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457 Simpsons Road, Bardon
Lot 1 on RP94635

Stormwater Management Plan

Proposed 1 into 3 lot Residential Subdivision

Report no. 260049_SMP_Rp01revB



Figure 1 - The Site (nearmap 2026)

Author
Darren Shanks
BSc(CE)(Hons) MEngPrac, MIEAust

Coordinated Development Solutions (CDS)
ABN: 22 666 736 018
PO Box 35, Albany Creek, QLD 4035
P: 0409 939 711
E: adam@cdevsolutions.com.au

Client
Mr Matthew Uhe and Ms Laura Noir
457 Simpsons Road, Bardon Qld 4065
(Mr Uhe and Ms Noir)

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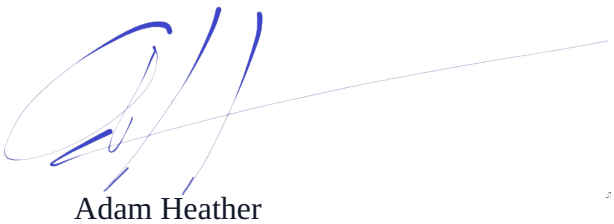

Adam Heather
RPEQ 29676
Director

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1 Introduction

Mr Uhe and Ms Noir commissioned CDS to prepare a Stormwater Management Plan (**SMP**) for the Proposed 1 into 3 lot Residential Subdivision located at 457 Simpsons Road, Bardon (Lot 1 on RP94635) (the **Site**). This report supports the application for this proposal lodged with Brisbane City Council (**BCC**).

This management plan addresses both the quality aspect of runoff generated by the site and the quantity aspect of runoff entering, being generated by, and leaving the site.

This assessment is carried out in accordance with Brisbane City Council's Brisbane City Plan 2014 (v36, effective 12 June 2026), referred to as BCC 2014 throughout this report.

2 Existing Site

The general location of the proposed site is shown below.

The site is located at 457 Simpsons Road, Bardon, formally described as Lot 1 on RP94635. The site generally slopes from north to south, with the northern boundary level ranging from 80.08m AHD at the northwestern corner to 79.37m AHD at the northeastern corner. The southern boundary ranges from 63.80m AHD in the southwestern corner to 61.44m AHD in the southeastern corner. The existing driveway enters the side near the western boundary. The existing verge is at approximately a 1 in 2 batter for the full frontage of the site. The site is currently improved with a dwelling and has a total area of approximately 1813m^2, with 195m^2 covered by existing buildings.



Figure 2 - The Site in context showing proximity to Ithaca Creek (Nearmap 2026)

3 Proposed development

It is proposed to subdivide the existing residential lot into three lots, including two real lots serviced by an access easement arrangement. The existing vehicle crossover will be reconfigured to allow suitable access into and from the site. The driveway will be extended through to the northernmost proposed lot along the western boundary of the site. Appropriate bin storage areas will be provided near the site's frontage, with bin pads provided on the verge, allowing for appropriate refuse collection by Council. The verge's existing 1 and 2 batter, which currently abuts the road pavement, will be pulled back to create a swale, allowing for the stormwater to appropriately drain off the pavement and from the site. The servicing and access arrangements are demonstrated in the preliminary civil design plans attached.

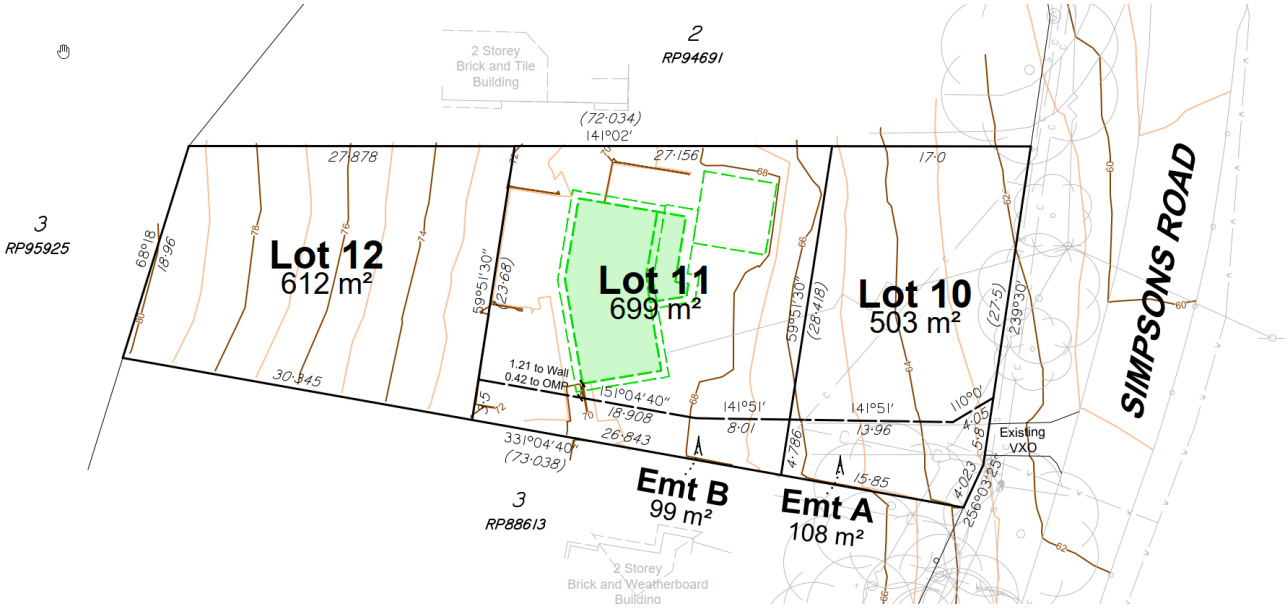


Figure 3 - Proposed subdivision layout plan



Figure 4 - The existing verge with a batter abutting the road pavement.

4 Design Objectives

The Stormwater Management Plan below aims to manage any increased runoff volume in a way that minimises impacts on downstream properties and receiving waters. From a quality perspective, the Stormwater Management Plan addresses the site in two phases: construction and operation. The construction phase of the Stormwater Management Plan addresses erosion and sediment control to prevent stormwater runoff from contaminating water sources during site construction, while the operational phase addresses the treatment of contaminated runoff from the developed site before it discharges into receiving waters.

5 Stormwater Strategy

Lawful Point of Discharge

The site currently discharges, in an uncontrolled manner, to the pavement on Simpsons Road. It is proposed to formalise a swale in the Simpsons Road Verge, protecting the pavement and allowing for the discharge from the site to be safely conveyed to the existing field inlet adjacent to the Simpsons Road pavement, which discharges through a 525mm diameter pipe under the road pavement into Ithaca Creek on the far side of Simpsons Road.

Water Quality

While the site does not trigger the requirement to meet the Water Quality Objective set out in the State Planning Policy during the operational phase, construction-phase discharge will require appropriate Sediment and Erosion Control measures to minimise impacts.

6 Stormwater Quality Management

6.1 Construction Phase

To prevent stormwater contamination (of watercourses) and the release of contaminated stormwater and wastewater by ensuring compliance with the Environmental Protection Act 1994 and Environmental Protection (Water) Policy 2009, the following strategy is proposed:

- Establish control measures and best practice approaches to prevent stormwater contamination and minimise the risk and adverse effects of erosion and sedimentation.
- All Erosion and Sediment Control measures must be designed, constructed and maintained in a manner that is commensurate with the site's erosion risk.

Erosion and Sediment Control Measures

Implement and maintain appropriate control measures to prevent sediment-laden wastewater and other potential pollutants, such as oil, paint, and wet concrete, from leaving the site or entering the stormwater system via stormwater drains and gullies. The control measures that must be considered for adoption are:

- Limitation of site access during construction to minimise disruption to traffic. Install a temporary construction entry/exit sediment trap at all site accesses to minimise mud and sediment from the site being tracked onto public roads, particularly during wet weather or when the site is muddy.
- Install and maintain sediment fences around construction areas as necessary.
- Divert clean stormwater runoff using catch drains around construction areas to existing or new stormwater drainage systems.
- Install sandbags and other pollution containment devices around stormwater drains and any other locations where required to prevent sediment from entering the trunk stormwater system.
- Cover open earth or soil areas progressively (with concrete slabs, pavements, or mulch) to minimise areas of bare earth or soil.
- Any stockpiles of excavated soil and demolition/construction waste must be located where the risk of erosion and sedimentation is minimal and must be protected from wind and water erosion.

- Implement and maintain appropriate control measures, such as catch drains and sediment fences, to prevent the ponding of stormwater or the discharge of stormwater from the site to adjacent properties.
- Provision of spill/pollution control equipment that is readily accessible for cleaning up spills and leaks.
- Ensure that spill and pollution control measures are available and maintained in good working condition.

Implementation Program

- Appropriate control measures, such as sediment fences, temporary construction entry and exit sediment traps, pollution containment devices (e.g., sandbags), stormwater diversion, and administrative controls, must be installed and established prior to the commencement of earthworks and construction activities.
- Pollution control devices such as spill control equipment must be inspected regularly (at least weekly).
- Other sediment and pollution control equipment, such as containment bunds, hay bales, and sediment fences, must be inspected regularly (at least daily).
- Inspection for any leaks, spills or potential contaminating activity must be performed regularly (at least daily).
- Regularly remove accumulated sediment or other contaminants from sediment and pollution control devices.
- All erosion and sediment control measures must be inspected within 24 hours of expected rain and within 18 hours of a rainfall event.
- The contractor shall be responsible for implementing and maintaining the Erosion and Sediment Control Measures.
- Records such as licenses, approvals, permits, and inspection reports must be reviewed regularly (e.g., at least monthly) to ensure that legal compliance is met, complaints are addressed, and systems are functioning to prevent contamination.
- Perform clean-up of any spills immediately.
- Any mud or sediment tracked onto public roads must be immediately removed using dry cleanup methods (i.e., a shovel and broom).
- Remove or relocate any stockpiles of waste where there is a reasonable risk of erosion and sedimentation.
- Replace or repair sediment or pollution control devices if they are not maintained in good working condition.

6.2 Operational Phase

Water Quality Management Objectives

The State Planning Policy (The State of Queensland, 2017) total pollutant load reduction targets, which have been accepted as indicating best management practices for stormwater quality management for South East Queensland waters, are given below:

Table 1 - SEQ Water Quality Objectives (The State of Queensland, 2017)

Indicator	Objective
Total suspended solids (TSS)	80
Total phosphorus (TP)	60
Total nitrogen (TN)	45
Gross pollutants >5mm	90

The State Planning Policy sets out the triggers for water quality objectives to be achieved for a development. These are:

1. A material change of use for an urban purpose that involves premises 2500m^2 or greater in size and:
    a. will result in six or more dwellings; or

b. an impervious area greater than 25 per cent of the net developable area.

2. Reconfiguring a lot for urban purposes that involves premises 2500m^2 or greater in size and will result in six or more lots.

The proposed development therefore does not trigger the achievement of the water quality objectives. Therefore, for the operational phase, no water quality treatment is proposed.

7 Stormwater Quantity Management

The site currently discharges stormwater runoff, from the roof and paved areas into the front yard of the site. It then travels down the batter, the one and two batter in the verge, and runs along the edge of the road pavement. This is undesirable for several reasons, in particular for the long-term health of the road pavement. The existing drainage travels along the road pavement to a field inlet, adjacent to the pavement, on the eastern side of the neighbour's vehicle crossover. The flow which enters this pit, travels under Simpson's Road through a 525 pipe and discharges to the banks of Ithaca Creek on the southern side of the Road.

A DRAINS model was developed to investigate the impact of the proposed development on the quantity of runoff from the site.

