

STORMWATER
LINE 310

CONCRETE SWALE

EXISTING SURFACE

302

HORIZONTAL DATA

VERTICAL DATA

DATUM RL 15.00

CONTROL LINE
FINISHED LEVEL

SWALE INVERT

EXISTING SURFACE
LEVEL

CONTROL LINE
CHAINAGES

SWALE – LONGITUDINAL SECTION

A1 HORZ SCALE 1: 500

A1 VERT SCALE 1: 50



planning | environment | landscape | engineering | survey
T: 3807 3333 | F: 3287 5461 | www.gassman.com.au
Gold Coast | 78 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD

Meridian:

PSM:

RL:

ISSUED FOR APPROVAL

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Drawing Title:

SWALE LAYOUT AND
DETAILS PLAN

B	08/02/24	FOOTPATH AMENDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	JH	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:
0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No.:	5941
Designed:	JH
Drafted:	JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No.:	5941 ENG CW3 560
Revision	B

SWALE LAYOUT AND DETAILS PLAN

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1136

Dated: 14 February 2024

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1.0m WIDE (100mm THICK) GRAVEL PEDESTRIAN ACCESS TRACK

CoGC STANDARD CHAIN WIRE SAFETY FENCING TO PERIMETER OF BASIN. REFER TO CoGC STD DWG 05-712 FOR DETAILS

301

SLOTTED PVC SUBSOIL DRAINAGE FEEDER PIPES
USIL: 11.28
DSL: 11.23
GRADE: 0.5%

SLOTTED PVC SUBSOIL DRAINAGE FEEDER PIPES WITH C.I. CAP

COARSE SEDIMENT FOREBAY TO IPWEAQ STD DWG DS-075. TOTAL FOREBAY AREA: 8.5m² MIN. FOREBAY SL: 11.90 AHD

CELL COLLECTOR PIPE. SOLID PVC SUBSOIL DRAINAGE
USIL: 11.24
DSL: 11.08
GRADE: 0.5%

TOTAL BIO RETENTION FILTER MEDIA AREA: 600m²
SL: 11.90 AHD

CELL COLLECTOR PIPE. SOLID PVC SUBSOIL DRAINAGE
USIL: 11.06
DSL: 10.88
GRADE: 0.5%

600x600 FIELD INLET GRATE SL: 12.70 AHD (800mm ABOVE BASIN FLOOR) WITH 240mm ORIFICE AT 12.800 AHD

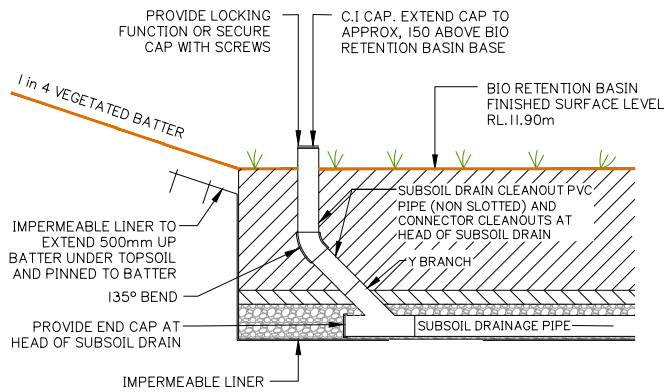
Ø450 RCP FOR Ø3 DISCHARGE CONNECTED TO EXISTING STAGE 2 DRAINAGE
LENGTH 21.0m
USIL: 10.86
DSL: 10.797
GRADE: 0.3%

PROVIDE SCOUR PROTECTION TO OUTLET. ROCK SIZE TO BE D₅₀=100mm. MIN. LENGTH 1.5m

BREAK INTO EXISTING STORMWATER STRUCTURE AND MAKE GOOD CONNECTION. EXISTING DSL 10.774

PROVIDE LOCKABLE ACCESS GATE

EXISTING STAGE 2 WORKS



SUBSOIL DRAIN CLEANOUT – IN BASIN
NOT TO SCALE

WATER SURFACE LEVEL TABLE

EVENT (ARI)	LEVEL (AHD)
Q1	12.871
Q2	12.984
Q5	13.099
Q10	13.148
Q20	13.260
Q50	13.341
Q100	13.388

BIO RETENTION I – COARSE SEDIMENT FOREBAY SIZING GUIDE CALCULATIONS

$$V_s = A_c \times R \times L_o \times F = 2.525 \text{ m}^3$$

$$R = 1 - \left[1 - \frac{1}{n} \times \frac{V_s}{0.7A_c} \right]^{-n}$$

$$0.8 = 1 - \left[1 - \frac{0.10}{0.5 \times 0.30/A_c} \right]^{-0.5} \quad A_f = 36 \text{ m}^2$$

$$D_s = \frac{V_s}{A_f} \quad D_s = \frac{2.5248}{36.00} = 0.070 \text{ m}$$

OPTIMIZATION OF MINIMUM FOREBAY SIZE:

$$D_s = 0.3 \text{ m} \quad A_f = \frac{2.5248 \text{ m}^3}{0.3} = 8.419 \text{ m}^2$$

CALCULATED FOR 1 FOREBAY AT 8.419m².

V_s = 2.5248m³ (Works Above)

A_c = 5.263 ha (Refer Catchment Plans)

UNMITIGATED POST-DEVELOPMENT FLOW
Q = 0.3 m³/s (3 month ARI)

V_s = 0.1 m/s (Recommended for Imm Particle)

R = 0.8 (Recommended 80% Capture)

L_o = 0.6 (From Healthy Waterways Guide)

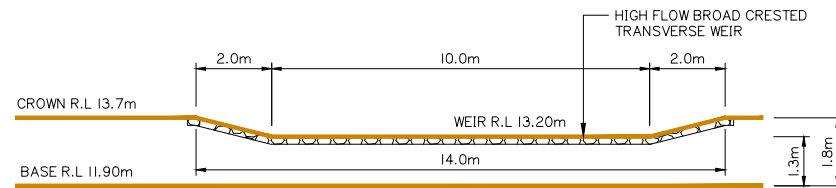
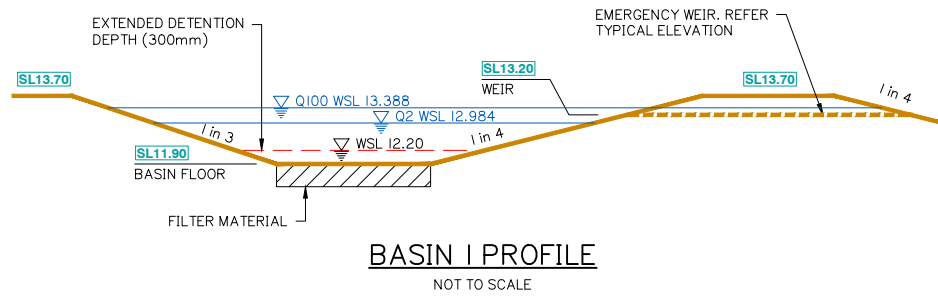
n = 0.5 (Recommended Turbulence)

F_o = 1.0 (Frequency of Clean Out / Yr)

REFER TO BIO RETENTION TECHNICAL DESIGN GUIDELINES FOR FURTHER INFORMATION

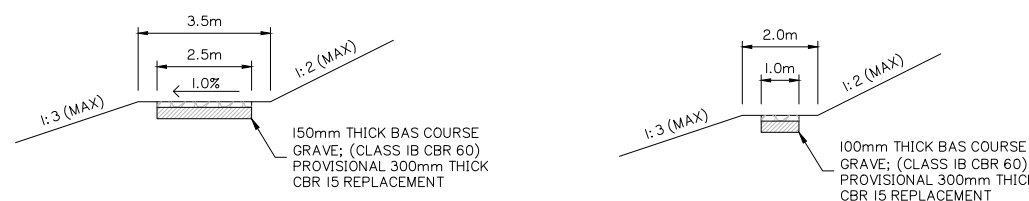
NOTE:

- FOR GENERAL DRAWING LEGENDS, REFER TO SHEET 004
- FOR GENERAL NOTES, REFER TO SHEETS 002 AND 003



BASIN I EMERGENCY WEIR ELEVATION

SCALE 1:100



TYPICAL SECTION

MAINTENANCE ACCESS TRACK FOR VEHICLES

SCALE 1:100

TYPICAL SECTION

MAINTENANCE ACCESS TRACK FOR PEDESTRIANS

SCALE 1:100

TYPICAL BIO-RETENTION BASIN DETAIL

N.T.S

OPERATIONAL PHASE BIO RETENTION BASIN I LAYOUT PLAN

Client:

Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD

Meridian:

PSM:

RL:

ISSUED FOR APPROVAL

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Drawing Title:

OPERATIONAL PHASE
BIO RETENTION BASIN 1
LAYOUT PLAN

Rev	Date	Description	DRN	CHK
D	08/02/24	FOREBAY DETAILS ADDED	JH	MG
C	08/01/24	NOTES ADDED	JH	MG
B	06/11/23	LAYOUT UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:



PROJECT NORTH POINT



Project No: 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

16939

Signed:

Date:

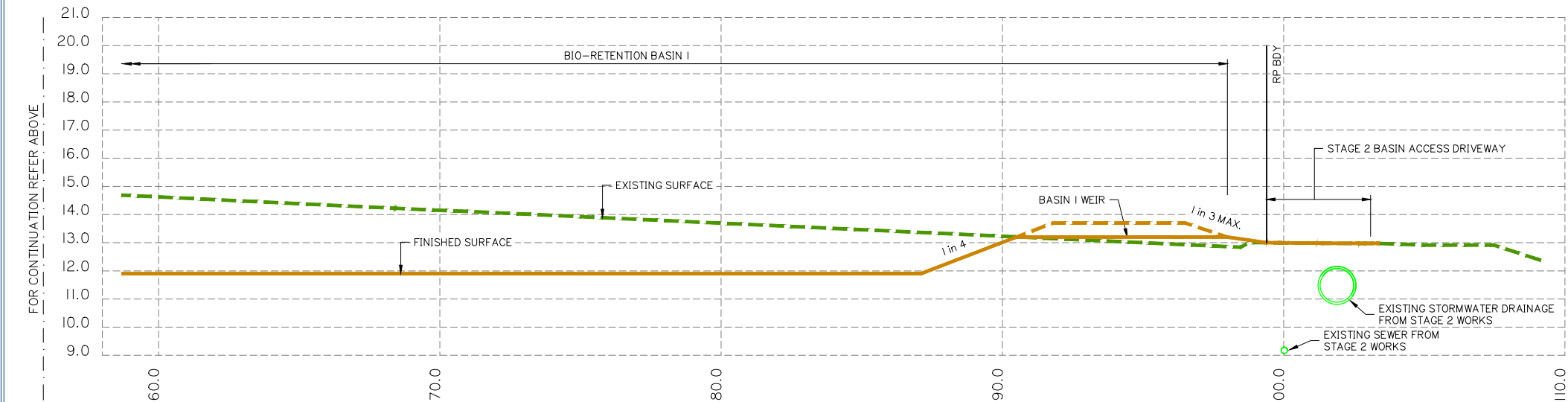
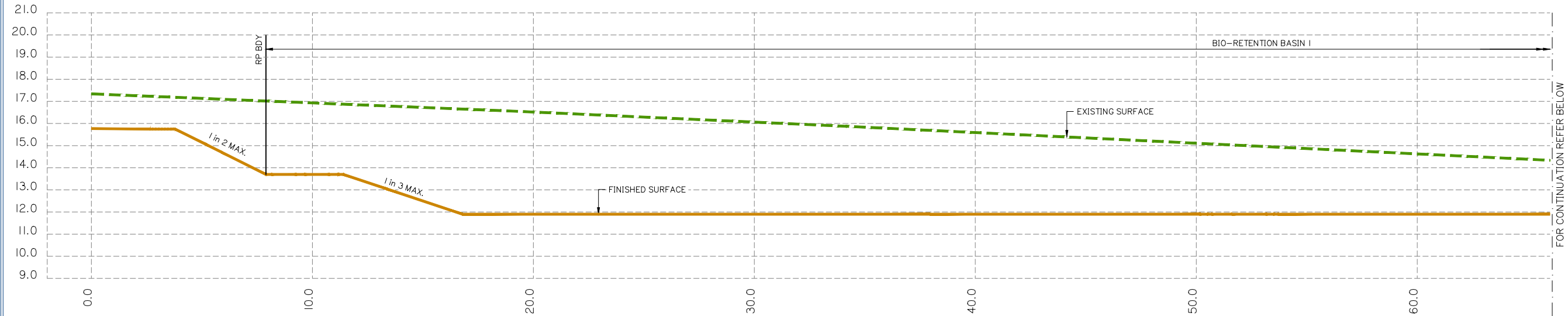
28/09/2023

Drawing No:

5941 ENG CW3 570

Revision

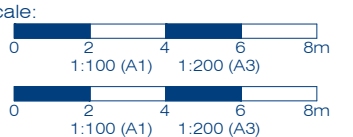
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SECTION 1
SCALE:
1: 100 HORIZ.
1: 100 VERT.

A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES
A1 UNREDUCED
A3 REDUCED



PROJECT NORTH POINT

Project No.	5941
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No:	Revision
5941 ENG CW3 573	A

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

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Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

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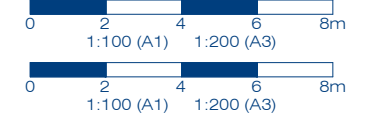
Drawing Title:

BIO RETENTION BASIN
SECTIONS
SHEET 2 OF 2

B	06/11/23	SECTION UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE
SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED



PROJECT NORTH POINT

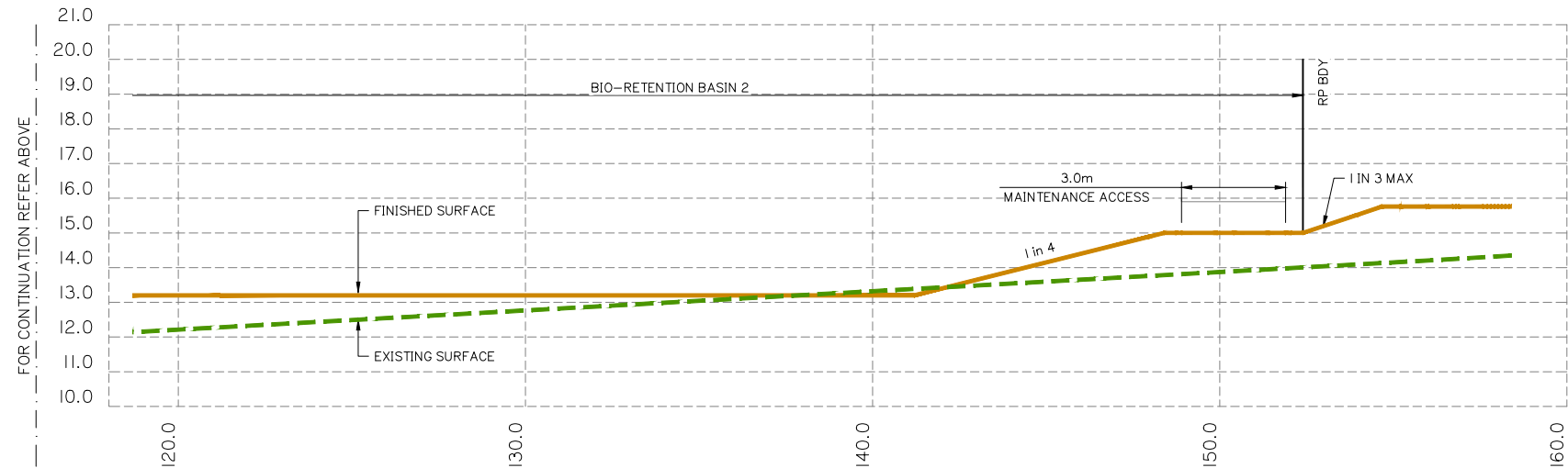
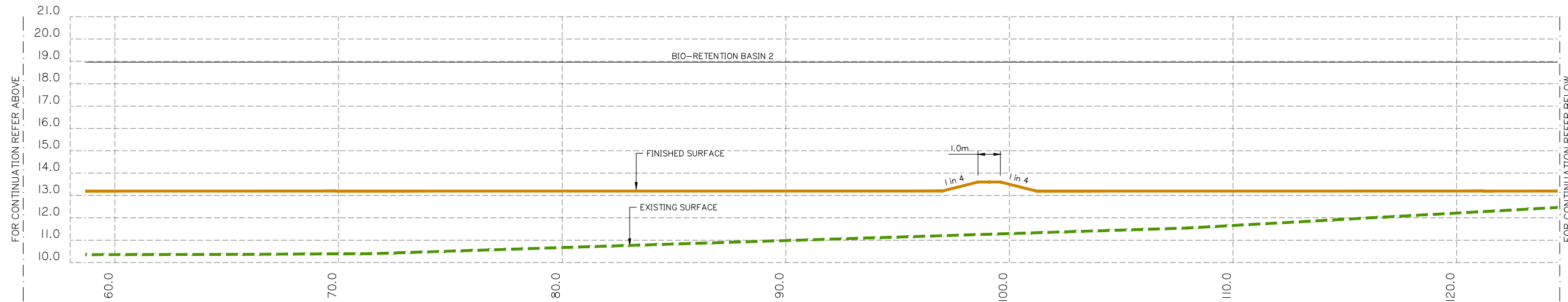
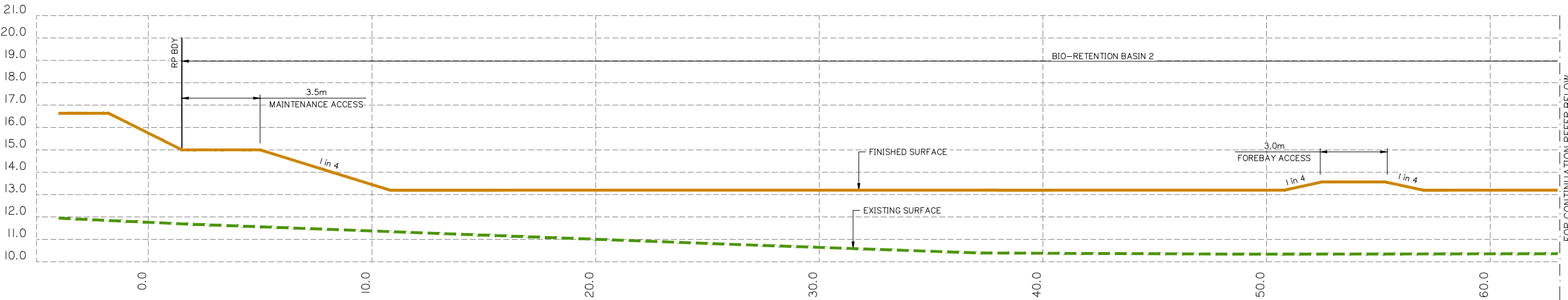
Project No:	5941	Revision	
Designed:	JH	Drafted:	JH
Approved:			MG
RPEQ			16939
Signed:			
Date:			28/09/2023
Drawing No:	5941 ENG CW3 574		

