LEGACY ENGINEERS
Consulting Civil & Structural Engineers

Prepared for
GGS Impex Pty Ltd

ENGINEERING REPORT INCLUDING SITE BASED STORMWATER MANAGEMENT PLAN

For
Proposed 4 Lot subdivision.
18 Springlands Drive,
Slacks Creek, QLD 4127

Prepared by:
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March 2026
Project No: 132602 -ER
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Document Register

Job title	Civil Engineering Report for Proposed 4 Lot subdivision 18 Springlands Dr. Slacks creek, QLD 4127	Job number 132602-ER

Revision	Date	Description
A	30/03/2026	Preliminary Issue
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1.0 Introduction

Legacy Engineers Pty Ltd has been engaged by GGS Impex Pty Ltd to prepare a Civil Engineering Report, including a Site-Based Stormwater Management Plan, for the proposed 4 Lot subdivision located at 18 Springlands Drive, Slacks Creek QLD 4127 (Lot 20 on RP89076).

The purpose of this report is to assess and provide recommendations on the service connection strategy, including the stormwater management approach for the proposed Subdivision, which the client intends to submit as part of a Development Application to Logan City Council, in accordance with relevant Council and State planning requirements.

1.1 Site Location

The site is located within the Logan City Council area and is bounded by Springlands Drive to the North and residential properties to all other directions. Figure 1.1 below provides an aerial locality of the site and adjacent areas.

Figure 1.1 – Proposed Development Site at 18 Springlands Dr, Slacks Creek QLD 4127 (Source: Logan PD Hub mapping)

1.2 Current Use

The site is currently vacant with no existing buildings or structures. The land is undeveloped and consists of a single lot which is proposed to be subdivided into four lots.

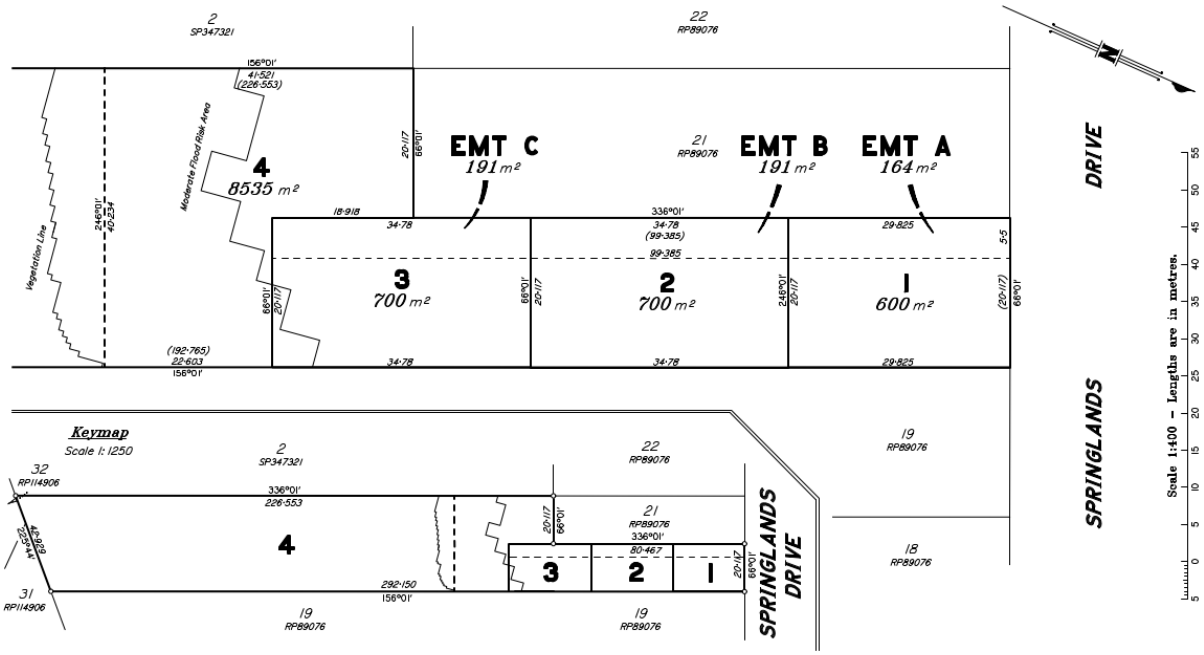
1.3 Proposed Development

The proposed plans of subdivision, prepared by East Coast Surveys (AUST) Pty. Ltd, is included in Appendix A, with an extract of the subdivision plan provided below in Figure 1.2.

The proposed subdivision includes the following key elements:

- Proposed Lots 1–4 and Easements A–C, created by the subdivision and cancelling the existing Lot 20.
- Proposed a new crossover in accordance with Logan City Council standards.
- Provision of new service connections (water, sewer, and stormwater) to service the proposed subdivision.

Figure 1.2 – Proposed Subdivision Plan



1.4 Covenants/Easements

A review of the available title information confirms that the site contains existing easements along the southern part of the lot (EMT A on SP250617). No other covenants are registered over the property.

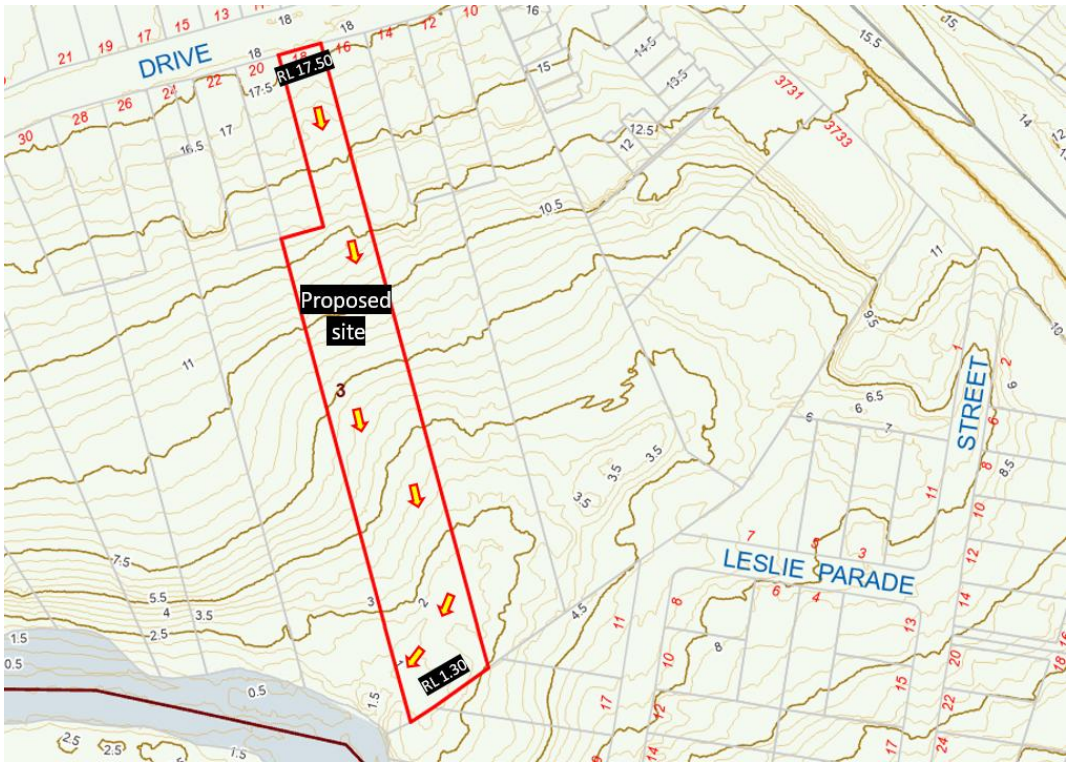
1.5 Topography and Surface Flow

The detailed survey plan for the site, prepared by East Coast Surveys (AUST), is included in this report as Appendix B. Figure 1.3 below diagrammatically illustrates the surface flow path directions across the development site.

The site falls from approximate RL 17.50 m AHD in the north to approximate RL 1.30 m AHD in the south. Overland flow trends generally away from Springlands Drive.

Figure 1.3 below indicates the topography of the existing site (source – Logan PD Hub Mapping).

Figure 1.3 – Site topography

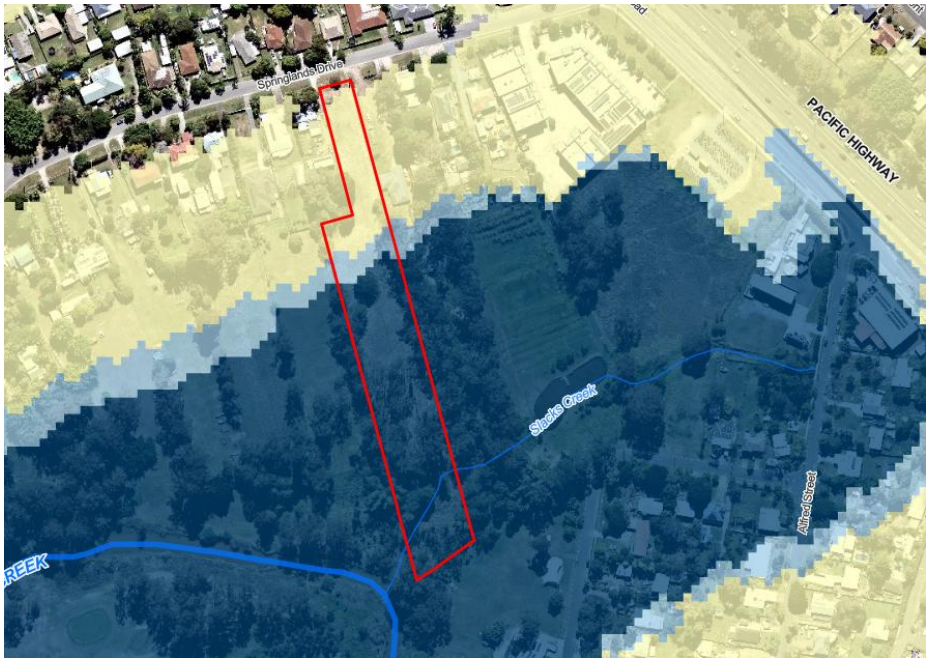


1.6 Flood Search

Based on the property flood report from the Logan Flood Portal, the southern portion of the site is located within a high flood risk area, while the northern portion is situated in a moderate to low flood risk area.