7.1 Hydrology

Current best practices were adopted to estimate design storm runoff for the existing and developed catchment conditions, including the following model parameters:

- BoM 2016 design rainfall depths (27.385 S, 153.030 E) for the 63% (1EY), 50%, 20%, 10%, 5%, 2% and 1% AEP;
- ARR (Ball et al., 2019) temporal patterns (East Coast North region) and burst losses (initial loss – median pre-burst) for the 63% (1EY), 50%, 20%, 10%, 5%, 2% and 1% AEP; and
- ARR (Ball et al., 2019) (27. 5288 S, 153.26574 E) Median Pre-burst Depths and Ratios.

An Initial Loss/Continuing Loss (IL/CL) Hydrologic Model was used with the following parameters, which apply to urban developments:

Table 2 - Initial Loss and Continuing Loss Parameters

Parameter	Value
Impervious Areas Initial Loss (mm)	2
Impervious Areas Continuing Loss (mm/hr)	0
Pervious Areas Initial Loss (mm)	10
Pervious Areas Continuing Loss (mm/hr)	2

7.2 Hydraulic Roughness Parameters

The following Manning's 'n' values were applied to catchments for the calculation of times of concentration (tc), pipes and overland flow paths:

Table 3 - Roughness Parameters

Parameter	Manning's 'n'
Pervious areas (short grass)	0.035
Grassed overland flow channels (short grass)	0.05
Impervious areas and concrete flow paths (concrete pavement)	0.015
uPVC pipes	0.011
RCP	0.012

7.3 Critical Storm Durations

Storm Durations from 5 minutes to 2 hours were investigated to determine the critical durations for the catchments.

7.4 DRAINS Model

The runoff generated on the site has been modelled using DRAINS software. Both the existing and developed cases were run as unconnected networks within the same model space, enabling direct comparison of the results. Attached as an Appendix are:

- The catchment Input values for the Existing Catchments and the Developed Catchments;
- the DRAINS Model setup, including images of each of the networks; and
- The output results for each Annual Evaluation Period (AEP).

7.5 Calibration

To ensure the model is representative of the catchments, Rational Method calculations have been prepared for each existing catchment and the developed catchment. The comparison results are presented in an Appendix.

It can be seen that the model produces results that are representative of the Rational Method calculations for the catchments.

7.6 Modelling Results

The model was constructed to calculate flow from the various catchments for comparison. While the peak flow from each catchment is generated by different storm-burst durations and storm events, this reflects the ensemble-of-events methodology, which involves taking the median peak flow generated for each duration. The comparisons, therefore, are peak flows generated regardless of duration and storm event.

Table 4 - Pre-Development to Post-Development Peak Flows

Storm Event (AEP)	DRAINS Existing Case - Ex (m^3/s)	DRAINS Developed Case - Dev (m^3/s)	Difference +/- (m^3/s)	Difference (%)
1EY	0.024	0.026	0.002	8%
50%AEP	0.028	0.030	0.002	7%
20%AEP	0.042	0.044	0.002	5%
10%AEP	0.051	0.050	-0.001	-2%
5%AEP	0.06	0.058	-0.002	-3%
2%AEP	0.07	0.070	0.000	0%
1%AEP	0.078	0.077	-0.001	-1%

As shown in the table above, discharge from the Site increases by a maximum of 2 l/s in small events while it decreases in larger events. This is due to the relatively steep grade of this existing site, meaning that the t_c is relatively short for both the existing and developed scenarios. The shorter t_c means rainfall intensity in both cases is relatively high; therefore, the increase in impervious area has a muted effect on the actual peak outflow increase.

Because the increase is so small, it is considered negligible, and no detention is proposed. The downstream drainage system, especially after the construction of a swale in the verge, will be more than capable of handling this peak increase of 2 l/s.

The calculations below use the site's 1%AEP flow of 0.077 m^3/s and demonstrate that this flow, both in the verge generally and where the swale is impinged by the retaining wall, is fully contained within the swale at appropriate depths and velocities.

The northern external catchment of approximately 350 m^2 (Section 8 and Appendix E) also discharges through the site to the verge swale. Its 1%AEP flow of 0.024 m^3/s (rational method, C = 0.84, 5 minute duration, 298.6 mm/hr) has been added to the site flow, giving 0.101 m^3/s. The swale and pipe remain within capacity:

Table 5 - 1%AEP Swale and Pipe Check including the External Catchment

Check	Site flow only (0.077 m^3/s)	Including external catchment (0.101 m^3/s)
Swale flow depth, verge generally (swale 0.300 m deep)	0.163 m	0.185 m
Swale flow depth, at the retaining wall (swale 0.300 m deep)	0.187 m	0.213 m
Swale velocity x depth, verge / at the wall	0.097 / 0.114 m^2/s	0.118 / 0.139 m^2/s
375 mm RCP, flow / capacity (0.269 m^3/s)	29%	38%

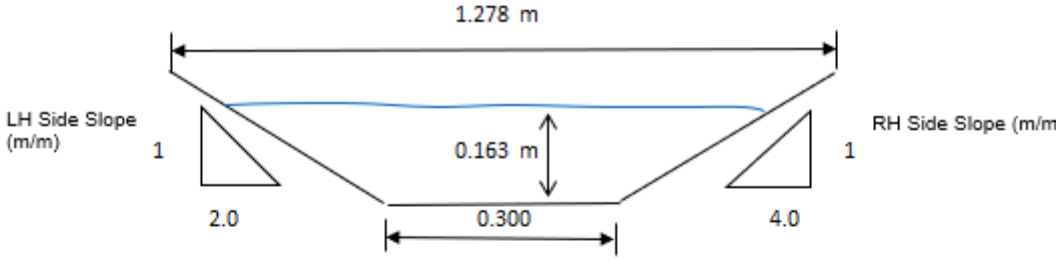
Swale Properties

Hydraulics (Manning's Equation)

Design Q (m^3/s)	0.077
Manning's n	0.050
Long Slope (m/m)	0.020
Base Width (m)	0.300
LH Side Slope (m/m	0.500
RH Side Slope (m/m	0.250

Channel Flow Conditions

Depth (m)	0.163
Area (m^2)	0.129
Wet Perimeter (m)	1.337
Hydraulic Radius (n	0.096
Top Width (m)	1.278
Velocity (m/s)	0.594
VD Product (m^3/s)	0.097
Velocity Head	0.018
Froude Number	0.081



Velocity =	0.594	*m/s*
Velocity Depth Product =	0.097	m^2/s
Long. Slope	2.00%	*%*
Freeboard Required	-	*m*
0m Freeboard. Depth =	0.163	*m*
LH Batter Horiz. Length =	0.326	*m*
RH Batter Horiz. Length =	0.652	*m*
Total Width =	1.278	*m*

Figure 5 - 1% AEP Flow in new verge swale

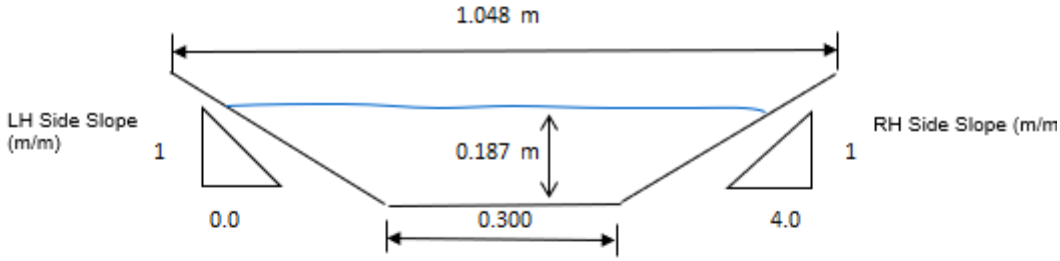
Swale Properties

Hydraulics (Manning's Equation)

Design Q (m^3/s)	0.077
Manning's n	0.050
Long Slope (m/m)	0.020
Base Width (m)	0.300
LH Side Slope (m/m	1000.000
RH Side Slope (m/m	0.250

Channel Flow Conditions

Depth (m)	0.187
Area (m^2)	0.126
Wet Perimeter (m)	1.258
Hydraulic Radius (n	0.100
Top Width (m)	1.048
Velocity (m/s)	0.610
VD Product (m^3/s)	0.114
Velocity Head	0.019
Froude Number	0.078



Velocity =	0.610	*m/s*
Velocity Depth Product =	0.114	m^2/s
Long. Slope	2.00%	%
Freeboard Required	-	*m*
0m Freeboard. Depth =	0.187	*m*
LH Batter Horiz. Length =	0.000	*m*
RH Batter Horiz. Length =	0.748	*m*
Total Width =	1.048	*m*

Figure 6 - 1% AEP Flow in new verge swale at proposed retaining wall

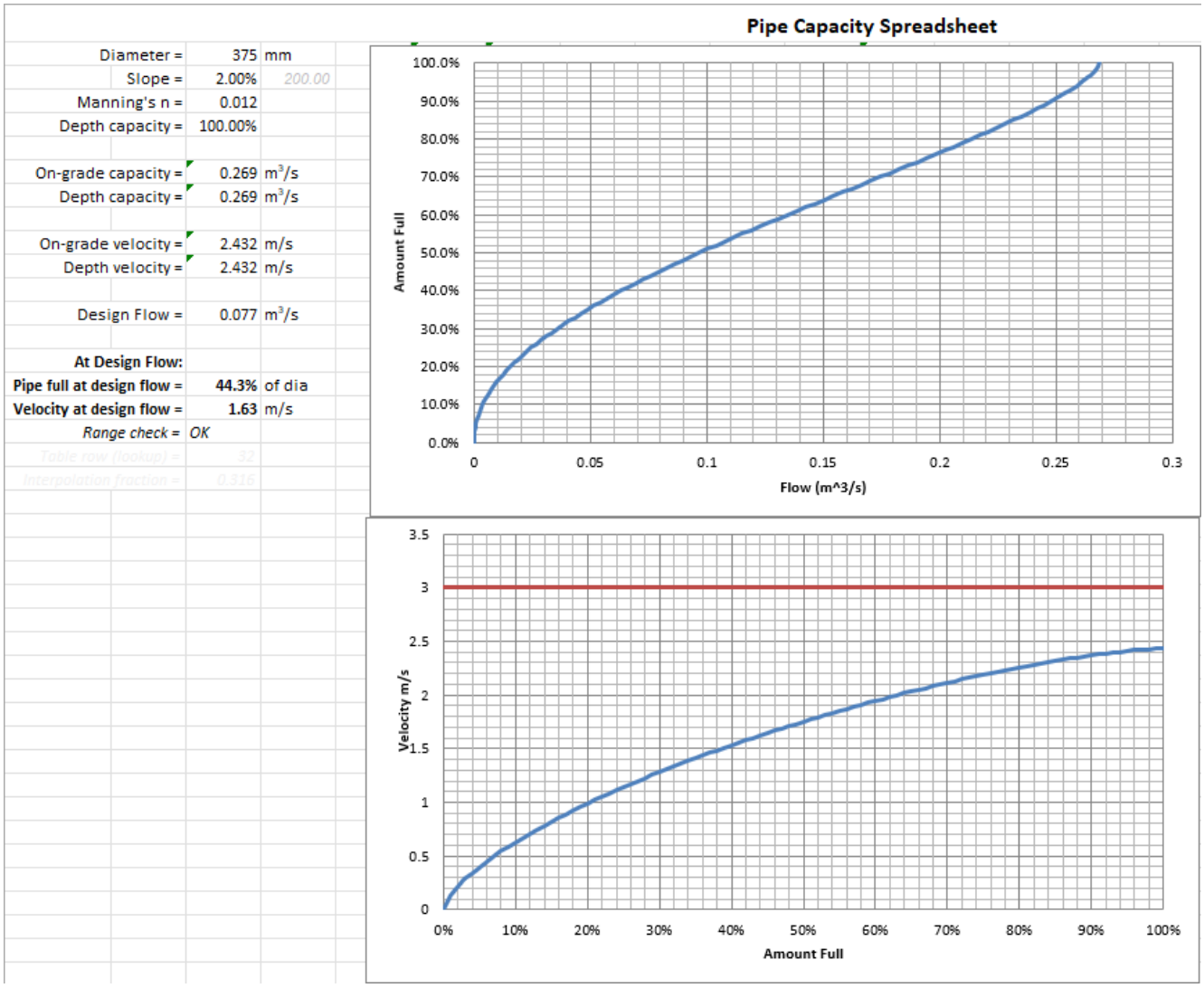


Figure 7 - Pipe capacity check demonstrating it can carry the 1% AEP flow.