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

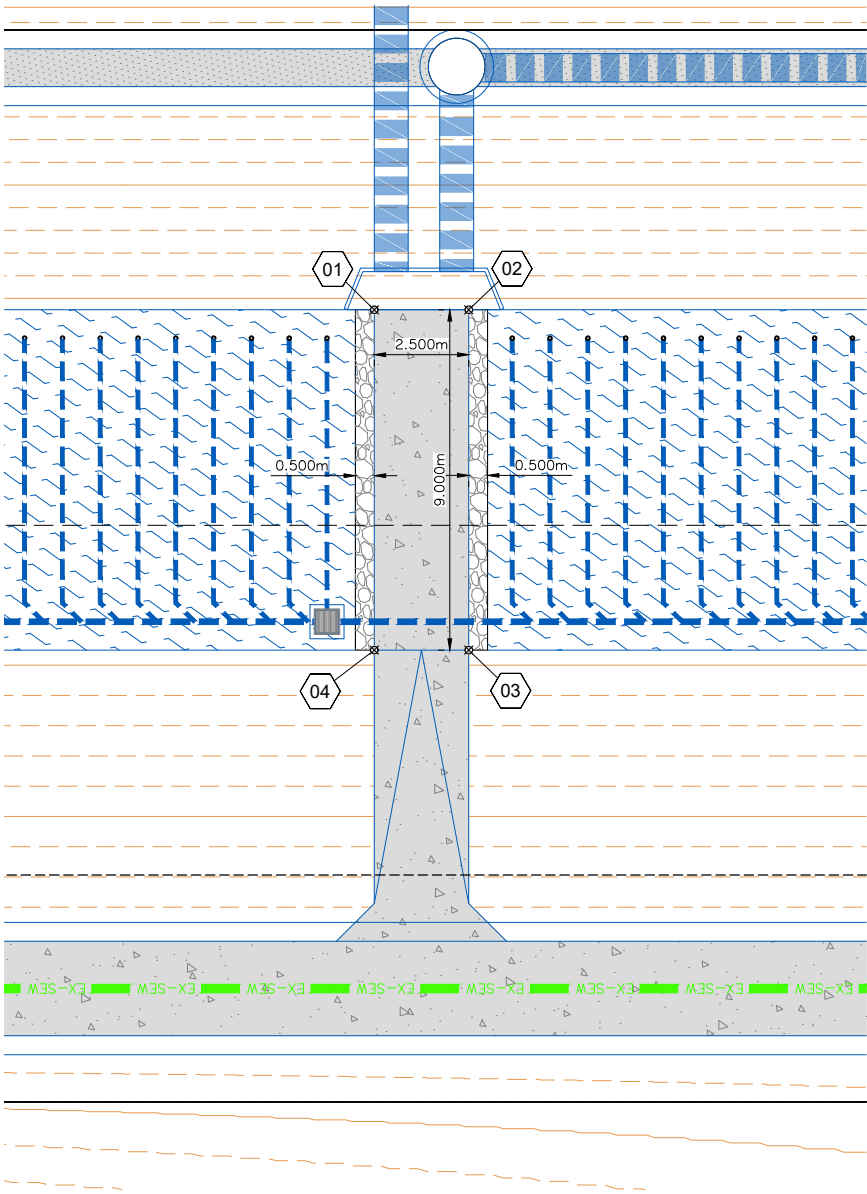
Application No: OPW/2023/1136

Dated: 14 February 2024

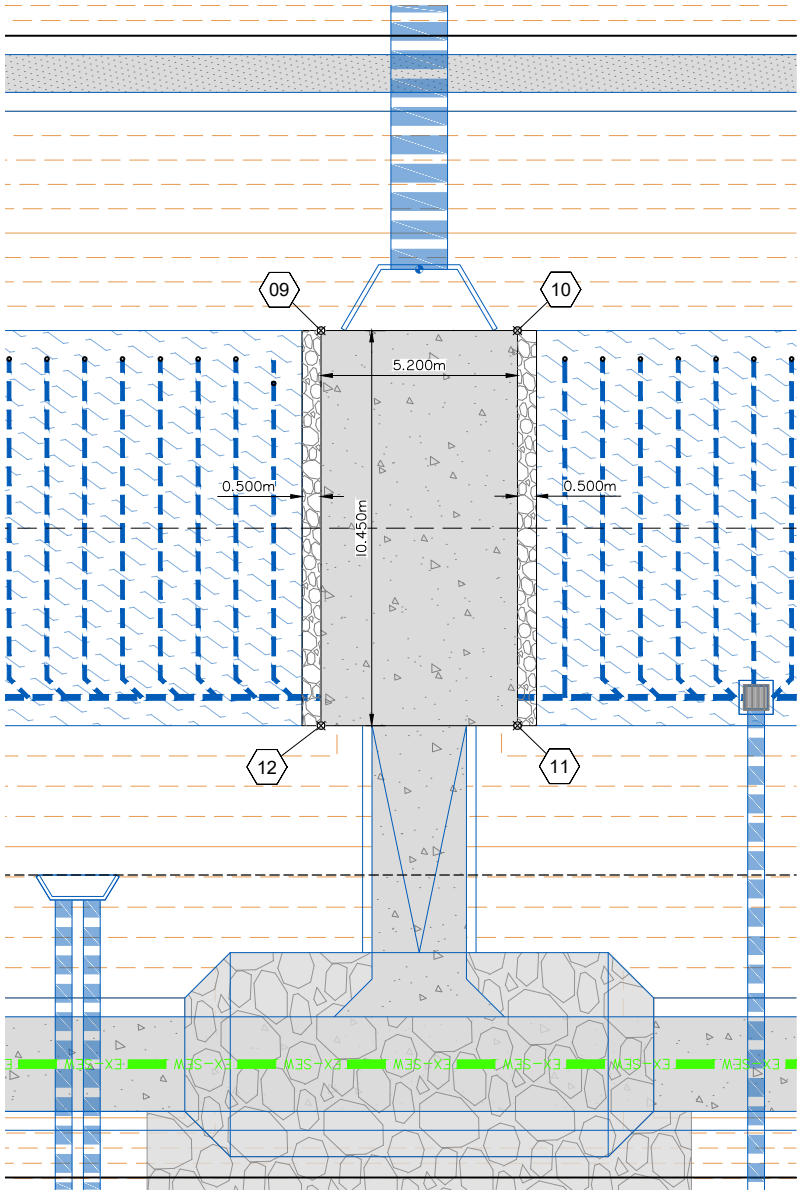
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



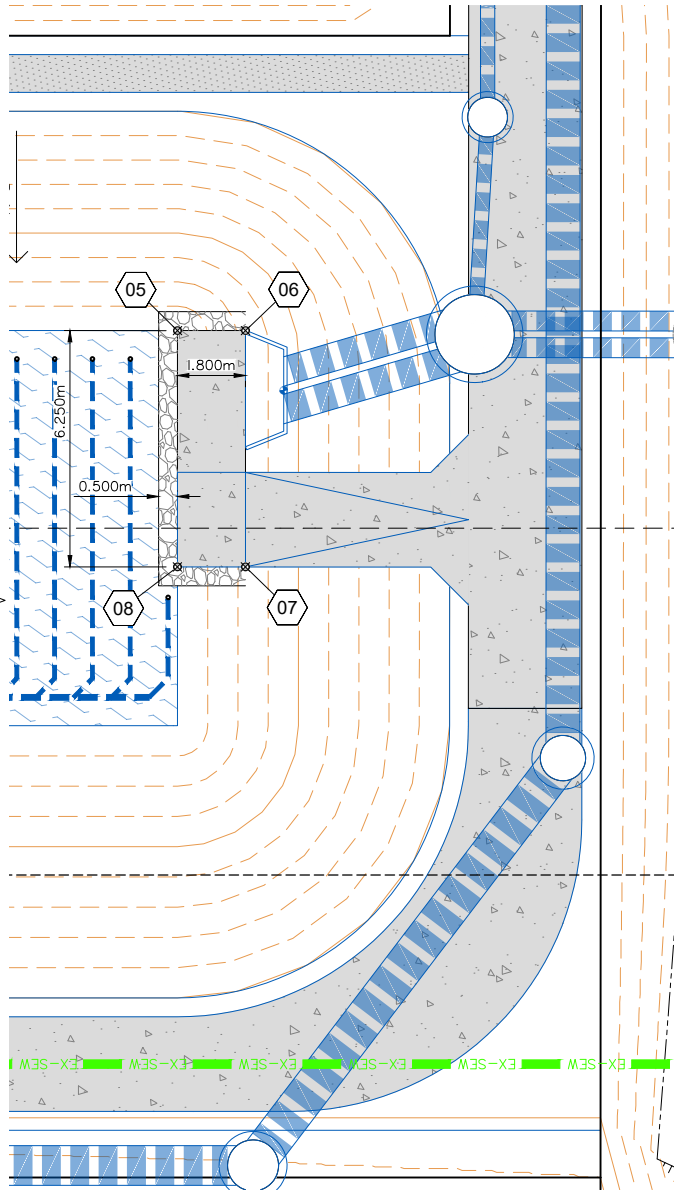
SECTION 2
SCALE:
1: 100 HORIZ.
1: 100 VERT.



BASIN 1 FOREBAY SETOUT PLAN
SCALE 1: 100



BASIN 2 FOREBAY SETOUT PLAN
SCALE 1: 100



BASIN 3 FOREBAY SETOUT PLAN
SCALE 1: 100

BIO RETENTION BASIN FOREBAY SETOUT PLAN

FOREBAY SETOUT TABLE			
POINT	EASTING	NORTHING	LEVEL (AHD)
01	3030.675	6445.598	11.900
02	3031.075	6448.066	11.900
03	3039.959	6446.627	11.900
04	3039.559	6444.159	11.900
05	2995.647	6238.362	13.200
06	2995.935	6240.138	13.200
07	3002.105	6239.137	13.200
08	3001.816	6237.361	13.200
09	2981.276	6149.618	13.200
10	2982.108	6154.751	13.200
11	2992.423	6153.080	13.200
12	2991.592	6147.947	13.200
13	2916.039	5990.062	12.700
14	2919.072	5995.228	12.700
15	2920.788	5994.221	12.700
16	2917.758	5989.054	12.700

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW/2023/1136

Dated: 14 February 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

B	06/11/23	LAYOUT UPDATED	ML	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE
CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

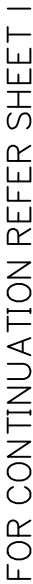
0 4 8 12 16m

1:200 (A1) 1:400 (A3)

PROJECT NORTH POINT



Project No.: 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No.: 5941 ENG CW3 575	Revision: B



FOR CONTINUATION REFER SHEET 3

NEW 150Ø PROPERTY CONNECTION
TO BE INSTALLED AS PART OF
STAGE 3 CIVIL WORKS. REFER TO
LIVE WORKS TABLE FOR DETAILS



1
S24

SEWER STRUCTURE LEGEND

● SEWER MAINTENANCE HOLE
TYPE P3-1050Ø (U.N.O)
TYPE C-1500Ø AS NOTED

LIVE WORKS SCHEDULE – SEWER

No	DESCRIPTION	DIA SEWER	MH No.	MH/MS TYPE	COVER TYPE	LOT No.	FSL	ESL	IL	DEPTH TO INVERT
1(A)	CONTRACTOR TO BREAK INTO EXISTING STRUCTURE S3/7, COMPLETE BENCHING AND LAY LINE 300 INCLUDING 150Ø LOT 303 HOUSE CONNECTION	DN150	S3/7	P3	D/C	—	15.931	15.931	11.955	3.976
2(A)	CONTRACTOR TO BREAK INTO EXISTING STRUCTURE S24/5, AND INSTALL 150Ø LOT 301 HOUSE CONNECTION	DN150	S24/5	C	D/C	301	15.690	15.690	11.820	3.870
3(A)	CONTRACTOR TO BREAK INTO EXISTING STRUCTURE S21/5, AND INSTALL 150Ø LOT 302 HOUSE CONNECTION	DN150	S21/5	C	D/C	302	16.565	16.565	11.720	4.845
4(A)	CONTRACTOR TO BREAK INTO EXISTING STRUCTURE S20/5, COMPLETE BENCHING AND LAY LINE 500 INCLUDING 150Ø LOT 503 HOUSE CONNECTION	DN150	S20/5	P3	D/C	—	13.264	13.264	7.036	6.228

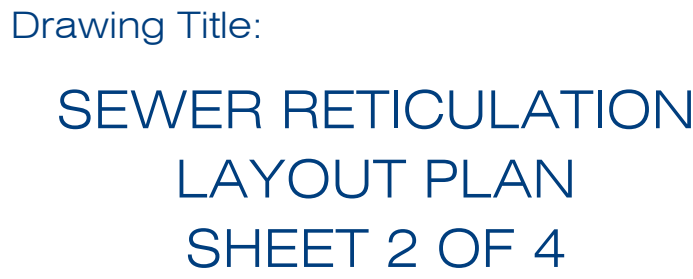


**PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL**

Application No: OPW/2023/1136

Dated: 14 February 2024

**Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies**

[illegible]

A	25/05/23	ORIGINAL ISSUE	JH	MG
Rev	Date	Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:

0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT



Project No: 5941	
Designed: JH	Drafted: JH
Approved:	MG
RPEQ	16939
Signed:	
Date:	28/09/2023
Drawing No: Revision	
5941 ENG CW3 611	A

PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 kPa.	VERY STIFF CLAY SANDY LOAM 100kPa.	SAND & GRAVEL HARDCLAY 150kPa.	SAND & GRAVEL CEMENTED WITH CLAY 200kPa.	ROCK 240kPa
100	90° BEND	19.8	400	1000	●	●	●	●
	60° BEND	14.0		700	●	●	●	●
	45° BEND	10.7		●	●	●	●	●
	22.5° BEND	5.5		●	●	●	●	●
	11.25° BEND	2.7		●	●	●	●	●
	TEE OR CLOSED END	14.0		700	●	●	●	●
150	90° BEND	41.7	450	1860	930	●	●	●
	60° BEND	29.5		1320	660	●	●	●
	45° BEND	22.6		1000	●	●	●	●
	22.5° BEND	11.5		●	●	●	●	●
	11.25° BEND	5.8		●	●	●	●	●
	TEE OR CLOSED END	29.5		1300	660	●	●	●
200	90° BEND	71.7	550	*	1300	870	650	●
	60° BEND	50.7		1850	920	●	●	●
	45° BEND	38.8		1410	700	●	●	●
	22.5° BEND	19.8		720	●	●	●	●
	11.25° BEND	9.9		●	●	●	●	●
	TEE OR CLOSED END	50.7		1850	920	●	●	●
225	90° BEND	89.4	600	*	1500	1000	750	●
	60° BEND	63.2		2110	1060	700	●	●
	45° BEND	48.4		1620	810	●	●	●
	22.5° BEND	24.6		830	●	●	●	●
	11.25° BEND	12.4		●	●	●	●	●
	TEE OR CLOSED END	63.2		210	1060	700	●	●
250	90° BEND	109.0	650	*	1700	1120	840	700
	60° BEND	77.1		2400	1200	800	●	●
	45° BEND	59.0		1820	910	●	●	●
	22.5° BEND	30.1		930	●	●	●	●
	11.25° BEND	15.1		●	●	●	●	●
	TEE OR CLOSED END	77.1		2400	1200	800	●	●
300	90° BEND	158.6	700	*	2270	1510	1140	950
	60° BEND	112.2		*	1600	1070	800	670
	45° BEND	85.9		2453	1230	820	●	●
	22.5° BEND	43.8		1250	630	●	●	●
	11.25° BEND	22.0		630	●	●	●	●
	TEE OR CLOSED END	112.2		*	1600	1070	800	750

PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 KPa.	VERY STIFF CLAY SANDY LOAM 100KPa.	SAND & GRAVEL HARDCLAY 150KPa.	SAND & GRAVEL CEMENTED WITH CLAY 200KPa.	ROCK 240KPa
375	90° BEND	241.9	800	*	*	2220	1510	1260
	60° BEND	171.0		*	2140	1430	1070	890
	45° BEND	130.9		*	1640	1090	820	680
	22.5° BEND	66.7		1670	840	●	●	●
	11.25° BEND	33.5		840	●	●	●	●
	TEE OR CLOSED END	171.0		*	2140	1430	1070	890
450	90° BEND	342.6	900	*	*	2540	1900	1590
	60° BEND	242.3		*	2690	1800	1350	1120
	45° BEND	185.4		*	2060	1375	1030	860
	22.5° BEND	94.5		2100	1050	700	●	●
	11.25° BEND	47.5		1060	●	●	●	●
	TEE OR CLOSED END	242.3		*	2690	1800	1350	1120
500	90° BEND	418	1000	*	*	2790	2090	1740
	60° BEND	295.6		*	*	1970	1480	1230
	45° BEND	226.2		*	2260	1510	1130	940
	22.5° BEND	115.3		2310	1150	770	●	●
	11.25° BEND	58.0		1160	●	●	●	●
	TEE OR CLOSED END	295.5		*	*	1970	1480	1230
600	90° BEND	593	1100	*	*	*	2700	2250
	60° BEND	419		*	*	2540	1910	1590
	45° BEND	320		*	2920	1950	1460	1220
	22.5° BEND	164		2980	1490	990	750	620
	11.25° BEND	82.2		1500	750	●	●	●
	TEE OR CLOSED END	419		*	*	2540	1910	1590
750	90° BEND	909	1300	*	*	*	*	2920
	60° BEND	643		*	*	*	2480	2060
	45° BEND	492		*	*	2530	1890	1580
	22.5° BEND	251		*	1930	1290	970	810
	11.25° BEND	126.1		1940	970	650	●	●
	TEE OR CLOSED END	643		*	*	*	2480	2060
900 (Ø960 MSCL)	90° BEND	1.228	1500	*	*	*	*	3420
	60° BEND	868		*	*	*	2900	2420
	45° BEND	664		*	*	2960	2220	1850
	22.5° BEND	339		*	2260	1510	1130	940
	11.25° BEND	170		2270	1140	760	●	●
	TEE OR CLOSED END	868		*	*	*	3300	2650

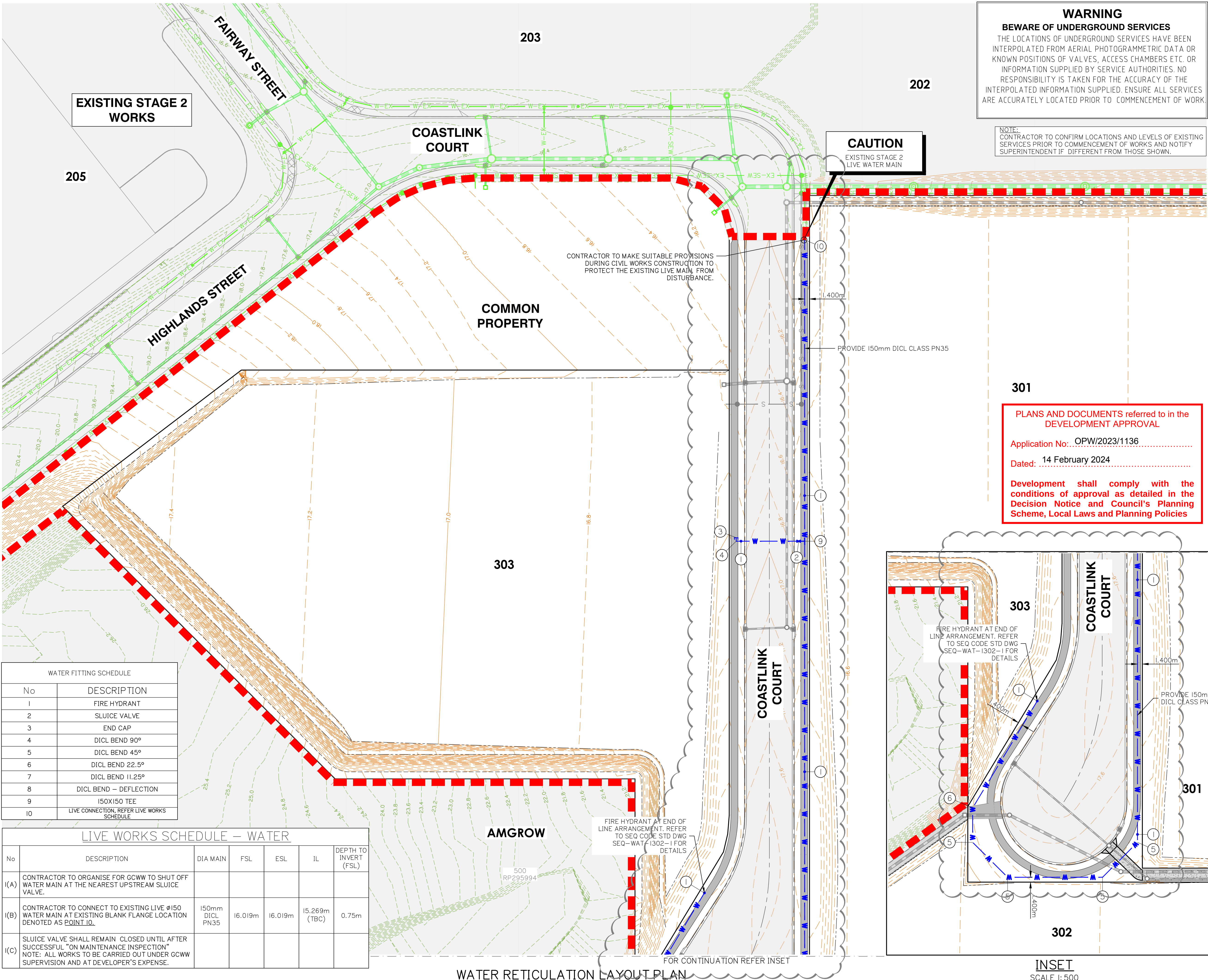
• INDICATES BLOCK LENGTH OF 600
* = SPECIAL DESIGN

THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN INTERPOLATED FROM AERIAL PHOTOGRAMMETRIC DATA OR KNOWN POSITIONS OF VALVES, ACCESS CHAMBERS ETC. OR INFORMATION SUPPLIED BY SERVICE AUTHORITIES. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE INTERPOLATED INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

CONTRACTOR TO CONFIRM LOCATIONS AND LEVELS OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS AND NOTIFY SUPERINTENDENT IF DIFFERENT FROM THOSE SHOWN.

1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. SOIL CLASSIFICATIONS USED ON THIS DRAWING ARE EXPLAINED IN SEQ-WAT-1200-1. DO NOT USE STANDARD THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WITH $< 50\text{kPa}$ BEARING CAPACITY EG;
 - VERY SOFT, SOFT OR FIRM CLAY.
 - LOOSE CLEAN SAND,
 - UNCOMPACTED FILL OR REFUSE.A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE SOILS.
3. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES OR BE LOCATED OUTSIDE THE WATER MAIN ALLOCATION WITHOUT WATER AGENCY APPROVAL.
4. ALL CONCRETE GRADE N20. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200kPa AND ACTUAL DI CL PIPE DIAMETERS.
5. THE MINIMUM THRUST AREA FOR TAPER THRUST BLOCKS TO BE EQUAL TO THE DIFFERENCE BETWEEN THE THRUST AREAS FOR TEES OR CLOSED ENDS OF EQUIVALENT DIAMETER TO THOSE EACH SIDE OF TAPER. THE DETAIL SHOWN IS FOR $< \text{OR} = \text{DN}150$ MAINS. FOR LARGER MAINS, THE TAPER THRUST BLOCK SHALL BE REINFORCED AND OF A SIZE AS SHOWN IN SEQ-WAT-1206-1.
6. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN.
7. WHEN POURING CONCRETE AGAINST FITTINGS PLACE A MEMBRANE OF POLYETHYLENE, PVC OR FELT BETWEEN THE FITTING AND CONCRETE TO PREVENT DAMAGE TO THE FITTING. PIPE JOINTS TO BE CLEAR OF CONCRETE.
8. CONCRETE THRUST BLOCK ANCHORS FOR VALVES TO BE AS DETAILED ON SEQ-WAT-1206-1.

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



est 1985

planning | environment | landscape | engineering | survey

T: 3807 3333 | F: 3287 5461 | www.gassman.com.au

Gold Coast | 78 Business Street, Yatala QLD | PO Box 392, Beerleigh 4207

Client:

FRASERS PROPERTY

FPI QUEENSLAND PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD DRIVE, STAPYLTON QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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THIS DRAWING IS INTENDED TO BE PRINTED IN COLOUR. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH GENERAL NOTES.

Drawing Title:

WATER RETICULATION LAYOUT PLAN

Rev	Date	Description	JH	MG
B	08/02/24	FOOTPATH AMENDED	JH	MG
A	25/05/23	ORIGINAL ISSUE	JH	MG

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

Scale:

0 10 20 30 40m
1:500 (A1) 1:1000 (A3)

PROJECT NORTH POINT

Project No.: 5941

Designed: JH
Drafted: JH

Approved: MG

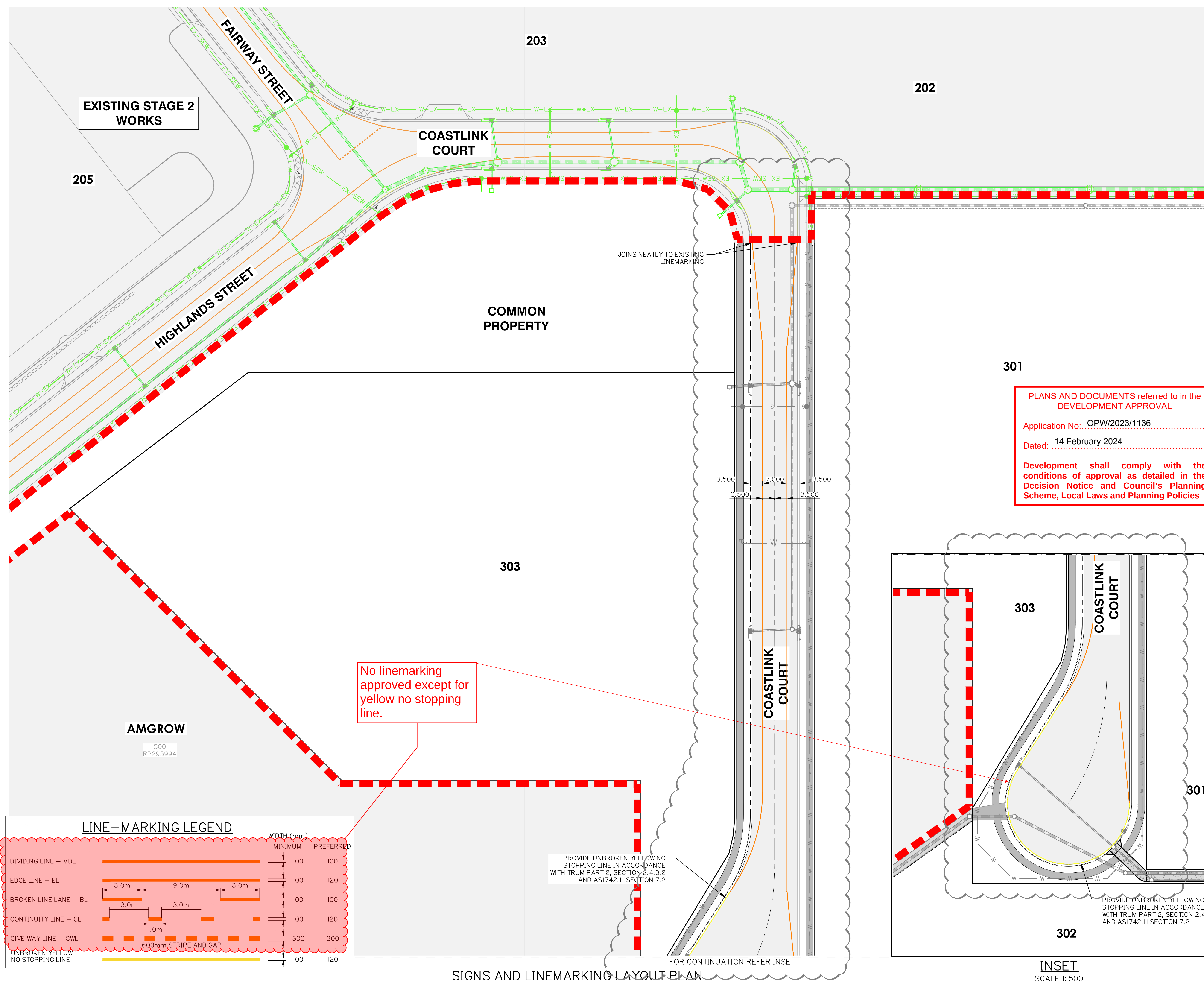
RPEQ: 16939

Signed:

Date: 28/09/2023

Drawing No: 5941 ENG CW3 710
Revision: B

g:\Projects\5941\engineering\Asa\civil works stage 3\Current\5941 ENG CW3 710.dwg



Client:



FPI QUEENSLAND
PTY. LTD.