A flood impact assessment and overland flow path analysis are not included within the scope of this report. The assessment is limited to site-based stormwater management strategies only. Proposed floor levels are to be set above the 1% AEP flood level, plus the applicable council-specified freeboard.

Figure 1.4-The flood risk map based on the latest flood studies accepted by Logan City Council.



The Property Flood Report obtained from the City of Logan mapping system is included in this report as Appendix C. The mapping indicates that the subject site is affected by River, Creek and Overland Flow flooding.

The adopted 1% AEP (Annual Exceedance Probability) flood level associated with River flooding is 10.9 m AHD.

2.0 Stormwater Management

2.1 Existing Stormwater Drainage Conditions

The existing topography and overland flow paths are described in Clause 1.5 of this report.

The site is currently vacant and generally covered with dense grass vegetation, with several mature trees located toward the southern portion of the lot.

Existing surface runoff is conveyed as sheet flow toward the southern boundary, where it follows relatively flat natural inverts and grades westward into Lot 2 on SP347321|417562. It is understood that runoff from this overland flow path ultimately discharges to Slacks Creek, which runs along the rear boundary of Lot 2 on SP347321|417562.

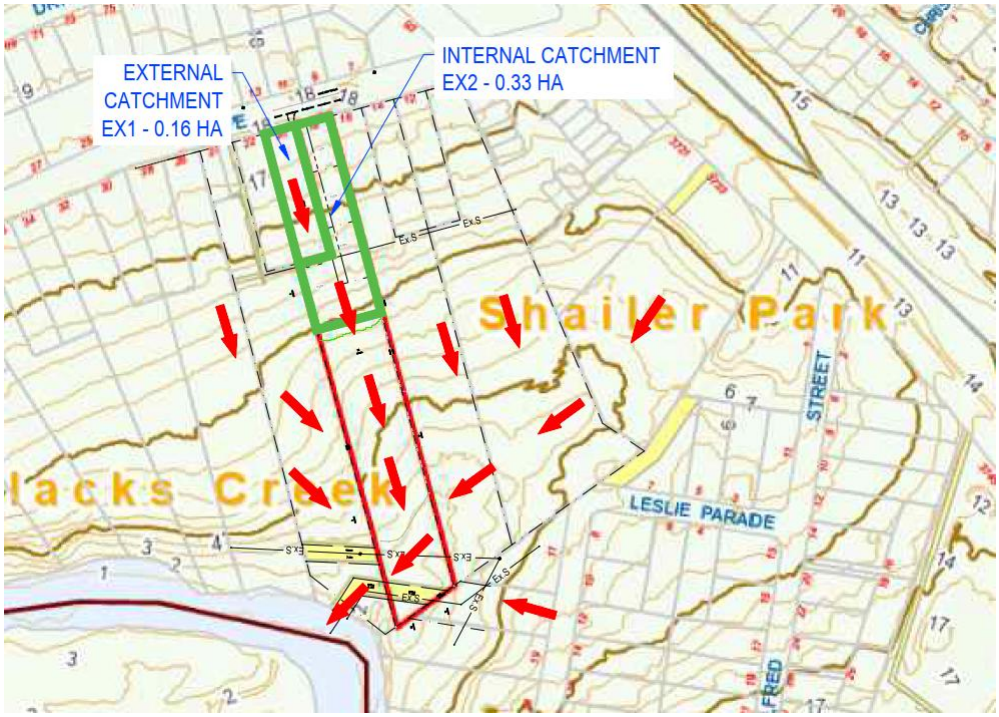
The southern portion of the site receives overland flow from external catchments associated with properties to the east. These upstream flows are generally confined to the natural low points and do not impact the proposed building envelopes or primary development areas.

Proposed Lot 4 receives an external catchment of approximately 1,600 m^2 from 20 Springlands Drive. This runoff enters the site at the northern boundary of proposed Lot 4 and is conveyed

southward through proposed Lot 4 via the existing natural overland flow path, consistent with current drainage patterns.

The pre-development stormwater catchment distribution and extent for the development area is illustrated in Figure 2.1 below.

Figure 2.1 – Existing Relevant Stormwater Catchments.



Based on the above:

- The proposed development area is situated within the northern portion of the site (Catchment EX2).
- External catchment EX1 traverses the site, generally through proposed Lot 4, in accordance with the existing overland flow path.
- The southern portion of the property, including the associated external catchments, does not impact the proposed development footprint.

2.2 Proposed Drainage Strategy

The proposed stormwater management strategy has been developed to minimise nuisance, hazard, and potential damage to people, property, and the environment arising from stormwater generated by the developed catchments.

This will be achieved by collecting surface runoff from the proposed access driveway and roofwater from the proposed lots within a piped underground drainage system designed to convey minor storm events. In addition, safe and controlled overland flow paths will be maintained to accommodate major storm events where flows exceed the capacity of the underground system.

The underground drainage network will discharge to the surface via a headwall structure incorporating a level spreader, ensuring that flows are dispersed and downstream concentration and erosion potential are minimised.

The conceptual stormwater management layout is provided in Appendix D (Drawing DA3-1).

2.3 Lawful Point of discharge

The lawful point of discharge for the proposed development is Slacks Creek, with stormwater to be conveyed via overland sheet flow across the southern portion of the site, consistent with the existing drainage regime and established flow path.

2.4 Stormwater Quantity Management

A hydrological analysis was undertaken using DRAINS software to compare pre and post development flows based on the existing and proposed catchment plans provided in Figure 2.1 and Figure 2.2 respectively. The relevant IFD data was obtained from The Bureau of Metrology for the purposes of this analysis.

2.4.1 Existing Conditions

Time of concentration has been calculated as per the QUDM guidelines. The existing catchment plan is shown in Figure 2.1 above in this report.

Table 2.1 – Existing Stormwater Catchments.

Catchment	Area (ha)	Imperviousness (%)	Length of flow (m)	Average slope (%)	Time of concentration (min)	Discharge point
EX1 & EX2	0.4092	7	104	6	16	E

An ILSAX-Horton model in the software DRAINS was set up to calculate existing stormwater flows from the site. The DRAINS results are summarized in Table 2.2 below.

Table 2.2 – Existing Scenario DRAINS Model Results.

Catchment	Stormwater flow (m3/s) for AEP					
	39%	18%	10%	5%	2%	1%
EX1 & EX2	0.063	0.090	0.111	0.131	0.156	0.175

The Rational Method calculations, as per the QUDM requirements, were also undertaken to estimate and compare existing flows from the site as follows:

Table 2.3 – Rational Method Results.

Catchment	Stormwater flow (m3/s) for AEP					
	39%	18%	10%	5%	2%	1%
EX1& EX2	0.052	0.074	0.089	0.109	0.143	0.168

The results from the DRAINS model are comparable to the Rational Method calculations. This comparison confirms that the estimations fall within a reasonable range and are supported by multiple analytical approaches.

2.4.2 Proposed Conditions

The proposed subdivision will increase impervious areas and modify existing flow patterns through the addition of new roofs, driveways, and footpaths. The conceptual stormwater management plan is provided in Appendix D. An extract of the proposed drainage sub-catchments is shown in Figure 2.2 below.

A detailed ILSAX–Horton DRAINS model has been developed to determine the difference in discharge rate between the proposed subdivision and the existing scenario. Impervious areas have been modelled with a 5-min time of concentration (as recommended by QUDM).

Figure 2.2 – Proposed Stormwater sub-catchments.

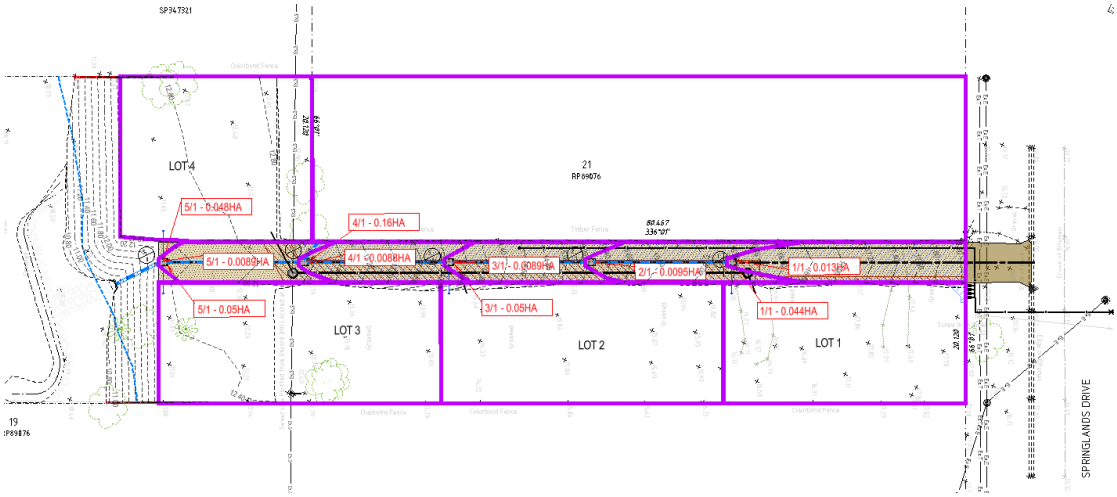
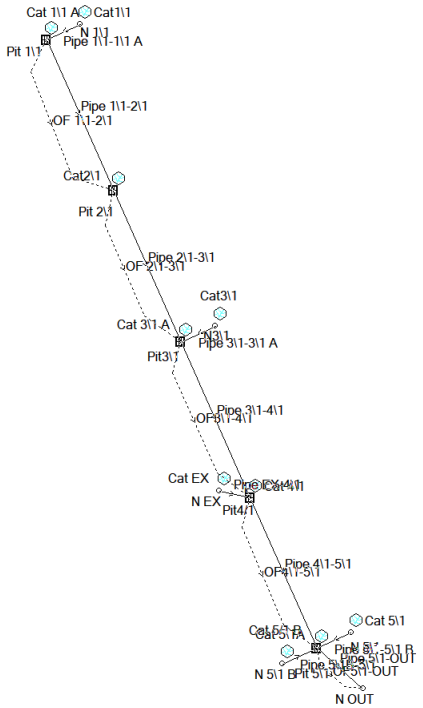


Figure 2.3 – DRAINS model for the proposed development.