8 Flooding

The site is not subject to coastal, riverine, creek or overland flow flooding. There is a small external catchment of approximately 350m^2 upslope of the northern boundary, measured from the Queensland Government 1 m LiDAR elevation data (refer to the External Catchment Plan in Appendix E). This catchment has no other outlet and will continue to discharge across the northern boundary as it currently does, then traverse the site to the Simpsons Road frontage and the swale in the verge. Its flow is included in the swale and pipe check in Section 7.6.

9 Conclusion

Based on the hydraulic analysis undertaken, it is demonstrated that the Proposed 1 into 3 lot Residential Subdivision as documented in this report will not have adverse flooding impacts on the surrounding Council's drainage infrastructure and will not adversely change the condition of the properties downstream, upstream and adjacent to the site.

The proposal will have no adverse social or environmental impacts from stormwater runoff originating from the proposed development. Acceptable levels of stormwater runoff quality can be achieved through the implementation of Best Management Practice techniques and strategies.

Appendix A - Code Responses

Planning Scheme Code Assessment

Job: 260049 — Proposed 1 into 3 lot Residential Subdivision **Address:** 457 Simpsons Road, Bardon
Code: Brisbane City Plan 2014 **Section:** Stormwater code **Version date:** 2026-06-12 **Council:** BCC **Dev type:** Residential

Performance Outcomes	Acceptable Outcomes	Response / Assessment
Purpose **1. This code applies to assessing a material change of use, reconfiguring a lot or operational work if:** **a. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for a material change of use (section 5.5), reconfiguring a lot (section 5.6) operational work (section 5.8) or an overlay (section 5.10); or** **b. impact assessable development, to the extent relevant.** **2. When using this code, reference should be made to section 1.5 and section 5.3.3.** ***Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.*** ***Note—Where this code includes performance outcomes or acceptable outcomes that relate to infrastructure design and construction works, guidance is provided in the Infrastructure design planning scheme policy.*** **1. The purpose of the Stormwater code is to assess the suitability of the stormwater aspects of development.**		
2. The purpose of the code will be achieved through the following overall outcomes:		
OO2(a) a. Development achieves acceptable levels of stormwater run-off quality and quantity by applying water sensitive urban design principles as part of an integrated stormwater management framework.		**Complies with OO2(a)** Stormwater will be managed through an integrated drainage system incorporating appropriate water sensitive urban design measures.
OO2(b) b. Development protects public health and safety and protects against damage or nuisance caused by stormwater flows.		**Complies with OO2(b)** The proposed stormwater system will safely manage stormwater flows to minimise nuisance and potential damage to people and property.
OO2(c) c. Development has a stormwater management system which maintains, recreates or minimises impact to natural catchment hydrological processes.		**Complies with OO2(c)** The stormwater management system will minimise impacts on existing catchment hydrological processes.
OO2(d) d. Development ensures that the environmental values of the city's waterways are protected or enhanced.		**Complies with OO2(d)** Stormwater management measures will minimise impacts on the environmental values of downstream waterways.
OO2(e) e. Development minimises run-off, including peak flows.		**Complies with OO2(e)** The proposed stormwater management system will minimise stormwater runoff and peak flows.
OO2(f) f. Development maintains or enhances the efficiency and integrity of the stormwater infrastructure network.		**Complies with OO2(f)** The proposed stormwater infrastructure will integrate with and maintain the efficiency of the existing drainage network.
OO2(g) g. Development minimises the whole of life cycle cost of stormwater infrastructure.		**Complies with OO2(g)** Stormwater infrastructure will be designed to provide a durable, functional and low-maintenance system with minimal whole-of-life costs.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
9.4.9.3 Performance outcomes and acceptable outcomes		
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: a. minimise flooding; b. protect environmental values of receiving waters; c. maximise the use of water sensitive urban design; d. minimise safety risk to all persons; e. maximise the use of natural waterway corridors and natural channel design principles. *Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.*	**AO1** Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	**Complies with AO1** The proposed stormwater management system has been designed in accordance with the Infrastructure Design Planning Scheme Policy to minimise flooding and safety risks and appropriately manage stormwater flows.
PO2 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.	**AO2.1** Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises.	**Complies with AO2.1** The proposed stormwater management system has been designed to ensure no increase in flood levels or flood hazard on adjoining, upslope or downslope premises.
	AO2.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Complies with AO2.2** The proposed stormwater management system has been designed in accordance with the applicable standards of the Infrastructure Design Planning Scheme Policy.
PO3 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.	**AO3.1** Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor.	**Complies with AO3.1** The proposed swale is contained within the northern verge of Simpsons Road.
	AO3.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Complies with AO3.2** The stormwater management system has been designed in accordance with the applicable standards of the Infrastructure Design Planning Scheme Policy.
	AO3.3 Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	**Complies with AO3.3** Stormwater from each lot will discharge via proposed pits and drainage infrastructure to the proposed swale within the northern verge of Simpsons Road, providing a lawful point of discharge in accordance with the Infrastructure Design Planning Scheme Policy.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO3 (cont.)	**AO3.4** Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	**Complies with AO3.4** Inter-allotment drainage will be provided in accordance with the Infrastructure Design Planning Scheme Policy, with a stormwater drainage easement provided over the required infrastructure within the proposed southern lot.
PO4 Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments.	**AO4.1** Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy.	**Complies with AO4.1** The proposed stormwater conveyance system has been designed to safely convey flows in accordance with the Infrastructure Design Planning Scheme Policy.
	AO4.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	**Complies with AO4.2** Sufficient area has been provided for stormwater conveyance in accordance with the Infrastructure Design Planning Scheme Policy.
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	**AO5** Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	**Capable of Compliance with AO5** The proposed stormwater infrastructure, including the driveway culvert, will be designed to minimise impacts on terrestrial and aquatic fauna movement.
PO6 Development ensures that location and design of stormwater detention and water quality treatment: a. minimises risk to people and property; b. provides for safe access and maintenance; c. minimises ecological impacts to creeks and waterways.	**AO6.1** Development locates stormwater detention and water quality treatment: a. outside of a waterway corridor; b. offline to any catchment not contained within the development.	**Not Applicable**
	AO6.2 Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Not Applicable**
PO7 Development is designed, including any car parking areas and channel works to: a. reduce property damage; b. provide safe access to the site during the defined flood event.	**AO7.1** Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.3.F. *Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site-based stormwater management plan).*	**Capable of Compliance with AO7.1** The development will be designed to achieve the applicable minimum flood immunity levels in accordance with the Infrastructure Design Planning Scheme Policy.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO7 (cont.)	**AO7.2** Development including the road network provides a stormwater management system that provides safe pedestrian and vehicle access in accordance with the standards in the Infrastructure design planning scheme policy.	**Capable of Compliance with AO7.2** The proposed stormwater management system will provide safe pedestrian and vehicle access in accordance with the Infrastructure Design Planning Scheme Policy.
PO8 Development designs stormwater channels, creek modification works and the drainage network to protect and enhance the environmental values of the waterway corridor or drainage path.	**AO8.1** Development ensures natural waterway corridors and drainage paths are retained.	**Complies with AO8.1**
	AO8.2 Development provides the required hydraulic conveyance of the drainage channel and floodway, while maximising its potential to maximise environmental benefits and minimise scour. *Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.*	**Capable of Compliance with AO8.2** The proposed drainage system will provide the required hydraulic conveyance while minimising scour and environmental impacts.
	AO8.3 Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in compliance with the standards in the Infrastructure design planning scheme policy.	**Capable of Compliance with AO8.3** Stormwater outlets will incorporate appropriate energy dissipation measures in accordance with the Infrastructure Design Planning Scheme Policy.
	AO8.4 Development ensures that the design of modifications to the existing design of new stormwater channels, creeks and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	**Not Applicable**
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	**AO9** No acceptable outcome is prescribed.	**Complies with PO9** The development minimises impervious areas where practicable and provides opportunities for on-site stormwater capture and reuse.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. *Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.*	**AO10** No acceptable outcome is prescribed.	**Complies with PO10** Sufficient site area is provided to accommodate the proposed stormwater management system, including drainage infrastructure and the proposed swale.
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: a. existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; b. safe management of stormwater discharge from existing and future up-slope development; c. implication for adjacent and down-slope development.	**AO11.1** Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge.	**Capable of Compliance with AO11.1** The approximately 350m² external catchment upslope of the northern boundary has no other outlet and will continue to enter the site across the northern boundary, then traverse the site to the Simpsons Road frontage and the proposed swale within the Simpsons Road verge, which has capacity for this flow.
	AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Infrastructure design planning scheme policy.	**Capable of Compliance with AO11.2** The stormwater infrastructure will be assessed and upgraded where required in accordance with the Infrastructure Design Planning Scheme Policy.
PO12 Development provides stormwater infrastructure which: a. remains fit for purpose for the life of the development and maintains full functionality in the design flood event; b. can be safely accessed and maintained cost effectively; c. ensures no structural damage to existing stormwater infrastructure.	**AO12.1** The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.	**Capable of Compliance with AO12.1** The proposed stormwater management system will be designed in accordance with the Infrastructure Design Planning Scheme Policy.
	AO12.2 Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	**Complies with AO12.2**

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: a. the environmental values and water quality objectives of waters; b. waterway hydrology; c. the maintenance and serviceability of stormwater infrastructure. *Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.*	**AO13** No acceptable outcome is prescribed.	**Capable of Compliance with PO13** Appropriate erosion, sediment and turbidity control measures will be implemented during construction in accordance with the Infrastructure Design Planning Scheme Policy.
PO14 Development ensures that: a. unnecessary disturbance to soil, waterways or drainage channels is avoided; b. all soil surfaces remain effectively stabilised against erosion in the short and long term.	**AO14** No acceptable outcome is prescribed.	**Capable of Compliance with PO14** Construction methods will minimise unnecessary disturbance to soil and drainage channels, with exposed soil surfaces stabilised against erosion during and after construction.
PO15 Development does not increase: a. the concentration of total suspended solids or other contaminants in stormwater flows during site construction; b. run-off which causes erosion either on site or off site.	**AO15** No acceptable outcome is prescribed.	**Capable of Compliance with PO15** Erosion and sediment control measures will be implemented during construction to minimise suspended solids, contaminants and erosive stormwater runoff both on and off site.
PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. *Note—Prescribed water contaminants are defined in the Environmental Protection Act 1994.* *Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.*	**AO16** Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Capable of Compliance with AO16** The stormwater management system will be designed in accordance with the Infrastructure Design Planning Scheme Policy to minimise the entry and transport of contaminants into stormwater.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO17 Development ensures that: a. the discharge of wastewater to a waterway or external to the site is avoided; or b. if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment. *Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome.* *Editor's note—This code does not deal with sewerage which is the subject of the Wastewater code.*	**AO17** No acceptable outcome is prescribed.	**Capable of Compliance with PO17** Wastewater discharge to waterways or external to the site will be avoided, with wastewater managed through the reticulated sewer network.
PO18 Development protects stormwater infrastructure to ensure the following are not compromised: a. the long term infrastructure for the stormwater network in the Long term infrastructure plans; b. the existing and planned infrastructure for the stormwater network in the Local government infrastructure plan; c. the provision of long term, existing and planned infrastructure for the stormwater network which: i. is required to service the development or an existing and future urban development in the planning scheme area; or ii. is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated. *Editor's note—A condition which requires a proposed development to keep permanent improvements and structures associated with the approved development clear of the area of long term infrastructure, may be imposed.*	**AO18** Development protects stormwater infrastructure in compliance with the following: a. for long term infrastructure for the stormwater network, the Long term infrastructure plans; b. for existing and planned infrastructure for the stormwater network, the Local government infrastructure plan; c. the standards for stormwater drainage in the Infrastructure design planning scheme policy.	**Capable of Compliance with AO18** Stormwater infrastructure will be designed and protected in accordance with the applicable Infrastructure Design Planning Scheme Policy standards and relevant Council infrastructure planning requirements.