Project:

VANTAGE YATALA STAGE 3

Site Address:

LOT 504 HOMESTEAD
DRIVE, STAPYLTON
QLD, 4207

RPD:

Lot: 504
Plan: SP329485
Local Authority: CITY OF GOLD COAST

Level Datum: AHD
Meridian:
PSM:
RL:

ISSUED FOR APPROVAL

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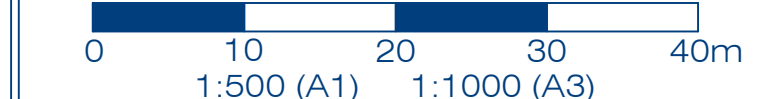
Drawing Title:

SIGNS AND LINEMARKING LAYOUT PLAN

C	08/02/24		FOOTPATH AMENDED	JH	MG
B	06/11/23		LEGEND UPDATED	ML	M3
A	25/05/23		ORIGINAL ISSUE	JH	MG
Rev	Date		Description	DRN	CHK

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE.	A1 UNREDUCED
CULVERT AND PIPE SIZES IN MILLIMETRES	A3 REDUCED

Scale:



PROJECT NORTH POINT



Project No. 5941

Designed: JH

Drafted: JH

Approved:

MG

RPEQ

16939

Signed:

Michael

Date:

28/09/2023

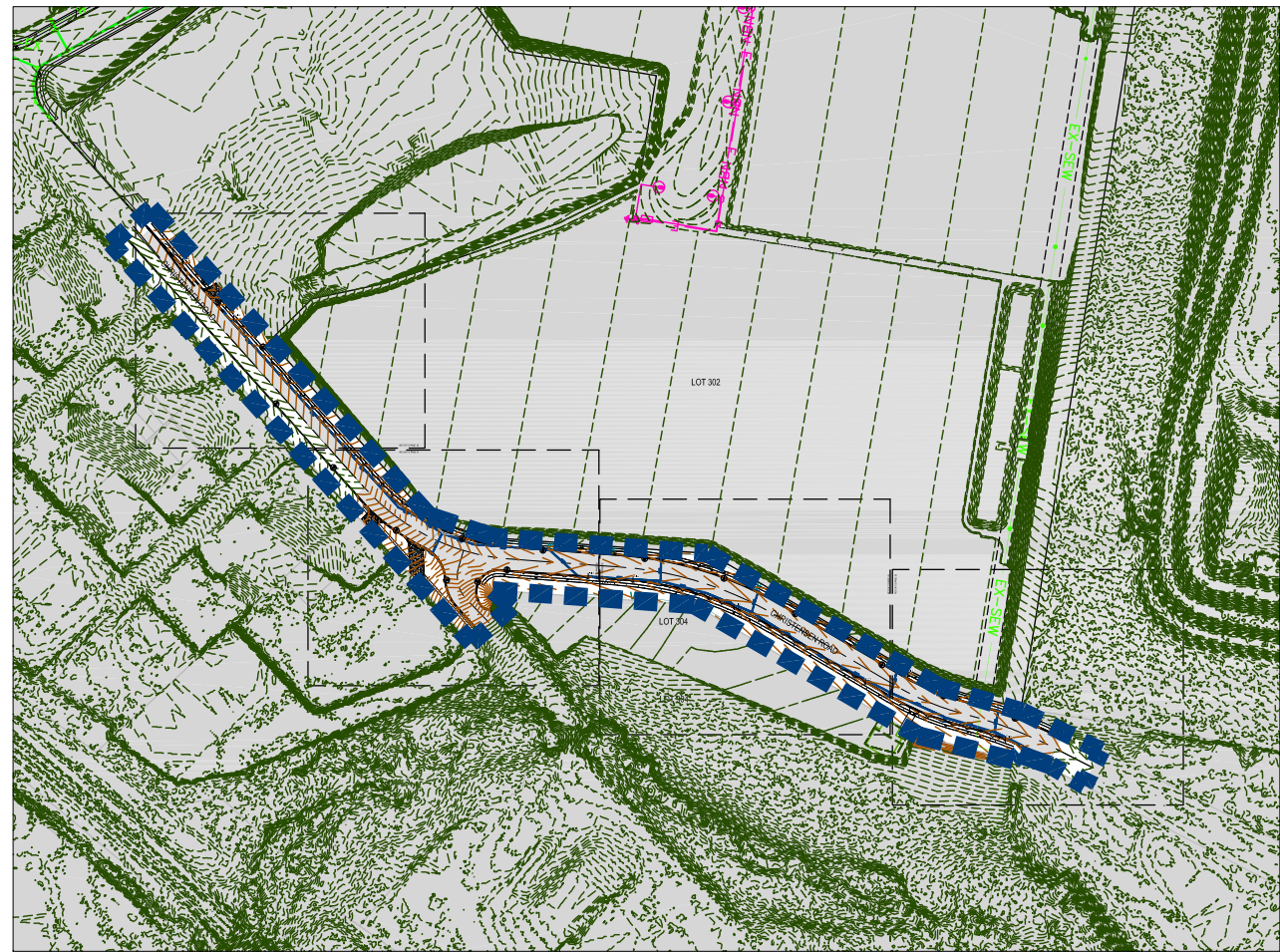
Drawing No:
5941 ENG CW3 810

Revision
C

VANTAGE YATALA

STAGE 3 EXTERNAL PUBLIC WORKS

60 STAPYLTON JACOBS WELL ROAD, 82 CHRISTENSEN ROAD AND 31 YELLOWOOD ROAD, STAPYLTON



LOCALITY PLAN

PRINCIPAL
FRASERS PROPERTY (AUSTRLIA) PTY LTD
LEVEL 3, 1C HOMEBUSH BAY DRIVE, RHODES, NSW 2138

 **gassman
development
perspectives**
76 BUSINESS STREET, YATALA
Tel: +61 7 3807 3333
Fax: +61 7 3287 5461
E: mail@gassman.com.au
w. www.gassman.com.au

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

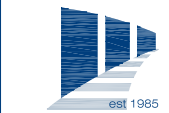
Dated: 2 April 2024

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

DRAWING INDEX

5941-3-L-EXTPUB-OPW-CP01	Locality Plan
5941-3-L-EXTPUB-OPW-CP02	Landscape Finishes and General Arrangement Plan
5941-3-L-EXTPUB-OPW-S01	Specifications and Planting Schedule
5941-3-L-EXTPUB-OPW-S02	Detail Drawings
5941-3-L-EXTPUB-OPW-STP01	Surface Treatment Plan
5941-3-L-EXTPUB-OPW-STP02	Surface Treatment Plan
5941-3-L-EXTPUB-OPW-STP03	Surface Treatment Plan
5941-3-L-EXTPUB-OPW-STP04	Surface Treatment Plan
5941-3-L-EXTPUB-OPW-PP01	Planting Plan
5941-3-L-EXTPUB-OPW-PP02	Planting Plan
5941-3-L-EXTPUB-OPW-PP03	Planting Plan
5941-3-L-EXTPUB-OPW-PP04	Planting Plan

PROVIDE ANNUAL MAINTENANCE COSTINGS FOR ALL
LANDSCAPE ITEMS ON PUBLIC LAND RELEVANT TO THE
DEVELOPMENT FOR THE DURATION OF THE
'ESTABLISHMENT' AND 'ON MAINTENANCE PERIODS. REFER
CONDITION 11,a,xv OF COM/2023/82

 **gassman
development
perspectives**
est 1985
planning | environment | landscape | engineering | survey
T: 3807 3333 | F: 3287 5461 | www.gassman.com.au
Gold Coast & Logan | 76 Business Street, Yatala QLD | PO Box 392, Beenleigh 4207

Client:

 **FRASERS
PROPERTY**
FRASERS PROPERTY
(AUSTRALIA) PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST
COUNCIL
Level Datum: AHD

ISSUED FOR TENDER

THIS DRAWING IS INTENDED TO
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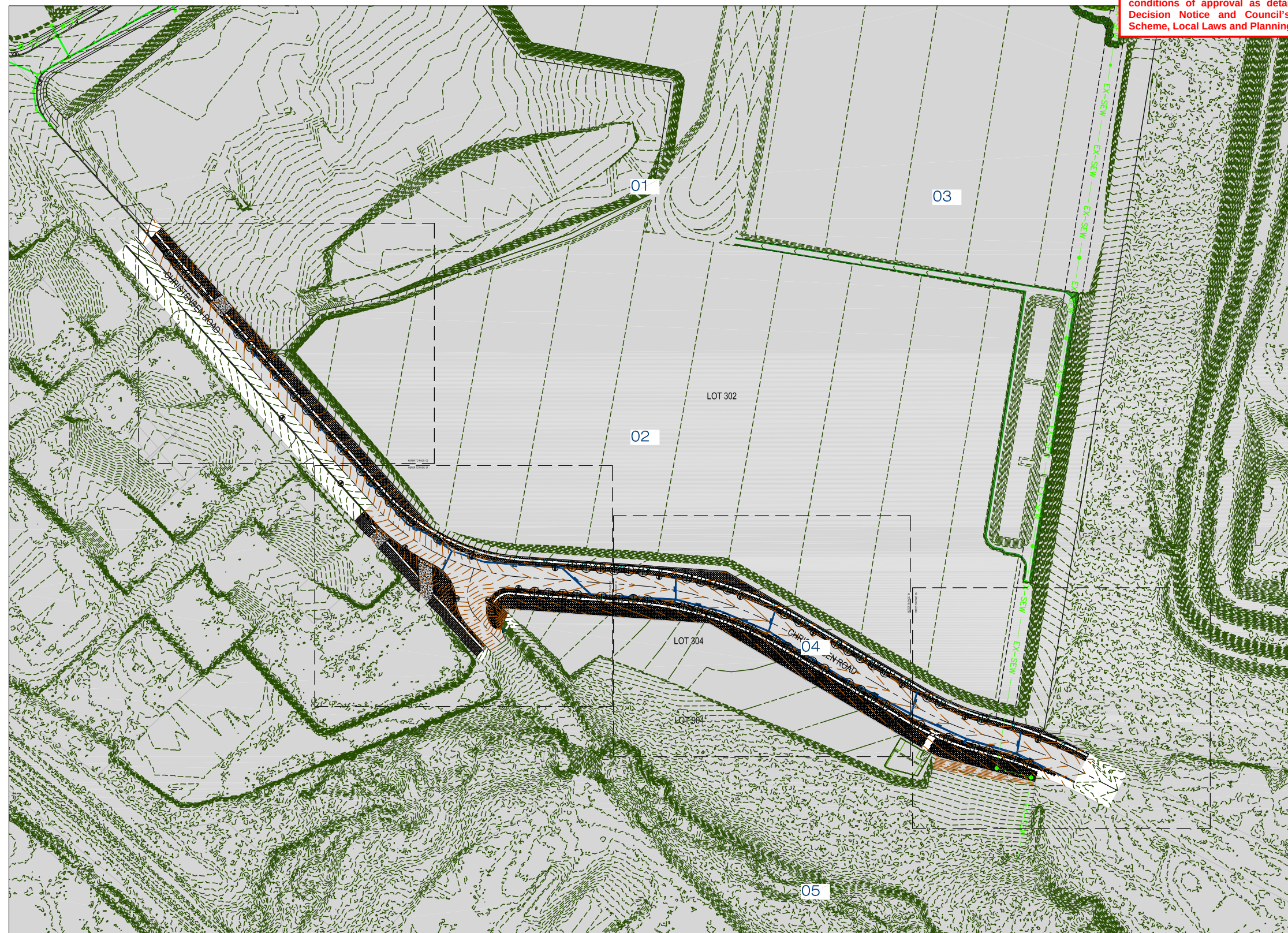
DRAWING TITLE
Cover Page

C	15.12.23	For Approval	JLS	MD
B	30.10.23	For Tender	JLS	MD
A	27.10.23	For Tender	JLS	MD
Issue	Date	Description	DRN	CHK

Scale at A1:	
Designed:	JLS
Drafted:	JLS
Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW- CP01 Rev. No: C

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Description:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST
COUNCIL
Level Datum: AHD

ISSUED FOR TENDER

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ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH GENERAL NOTES

DRAWING TITLE
Cover Page

C	15.12.23	For Approval	JLS	MC
B	30.10.23	For Tender (ask for)	JLS	MC
A	27.10.23	For Tender	JLS	MC
Issue	Date	Description	DRN	CH

Scale at A1:

Designed:	JLS
Drafted:	JLS
Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No:	Rev. No:
5941-3-L-EXTPUB-OPW-CP02	C

LANDSCAPE SPECIFICATIONS

GENERAL

The Operational Works Plans are to be read in conjunction with Survey, Civil Engineering and Architectural Plans, Hydraulic and Electrical Reticulation Drawings and specifications for this project.

All works are to be in accordance with Gold Coast City Council - Planning Scheme - Landscape Work Code and approval conditions. Any discrepancy between these plans and other relevant drawings and specifications shall be brought to the notice of the Developments Managers Representative before commencement or continuation of works.

LEVELS

Existing and finished surface levels shown within this plan have been derived from survey and civil engineering plans authored by Gassman Development Perspectives. Refer to these plans for further information, where required. Any discrepancy found between these plans and the survey and civil drawing series shall be brought to the attention of the Development Managers Representative before the commencement or continuation of works.

EDGING

TYPE 1 Install spaded edge as detailed and to locations indicated within this set of plans and as per detail drawing reflected on SP02.

GROWING MEDIA (Deep Planting Beds)

The Landscape Contractor is to provide sufficient surface and subsurface drainage to street tree garden beds to ensure positively drain areas free from ponding and water logging of soils.

Cultivation of subgrade is to a minimum depth of 200mm prior to placing topsoil turf for at 150mm, and to a minimum depth of 300mm for planting areas, and 500mm depth to batters that have grade of 1:3 or less.

Cultivate manually within 300mm of paths or structures and within the drip line of trees to a minimum depth of 150mm.

Remove stones exceeding 25mm, clods of earth exceeding 50mm, and all weed material. Grub out stumps and roots over 50mm in diameter to a minimum depth of 300mm below sub-grade. Tree and shrub stumps less than 75mm in diameter must be cut off at ground level and treated to prevent re-growth. trim the surface to design levels after cultivation.

Apply additives after ripping or cultivation and incorporate into the upper 100mm layer of the subgrade. gypsum: incorporate at the rate in accordance with the manufactures guidelines.

Fill required for leveling must be from previous earthworks on site or imported from a certified supplier as required. all fill material to be used must be free from:

- Logs, stumps and other vegetative material;
- Materials susceptible to spontaneous combustion;
- Clay of liquid limit exceeding 90 and/or plasticity index exceeding 65;
- Refuse and rubbish;
- Concrete and masonry rubble, and
- Toxic materials and substances.

Supply and install imported topsoil complying with as 4419 - 1996. Spread topsoil on prepared sub-grade and grade evenly, making allowances for required finished levels and contours (allow for light compaction).

The reuse of modified topsoil must be free from stones, vegetative matter, stumps, clods greater than 75mm and toxic materials. Modified site soil must have good drainage and be high in organic matter. All modified soils to comply with AS4419. Refer to detail drawing no DD01 on 4002 for further detail.

MULCH (Deep Planting Areas)

Supply and install organic mulch (Hoop Fines or similar approved) to a minimum depth 100mm on top of growing media. Place mulch to the required depth, clear of plant stems. Spread mulch so that after settling it is smooth and evenly graded between design surface levels sloped towards the base of plant stems.

All mulch to be free from stones and soils.

Mulch must comply with AS1289, AS2223, AS 4419 and AS4454.

FERTILIZER

Use Agriform (or similar approved) 10g fertilizer (N:P:K / 20:4:3:4.1) tablet at a rate of 1 per 140mm pot or smaller pot, 2 per 200mm pot, 3 per 300mm pot or larger. Place fertilizer at plant rootball as indicated within detail drawings found within this set of plans.

PLANT MATERIAL

All plant material is to be inspected onsite prior to planting and shall be rejected if it is not found to meet the following criteria;

- All plant material is to be visibly free of disease and damage, is to be of true genus, species and cultivars specified and is to be the specified container size and appropriate height or spread.
- All plant material is to have a well developed root system, without girding and spiraling, nor shall the plant be 'root bound'.

TURF

Supply and install 'A' grade winter green couch, as indicated on landscape plans or equal approved. Roll on completion and top dress as necessary to provide an even free draining surface. Water immediately after installation until the topsoil is moistened to its full depth.

General: Cultivation and topsoil by others (civil). Landscaper to provide final trim to ensure no peaks or troughs, and fall directed towards stormwater / drainage.

TREE PLANTING

Supply and install street trees in accordance with Gold Coast City Council street tree placement guidelines. Trees are to be installed in locations as shown on this plan and as per the planting schedule located on this page.

All trees to be placed within 48hours of delivery.

Plant as per typical planting detail located on SP02.

TREE STAKING

Supply and install unpainted 180mm, 38mm x 38mm straight hardwood embedded 600mm into the soil. Stake all trees supplied in 25L or greater. Position stakes equidistant from the plant center and in line with the prevailing wind directions. Secure the tree with suitable lengths of non abrasive UV resistant webbing looped in a figure 8 patten around the trunk. Secure the webbing to the stake to prevent slipping. Refer to typical planting detail located on SP02.

ESTABLISHMENT / MAINTENANCE PERIOD

The planting establishment period commences at the date of practical completion as set out by the Gold Coast City Council in a written certification to the Superintendent and Landscape Subcontractor. Planting Establishment on all landscape works is for a 12 month period at date of practical completion and shall incorporate as listed below.

Once accepted as on maintenance by City Council, a further 12 months of landscape maintenance will take place.

Maintenance shall incorporate the items outlined below, and continue until council acceptance as 'off maintenance'.

General

Maintain all planted areas to ensure the establishment and continued growth of all shrub/ground cover material and palms. Areas shall be maintained in such a way as to ensure groundcover's and shrubs is encouraged to form a mass planting effect.

Weed Control

All planting areas are to be kept weed free through the use of chemical, mechanical and hand weeding as appropriate to the type of planting, its prominence and species involved.

Translocated herbicides should be used in preference to contact products, and where applied in ornamental areas re-visits to remove dead growth will be required.

Pruning

Inspect planting areas regularly and prune out dead or diseased growth as and when discovered.

Dusting and Spraying

Allow for regular inspections and spraying and dusting as may be necessary to control pests and diseases on plant stock. Report any occurrences to the Superintendent.