2.4.3 DRAINS model results

It has been determined that the peak discharge from the site increases by approximately 0.080 m^3/s during the 1% AEP event. A comparison of the existing and post-development flow rates, based on the above parameters, is presented in Table 2.5 below.

Table 2.5 –Model Results Comparison.

Catchment	AEP					
	39%	18%	10%	5%	2%	1%
Existing Conditions, (m^3/s)	0.063	0.090	0.111	0.131	0.156	0.175
Post-development. (m^3/s)	0.101	0.134	0.164	0.196	0.229	0.255
Difference (m^3/s)	0.038	0.044	0.053	0.065	0.073	0.080

Based on the site conditions and downstream drainage assessment, the following conclusions have been made:

- Analysis of the 1% AEP storm event indicates that the minor increase in runoff from the proposed development would not result in any actionable nuisance or adverse impact downstream.
- The lower portion of the site is within the River/Creek floodplain associated with Slacks Creek. Any detention basin located in this area would be submerged or backwatered during design flood events, rendering its storage ineffective.
- The lawful point of discharge is Slacks Creek, a natural watercourse with sufficient conveyance capacity to accommodate the anticipated flows from the development, relative to the minor increase in impervious area.
- On-site detention within the lower, flood-affected portion of the site is not hydraulically effective, and attempting to delay runoff in this location may be counterproductive.

Given these factors, on-site stormwater detention is not proposed for this development.

2.5 Stormwater Quality Management

The proposed development footprint encompasses an area of less than 2,500 m^2 and does not comprise six or more residential lots. Accordingly, the stormwater infrastructure standards outlined in Part 3.6 of the City of Logan Planning Scheme Policy 5 – Infrastructure are not applicable.

As such, formal compliance with these standards is not required, and best-practice stormwater management can be adopted. The proposed strategy will incorporate best management practices, including:

- Installation of trash baskets within grated inlet pits along the driveway to capture debris;
- Use of a level spreader at the drainage outlet to safely disperse stormwater flows and minimise downstream concentration; and
- Routine maintenance of the stormwater drainage system to ensure ongoing functionality and performance.

3.0 Erosion and sediment control

Erosion and settlement control will comply with the best practice including the use of buffer strips, sediment fencing and silt control during the construction stage. These will be maintained until post construction stabilization has been completed. Detail erosion and sediment control plans to be prepared during the detail design stage.

4.0 Existing and Proposed Services

The Combined Services Plan included in the civil drawings package (Appendix D – Drawing DA1-2) outlines the existing and proposed infrastructure services for the Subdivision. Further details are provided in the relevant services sections below in this report.

4.1 Stormwater

Reference should be made to Section 2.0 of this report and the conceptual civil drawings included in Appendix D (Plans DA1-2 and DA3-1) for details of the proposed stormwater management strategy.

The lawful point of discharge for the development is Slacks Creek. Roofwater and runoff from the access driveway will be collected via an underground drainage system and discharged to the surface through a headwall structure. Major storm overland flows will be safely conveyed toward the rear of the property, consistent with the existing drainage regime.

4.2 Water

4.2.1 Existing Water

A water reticulation main is available in Springlands Drive on the opposite side of the proposed Subdivision. This information has been obtained from City of Logan records, as shown in Figure 4.1 below.

Figure 4.1: Existing water property connection as per Logan Water Asset Data Map

4.2.2 Proposed Water

It is proposed to extend a new water main from the existing main within Springlands Drive to the property frontage, where four (4) separate water meters will be installed to service the proposed lots. Private water services will then extend from these meters along the access driveway to each individual lot.

In addition, the water main will be extended along the access driveway to provide a fire hydrant, as indicated on the Conceptual Services Layout Plan DA1-2 (Appendix D).

The proposed internal easement to accommodate the water infrastructure is shown on Conceptual Services Layout Plan DA1-3 (Appendix D).

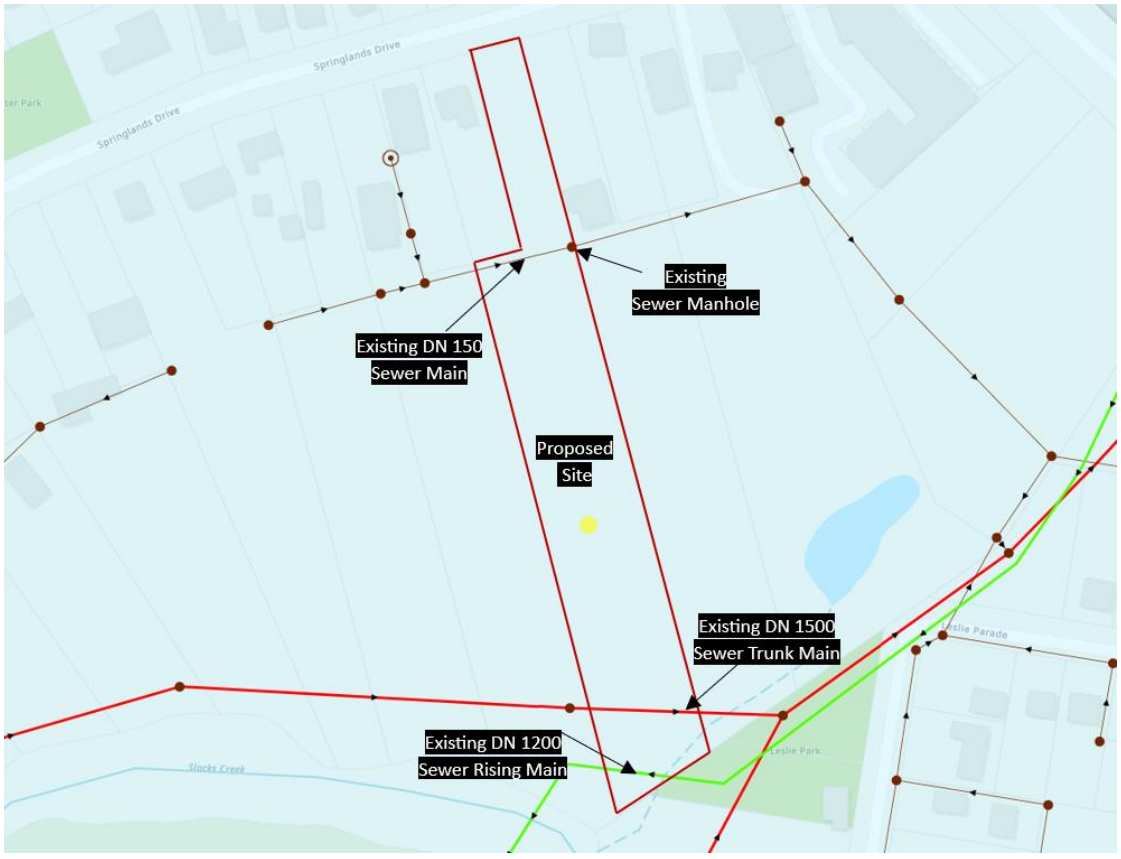
This servicing arrangement is subject to Council's water network modelling, approval, and confirmation of the preferred metering configuration.

4.3 Sewer

4.3.1 Existing Sewer

The nearest sewerage infrastructure is located within the proposed site, as illustrated in Figure 4.2 below.

Figure 4.2: Existing sewerage infrastructure as per Logan PD Hub Mapping.



An existing sewer main and manhole are currently located within the property within the development area. In addition, a sewer trunk main and sewer rising main pass through the southern portion of the site.

4.3.2 Proposed Sewer

The proposed lots will discharge to the existing sewer main that traverses across proposed Lots 3 and 4.

The existing sewer property connection located at the manhole within proposed Lot 3 may be reused to service that lot. New DN100 property connections will be provided for the remaining lots via construction of a new manhole on the existing sewer main and extension of a new sewer main northward along the access driveway.

Refer to the Conceptual Services Layout Plan DA1-2 (Appendix D) for details of the proposed sewer main extension and property connection strategy.

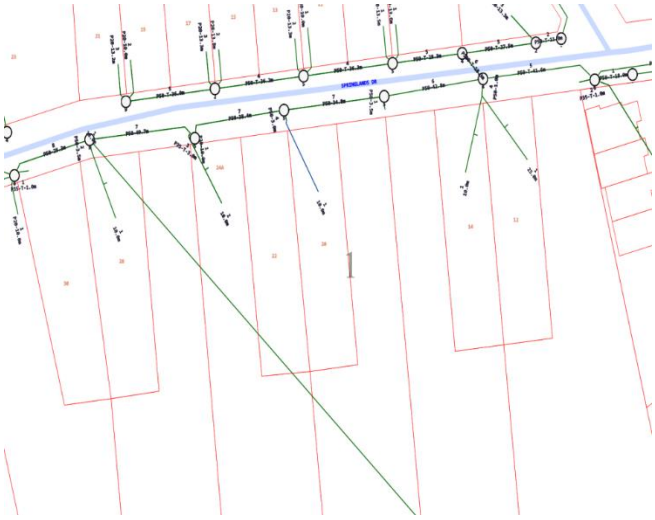
It is proposed to undertake controlled filling within Lots 3 and 4 to raise the finished building pad levels sufficiently to facilitate gravity sewer property connections to the existing sewer main.

This servicing arrangement is subject to Council's network modelling, approval, and confirmation of the preferred method of connection.