Performance Outcomes	Acceptable Outcomes	Response / Assessment
PO19 Development provides for the payment of extra trunk infrastructure costs for the following: a. for development completely or partly outside the priority infrastructure area in the Local government infrastructure plan; b. for development completely inside the priority infrastructure area in the Local government infrastructure plan involving: i. trunk infrastructure that is to be provided earlier than planned in the Local government infrastructure plan; ii. long term infrastructure for the stormwater network which is made necessary by development that is not assumed future urban development; iii. other infrastructure for the stormwater network associated with development that is not assumed future urban development which is made necessary by the development. *Editor's note—The payment of extra trunk infrastructure costs for development completely inside the priority infrastructure area in the Local government infrastructure plan is to be worked out in accordance with the Charges Resolution.* *Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the Planning Act 2016.*	**AO19** No acceptable outcome is prescribed.	**Not Applicable**

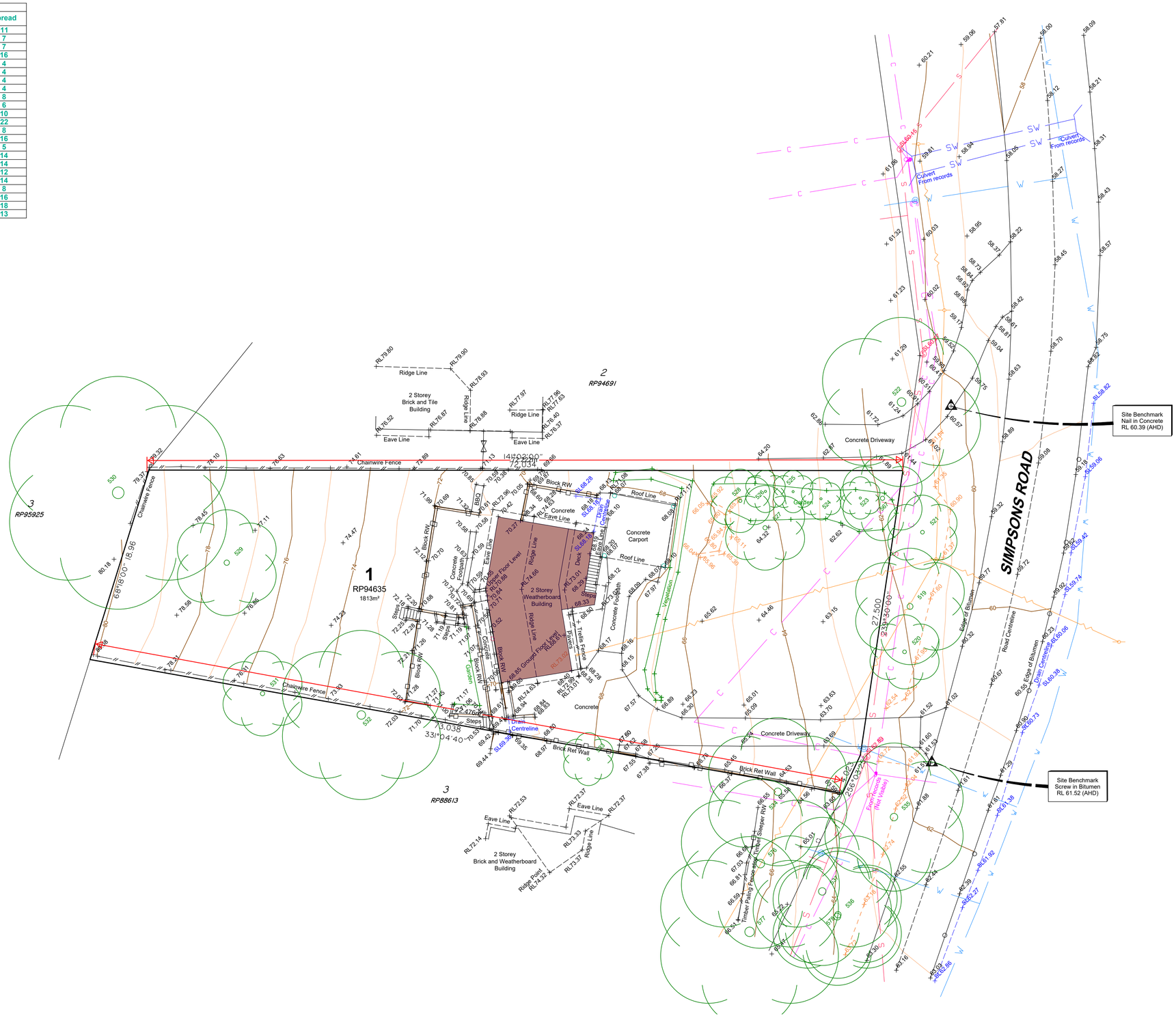
Appendix B - Detailed Survey

LEGEND

- Benchmark
- Electrical Pillar
- Electrical Light Pole
- Electrical Pit
- Electrical Pole
- Fire Hydrant
- Sewer Manhole
- Stormwater Manhole
- Telstra / NBN Pit
- Unknown Service Point
- Unknown Manhole
- Tree
- Post/Pole
- Gate
- Overflow Relief Gully
- Inspection Opening
- Sewer Inspection Opening
- Sewer Vent Pipe
- Sewer H/C
- Bollard
- Water Meter
- Water Valve
- Gas Meter
- Gas Valve
- Roof Water Outlet
- Gully Pit
- Field Inlet
- Traffic Sign Post
- C — U/G Communications Line
- O/H Communications Line
- E — U/G Power Line
- O/H Power Line
- W — Water Line
- S — Sewer Line
- G — Gas Line
- SW — Stormwater Line
- U — Unknown Service Line
- Fence Line
- Retaining Wall
- Revetment Wall
- Major Contour Line (Existing)
- Minor Contour Line (Existing)
- Major Contour Line (Natural)
- Minor Contour Line (Natural)
- Top of Bank
- Bottom of Bank
- Change of Grade
- Awning / Eave / Gutter Line
- Building Structure Hatch

Tree Dimension Table

Point Number	Diameter	Height	Spread
519	0.3	6.5	11
520	0.3	4	7
521	0.2	5	7
522	0.7	27	16
523	0.3	9	4
524	0.3	9	4
525	0.4	10	4
526	0.4	10	4
527	0.3	11	8
528	0.3	4	6
529	1.0	10	10
530	1.0	28	22
531	0.2	16	8
532	1.0	20	16
533	0.5	4	5
534	0.5	14	14
535	0.6	22	14
536	0.6	27	12
537	0.5	18	14
567	0.3	6	8
576	0.7	19	16
577	0.8	20	18
578	0.6	27	13



SCALE 1:200

0m 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30

GENERAL NOTES

1. Drawn to scale on an A1 sheet.
2. Property boundaries and dimensions shown on this plan has been compiled from RP94635 and subject to confirmation by survey.
3. All levels shown are in metres on Australian Height Datum as derived by GNSS using OPM40790 RL39.988 (AHD), situated on Cor Gulliver Street and Belmont Crescent.
4. Features and services shown on this plan are shown by a combination of survey and supplied records. The exact nature and location of these services must be confirmed by relevant authorities prior to any operational works.
5. This plan has been produced for client information purposes only, for additional site detail and existing surface model, refer to digital documentation of this plan.
6. Sonto accepts no responsibility for any damages or loss in contravention to the above.
7. Based on our analysis of the available property records and site conditions, we have determined that an *Identification Survey is recommended* to confirm the exact location, boundary dimensions and lot area for this project. Please contact our office for further information on conducting an Identification Survey.
8. This plan cannot be copied unless these notes are included.

SONTO™
ph 3186 5959 admin@sonto.com.au
mail PO Box 498, Cannon Hill QLD 4170

Contour Interval:	1.0m								
Datum:	AHD derived via GNSS								
Height:	39.988 (Origin PM40790)								
Locality:	Bardon	A	ISSUE FOR USE	2/07/26	AR	CD	07/07/26	QT	CC
Local Authority:	Brisbane City	Rev.	Description	Surveyed Date	Surveyed	Survey Check	Drawing Date	Drawn	Drawing Check

Client: Matthew Uhe and Laura Noir

Drawing Title: Plan of Detail Survey of Lot 1 on RP94635 "457 Simpsons Road, Bardon"

Sheet Size	Drawing No.	Scale	Sheet No.	Revision
A1	P-26648 - DET1 REV_A	1:200 on A1	1 OF 1	A

Appendix C - Proposed Lot Layout

LEGEND

- To be Retained
- Major Contour Line
- Minor Contour Line



GENERAL NOTES

1. Drawn to scale on an A3 sheet.
2. Property boundaries, dimensions and areas are subject to Council requirements and confirmation by survey.
3. This plan has been produced for client information purposes only, for additional site detail and existing surface model, refer to digital documentation of this plan.
4. Sonto accepts no responsibility for any damages or loss in contravention to the above.
5. This plan cannot be copied unless these notes are included.

SCALE 1: 400

0m 5 10 15 20 25 30 35 40 45 50 55 60

SONTO™

ph 3186 5959 admin@sonto.com.au mail PO Box 498, Cannon Hill QLD 4170

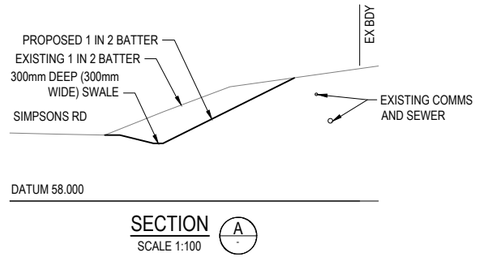
Rev.	Description	Surv. Date	Surveyed	Surv. Check	Dwg. Date	Drawn	Dwg. Check
A	ISSUE FOR USE	02/07/26	AR	CD	24/07/26	JC	RW

Project: Plan of Proposed Lots 10, 11 & 12 Cancelling Lot 1 on RP94635 "457 Simpsons Road, Bardon"

Client: Matthew Uhe and Laura Noir

Locality: Bardon	Local Authority: Brisbane City	Datum: AHD derived via GNSS	Height: 39.988 (Origin PM40790)	Contour Interval: 1.0m	Drawing No. P-26648 - PRO2 REV_A	Scale: 1:400 on A3	Sheet No. 1 OF 1

Appendix D - Civil Preliminary Design Plans



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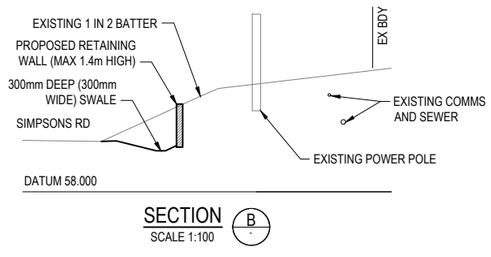