Replacements

Monitor plant growth and allow for the removal from site of any plants, which fail to thrive, and the leveling up of the planting area. Advise the Superintendent of number of plant failures after each maintenance visit.

Monitor planting areas and report any incidents of malicious damage or theft.

Mulch

Inspect mulch depths to all planting areas regularly and allow for tidying and topping up levels to specified depths as required.

Log Book

Keep record of dates of visits, maintenance performed and photo evidence of results achieved for the area. Log book to be issued to the Development Managers Representative, at their request.

PLANTING SCHEDULE					
CODE	BOTANICAL NAME	COMMON NAME	POT SIZE	STAKE	QTY
PL001	Flindersia xanthoxyla	yellow ash	400mm	Y	29
WATF10	Waterhousia floribunda	weeping lily pily	100lt	Y	29

SUBSTITUTE Flindersia xanthoxyla WITH Lophostemon suaveolens OR Tristaniopsis laurina

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

Dated: 2 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



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Client:



FRASERS PROPERTY
(AUSTRALIA) PTY. LTD.

Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST
COUNCIL
Level Datum: AHD

ISSUED FOR TENDER

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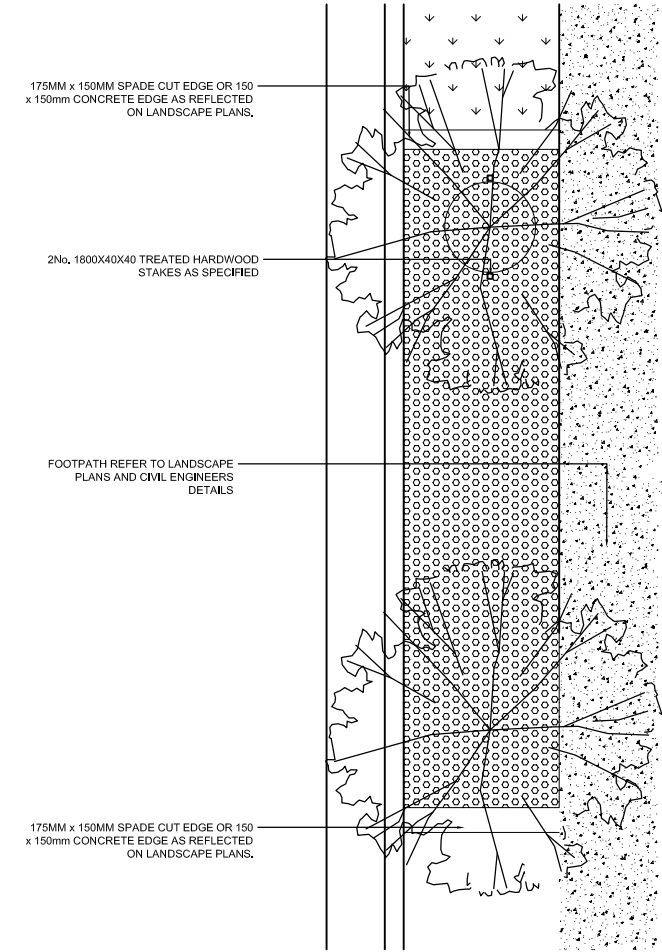
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A	27.10.23	For Tender	JLS	MD
Issue	Date	Description	DRN	CHK

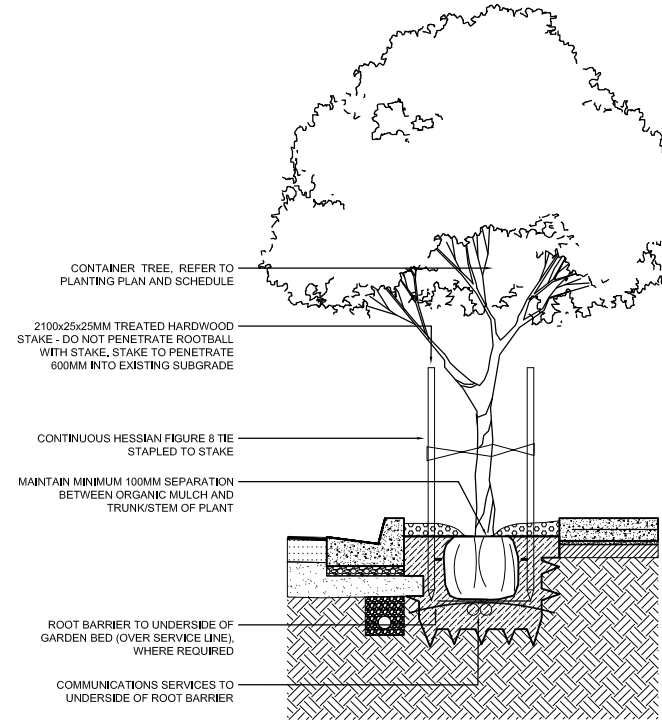
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RPEQ:	16939
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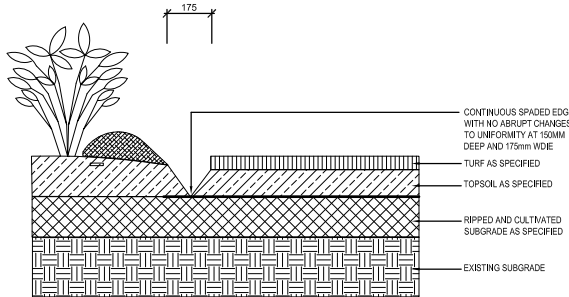
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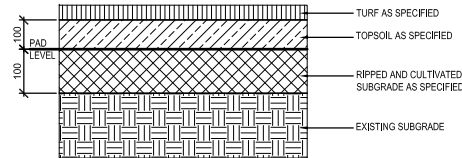
STREET TREE SET OUT DRAWING



STREET TREE PLANTING DETAIL



SPADED EDGE DETAIL



TURF DETAIL

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

Dated: 2 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

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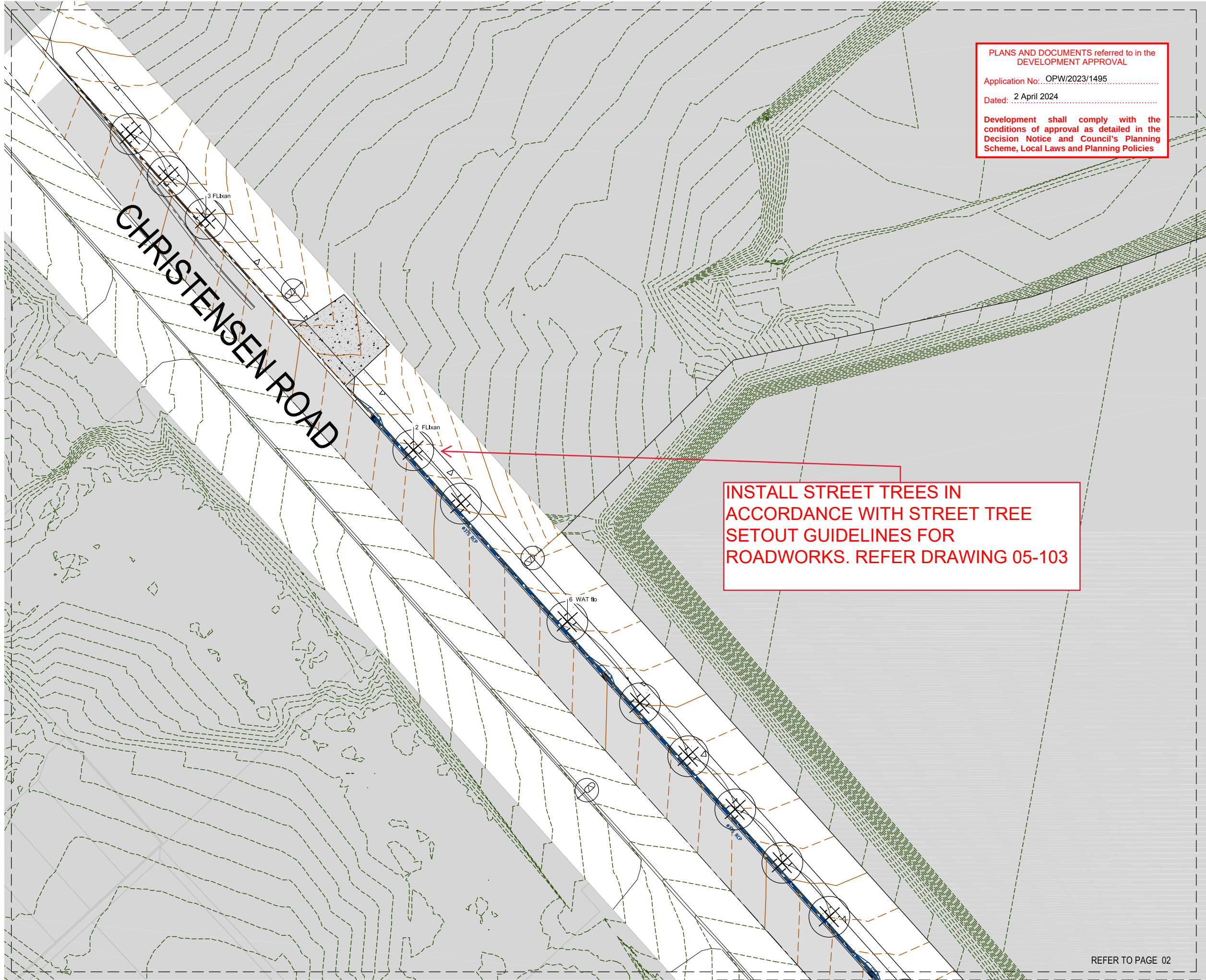
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A	27.10.23	For Tender	JLS	MG

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Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-SP02
Rev. No: C



PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

Dated: 2 April 2024

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INSTALL STREET TREES IN
ACCORDANCE WITH STREET TREE
SETOUT GUIDELINES FOR
ROADWORKS. REFER DRAWING 05-103



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Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

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LEGEND

Proposed Tree



DRAWING TITLE

Planting Plan

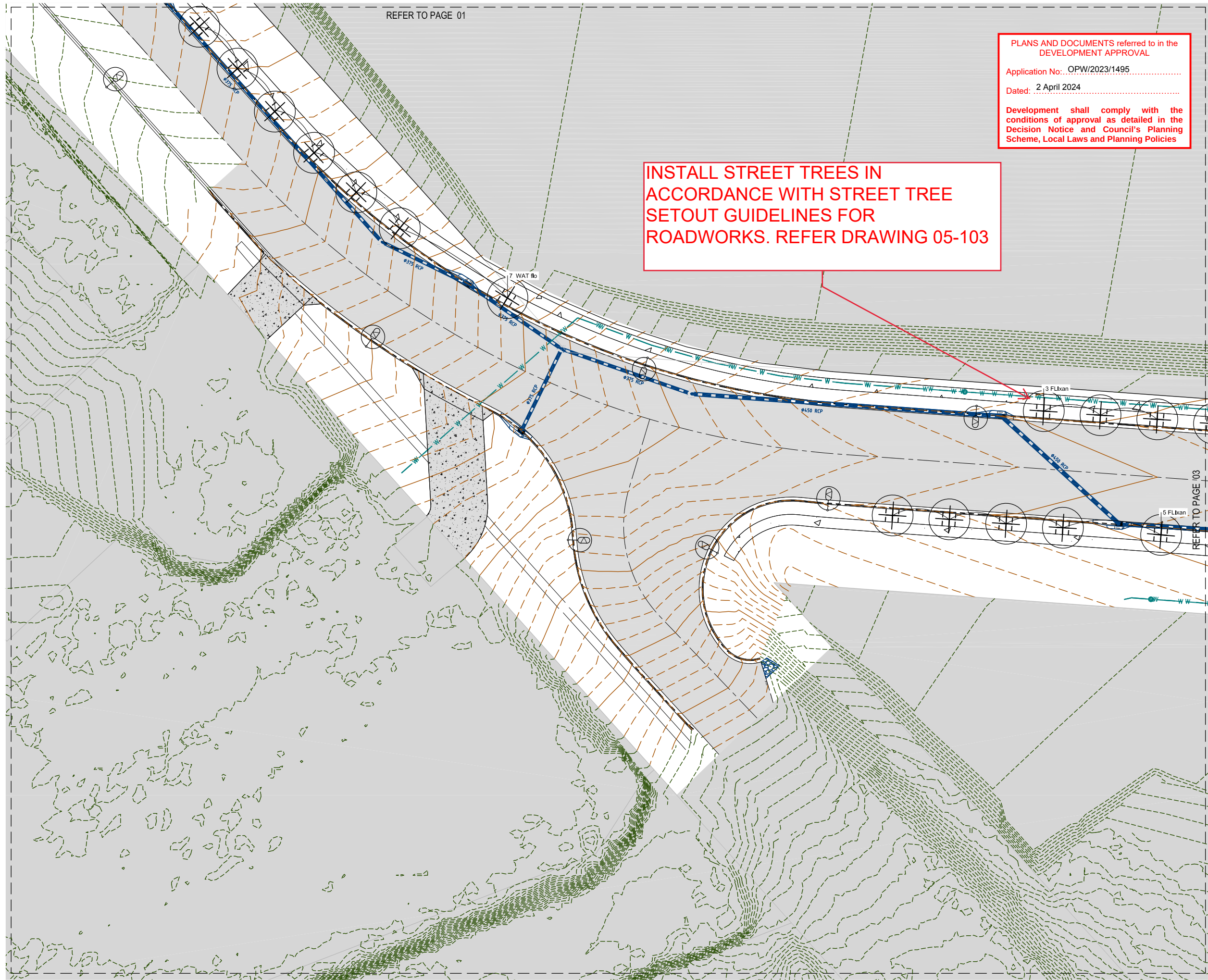
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B	30.10.23	For Tender	JLS	MG
A	27.10.23	For Tender	JLS	MG

Scale at A1: 1:250, 1:500 at A3

Designed:	JLS
Drafted:	JLS
Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-PP01 Rev. No: C

REFER TO PAGE 02



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

Dated: 2 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

INSTALL STREET TREES IN ACCORDANCE WITH STREET TREE SETOUT GUIDELINES FOR ROADWORKS. REFER DRAWING 05-103



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Project: VANTAGE YATALA STAGE 3

Site Address: 60 STAPYLTON JACOBS WELL ROAD, STAPYLTON QLD 4207

Real Property Discription:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST COUNCIL
Level Datum: AHD

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LEGEND



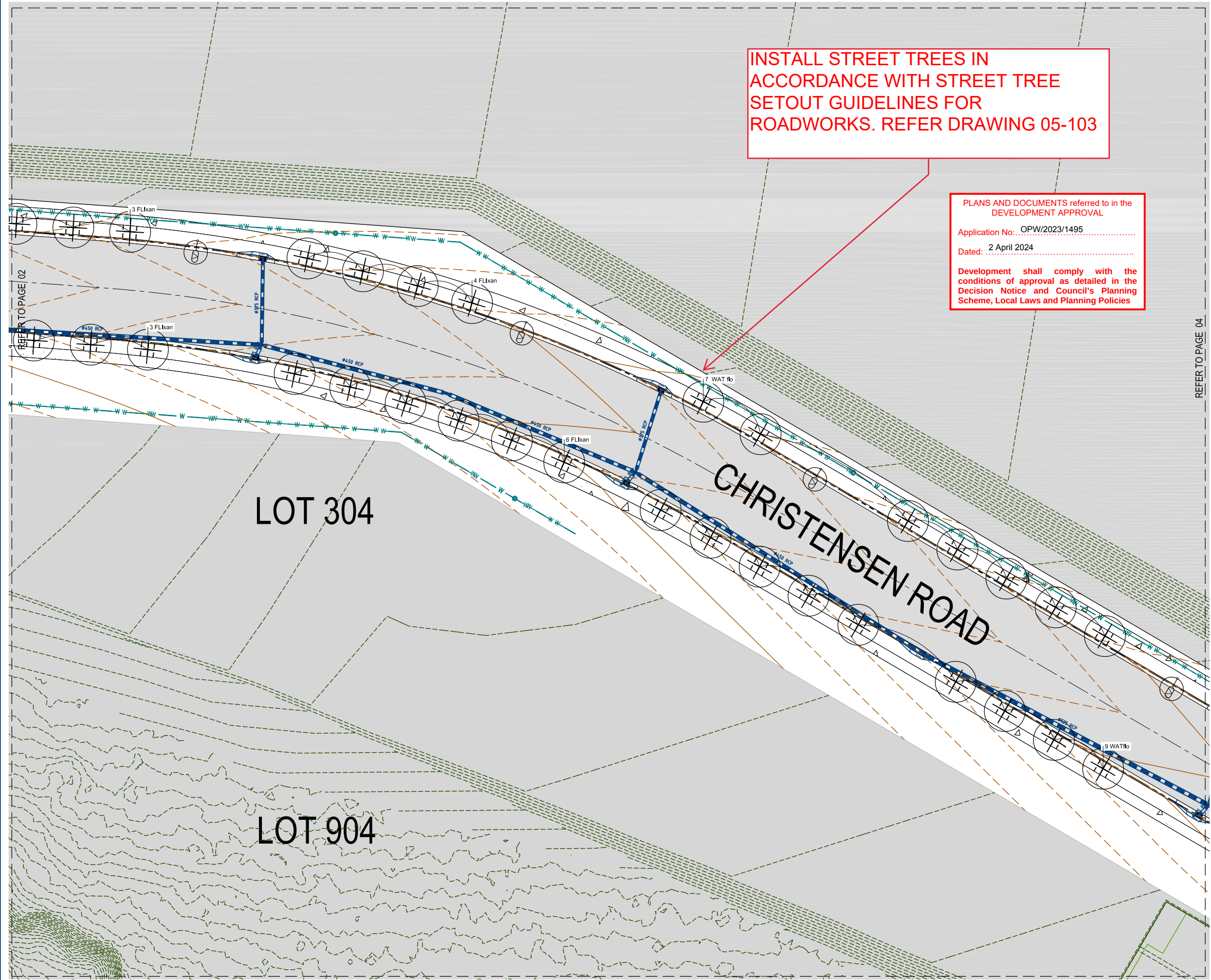
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Issue	Date	Description	DRN	CHK