4.3.3 Electrical & Telecommunications

Overhead electricity, as well as underground telecommunications, are available for connection to the site via Springlands Drive. Dial Before You Dig (DBYD) information for existing underground NBN assets is provided below in Figures 4.3. The electrical consultant will develop a connection strategy for these services, including any requirements for a pad-mounted transformer to service the development.

Figure 4.3: Existing NBN asset in Springlands Drive



5.0 Driveway Crossover

A new Driveway Crossover will be constructed in accordance with Council standard drawing RS-049 and RS-050.

6.0 Earthworks

Refer to the conceptual earthwork drawings (DA2-1 and DA2-2) attached as Appendix D for the proposed earthworks layout.

The following earthworks are proposed as part of the development:

- Earthworks for the construction of access road.
- Site filling within Lots 3 and 4 to raise the finished building pad levels sufficiently to facilitate gravity sewer property connections to the existing sewer main.

6.1 Flood Plain Storage Management

The proposed development involves approximately 5 m^3 of fill within the floodplain below the 1% AEP flood level, associated with the formation batters for Lots 3 and 4. As such, compensatory earthworks will be required to ensure that there is no net loss of floodplain storage as a result of the development.

Accordingly, it is recommended that additional excavation be considered in the vicinity of the level spreader to offset the introduced fill volume and achieve a balanced earthworks outcome. This is to be confirmed and refined during the detailed design stage.

6.2 Erosion and sediment control

Erosion and sediment control will be implemented in accordance with best-practice measures, including the use of sediment fencing and silt control devices. These controls will be maintained until post-construction site stabilization is achieved. Detailed erosion and sediment control plans will be prepared during the detailed design stage.

7.0 Conclusion

This Engineering Report has assessed the stormwater management strategy, as well as the proposed stormwater discharge, water supply, sewer servicing, and earthworks requirements for the development at 18 Springlands Drive, Slacks Creek.

It has been determined that the proposed development can be adequately serviced with stormwater, water, and sewer infrastructure. Sewer property connections for Lots 3 and 4 will require partial filling of the respective lots to achieve gravity discharge to the existing sewer reticulation system.

The required earthworks, including erosion and sediment control measures, can be undertaken using standard and accepted construction practices.

On-site stormwater detention is not proposed as part of this development.

A best-practice stormwater quality management approach will be implemented to mitigate potential impacts associated with runoff from the developed site.

Relevant Logan City Council's Code Compliance Tables are attached to this Report as Appendix E.

__ End of Report __

Appendix A: Proposed Plan of Subdivision

2
SP347321

22
RP89076

156°01'
41·521
(226·553)

Moderate Flood Risk Area

Vegetation Line

246°01'
40·234

4
8535 m²

20·117
66°01'

EMT C
191 m²

21
RP89076

EMT B
191 m²

EMT A
164 m²

18·918
34·78

336°01'
34·78
(99·385)

29·825

5·5

99·385

66°01'
20·117

3
700 m²

66°01'
20·117

2
700 m²

246°01'
20·117

1
600 m²

(20·117)
66°01'

(192·765)
22·603
156°01'

34·78

34·78

29·825

DRIVE

SPRINGLANDS

Scale 1:400 – Lengths are in metres.

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

Keymap
Scale 1: 1250

2
SP347321

22
RP89076

32
RP114906

336°01'
226·553

42·929
225°44'

4

20·117
66°01'

21
RP89076

336°01'
80·467

3 **2** **1**

20·117
66°01'

292·150
156°01'

31
RP114906

19
RP89076

19
RP89076

19
RP89076

18
RP89076

SPRINGLANDS DRIVE

East Coast Surveys (Aust)
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Ph: (07) 3823 1029
info@eastcoastsurveys.com.au
7B Natasha Street, Capalaba, QLD 4157
P.O Box 168, Capalaba, QLD 4157

Subdivision Proposal Plan

Lot 20 **on** RP89076
18 Springlands Drive
Slacks Creek
Local Authority Logan City C.
Meridian RP89076
Level Datum
RL
Contour Intervals

Client: GGS Impex

Surveyed By		**Drawn By**	MJR
Date		**Date**	13/01/2026
Checked By		**Authorized By**	
Date		**Date**	

Our Ref. 11304 ROL **Rev** A-2-A
Original Size A3
Scale 1: 400 **Sheet** 1 **of** 1

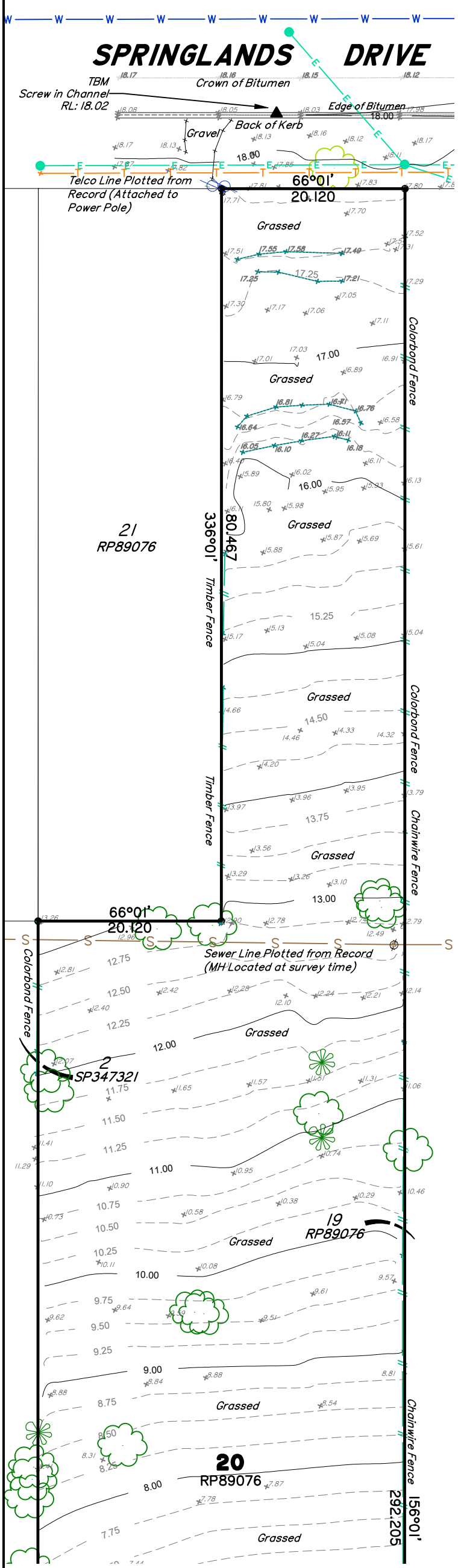
Rev	Notes	Date	Initials
A-2-A	Original Issue	Jan 2026	MJR

The areas and dimensions on this plan are approximate only and are subject to Local Government Approval and final survey.

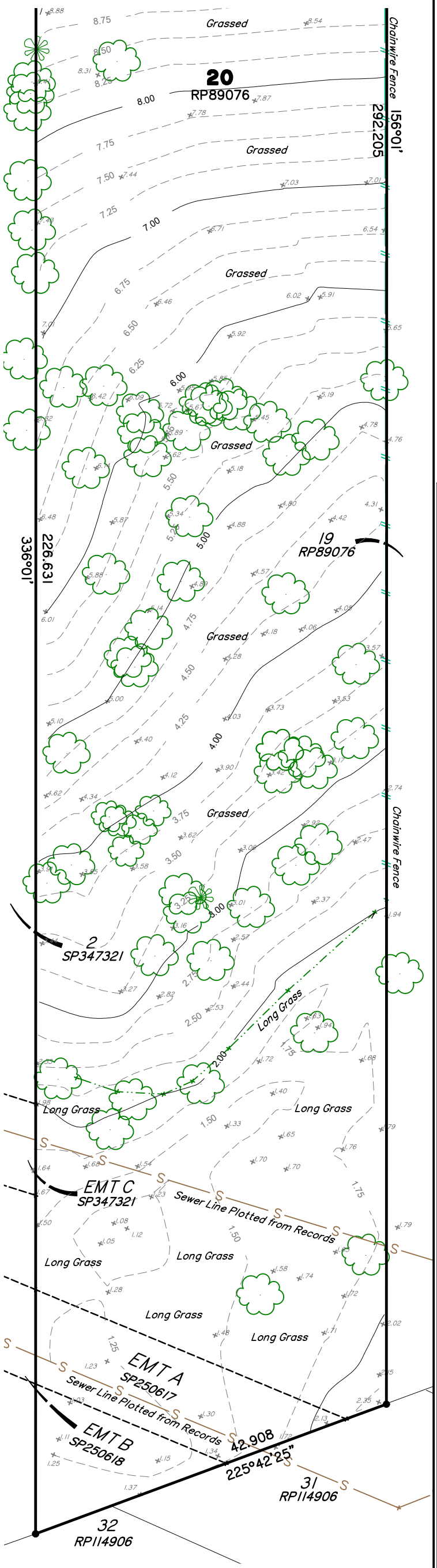
Plan of Proposed Lots
1-4 and Easement A-C
Cancelling Lot 20
on RP89076

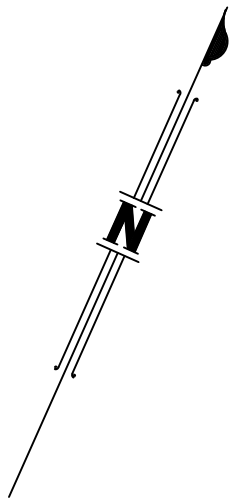
Appendix B: Detail Survey Plan

DIAGRAM A



Continue Diagram A





East Coast Surveys (Aust)

Pty. Ltd. ACN 111 434 005

Cadastral Surveyors Town Planners & Subdivision Consultants

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P.O Box 168, Capalaba, QLD 4157

This plan is prepared for **GGS Impex Pty Ltd** from field survey and existing records for the purpose of new constructions and subdivisions and should not be used for any other purpose. The title boundaries show hereon were not marked at the time of survey and have been determined by plan dimension only. Services shown hereon have been located by field survey where possible. If not able to be so located, services have been plotted from the relevant authorities where available and have been noted accordingly on this plan. Where such records either do not exist or are considered inadequate, a notation has been made hereon. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and location of all services. This note is an integral part of this plan.