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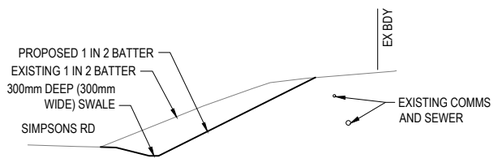
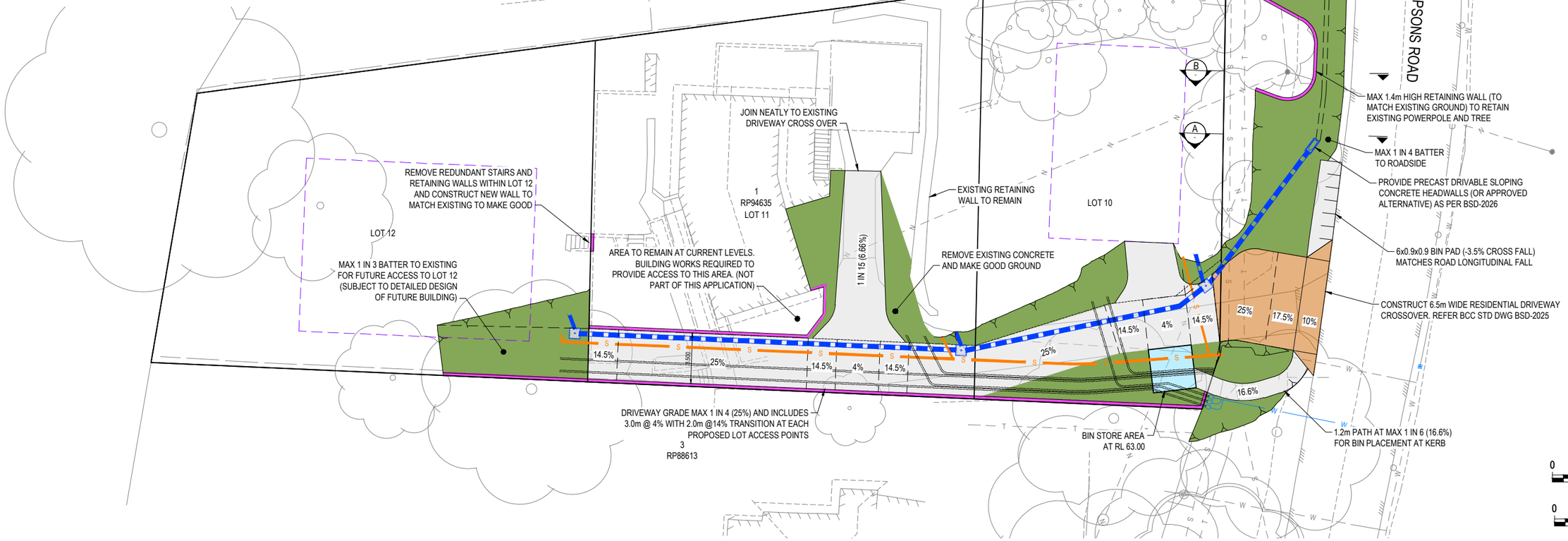


SECTION C
SCALE 1:100

LEGEND

- PROPERTY BOUNDARY
- PROPOSED CONCRETE
- TOP OF BATTER
- TOE OF BATTER
- FUTURE INDICATIVE BUILDING
- PROPOSED CONCRETE SLAB REFER STRUCTURAL DWGS
- PROPOSED CONCRETE CROSSOVER REFER BCC STD DWG BSD-2025
- PROPOSED LANDSCAPING REFER TO LANDSCAPE DRAWINGS



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SCALE 1:100 @A1

0 3 6 9m
SCALE 1:150 @A1

COORDINATED DEVELOPMENT SOLUTIONS
EMAIL: ADAM@CDEVSOLUTIONS.COM.AU
MOBILE: 0409 939 711

PROJECT	TITLE	CLIENT
1 INTO 3 LOT SUBDIVISION 457 SIMPSONS ROAD, BARDON	CIVIL WORKS PLAN	MATTHEW UHE AND LAURA NOIR

PRELIMINARY ISSUE.
NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DATE
A	PRELIMINARY ISSUE	26.08.26
B	AMENDED TO SUIT TRAFFIC ADVICE	02.10.26
C	WIDENED ACCESS TO LOT 10 AND 11 TO SUIT TRAFFIC ADVICE	20.10.26
D	ISSUED FOR APPROVAL	20.10.26
E	DRIVEWAY WIDTH LABEL CORRECTED TO 6.5m	21.10.26

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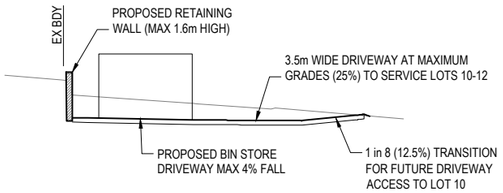
Designed	Drawn	Date
BCM	BCM	21.10.26

Approval No.	Scale
N/A	1:125 (A1)

Job No.	Drawing No.	Rev.
260049	SK01	E



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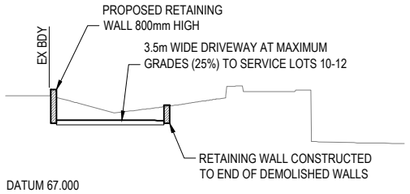

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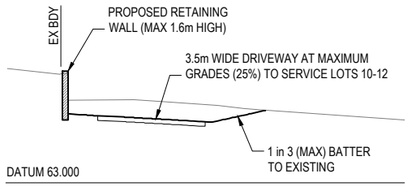

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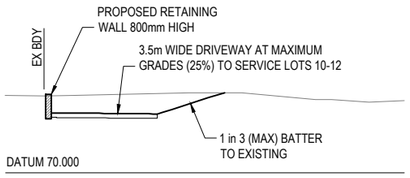
SCALE 1:100



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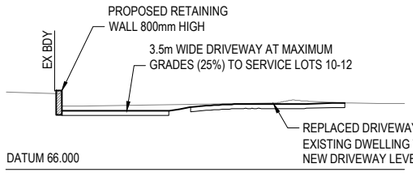


SECTION 3
SCALE 1:100

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOURS
- EXISTING BUILDING
- SW EXISTING STORMWATER
- W EXISTING WATER
- S EXISTING SEWER
- G EXISTING GAS
- E EXISTING ELECTRICAL
- T EXISTING TELECOMMUNICATIONS
- PROPOSED BATTER TOP
- PROPOSED BATTER TOE
- PROPOSED RETENTION METHOD
- EARTHWORKS CUT
- EARTHWORKS FILL

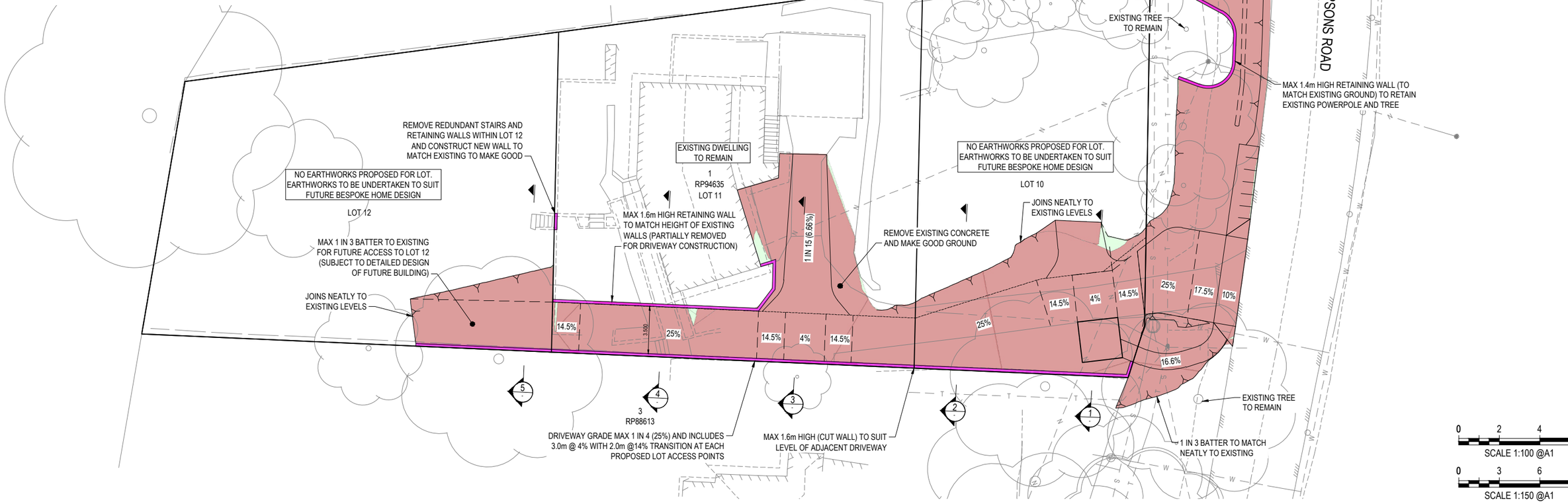
EARTHWORKS VOLUMES

100mm STRIP (NOM.) =67m^3
CUT = 234m^3
FILL = 3m^3
NOTE: THE QUANTITIES ABOVE HAVE BEEN CALCULATED FROM THE NOMINAL STRIPPED SURFACE TO THE BULK EARTHWORKS SURFACE. THE QUANTITIES DO NOT ALLOW FOR DETAILED BACKFILL BEHIND RETAINING WALLS. CONTRACTOR TO MAKE ALLOWANCE FOR DETAILED EARTHWORKS.

WARNING

THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING SERVICES ON AND EXTERIOR TO THE SITE INCLUDING WATER MAINS, SEWER MAINS, GAS MAINS, TELECOMMUNICATIONS CABLES, ELECTRICAL CABLES, AND STORMWATER PIPES. ANY DAMAGE TO EXISTING SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

2
RP94691



0 2 4 6m
SCALE 1:100 @A1

0 3 6 9m
SCALE 1:150 @A1

COORDINATED DEVELOPMENT SOLUTIONS
EMAIL: ADAM@CDEVSOLUTIONS.COM.AU
MOBILE: 0409 939 711

PROJECT	TITLE	CLIENT
1 INTO 3 LOT SUBDIVISION 457 SIMPSONS ROAD, BARDON	BULK EARTHWORKS LAYOUT PLAN	MATTHEW UHE AND LAURA NOIR

PRELIMINARY ISSUE.
NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DATE
A	PRELIMINARY ISSUE	26.08.26
B	AMENDED TO SUIT TRAFFIC ADVICE	02.10.26
C	WIDENED ACCESS TO LOT 10 AND 11 TO SUIT TRAFFIC ADVICE	20.10.26
D	ISSUED FOR APPROVAL	20.10.26
E	DRIVEWAY WIDTH LABEL CORRECTED TO 6.5m	21.10.26

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Designed	Drawn	Date
BCM	BCM	21.10.26

Approval No.	Scale
N/A	1:125 (A1)

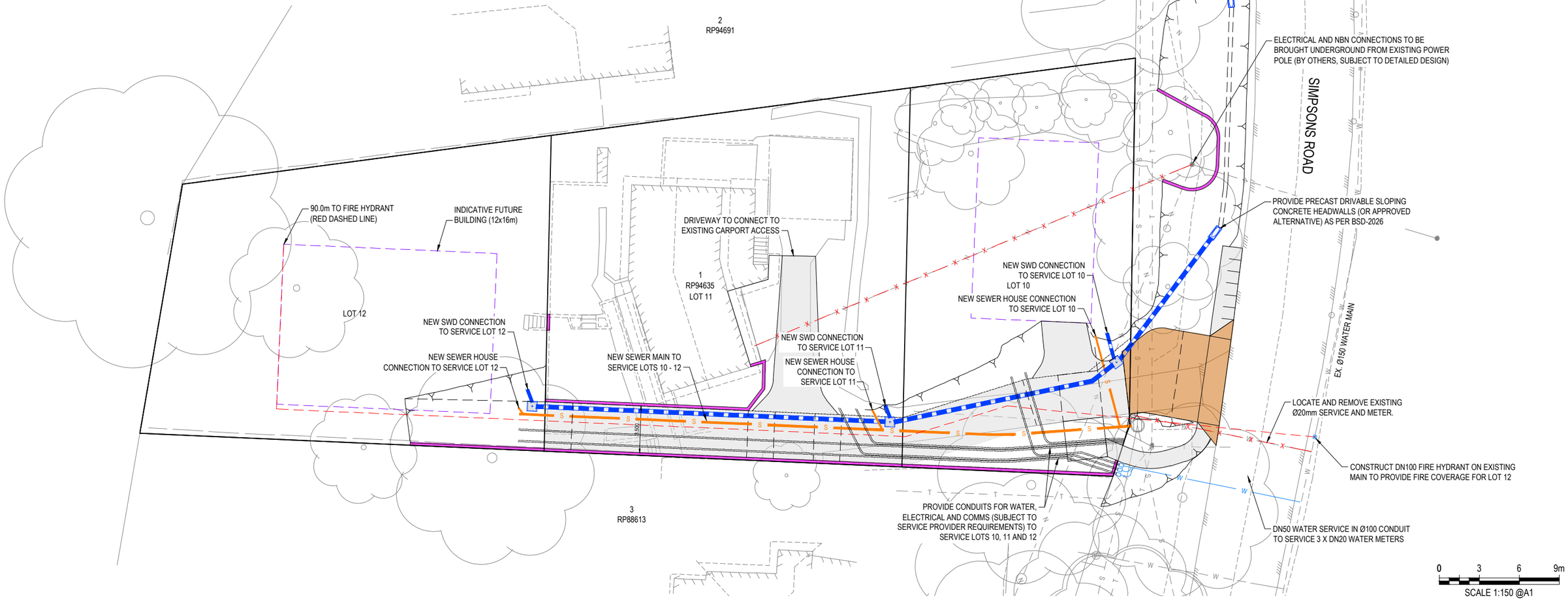
Job No.	Drawing No.	Rev.
260049	SK02	E

LEGEND

- PROPOSED STORMWATER
- RW — PROPOSED ROOFWATER
- W — PROPOSED WATER
- S — PROPOSED SEWER
- E — PROPOSED ELECTRICAL
- PROPOSED ELECTRICAL OVERHEAD
- T — PROPOSED TELECOMMUNICATIONS
- X — X — SERVICE TO BE REMOVED