Scale at A1: 1:250, 1:500 at A3

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RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-PP02 Rev. No: C



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Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

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Plan: SP295994
Local Authority: CITY OF GOLD COAST
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LEGEND

Proposed Tree



DRAWING TITLE

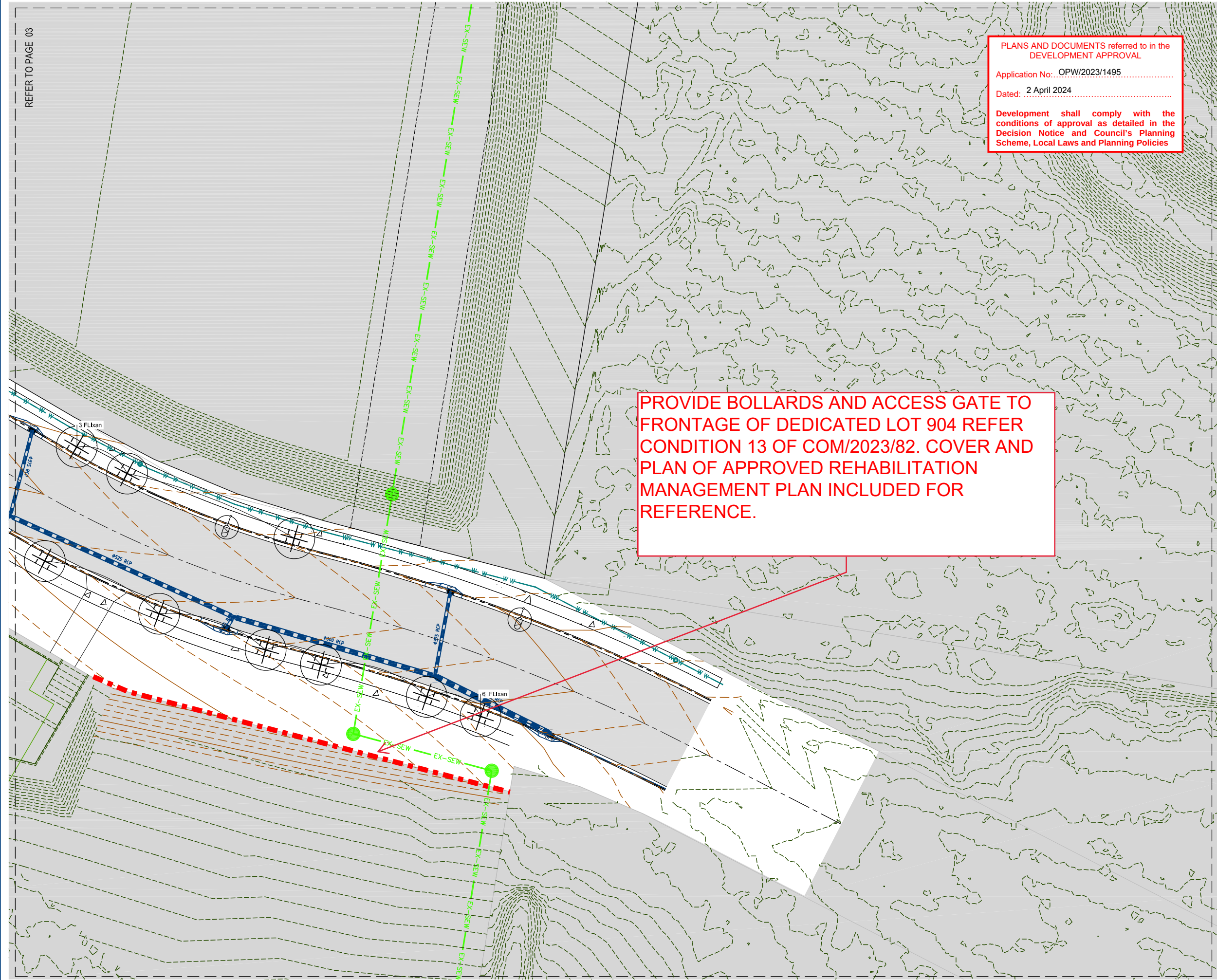
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REFER TO PAGE 03

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1495

Dated: 2 April 2024

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Project:

VANTAGE YATALA
STAGE 3

Site Address:

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LEGEND



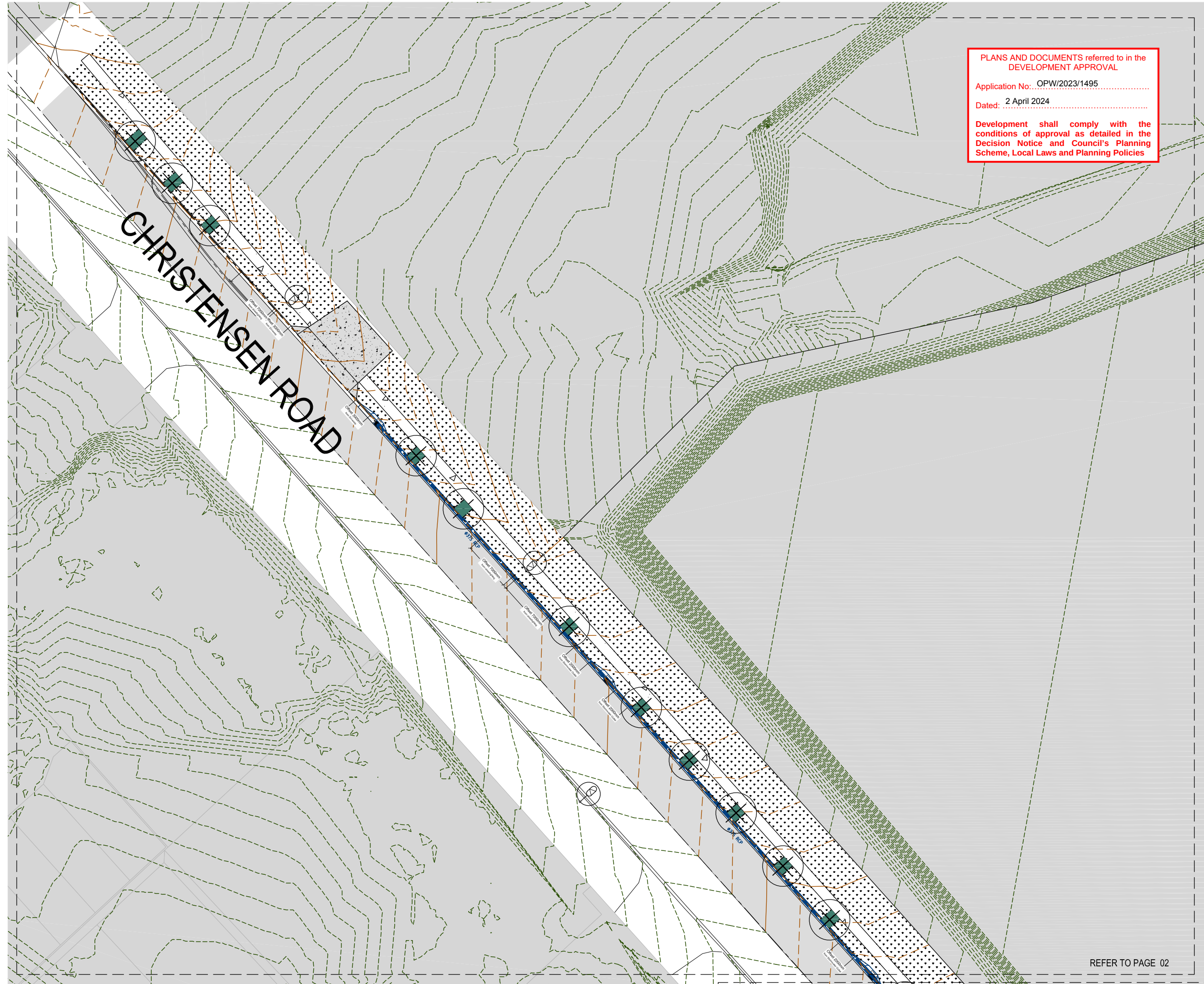
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Issue	Date	Description	DRN	CHK

Scale at A1: 1:250, 1:500 at A3

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Drafted:	JLS
Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-PP04 Rev. No: C



PLANS AND DOCUMENTS referred to in the
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Application No: OPW/2023/1495

Dated: 2 April 2024

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Project:
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STAGE 3

Site Address:
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Real Property Discription:
Lot: 501
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LEGEND

G1 - Garden Beds


T1 - Turf


SE - Spade Edge

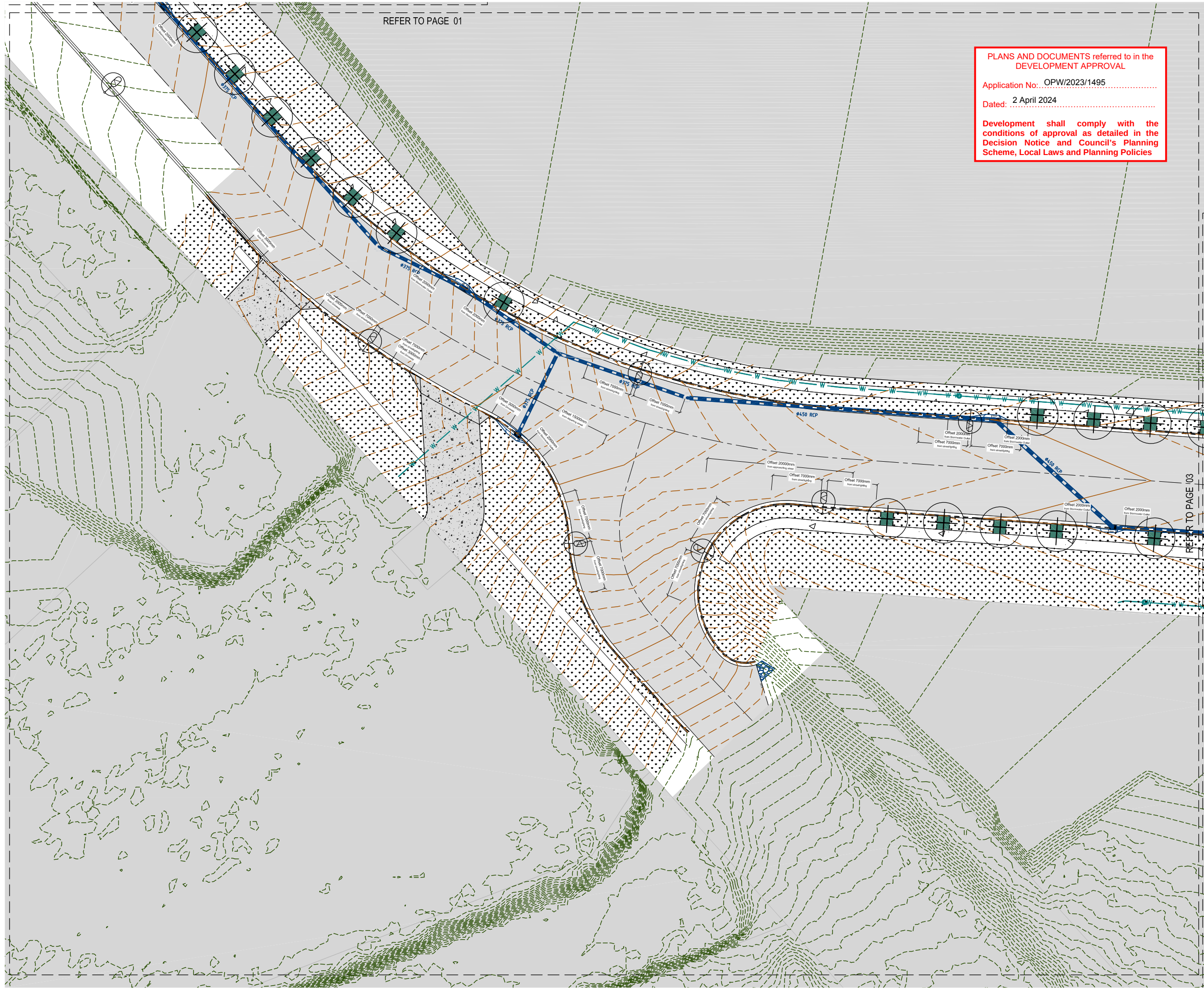

Proposed Tree


DRAWING TITLE
Surface Treatment

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B	30.10.23	For Tender	JLS	MD
A	27.10.23	For Tender	JLS	MD
Issue	Date	Description	DRN	CHK

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Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-ST01 Rev. No: C



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Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST
COUNCIL
Level Datum: AHD

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LEGEND

G1 - Garden Beds



T1 - Turf



SE - Spade Edge



Proposed Tree



DRAWING TITLE

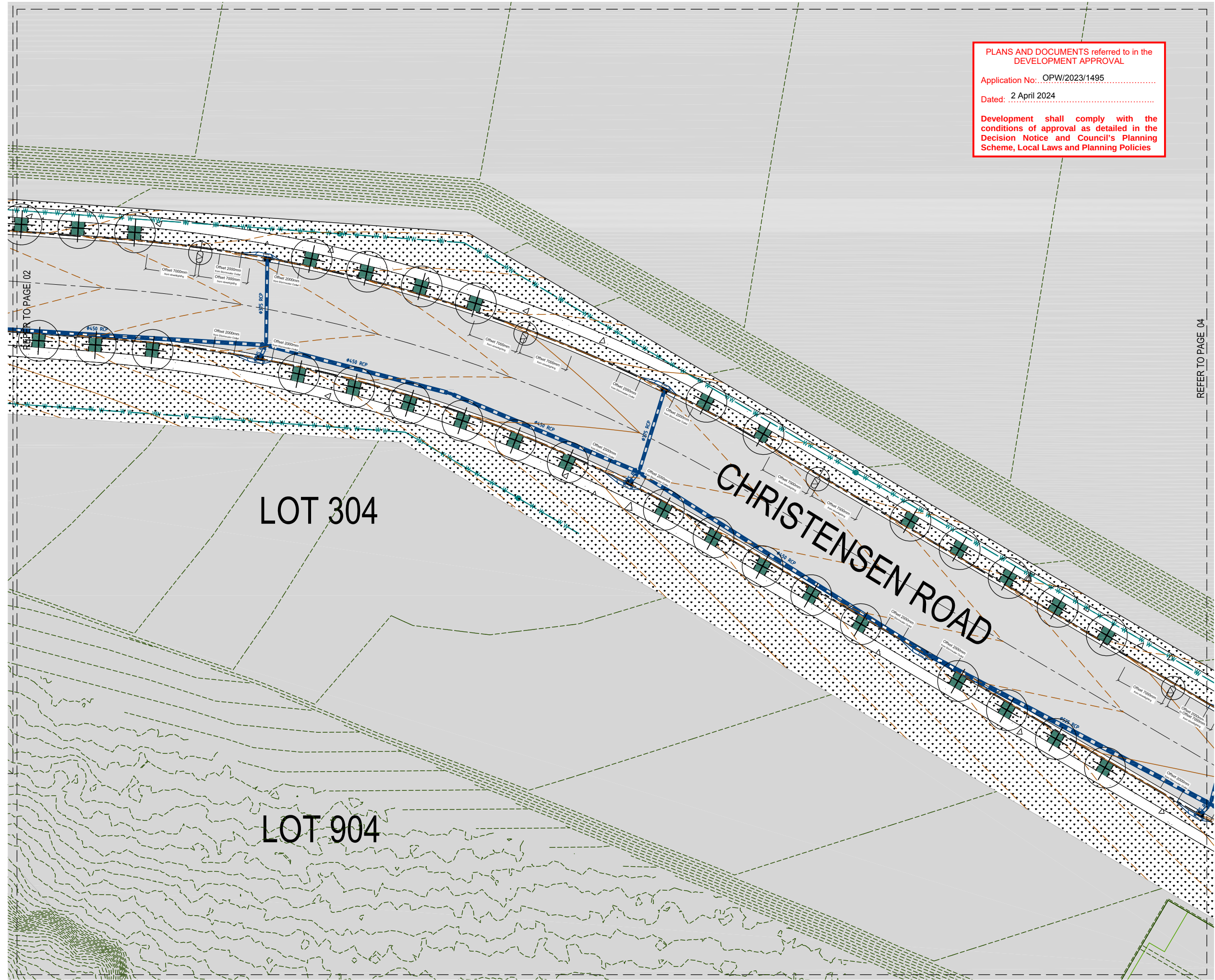
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Checked:	MG
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Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW-ST02 Rev. No: C