Detail & Level Survey Plan

Lot 20 **on** RP89076
18 Springlands Drive
Slacks Creek
Local Authority Logan City C.
Meridian SP250617

Level Datum AHD Der
RL 17.157 OPM 97454
Contour Intervals 0.25m

Client: GGS Impex Pty Ltd

Surveyed By	J.G	**Drawn By**	J.G.
Date	12/02/2026	**Date**	13/02/2026
Checked By	A.S.	**Authorized By**	A.S.
Date	13/02/2026	**Date**	13/02/2026

Rev	Notes	Date	Initials
A-1-A	Original Issue	13/02/26	J.G

LEGEND

BENCHMARK		GULLY PIT	
ELECTRICITY PIT	E	STORMWATER M/H	SW
LIGHTPOLE		STREET SIGN	
POWER POLE		CLUMP VEGETATION	
POWER POLE & LIGHT		TREE	
ELECTRICITY PILLAR	E	PALM	
SEWER M/H	MH	FENCE LINE	//
TELCO PIT	T	SEWER LINE	S
TELCO PILLAR	T	TELCO	T
FIRE HYDRANT	FH	STORMWATER	SW
WATER METER		WATER LINE	W
WATER TAP		GAS LINE	G
SLUICE VALVE	SV	O/HEAD POWER	E
S/WATER FIELD PIT		U/GRND POWER	UE
UNKNOWN PIT		OIL PIPELINE	

Scale 1:500 – Lengths are in Metres.

5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70

Our Ref. 11304 DTM **Rev** A-1-A
Original Size A3
Scale 1: 500 **Sheet** 1 **of** 1

Appendix C: Property Flood Report

CITY OF LOGAN

PROPERTY FLOOD REPORT

Property Details

Address: 18 Springlands Drive SLACKS CREEK QLD 4127

Lot/Plan: Lot 20 RP 89076

Size/Area: 10,430 m^2

Property Key: 190532

Catchment(s): Centenary Creek, Logan River, Slacks Creek

View Logan's catchments and waterways map (PDF)

Summary Flood Assessment

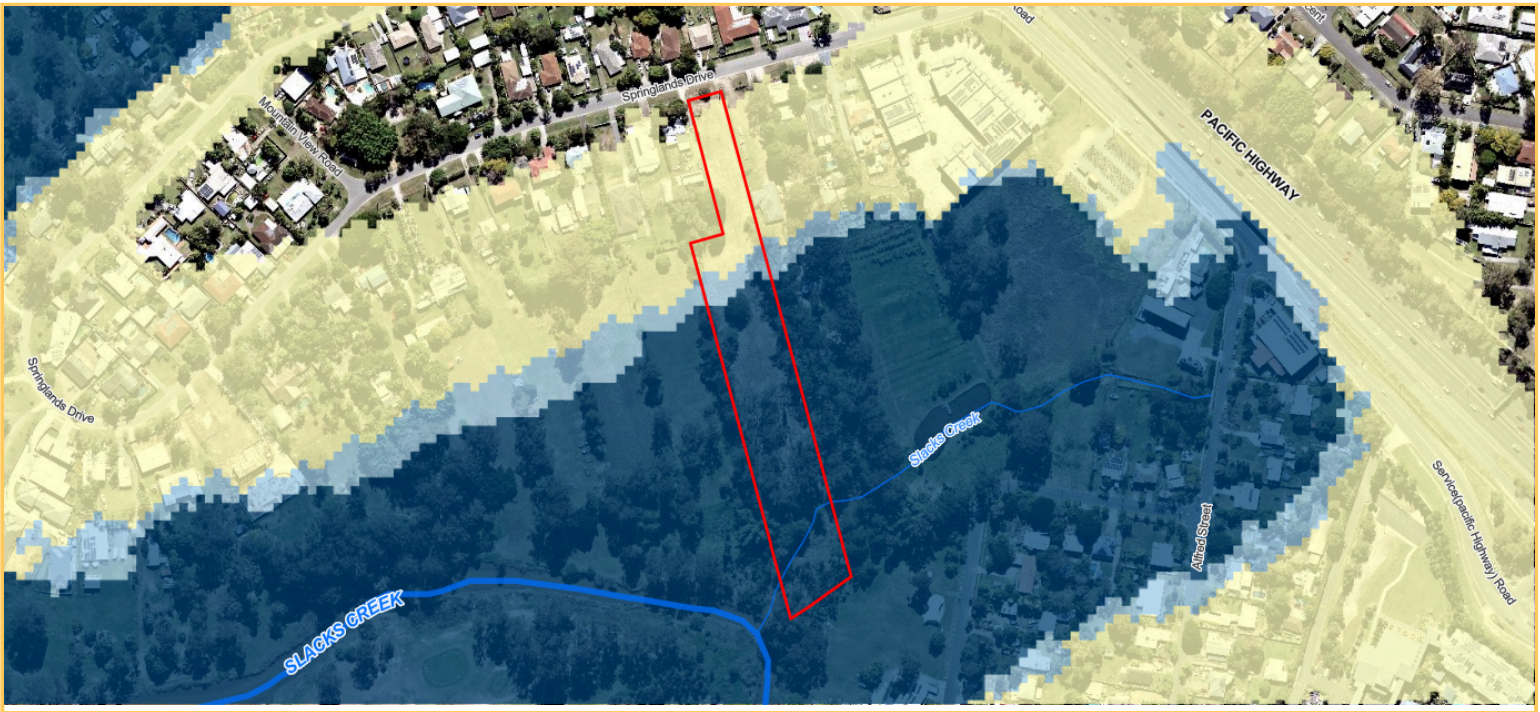
The table below presents the flood risks applicable to the selected property. There may be multiple studies and flood scenarios affecting the property, particularly for larger sites.

Assessment	Details
Risk area(s)	High, Moderate, Low
Investigation area	Not applicable
Isolation risk	High flood island Low flood islands may be isolated and then inundated as floodwater rises and high flood islands may be surrounded by floodwater and lose access to safe evacuation routes, services and supplies. Please refer to the Isolated Islands map in the Planning Scheme Maps section of the Property Flood Report.
River flooding	20% chance of a flood this size or larger happening in any given year
Creek flooding	20% chance of a flood this size or larger happening in any given year
Overland flow	Applies. It is possible that flooding from a local waterway which has not yet been studied may also impact the property. Please contact Council for further advice. Overland flow is water (stormwater run-off) that travels over land during heavy rainfall events. It generally occurs quickly and for short durations.

CITY OF LOGAN

Latest Flood Risk

The extract below comes from the flood risk map based on the latest (most recent) flood studies accepted by Council applicable for this property.



LEGEND

High

Floodwaters may be deep or fast flowing, or have a relatively high chance of occurrence (e.g. 80% chance in 30 years). Conditions may pose a risk to life and cause damage to buildings, possibly severe. Limited development may be considered if not increasing the flood risk exposure for people or property. These areas are generally better suited to environmental, recreational and some agricultural uses.

Moderate

Less frequently affected by flooding or if more frequent, with shallow or slower moving floodwater. Conditions may pose an unacceptable risk to people or property if not mitigated. Development may be tolerable if measures are taken to address flood impacts, protect people and limit damage.

Low

Extremely unlikely chance of flooding (1% chance or less over a 30 year period) and/or relatively shallow or benign flooding conditions. Development is generally acceptable except for essential community infrastructure (e.g. emergency services). Vulnerable uses (e.g. childcare, aged care) may be ok subject to building, site access and safe shelter mitigation measures. Shows the full floodplain under the largest flood that could conceivably occur.

Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Development should avoid these areas until further investigation (updated flood study or localised risk assessment) is completed.

The flood studies this map is based on consider the impacts of climate change, as required by Queensland's planning legislation and policies. The map considers the whole floodplain for Logan and reflects a risk-based approach that takes into account:

- How likely a flood of a given size is in any given year, and
- What the impact or level of danger of that flood is.

Flood Levels

The table below displays flood levels from the most recently accepted flood studies affecting this property. To view the flood study documents please see the Flood page on Council's website.

The levels are measured in Australian Height Datum (AHD), where sea level is approximately zero (0) metres. The level displayed in the table below is the maximum flood level on the property for that event (likelihood). For some properties, particularly large properties or those on a significant slope, flood levels can vary significantly.

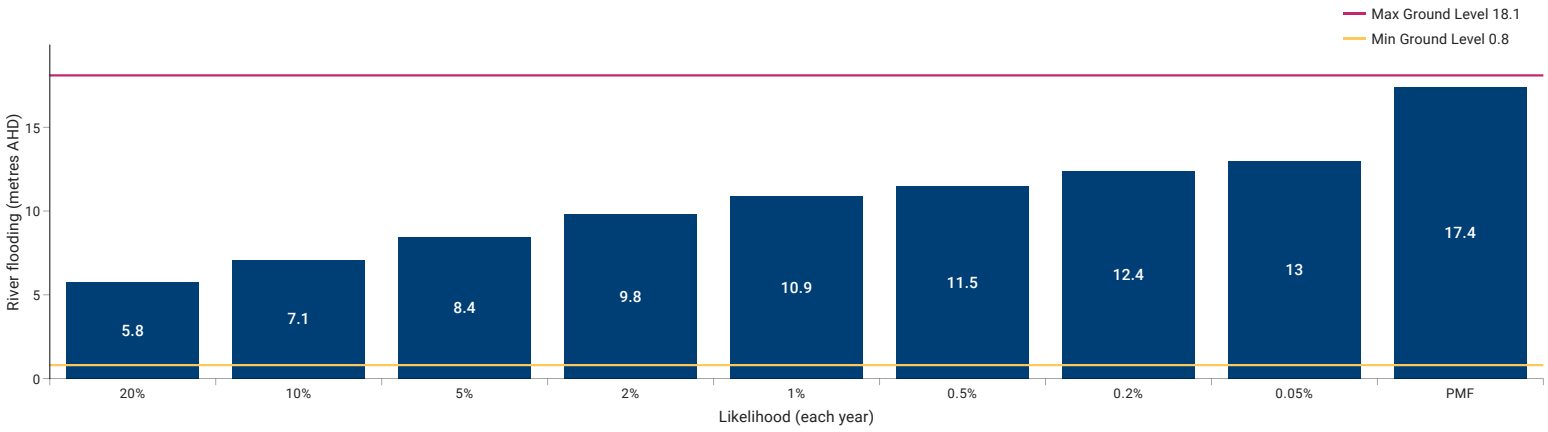
The most likely flood scenarios is shown at the top of the table, with the Probable Maximum Flood (PMF) at the bottom, being the least likely but most serious flood scenario.