NOTES

- ALL EXISTING OVERHEAD AND IN GROUND ELECTRICAL AND TELECOMMUNICATION SERVICES AND CONDUITS TO BE DISCONNECTED AND REMOVED FROM SITE PRIOR TO COMMENCEMENT
- NEW SERVICE CONNECTIONS AS PER SERVICE AUTHORITY APPROVALS (SUBJECT TO DETAILED DESIGN)
- ALL ABANDONED SERVICES SHALL BE REMOVED FROM THE GROUND.



COORDINATED DEVELOPMENT SOLUTIONS
EMAIL: ADAM@CDEVSOLUTIONS.COM.AU
MOBILE: 0409 939 711

PROJECT	TITLE	CLIENT
1 INTO 3 LOT SUBDIVISION 457 SIMPSONS ROAD, BARDON	CIVIL SERVICES LAYOUT PLAN	MATTHEW UHE AND LAURA NOIR

PRELIMINARY ISSUE.
NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DATE
A	PRELIMINARY ISSUE	26.08.26
B	AMENDED TO SUIT TRAFFIC ADVICE	02.10.26
C	WIDENED ACCESS TO LOT 10 AND 11 TO SUIT TRAFFIC ADVICE	20.10.26
D	ISSUED FOR APPROVAL	20.10.26
E	DRIVEWAY WIDTH LABEL CORRECTED TO 6.5m	21.10.26

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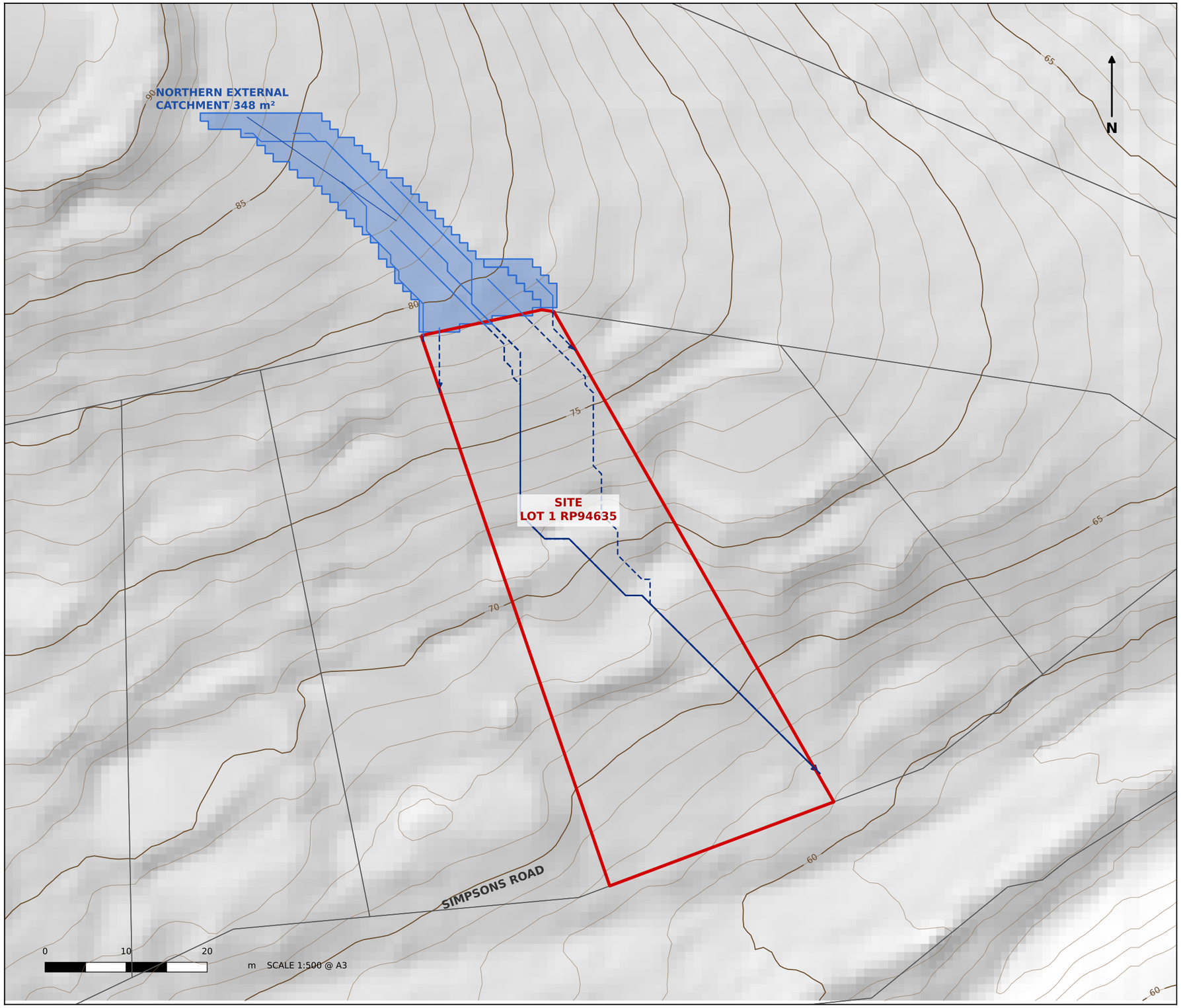
Designed	Drawn	Date
BCM	BCM	21.10.26
Approval No.		Scale
N/A		1:125 (A1)
Job No.	Drawing No.	Rev.
260049	SK03	E

Appendix E - External Catchment Plan



LEGEND

- Site boundary (Lot 1 RP94635, DCDB)
- Cadastre (DCDB, 20 Mar 2026)
- Northern external catchment (348 m²)
- Overland flow path to the northern boundary
- Overland flow path through the site
- 1 m contour (LiDAR DEM, m AHD)
- 5 m contour (LiDAR DEM, m AHD)

NOTES

1. Northern external catchment 348 m² (adopted approx. 350 m²), measured from the Queensland Government 1 m LiDAR DEM (QSpatial Elevation/QldDem, 22 Oct 2026): depressions filled, D8 flow routing.
2. This catchment has no other outlet. It enters across the northern boundary and continues through the site to the Simpsons Road frontage and the verge swale (SK01). Flow paths are shown on the existing surface.
3. 1% AEP inflow from this catchment 0.024 m³/s (C = 0.84, 5 min, 298.6 mm/h); refer to SMP Section 7.6 for the swale and pipe check.
4. DEM levels sit 0.5-1.1 m below the detail survey; the falls agree.

COORDINATED DEVELOPMENT SOLUTIONS
EMAIL: ADAM@CDEVSOLUTIONS.COM.AU
MOBILE: 0409 939 711

PROJECT	TITLE	CLIENT
1 INTO 3 LOT SUBDIVISION 457 SIMPSONS ROAD, BARDON	EXTERNAL CATCHMENT PLAN	MATTHEW UHE AND LAURA NOIR

PRELIMINARY ISSUE.
NOT FOR CONSTRUCTION

REVISION	AMENDMENT	DATE
A	ISSUED FOR INFORMATION	22.10.26
B	REVISED LAYOUT, CDS TITLE BLOCK	22.10.26
C	NOTES REVISED	22.10.26

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Designed	Drawn	Date
CDS	CDS	22.10.26

Approval No.	Scale
N/A	1:500 (A3)

Job No.	Drawing No.	Rev
260049	SKC01	C

Appendix F - DRAINS Modelling

Pre-Developed Catchment

Description	Tag	Calc	Value (m^2)	% Area	t_c (mins)	Flowpath Length (m)	Flow Path Slope (%)	Hortons"n"
Total Catchment								
Total Area	TA	Measure	1813					
Total Impervious Area	TIA	Measure	427					
Directly Connected Impervious Area	DCIA	Measure	195					
Effective Impervious Area	EIA	0.75*DCIA	146.25	8.1%	5			
Indirectly Connected Impervious Area	ICIA	TIA - DCIA	232					
Remaining Impervious Area	RIA	ICIA + 0.25 x DCIA	280.75	15.5%	5			
Pervious Area	PA	TA - EIA - RIA	1386	76.4%	24.0	73.038	23%	0.1

Using Friend's Eqn (QUDM eqn 4.5)

L =	73.038	m
Top of Flowpath RL =	80.08	m AHD
Bottom of Flowpath RL =	63.59	m AHD
Fall =	16.49	m
Grade =	22.6	%
n =	0.1	

t = 107.n.L^(1/3)/S^(1/5)

t = 24.0 mins

Developed Catchment

Description	Tag	Calc	Value (m^2)	% Area	t_c (mins)	Flowpath Length (m)	Flow Path Slope (%)	Hortons"n"
Bypass Basin								
Total Area	TA	Measure	1813					
Total Impervious Area	TIA	Measure	1007					
Directly Connected Impervious Area	DCIA	Measure	695					
Effective Impervious Area	EIA	0.75*DCIA	521	28.8%	5			
Indirectly Connected Impervious Area	ICIA	TIA - DCIA	312					
Remaining Impervious Area	RIA	ICIA + 0.25 x DCIA	486	26.8%	5			
Pervious Area	PA	TA - EIA - RIA	806	44.5%	24		23%	0.1

Using Friend's Eqn (QUDM eqn 4.5)

L =	73.038	m
Top of Flowpath RL =	80.08	m AHD
Bottom of Flowpath RL =	63.59	m AHD
Fall =	16.49	m
Grade =	22.6	%
n =	0.1	

t = 107.n.L^(1/3)/S^(1/5)

t = 24.0 mins

RATIONAL METHOD CALCULATIONS - DEVELOPED SITE

Job Reference	260049
Site Address	457 Simpsons Road, Bardon
Council	Brisbane City Council

Number of Sub-Catchments	3
Minor Storm Event	10% *(As per QUDM Table 7.3.1)*
Major Storm Event	1% *(As per QUDM Table 7.3.1)*

Subcatchment Summary Table

Number	*Catchment Name*	*Catchment Description*	*C_10%*	*tc*	Av C_{10}
1	Roof	Impervious Roof	0.90	24	0.345008
2	Driveway	Significant paved areas	0.88	24	0.15144
3	Gardens	Open Space (eg parks)	0.70	24	0.311197
					0
					0
					0
					0
					0
					0
					0.81

Catchment Calculations (Major and Minor Storm ARI's)