Client:



Project:

VANTAGE YATALA
STAGE 3

Site Address:

60 STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

Real Property Discription:

Lot: 501
Plan: SP295994
Local Authority: CITY OF GOLD COAST
COUNCIL
Level Datum: AHD

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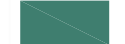
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LEGEND

G1 - Garden Beds



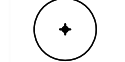
T1 - Turf



SE - Spade Edge



Proposed Tree



DRAWING TITLE

Surface Treatment

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A	27.10.23	For Tender	JLS	MD
Issue	Date	Description	DRN	CHK

Scale at A1: 1:250, 1:500 at A3

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Checked:	MG
RPEQ:	16939
Signed:	
Date:	15.12.23

Drawing No: 5941-3-L-EXTPUB-OPW- ST03 Rev. No: C

APPROVED REHABILITATION MANAGEMENT PLAN FOR
LOT 904 AS PER CONDITON 4 COM/2023/82

REHABILITATION MANAGEMENT PLAN

Prepared for: FPI Queensland Pty Ltd

Vantage Industrial Estate Stage 3

Lot 504 Homestead Drive STAPYLTON QLD
4207

LOT 504 on SP329485

ADDRESS: Christensen Road South, Stapylton QLD

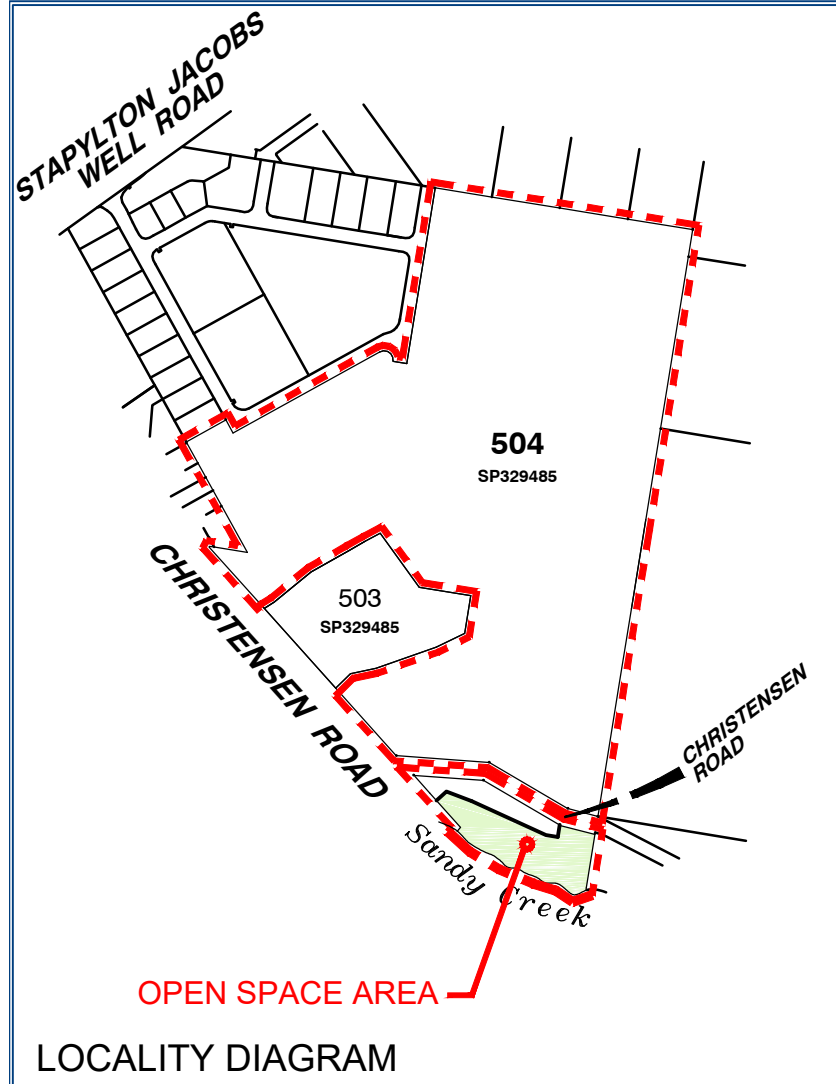
REAL PROPERTY DESCRIPTION: LOT 504 on SP329485

PREPARED FOR: FPI Queensland Pty Ltd

DATE PREPARED: June 2023

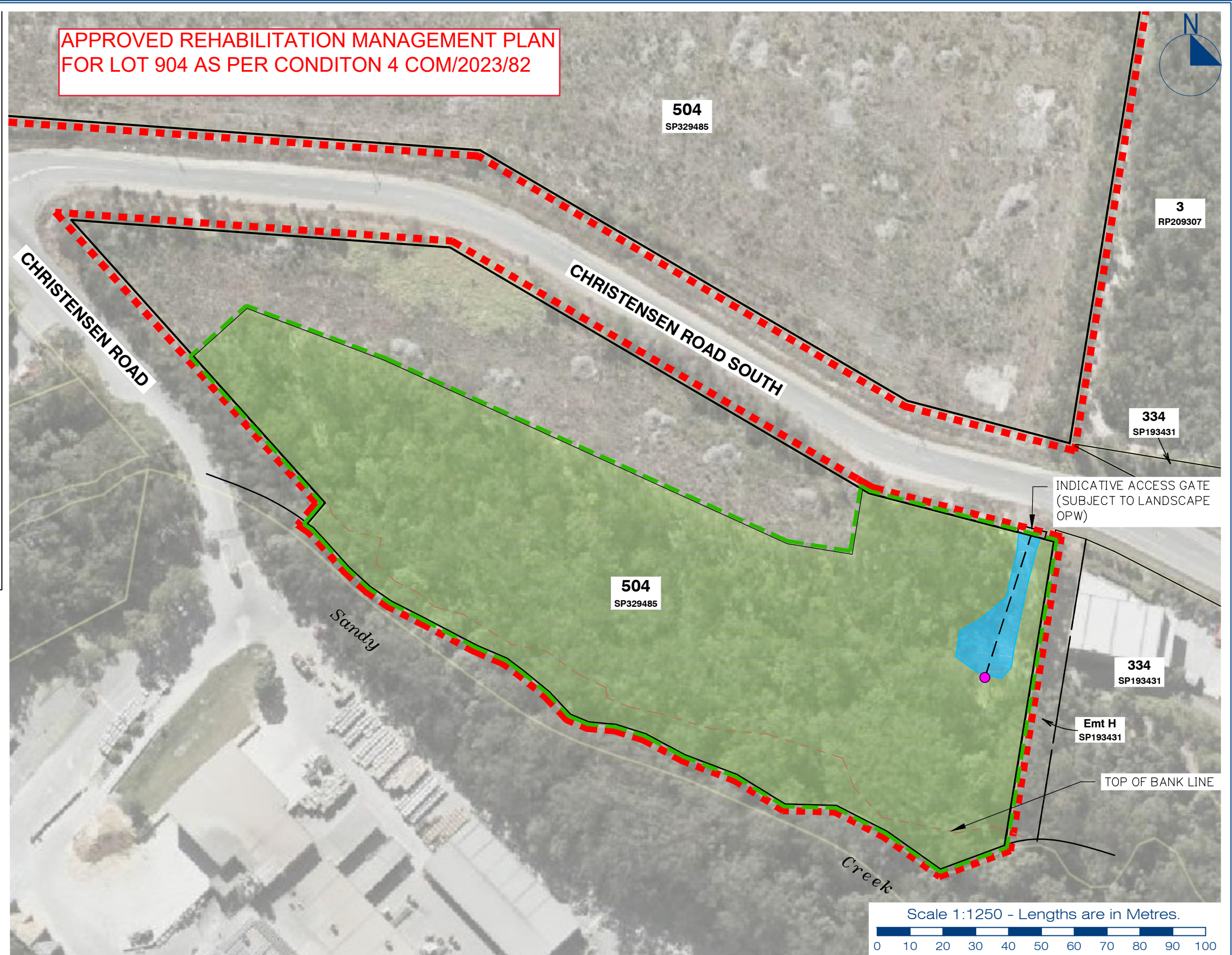


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LEGEND

- SUBJECT SITE
- OPEN SPACE AREA BOUNDARY
- LOT BOUNDARY
- EXISTING 4m WIDE ACCESS TRACK TO BE MAINTAINED
- REHABILITATION ZONE 1 (435m²): ACTIVE PLANTING - 1 PLANT PER 1m²
- REHABILITATION ZONE 2 (18,568m²): WEED MANAGEMENT
- RELOCATED WEDGE TAILED EAGLE NEST





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Scale at A3: 1:1250

Date: 10-07-23

Design: MG

Drawn: SH

Checked: HO

Issue	Date	Description	DRN	CHK
B	10/07/2023	BOUNDARY REALIGNMENT	TGP	HO
-	25/01/2023	ORIGINAL ISSUE	SJH	HO

Project:

VantageYatala

Client:

**FRASERS
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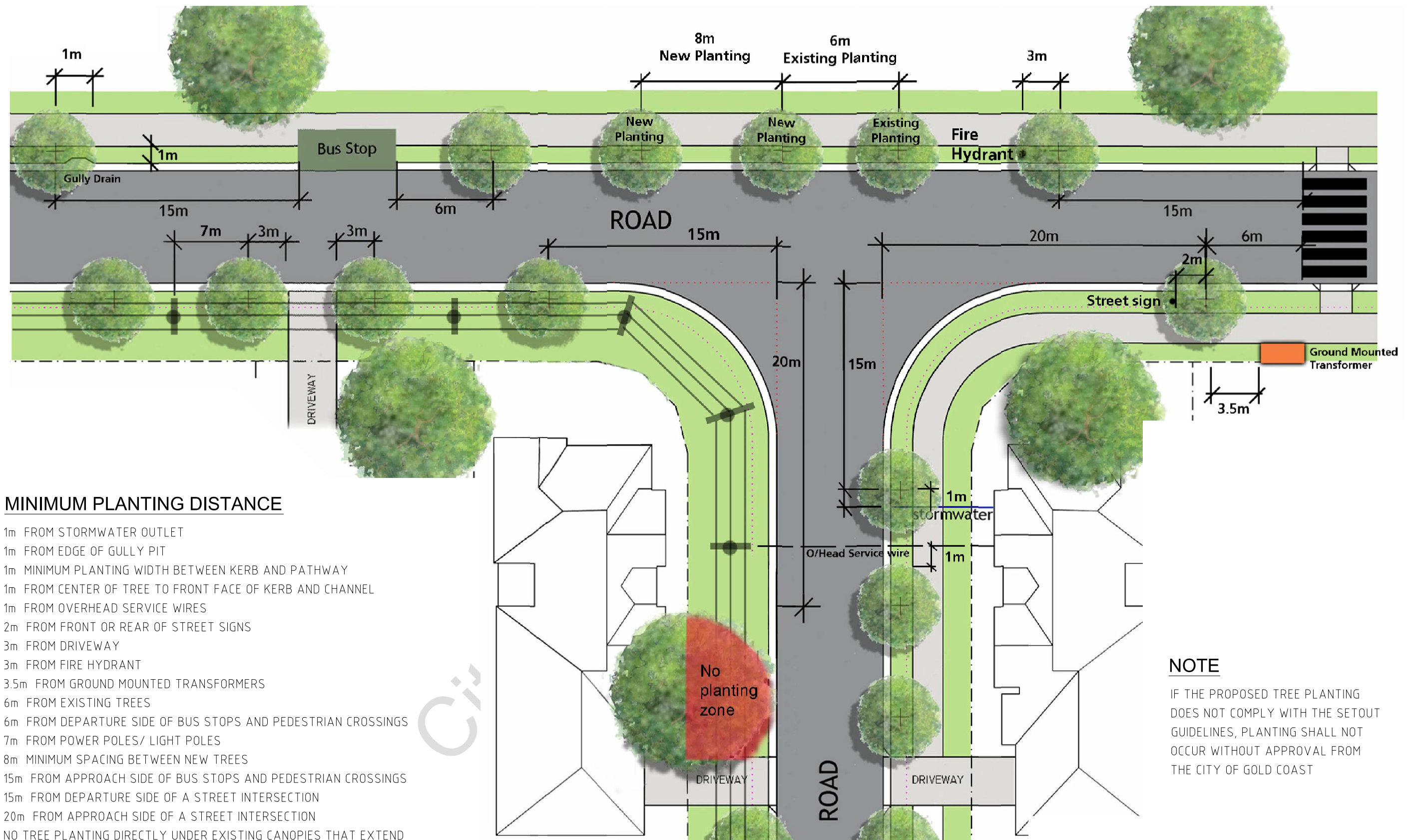
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**REHABILITATION MANAGEMENT
PLAN**

LOCATION: 60 Stapyhton Jacobs Well Road, Stapyhton QLD

Drawing No: 5941 ENV OSMP 001

Revision No:



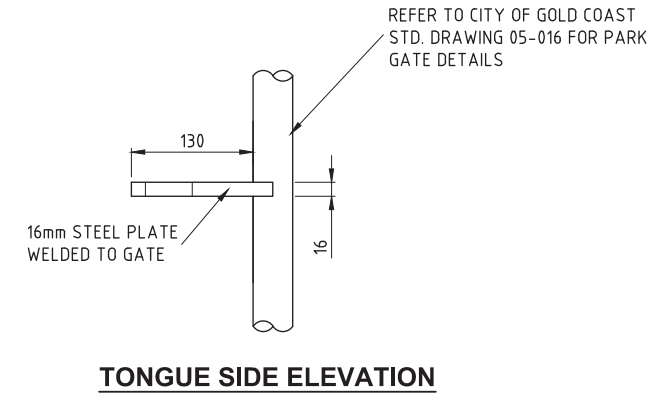
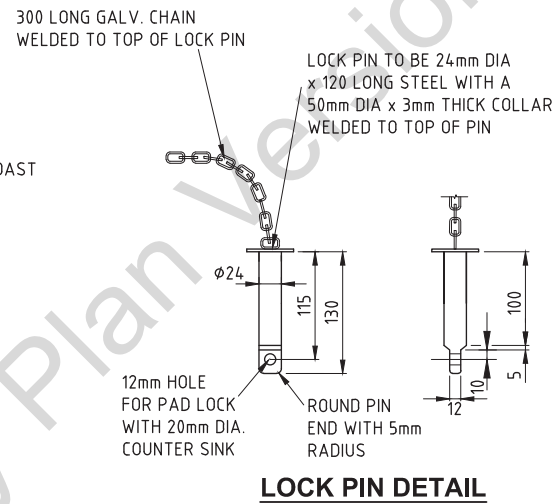
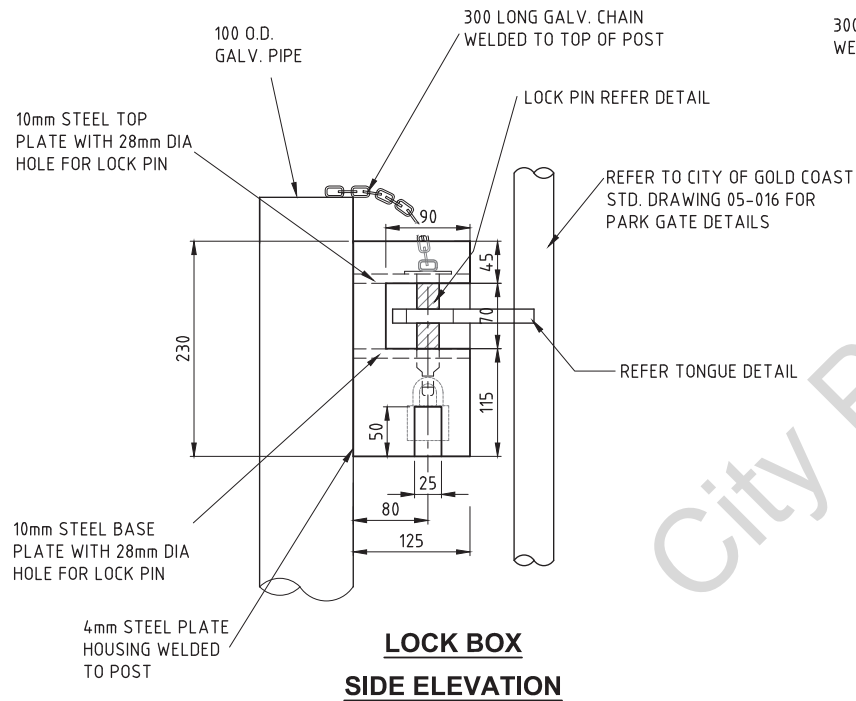
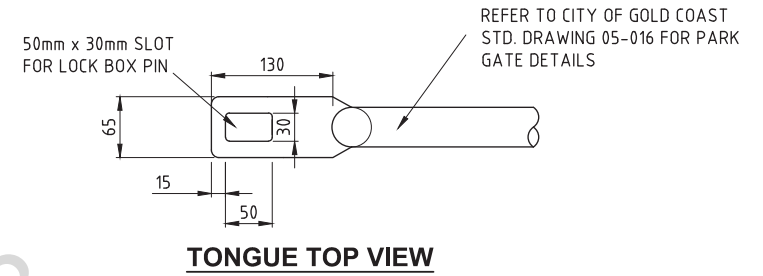
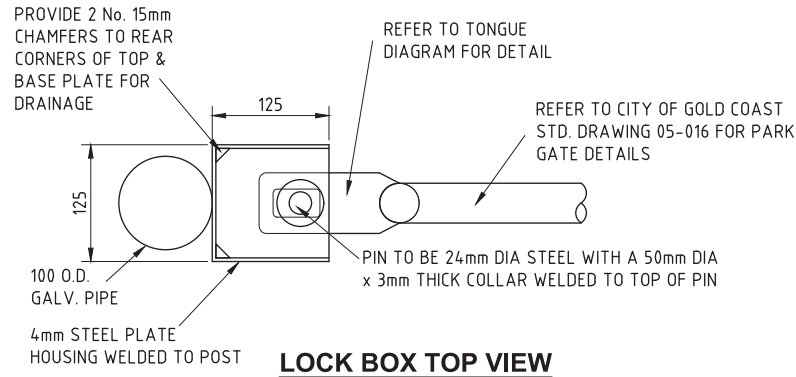
MINIMUM PLANTING DISTANCE

- 1m FROM STORMWATER OUTLET
- 1m FROM EDGE OF GULLY PIT
- 1m MINIMUM PLANTING WIDTH BETWEEN KERB AND PATHWAY
- 1m FROM CENTER OF TREE TO FRONT FACE OF KERB AND CHANNEL
- 1m FROM OVERHEAD SERVICE WIRES
- 2m FROM FRONT OR REAR OF STREET SIGNS
- 3m FROM DRIVEWAY
- 3m FROM FIRE HYDRANT
- 3.5m FROM GROUND MOUNTED TRANSFORMERS
- 6m FROM EXISTING TREES
- 6m FROM DEPARTURE SIDE OF BUS STOPS AND PEDESTRIAN CROSSINGS
- 7m FROM POWER POLES/ LIGHT POLES
- 8m MINIMUM SPACING BETWEEN NEW TREES
- 15m FROM APPROACH SIDE OF BUS STOPS AND PEDESTRIAN CROSSINGS
- 15m FROM DEPARTURE SIDE OF A STREET INTERSECTION
- 20m FROM APPROACH SIDE OF A STREET INTERSECTION
- NO TREE PLANTING DIRECTLY UNDER EXISTING CANOPIES THAT EXTEND TO AND BEYOND THE KERB AND CHANNEL

NOTE

IF THE PROPOSED TREE PLANTING DOES NOT COMPLY WITH THE SETOUT GUIDELINES, PLANTING SHALL NOT OCCUR WITHOUT APPROVAL FROM THE CITY OF GOLD COAST

CITY OF GOLD COAST	THIS DRAWING IS NOT TO BE AMENDED WITHOUT REFERENCE TO STANDARDS COMMITTEE				CONTROLLED DOCUMENT	DO NOT SCALE TAKE FIGURED DIMENSIONS ONLY		STANDARD DRAWING	
						DRAWN BY	CITY OF GOLD COAST	STREET TREE PLANTING SETOUT GUIDELINES FOR ROADWORKS	
						PASSED - COORDINATOR OPEN SPACE ASSETS			
						NAME: CAMERON TAYLOR	17/10/13		
						APPROVED - MANAGER PARKS & RECREATIONAL SERVICES			
	No.	AMENDMENT	APPROVED	DATE	ISSUED	NAME: RON JACOBS	17/10/13	STANDARD DRAWING No. 05-103 ISSUE 2015 EDITION	



NOTES:

- WORKMANSHIP & MATERIALS TO BE IN ACCORDANCE WITH AS4100 & OTHER RELEVANT AUSTRALIAN STANDARDS.
- THE PIPE STEEL TO BE GRADE 350, ALL OTHER STEEL INCLUDING FLATS & PLATE TO BE AT LEAST GRADE 250.
- WELDING & PREPARATION TO BE IN ACCORDANCE WITH AS1554.1 CATEGORY SP GRADE E48XX & AS4100.
- ALL WELDING TO BE 6mm CONTINUOUS FILLET WELD.
- ALL WELDS TO BE WELL CLEANED & PAINTED IN ACCORDANCE WITH AS2312 CLAUSE 10.5.
- ALL POSTS TO BE SET VERTICALLY & ACCURATELY ALIGNED IN CONCRETE GRADE N25.
- ALL GALVANISING TO BE IN ACCORDANCE WITH AS/NZS 4680.
- DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

**CITY OF
GOLDCOAST.**

City of Gold Coast
PO Box 5042
Gold Coast MC 9729
P: 1300 GOLDCOAST

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DRAWN BY
CITY OF GOLD COAST

PASSED - COORDINATOR OPEN SPACE ASSETS

NAME: CAMERON TAYLOR 17/10/13

APPROVED - MANAGER PARKS & RECREATIONAL SERVICES

NAME: RON JACOBS 17/10/13

PARK GATE LOCK BOX

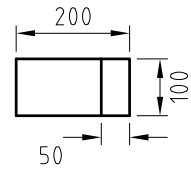
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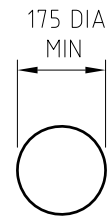
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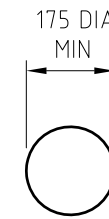
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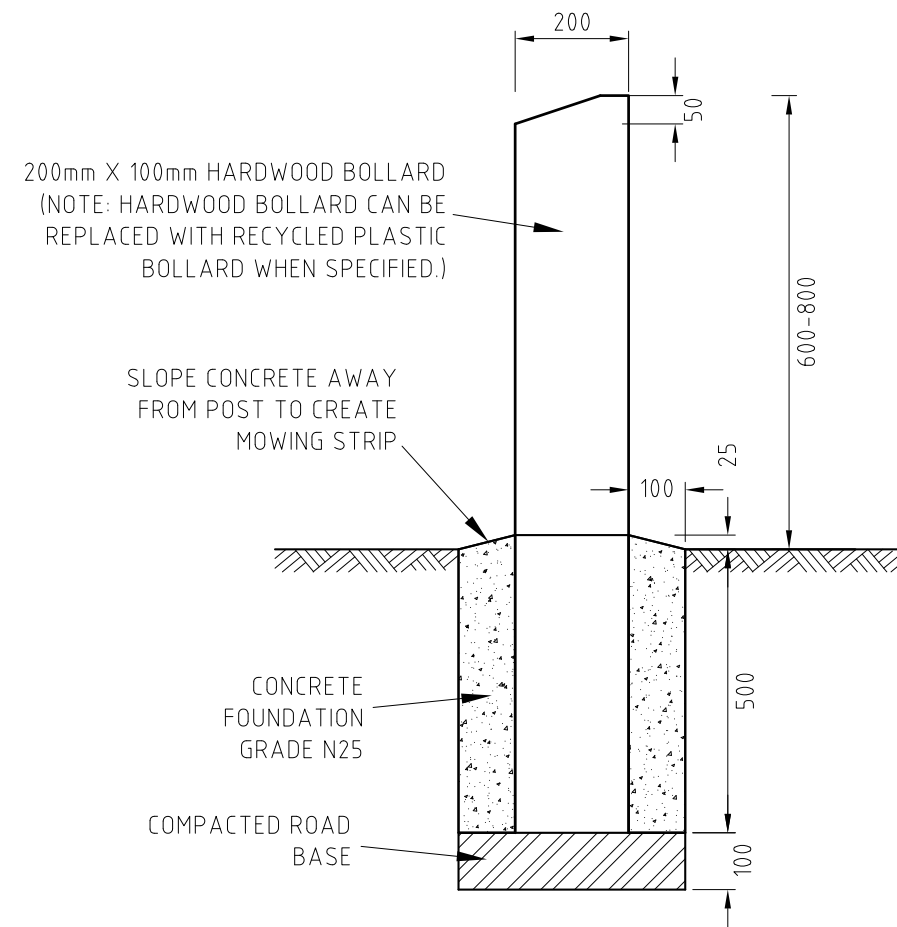
TOP VIEW



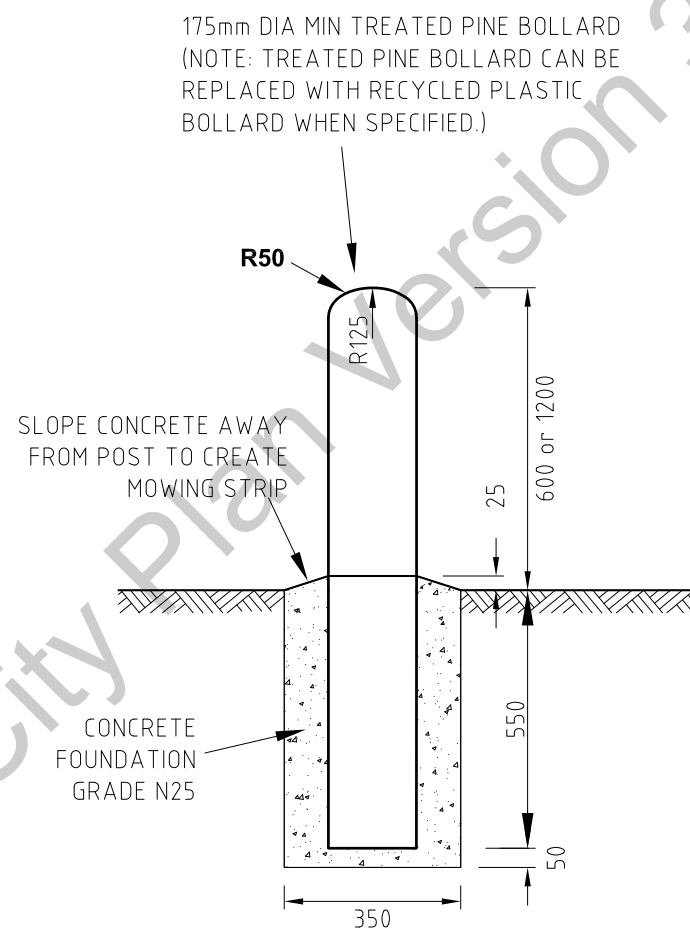
TOP VIEW



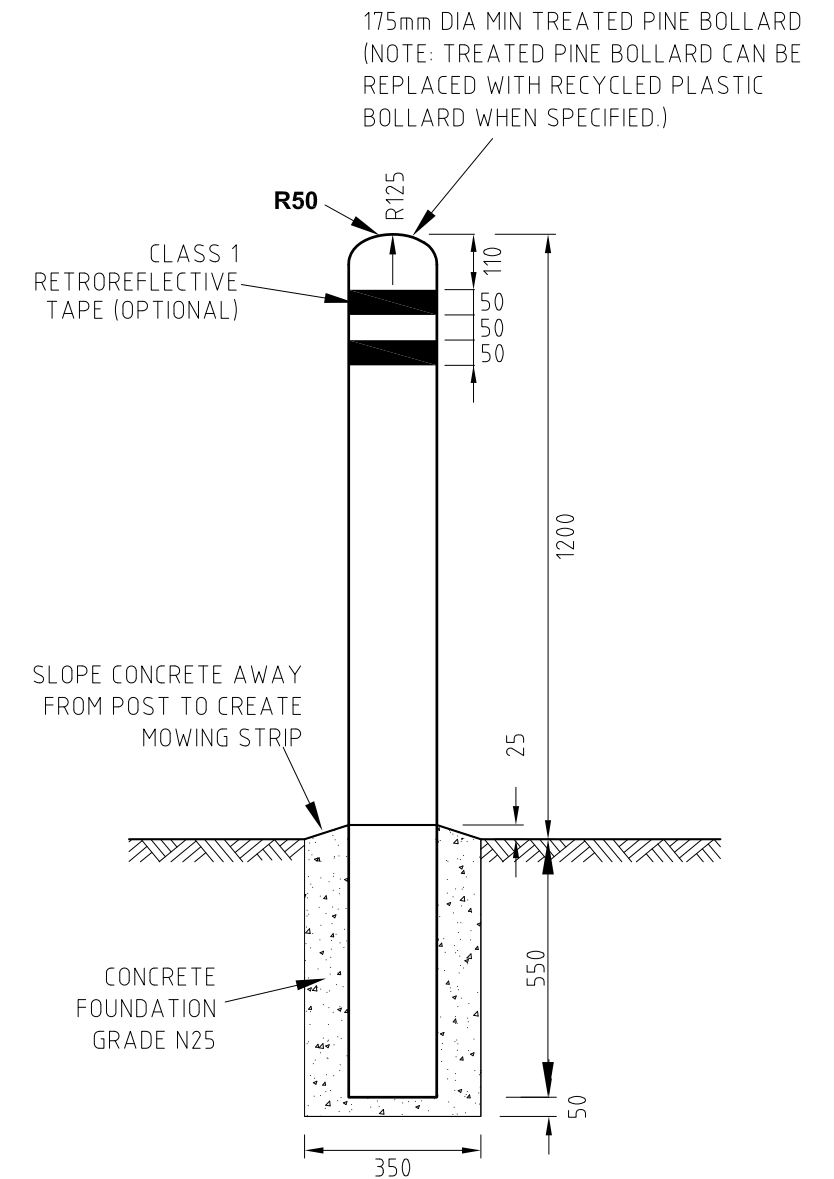
TOP VIEW



BUSHLAND BOLLARD
TYPE 1



PEDESTRIAN BOLLARD
TYPE 1



PEDESTRIAN BOLLARD
TYPE 2

CITY OF GOLDCOAST. City of Gold Coast PO Box 5042 Gold Coast MC 9729 P: 1300 GOLDCOAST	THIS DRAWING IS NOT TO BE AMENDED WITHOUT REFERENCE TO STANDARDS COMMITTEE				CONTROLLED DOCUMENT	DO NOT SCALE TAKE FIGURED DIMENSIONS ONLY	STANDARD DRAWING	BOLLARDS - TIMBER	STANDARD DRAWING No.
						DRAWN BY CITY OF GOLD COAST			05-716
						PASSED - COORDINATOR OPEN SPACE ASSETS			ISSUE 2015 EDITION
						NAME: CAMERON TAYLOR 17/10/13			
						APPROVED - MANAGER PARKS & RECREATIONAL SERVICES			
	No.	AMENDMENT	APPROVED	DATE	ISSUED	NAME: RON JACOBS 17/10/13			

Appendix D – Bioretention Basin Maintenance Checklist

BIORETENTION BASIN MAINTENANCE CHECKLIST			
Inspection Frequency:	1 to 6 monthly	Date of Visit:	
Location:			
Description:			
Asset I.D.			
Site Visit by:			
INSPECTION ITEMS:	Y	N	Action Required (details)
Sediment accumulation at inflow points?			
Litter within basin?			
Erosion at inlet or other key structures?			
Traffic damage present?			
Evidence of dumping (e.g. building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Watering of vegetation required?			
Replanting required?			
Mowing/slashing required?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Damage/vandalism to structures present?			
Surface clogging visible?			
Drainage system inspected?			
Resetting of system required?			
COMMENTS			