Some properties may be impacted by only river flooding or only creek flooding, and some may be impacted by both. There may also be other sources of inundation that may impact the property and affect flood levels, based on overland flow or local creeks where studies have not yet been completed.

Study: Logan and Albert Rivers Flood Study 2023

Likelihood (each year)	River flooding
20% chance	5.8 metres AHD
10% chance	7.1 metres AHD
5% chance	8.4 metres AHD
2% chance	9.8 metres AHD
1% chance	10.9 metres AHD
0.5% chance	11.5 metres AHD
0.2% chance	12.4 metres AHD
0.05% chance	13.0 metres AHD
PMF	17.4 metres AHD

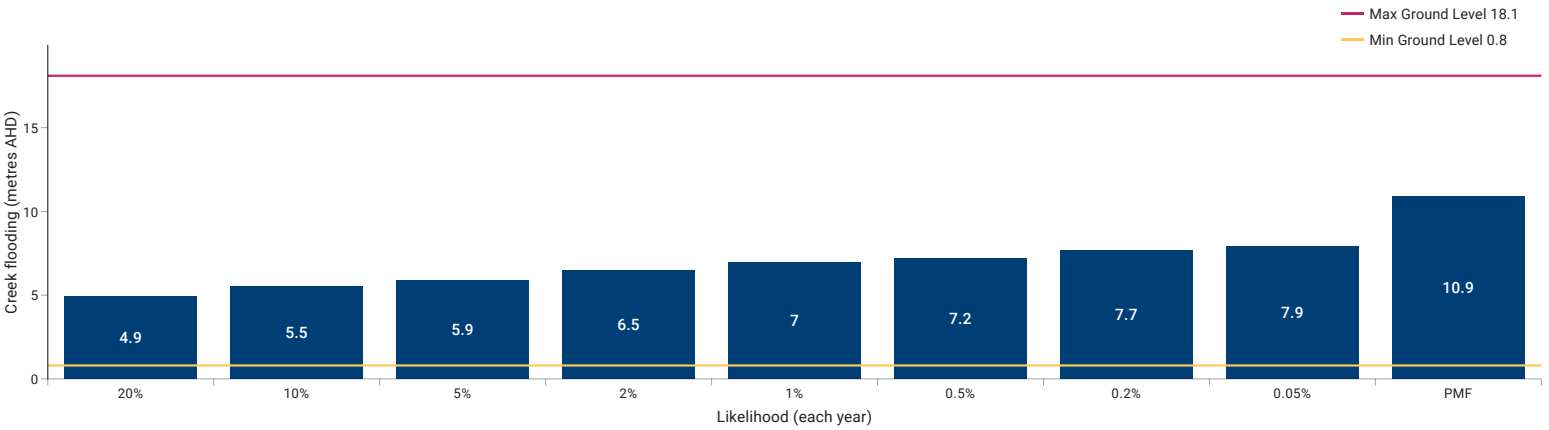
Flood and Ground Levels in metres AHD



Study: Slacks and Scrubby Creek Flood Study 2023

Likelihood (each year)	Creek flooding
20% chance	4.9 metres AHD
10% chance	5.5 metres AHD
5% chance	5.9 metres AHD
2% chance	6.5 metres AHD
1% chance	7.0 metres AHD
0.5% chance	7.2 metres AHD
0.2% chance	7.7 metres AHD
0.05% chance	7.9 metres AHD
PMF	10.9 metres AHD

Flood and Ground Levels in metres AHD



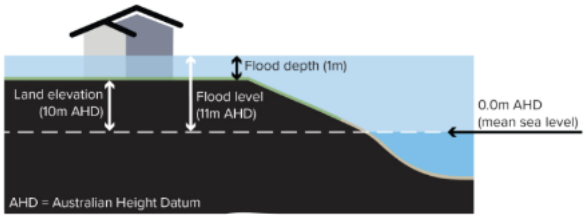
Ground Levels

Ground levels are based on an aerial LiDAR (Light Detection and Ranging) survey, which uses millions of laser point measurements to build a model of the ground surface. The source of the data is displayed in the table below so that you know when the survey was conducted.

Ground level	Details
Minimum ground level	0.8 metres AHD
Maximum ground level	18.1 metres AHD

Source: 2021 Digital elevation model (1 metre grid)

The projected flood depth (how deep the water may be above ground, in metres) is the difference between the flood levels in the section above and the ground levels in this table. The diagram below provides an example (land elevation is ground level).



Overland Flow

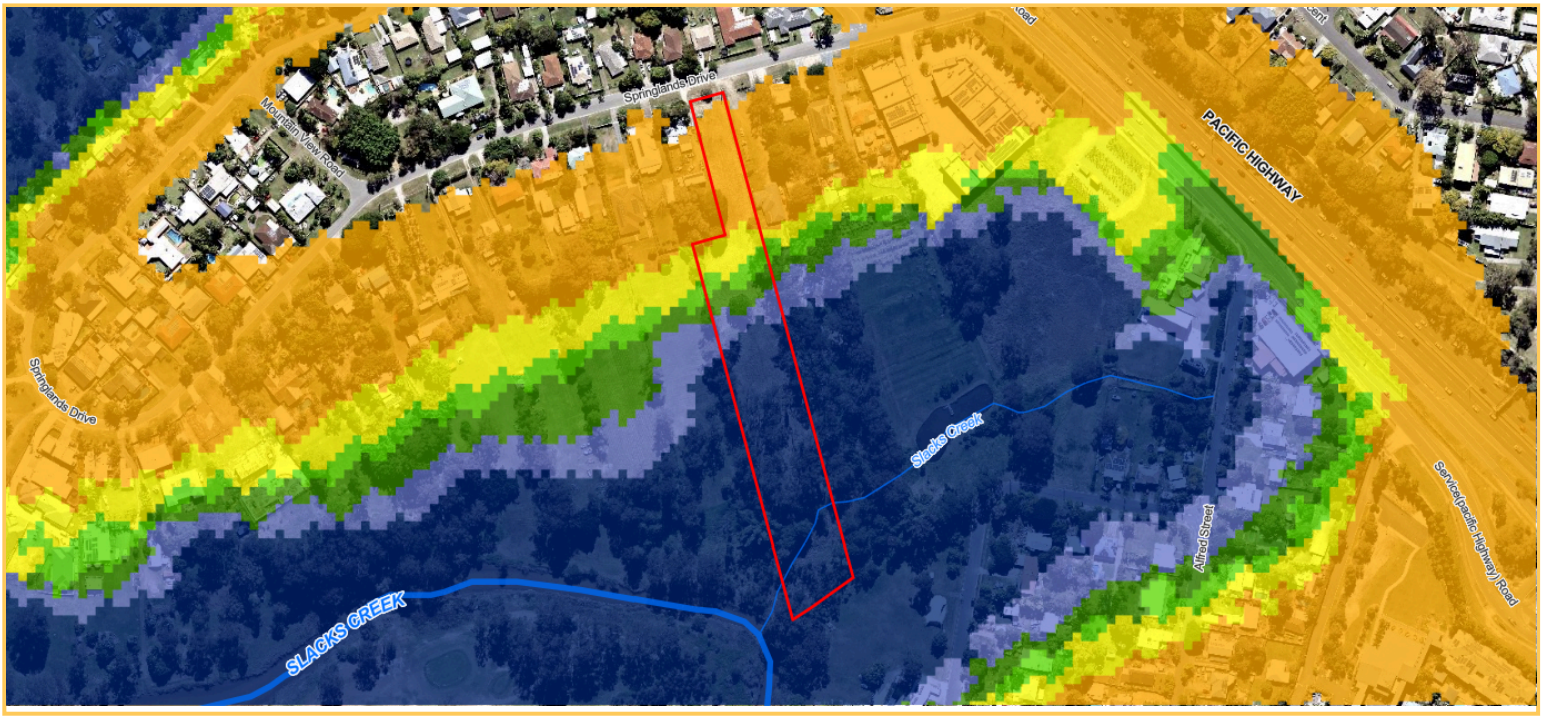
Overland flow is water (stormwater/rainfall run-off) that exceeds the capacity of drains, pipes and channels during heavy rainfall events and travels over land towards waterways. It generally occurs quickly and for shorter periods of time. The impact of overland flow is dependent on local conditions, so the mapping is a guide only. It is possible that flooding from a local waterway which has not yet been studied may also impact the property. Please contact Council for further advice.

LEGEND

Overland flow extent (areas possibly impacted)

Future Climate Scenarios

This extract comes from the map showing the projected extent of flooding (affected areas) for multiple flood scenarios for all relevant flood studies, **including the projected impacts of climate change**. This map corresponds with the flood levels provided in the table above for the 5%, 2%, 1%, 0.5%, 0.05% and Probable Maximum Flood (PMF) scenarios.



LEGEND

5% chance
The areas modelled to be impacted by a flood that has a 5% (or 1 in 20) chance of happening in any given year, or 80% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.