Number	*Area*	*C_10%*	*I_10%*	*10%*	*C_1%*	*I_1%*	*1%*
	ha		*mm/hr*	*m^3/s*		*mm/hr*	*m^3/s*
1	0.070	0.90	112	0.019	1.00	166	0.032
2	0.031	0.88	112	0.009	1.00	166	0.014
3	0.081	0.70	112	0.018	0.84	166	0.031

Total Runoff	Minor	0.046 m^3/s
	Major	0.077 m^3/s
Total Area		0.181 *ha*

Overland Flow Calculations

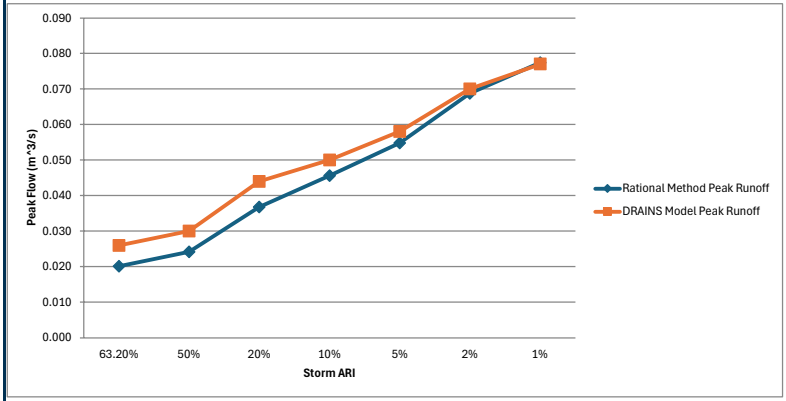
Trunk SW Infrastructure	
Pipe Diameter	N/A *m*
Number of Pipes	0
Grade	0 *m/m*
mannings	0
Pipe Capacity	m^3/s
Pipe Velocity	*m/s*
Capacity @ 3m/s	m^3/s
Overland Flow	m^3/s

All Storm ARI's

ARI	*Peak Discharge*	
3 Month	0.010	m^3/s
63.20%	0.020	m^3/s
50%	0.024	m^3/s
20%	0.037	m^3/s
10%	0.046	m^3/s
5%	0.055	m^3/s
2%	0.069	m^3/s
1%	0.077	m^3/s

Model Calibration

Storm Event	Rational Method Peak Runoff	DRAINS Model Peak Runoff	Difference	
AEP	*(m^3/s)*	*(m^3/s)*	*+/-*	*%*
63.20%	0.020	0.026	-0.006	29%
50%	0.024	0.030	-0.006	24%
20%	0.037	0.044	-0.007	20%
10%	0.046	0.050	-0.004	10%
5%	0.055	0.058	-0.003	6%
2%	0.069	0.070	-0.001	2%
1%	0.077	0.077	0.000	0.6%



RATIONAL METHOD CALCULATIONS - EXISTING SITE

Job Reference	260049
Site Address	457 Simpsons Road, Bardon
Council	Brisbane City Council

Number of Sub-Catchments	3
Minor Storm Event	10% *(As per QUDM Table 7.3.1)*
Major Storm Event	1% *(As per QUDM Table 7.3.1)*

Subcatchment Summary Table

Number	*Catchment Name*	*Catchment Description*	C_{10}	*tc*
1	Roof	Impervious Roof	0.90	24
2	Hardstand	Significant paved areas	0.88	24
3	Vegetation	Open Space (eg parks)	0.70	24

Catchment Calculations (Major and Minor Storm ARI's)

Number	*Area*	*C_10%*	*I_10%*	*10%*	*C_1%*	*I_1%*	*1%*
	ha		*mm/hr*	*m^3/s*		*mm/hr*	*m^3/s*
1	0.020	0.90	110	0.005	1.00	162	0.009
2	0.023	0.88	110	0.006	1.00	162	0.010
3	0.139	0.70	110	0.030	0.84	162	0.052

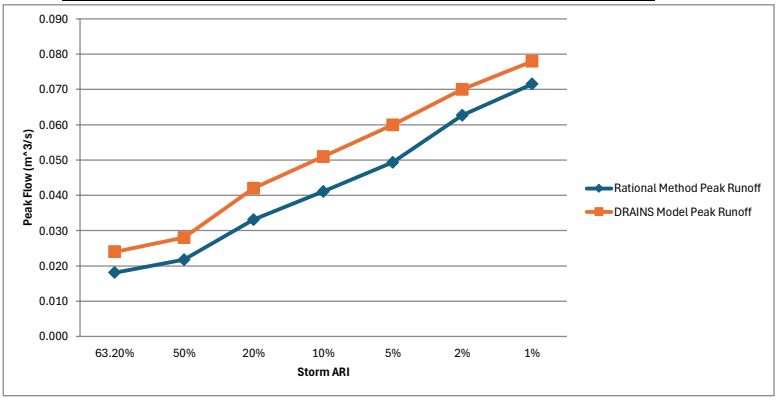
Total Runoff	Minor	0.041 m^3/s
	Major	0.072 m^3/s
Total Area		0.181 *ha*

Overland Flow Calculations	
Trunk SW Infrastructure	
Pipe Diameter	N/A *m*
Number of Pipes	0
Grade	0 *m/m*
mannings	0
Pipe Capacity	m^3/s
Pipe Velocity	*m/s*
Capacity @ 3m/s	m^3/s
Overland Flow	m^3/s

All Storm AEP's		
ARI	*Peak Discharge*	
3 Month	0.009	m^3/s
63.20%	0.018	m^3/s
50%	0.022	m^3/s
20%	0.033	m^3/s
10%	0.041	m^3/s
5%	0.049	m^3/s
2%	0.063	m^3/s
1%	0.072	m^3/s

Model Calibration

Storm Event	Rational Method Peak Runoff	DRAINS Model Peak Runoff	Difference	
AEP	*(m^3/s)*	*(m^3/s)*	*+/-*	*%*
63.20%	0.018	0.024	-0.006	32%
50%	0.022	0.028	-0.006	28%
20%	0.033	0.042	-0.009	27%
10%	0.041	0.051	-0.010	24%
5%	0.049	0.060	-0.011	21%
2%	0.063	0.070	-0.007	12%
1%	0.072	0.078	-0.006	9%



DRAINS Model Setup

PIT / NODE DETAILS

Name	Type	Family	Version 15 Size	Ponding Volume (cu.m)	Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor	x	y	Bolt-down lid	id	Part Full Shock Loss	Inflow Hydrograph	Pit is	Internal Width (mm)	Inflow is Misaligned	Minor Safe Pond Depth (m)	Major Safe Pond Depth (m)
ExCase	Node					61.02		0		6440	-5443		2		No					
DevCase	Node					61.02		0		6595	-5455		7		No					

DETENTION BASIN DETAILS

Name	Elev	Surf. Area	Not Used	Outlet Type	K	Dia(mm)	Centre RL	Pit Family	Pit Type	x	y	HED	Crest RL	Crest Length(m)	id

SUB-CATCHMENT DETAILS

Name	Pit or Node	Total Area (ha)	EIA %	Perv Area %	RIA %	EIA Time (min)	Perv Time (min)	RIA Time (min)	EIA Length (m)	Perv Length (m)	RIA Length (m)	EIA Slope(%) %	Perv Slope %	RIA Slope %	EIA Rough	Perv Rough	RIA Rough	Rainfall Multiplier
ExCat	ExCase	0.1813	8.1	76.4	15.5	5	24	5										1
DevCat	DevCase	0.1813	28.8	44.4	26.8	5	24	5										1

PIPE DETAILS

Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From	At Chg	Chg (m)	Rl (m)	Chg (m)	RL (m)	etc (m)

DETAILS of SERVICES CROSSING PIPES

Pipe	Chg (m)	Bottom Elev (m)	Height of Service (m)	Chg (m)	Bottom Elev (m)	Height of Service (m)	Chg (m)	Bottom Elev (m)	Height of Service (m)	etc etc

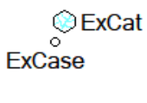
CHANNEL DETAILS

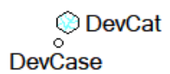
Name	From	To	Type	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Base Width (m)	L.B. Slope (1:?)	R.B. Slope (1:?)	Manning n	Depth (m)	Roofed

PIPE COVER DETAILS

Name	Type	Dia (mm)	Safe Cover (m)	Cover (m)

This model has no pipes with non-return valves





1%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

Version 8

Predev Case Outflow
PostDev Case Outflow

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)	
ExCat	0.078	0.008	0.071	5	5	24	1% AEP, 25 min burst, Storm 7	
DevCat	0.077	0.037	0.056	5	5	24	1% AEP, 25 min burst, Storm 5	

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:15:22 on 3/9/2026.

Results for median storm in critical 1% AEP ensembles using Full Unsteady hydraulic model.



Check
0.078 ExCat
0.077 DevCat

0.001 Difference
0 Hydrograph Difference

2%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

Version 8

Predev Case Outflow
PostDev Case Outflow

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constrai

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)	
ExCat	0.07	0.007	0.064	5	5	24	2% AEP, 25 min burst, Storm 7	
DevCat	0.07	0.033	0.05	5	5	24	2% AEP, 25 min burst, Storm 5	

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:17:51 on 3/9/2026.

Results for median storm in critical 2% AEP ensembles using Full Unsteady hydraulic model.



Check
0.07 ExCat
0.07 DevCat
0 Difference

5%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

PIT / NODE DETAILS				Version 8				Predev Case Outflow
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboarc	Overflow (cu.m/s)	Constrai	PostDev Case Outflow

SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)
ExCat	0.06	0.006	0.056	5	5	24	5% AEP, 25 min burst, Storm 8
DevCat	0.058	0.026	0.041	5	5	24	5% AEP, 20 min burst, Storm 10

PIPE DETAILS					
Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS			
Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS					
Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:21:44 on 3/9/2026.

Results for median storm in critical 5% AEP ensembles using Full Unsteady hydraulic model.



Check	
0.06	ExCat
0.058	DevCat
0.002	Difference

10%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

Predev Case Outflow
PostDev Case Outflow

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constra

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)	
ExCat	0.051	0.007	0.048		5	5	24	10% AEP, 25 min burst, Storm 7
DevCat	0.05	0.022	0.037		5	5	24	10% AEP, 25 min burst, Storm 4

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:22:38 on 3/9/2026.

Results for median storm in critical 10% AEP ensembles using Full Unsteady hydraulic model.



Check
0.051 ExCat
0.05 DevCat

0.001 Difference

20%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constra

Predev Case Outflow
PostDev Case Outflow

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)
ExCat	0.042	0.004	0.039	5	5	24	20% AEP, 30 min burst, Storm 5
DevCat	0.044	0.02	0.031	5	5	24	20% AEP, 30 min burst, Storm 8

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:23:53 on 3/9/2026.

Results for median storm in critical 20% AEP ensembles using Full Unsteady hydraulic model.



Check
0.042 ExCat
0.044 DevCat

-0.002 Difference

50%AEP **DRAINS results prepared from Version 2026.08.9711.23351**

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constrair

Predev Case Outflow
PostDev Case Outflow

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)
ExCat	0.028	0.003	0.027	5	5	24	50% AEP, 30 min burst, Storm 9
DevCat	0.03	0.015	0.022	5	5	24	50% AEP, 30 min burst, Storm 8

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:25:05 on 3/9/2026.

Results for median storm in critical 50% AEP ensembles using Full Unsteady hydraulic model.