2% chance
The areas modelled to be impacted by a flood that has a 2% (or 1 in 50) chance of happening in any given year, or 45% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.

1% chance
The areas modelled to be impacted by a flood that has a 1% (or 1 in 100) chance of happening in any given year, or 25% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.

0.5% chance
The areas modelled to be impacted by a flood that has a 0.5% (or 1 in 200) chance of happening in any given year, or 15% chance over a 30 year period, which is the common term of a mortgage. This modelling **includes the impacts of climate change** and represents our understanding of future risk.

0.05% chance
The areas modelled to be impacted by a flood that has a 0.05% (or 1 in 2000) chance of happening in any given year. This is an extremely unlikely flood event with a 1% chance of happening over a 30 year period, not including the impacts of climate change.

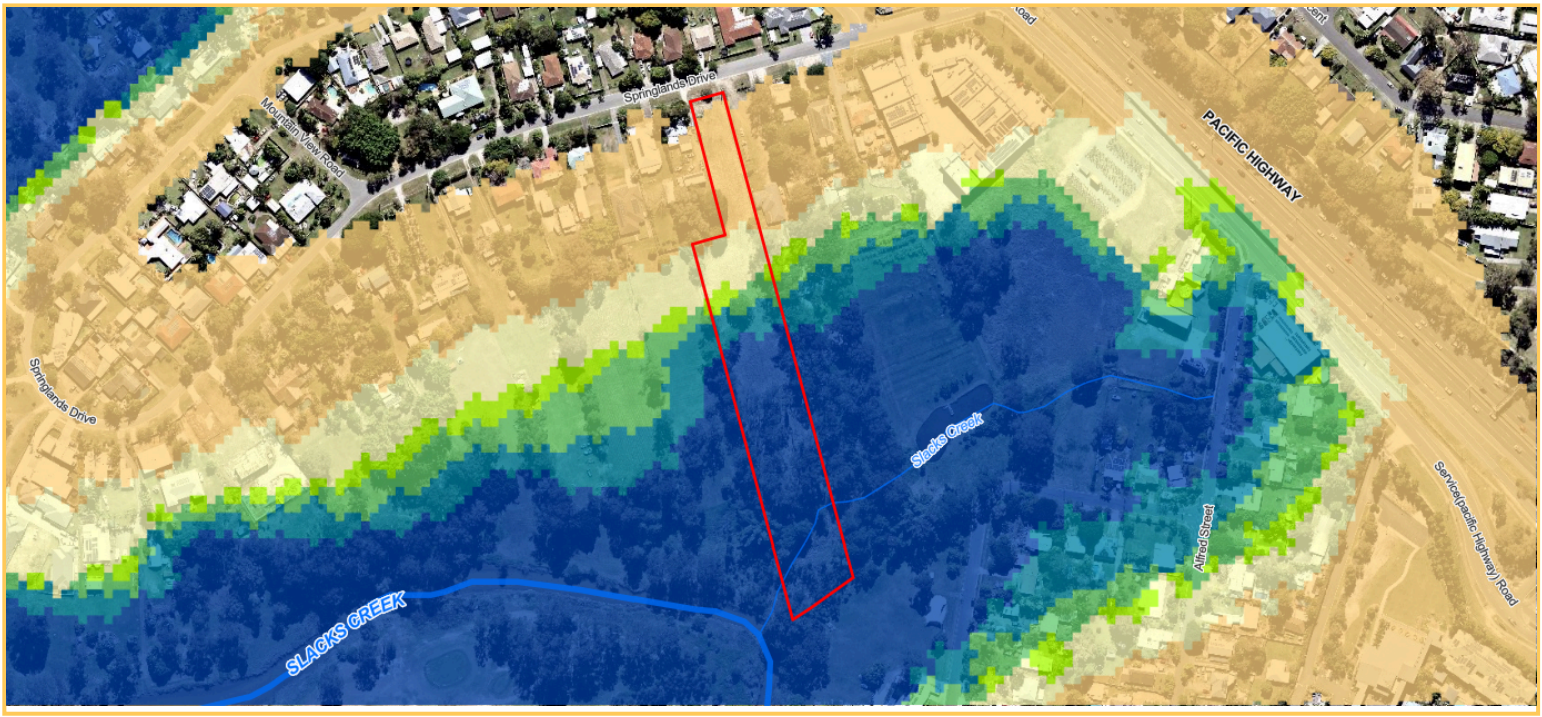
PMF
The PMF or probable maximum flood scenario represents the full extent of the floodplain, or the most serious flood that could be expected to occur. This is usually estimated based on the probable maximum rainfall, not including the impacts of climate change.

Investigation area
Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Further investigation is needed.

CITY OF LOGAN

Current Climate Scenarios

This extract comes from the map showing flood affected areas **without** considering the impacts of climate change. This map represents modelled flooding under current conditions, and can be used for insurance purposes.



LEGEND

5% chance
The areas modelled to be impacted by a flood that has a 5% (or 1 in 20) chance of happening in any given year, or 80% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

2% chance
The areas modelled to be impacted by a flood that has a 2% (or 1 in 50) chance of happening in any given year, or 45% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

1% chance
The areas modelled to be impacted by a flood that has a 1% (or 1 in 100) chance of happening in any given year, or 25% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

0.5% chance
The areas modelled to be impacted by a flood that has a 0.5% (or 1 in 200) chance of happening in any given year, or 15% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

0.05% chance
The areas modelled to be impacted by a flood that has a 0.05% (or 1 in 2000) chance of happening in any given year. This is an extremely unlikely flood event with a 1% chance of happening over a 30 year period, not including the impacts of climate change.

PMF
The PMF or probable maximum flood scenario represents the full extent of the floodplain, or the most serious flood that could be expected to occur. This is usually estimated based on the probable maximum rainfall, not including the impacts of climate change

Investigation area
Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Further investigation is needed.

Historic Flood Events

Based on the best information available to Council, the table below indicates whether or not the selected property may have been impacted by significant historic flood events. It is possible that other creek flooding or overland flow, which is not included in Council's mapping of these events, may have impacted the property.

Flood event	Property impacted
1974	Yes
2017 (after ex Tropical Cyclone Debbie)	Yes
2022 (late February / early March)	Yes

1974

2017

2022

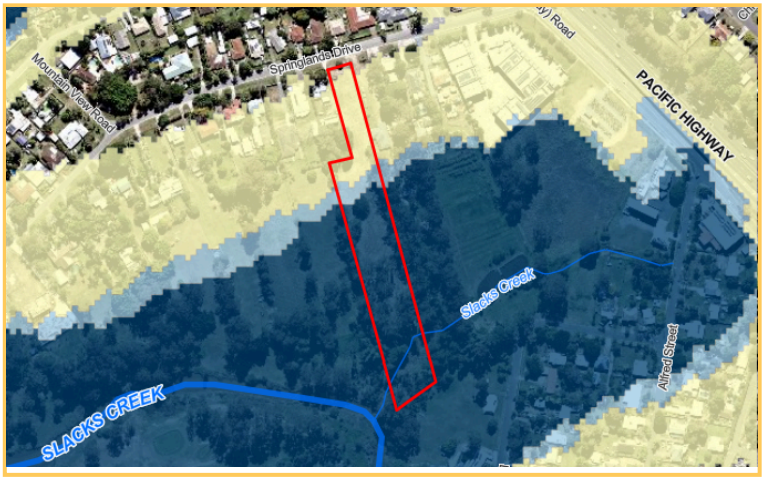
Planning Scheme Maps

The selected property is shown below on an extract of the Flood Overlay Maps from the Logan Planning Scheme 2015 V9.2 with TLPI No. 1/2024. Various provisions of the planning scheme which refer to properties affected by the Flood Overlay Maps will apply to the flood affected areas for the purposes of planning and development. This may include, for example, raised building floor levels and achieving safe vehicle access to the road network.

OM-05.01 Isolated islands

OM-05.02 High flow area

OM-05.04 Flood risk areas



MAP LEGEND

High

Floodwaters may be deep or fast flowing, or have a relatively high chance of occurrence (e.g. 80% chance in 30 years). Conditions may pose a risk to life and cause damage to buildings, possibly severe. Limited development may be considered if not increasing the flood risk exposure for people or property. These areas are generally better suited to environmental, recreational and some agricultural uses.

Moderate

Less frequently affected by flooding or if more frequent, with shallow or slower moving floodwater. Conditions may pose an unacceptable risk to people or property if not mitigated. Development may be tolerable if measures are taken to address flood impacts, protect people and limit damage.

Low

Extremely unlikely chance of flooding (1% chance or less over a 30 year period) and/or relatively shallow or benign flooding conditions. Development is generally acceptable except for essential community infrastructure (e.g. emergency services). Vulnerable uses (e.g. childcare, aged care) may be ok subject to building, site access and safe shelter mitigation measures. Shows the full floodplain under the largest flood that could conceivably occur.

Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Development should avoid these areas until further investigation (updated flood study or localised risk assessment) is completed.

CITY OF LOGAN

MAP LEGEND

High flow area
High hazard areas of flooding where significant (deeper, faster) flow of water occurs and in which a building is vulnerable to structural damage or failure from floodwater. Classified as H5 or H6 in the Australian Institute of Disaster Resilience (AIDR) Guideline 7-3 'Flood Hazard'.

High flood island
Areas which are isolated from flood-free land (surrounded by floodwater) but retain a portion of the area as flood free in a probable maximum flood (PMF).

Low flood island
Areas which are surrounded by floodwater and at first isolated from flood-free land, then completely inundated by floodwater (submerged) as the flood continues to rise.

Meadowbrook flood assessment area
Area where the function of important community infrastructure needs to be maintained. Flood mitigation measures and comprehensive emergency management planning is required to adequately manage the risk for flood events.

If more recent flood studies have been completed and accepted by Council, the Latest Flood Risk Map shown at the top of this report may be different from the planning scheme map. The latest flood information should be used to inform development decisions and will be incorporated into the planning scheme in a future amendment.