Check	
0.028	ExCat
0.03	DevCat
-0.002	Difference

1EY_AEP **DRAINS results prepared from Version 2026.08.9711.23351**

Version 8

Predev Case Outflow
PostDev Case Outflow

PIT / NODE DETAILS

Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constrai

SUB-CATCHMENT DETAILS

Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)	
ExCat	0.024	0.004	0.023	5	5	24	1EY AEP, 30 min burst, Storm 8	
DevCat	0.026	0.013	0.019	5	5	24	1EY AEP, 30 min burst, Storm 8	

PIPE DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Max U/S HGL (m)	Max D/S HGL (m)	Due to Storm

CHANNEL DETAILS

Name	Max Q (cu.m/s)	Max V (m/s)	Due to Storm

DETENTION BASIN DETAILS

Name	Max WL	MaxVol	Max Q Total	Max Q Low Level	Max Q High Level

Run Log for DRAINS v2026.08.9711.23351 - 260049
Run Log for DRAINS v2026.08.9711.23351 - 260049.drn run at 18:26:05 on 3/9/2026.

Results for median storm in critical 1EY ensembles using Full Unsteady hydraulic model.



Check

0.024	ExCat
0.026	DevCat
-0.002	Difference

Appendix G - Erosion Hazard Assessment Form

BRISBANE CITY COUNCIL ABN 72 002 765 795

Erosion Hazard Assessment

Brisbane City Council (BCC), *Erosion Hazard Assessment* form must be read in conjunction with the *Erosion Hazard Assessment- Supporting Technical Notes* (June 2014 or later version) for explanatory terms and Certification information.

What is an Erosion Hazard Assessment?

Soil erosion and sediment from urban development, particularly during construction activities, is a significant source of sediment pollution in Brisbane's waterways. The Erosion Hazard Assessment determines whether the risk of soil erosion and sediment pollution to the environment is 'low', 'medium' or 'high'.

When is the EHA required?

An Erosion Hazard Assessment form must be completed and lodged with BCC for any Development Application (ie MCU or ROL) that will result in soil disturbance OR Operational Works or Compliance Assessment Application for 'Filling' or Excavation.

Failure to submit this form during lodgement of an application may result in assessment delays or refusal of the application.

Privacy Statement

The personal information collected on this form will be used by Brisbane City Council for the purposes of fulfilling your request and undertaking associated Council functions and services. Your personal information will not be disclosed to any third party without your consent, unless this is required or permitted by law.

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

2 Based on the erosion hazard assessment overleaf, is the side:

☐ ***A 'low' risk site***

Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets outlining best practice ESC can be found at https://waterbydesign.com.au/download/erosion-sediment-control-for-small-construction-sites

☑ ***A 'medium' risk site***

If the development is approved, the applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy.

☐ ***A 'high' risk site***

If the development is approved, the applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.

3 Site Information and Certification

Application number (if known)

Site address

457 Simpsons Road

Bardon

Postcode **4065**

I certify that:

☑ I have made all relevant enquiries and am satisfied no matters of significance have been withheld from the assessment manager.

☑ I am a person with suitable qualifications and/or experience in erosion and sediment control.

☑ The Erosion Hazard Assessment was completed in accordance with the Erosion Hazard Assessment Supporting Technical Notes and the BCC Infrastructure Design Planning Scheme Policy.

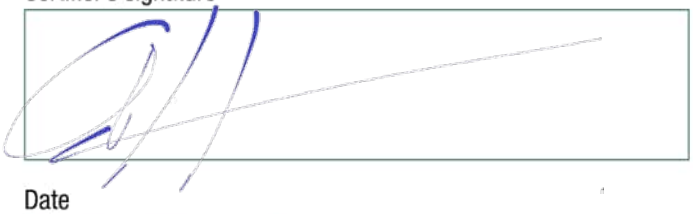
☑ The Erosion Hazard Assessment accurately reflects the site's overall risk of soil erosion and sediment pollution to the environment.

☑ I acknowledge and accept that the BCC, as assessment manager, relies, in good faith, on this certification as part of its development assessment process and the provision of false or misleading information to the BCC constitutes an offence for which BCC may take punitive steps/ action against me/ enforcement action against me.

Certified by *(Print name)*

Adam Heather

Certifier's signature



Date

04 / **09** / **2026**

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Assessment Table

Table 1: Low Risk Test

		Yes	*No*
1.1	is the area of land disturbance > 1000 m2?	☐	☑
1.2	does any land disturbance occur in a BCC mapped waterway corridor?	☐	☑
1.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 5%?	☑	☐
1.4	does any land disturbance occur below 5 m AHD?	☐	☑
1.5	does development involve endorsement of a staging plan?	☐	☑
1.6	is there an upstream catchment passing through the site > 1 hectare?	☐	☑

If you answered ***'No'*** to **ALL** of these questions, then the site is **low risk** with respect to erosion and sediment control. (Do not continue to Table 2)

If you answered ***'Yes'*** to **ANY** of these questions, then proceed to ***Table 2***

Table 2: Medium Risk Test

		Yes	*No*
2.1	is the area of land disturbance > 1 hectare?	☐	☑

If ***'No'*** then the site is **medium risk** with respect to erosion and sediment control. (Do not continue to Table 3)

If ***'Yes'*** then proceed to ***Table 3***

Table 3: High Risk Test

		Yes	*No*
3.1	is there an upstream catchment passing through the site > 1 hectare?	☐	☐
3.2	does any land disturbance occurs in a BCC mapped waterway corridor?	☐	☐
3.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 15%?	☐	☐

If you answered ***'No'*** to **ALL** of these questions, then the site is also **medium risk** with respect to erosion and sediment control.

If you answered ***'Yes'*** to **ANY** of these questions, then the site is **high risk** with respect to erosion and sediment control.

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Appendix H - Floodwise Property Report

FloodWise Property Report

457 SIMPSONS RD, BARDON 4065
Lot 1 on RP94635

Dedicated to a better Brisbane

THE PURPOSE OF THIS REPORT IS FOR BUILDING AND DEVELOPMENT

Brisbane City Council's FloodWise Property Report **provides technical flood planning information** including estimated flood levels, habitable floor level requirements and more. **This report uses the adopted flood planning information in Brisbane City Plan 2014**, that guides how land in Brisbane is used and developed for the future. Find out more about planning and building. To understand how to be **resilient and prepare for floods**, visit Council's Be Prepared webpage. Find more information about how to read a FloodWise Property Report.

This property has no flood levels

Brisbane City Council has not assigned flood level information for this property however it may be affected by one or more flood or property development flags. Please refer to the Flood Planning and Development Information below for details. The property may have 0.2% AEP flood level which will appear on the Flood Planning Information table if applicable. For professional advice or detailed assessment of a property contact a Registered Professional Engineer of Queensland.

Visit the Be Prepared page to find more information on how to prepare your home or business for potential flooding.

Combined 1% AEP for river, creek and storm tide flood extent (if applicable) from the adopted Brisbane City Plan 2014.
Read more about Brisbane City Plan 2014.





Are you resilient and ready for flood?

- Sign up to the Brisbane Severe Weather Alert at **brisbane.qld.gov.au/beprepared**
- Visit bom.gov.au for the latest weather updates.
- Have an evacuation plan, emergency kit and important phone numbers ready.
- Observe where water flows from and to during heavy rain.
- Consider how flood-resilient building techniques will have you home faster and with less damage.

Life threatening emergencies **000** Police/fire/ambulance (mobiles **000** and **112**)	State Emergency Service (SES) **132 500** Energex **13 19 62** Brisbane City Council **3403 8888**

Technical Summary

This section of the FloodWise Property Report contains more detailed flood information for this property so **surveyors, builders, certifiers, architects, and engineers can plan and build** in accordance with Council's planning scheme.

Find more information about **planning and building** in Brisbane or talk to a Development Services Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

Flood Planning and Development Information

This section of the FloodWise Property Report contains information about Council's planning scheme overlays. Overlays identify areas within the planning scheme that reflect distinct themes that may include constrained land and/or areas sensitive to the effects of development.

Flood overlay code

The Flood overlay code of Council's planning scheme uses the following information to provide guidelines when developing properties. The table below summarises the flood planning areas (FPAs) that apply to this property. Development guidelines for the FPAs are explained in **Council's planning scheme**.

Flood planning areas (FPA)		
River	**Creek / waterway**	**Overland flow**
		Not Applicable

To find more information about Council's flood planning areas (FPAs) for Brisbane River and Creek/waterway flooding to guide future building and development in flood prone areas, please review **Council's Flood Planning Provisions**.

Coastal hazard overlay code

The Coastal hazard overlay code of Council's planning scheme uses the following information to provide guidelines when conducting new developments. The table below summarises the coastal hazard categories that apply to this property. Development guidelines for the following Coastal hazard overlay sub-categories are explained in Council's **planning scheme**.

Coastal hazard overlay sub-categories
There are currently no Coastal hazard overlay sub-categories that apply to this property.

Note: Where land is identified within one for more flood planning areas on the Flood overlay or is identified within one of the Storm tide inundation area sub-categories on the Coastal hazard overlay, the assessment criteria that provides the highest level of protection from any source of flooding applies.

Property development flags
Large allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site. For more information or advice, please consult a Registered Professional Engineer of Queensland (RPEQ).

Useful Flood Information Definitions

Australian Height Datum (AHD) - The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

- **0.2% AEP** - A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year.
- **1% AEP** - A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year.
- **2% AEP** - A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
- **5% AEP** - A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year.
- **20% AEP** - A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.

Data quality

- **Data Quality Code A** - Level data based on recent surveyor report or approved as-constructed drawings.
- **Data Quality Code B** - Level data based on ground-based mobile survey or similar.
- **Data Quality Code C** - Level data derived from Airborne Laser Scanning or LiDAR information.

Defined Flood Level (DFL) - The DFL is used for commercial and industrial development. The Defined flood level (DFL) for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m/s. DFL is only applicable for non-residential uses affected by Brisbane River flooding.

Flood planning area (FPA) - Council has developed five Flood planning areas (FPAs) as part of Brisbane City Plan 2014 Flood overlay mapping for Brisbane River, Creek/waterway flooding and Overland flow to guide future building and development in flood prone areas. Storm tide flooding is mapped separately. The FPAs are designed to recognise the flood hazard for different flooding types. Flood hazard is a combination of frequency of flooding, the flood depth, and the speed at which the water is travelling. **Find more information here**.

Maximum and minimum ground level - Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.

Minimum habitable floor level (dwelling house) - The minimum level in metres AHD at which habitable areas of development (generally induding bedrooms, living rooms, kitchen, study, family, and rumpus rooms) must be constructed as required by the Brisbane City Plan 2014.

Indicative existing floor level - The approximate level in metres AHD of the lowest habitable floor in the existing building (exduding apartments). The data is sourced from a range of sources with varying accuracy levels.

Property - A property will contain 1 or more lots. The multiple lot warning is shown if you have selected a property that contains multiple lots.

Residential flood level (RFL) - This flood level for the Brisbane River equates to the 1% annual exceedance probability (AEP) flood level.

To learn more, visit **Brisbane City Council's Flood Information Hub**

Brisbane City Council's Online Flood Tools

Council provides several online flood tools:

- to guide planning and development
- to help residents and businesses understand their flood risk and prepare for flooding.

Council's online flood tools for planning and development purposes indude:

- **FloodWise Property Report**
- **Flood Overlay Code**

For more information on Council's planning scheme and online flood tools for planning and development:

- phone (07) 3403 8888 and ask to talk to a Development Services Planning Information Officer

- visit brisbane.qld.gov.au/planning-building

Council's Planning Scheme - The Brisbane City Plan 2014 (planning scheme) has been prepared in accordance with the Sustainable Planning Act as a framework for managing development in a way that advances the purpose of the Act. In seeking to achieve this purpose, the planning scheme sets out the Council's intention for future development in the planning scheme area, over the next 20 years.

Disclaimer

1. Defined flood levels and residential flood levels, minimum habitable floor levels and indicative existing floor levels are determined from the best available information to Council at the date of issue. These levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property Report. Council disdaims any responsibility or liability in relation to the use or reliance by any person on a FloodWise Property Report.



Planning to build or renovate?

For information, guidelines, tools and resources to help you track, plan or apply for your development visit brisbane.qld.gov.au/planning-building

You can also find the Brisbane City Plan 2014 and Neighbourhood Plans as well as other information and training videos to help, with your building and development plans.