Further Information

1. Floods are highly unpredictable and variable, and properties may be affected by other sources of potential flooding. Each flood and its impact is different. Areas that were not flooded previously may be affected by future events. Areas that have been previously flooded may be impacted in different ways. This online report cannot take all of this into account.
2. The flood mapping and levels in this report are based on data from flood studies undertaken at a particular time and are subject to change. For example, if the method for calculating flood levels is updated, industry guidelines are updated or more recent information becomes available, this may result in changes to the information in this report. In areas where development is ongoing, the flood mapping and levels may not reflect developed conditions.
3. Flood studies do not create risk. They help us to understand the risk, based on relevant legislation and Queensland Government policies and guidelines. Flood studies also consider a range of other factors such as rainfall and river level information from recent events, climate change and trends, the impacts of development, changes to catchment conditions, new technologies and industry best practice (which help to improve accuracy).
4. Flood studies and models are developed from the best information available at the time. They do not tell you how the flood waters might behave, how quickly they may rise, or how dangerous the flooding will be. The models also cannot represent changes that have occurred since they were developed which may impact flood behaviour, such as earthworks, new developments or road infrastructure.
5. This report is not a substitute for independent professional advice. You should engage the services of a Registered Professional Engineer of Queensland (RPEQ) to get site specific information regarding the flood risk to your property, and how that might affect any proposed building or development work.
6. While Logan City Council takes reasonable care in producing this report, it does not guarantee that the information is accurate, complete or current. Logan City Council does not accept any responsibility for any loss or damage (however it was caused) in connection with the use of or reliance on the information in this report.

Contact Information

Where to go for further information depends on the type of information you need. Please refer to the Flood Risk Fact Sheet or contact Council using the details below.

Topic	Contact Details
Flood studies and modelling information, and the flood risk on your property	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au. Further information about flooding and flood studies is available on the Flood page on Council's website.
Planning and development enquiries or proposals	Contact Council on 07 3412 3412 or email development@logan.qld.gov.au. Before lodging a development application, pre-lodgement advice is recommended.
Building information	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au. You can also contact a private building certifier.
Properties in Priority Development Areas	Contact Economic Development Queensland. Council is not the planning authority for these properties.
Independent advice about flooding on your property	Contact a registered engineer through the Board of Professional Engineers of Queensland: Phone: 07 3210 3100 Email: admin@bpeq.qld.gov.au Web: Home - Board of Professional Engineers Queensland (bpeq.qld.gov.au)

Appendix D: Conceptual Civil Drawings

LOCALITY PLAN
NOT TO SCALE

PROPOSED 4 LOT RESIDENTIAL SUBDIVISION

18 SPRINGLANDS DRIVE, SLACKS CREEK, QLD 4127

CIVIL DRAWINGS

PROJECT NUMBER
132602

CLIENT
CGS IMPLEX PTY LTD

DRAWING INDEX

REFERENCED GUIDLINES & STANDARDS	
LOGAN CITY COUNCIL (LCC)	
LOGAN CITY COUNCIL-PLANNING SCHEME POLICIES (PSPs) AND DEVELOPMENT CODES	
WATER SERVICES ASSOCIATION OF AUSTRALIA	
WATER SUPPLY CODE OF AUSTRALIA-SEQ SERVICE PROVIDERS EDITION V1.3	
GRAVITY SEWERAGE CODE OF AUSTRALIA-SEQ SERVICE PROVIDERS EDITION V2.0	
SEQ CODE FOR WATER SUPPLY AND SEWER DESIGN AND CONSTRUCTION	
SEQ WS&S D&C CODE - DESIGN CRITERIA	
SEQ WS&S D&C CODE - SEQ ACCEPTED INFRASTRUCTURE PRODUCTS AND MATERIALS (IPAM) LIST	
AUSTRALIAN STANDARDS (AS)	
AS 3798-2007	EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS
AS 1289.1.1	METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES
AS 2890.1	OFFSTREET CARPARKING
AS 3500-2018	PLUMBING AND DRAINAGE
INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA)	
IECA AUSTRALIA GUIDELINES AND STANDARD DRAWINGS	

PRELIMINARY
NOT FOR CONSTRUCTION

N

LEGACY ENGINEERS
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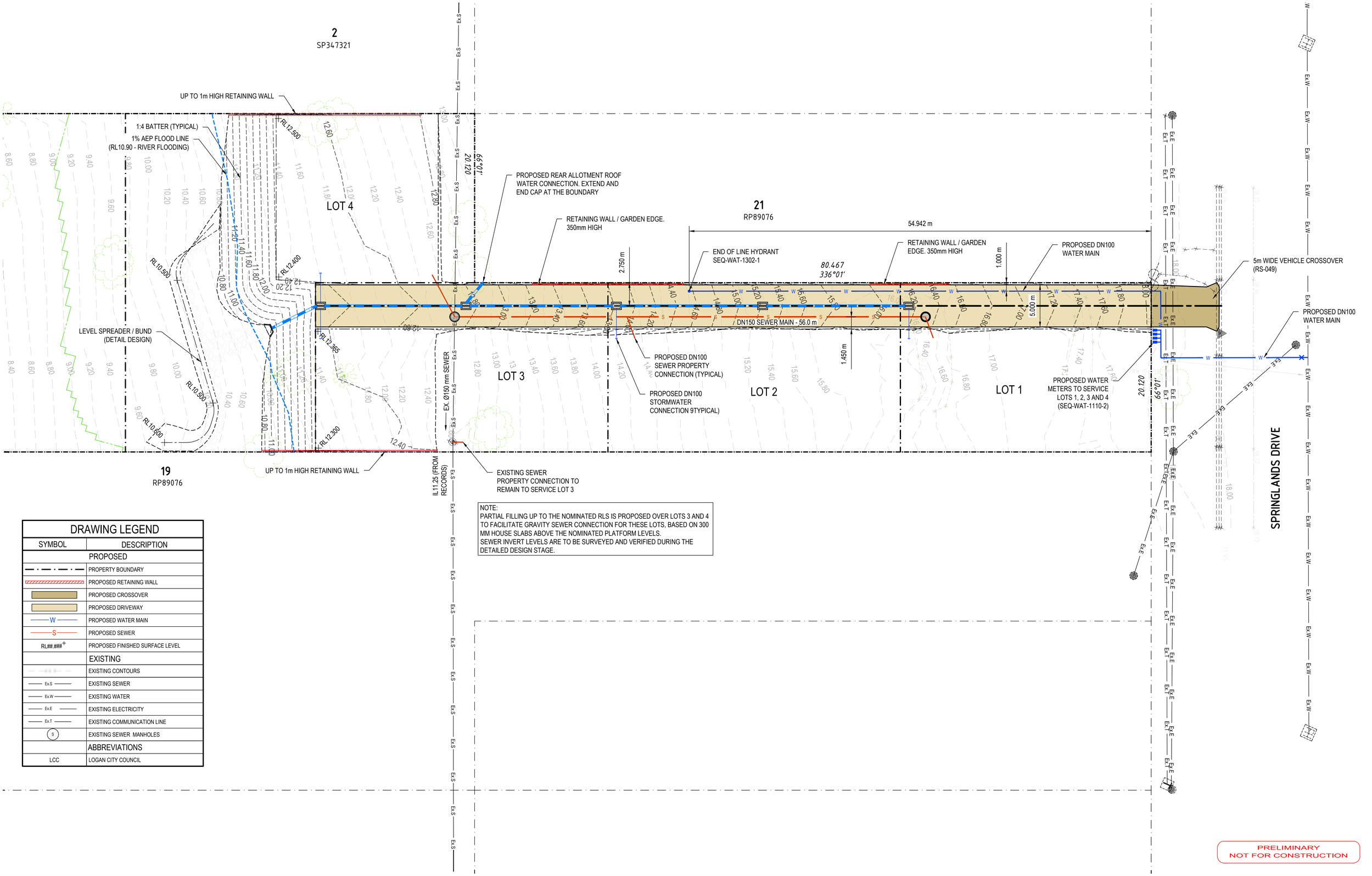
T. 1300 136 198 E. info@legacyengineers.com.au
W. www.legacyengineers.com.au

REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

SHEET 1

CLIENT	GGS IMPLEX PTY LTD		
DESIGNED	SK	DRAWN	PC
CHECKED	SK	SCALE	N.T.S.

PROJECT TITLE	PROPOSED 4 LOT SUBDIVISION 18 SPRINGLANDS DRIVE SLACKS CREEK, QLD 4127	PROJECT No.	132602
		DATE	MAR 2026
		SHEET SIZE	A1
DRAWING TITLE	LOCALITY PLAN, DRAWING INDEX AND NOTES	DRAWING No.	DA1-1
		REVISION	P1



NOTE:
PARTIAL FILLING UP TO THE NOMINATED RLS IS PROPOSED OVER LOTS 3 AND 4 TO FACILITATE GRAVITY SEWER CONNECTION FOR THESE LOTS, BASED ON 300 MM HOUSE SLABS ABOVE THE NOMINATED PLATFORM LEVELS.
SEWER INVERT LEVELS ARE TO BE SURVEYED AND VERIFIED DURING THE DETAILED DESIGN STAGE.

DRAWING LEGEND

SYMBOL	DESCRIPTION
	PROPOSED
	PROPERTY BOUNDARY
	PROPOSED RETAINING WALL
	PROPOSED CROSSOVER
	PROPOSED DRIVEWAY
W	PROPOSED WATER MAIN
S	PROPOSED SEWER
RL##.###+	PROPOSED FINISHED SURFACE LEVEL
	EXISTING
	EXISTING CONTOURS
Ex.S	EXISTING SEWER
Ex.W	EXISTING WATER
Ex.E	EXISTING ELECTRICITY
Ex.T	EXISTING COMMUNICATION LINE
S	EXISTING SEWER MANHOLES
	ABBREVIATIONS
LCC	LOGAN CITY COUNCIL

PRELIMINARY
NOT FOR CONSTRUCTION

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

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REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

SHEET 2

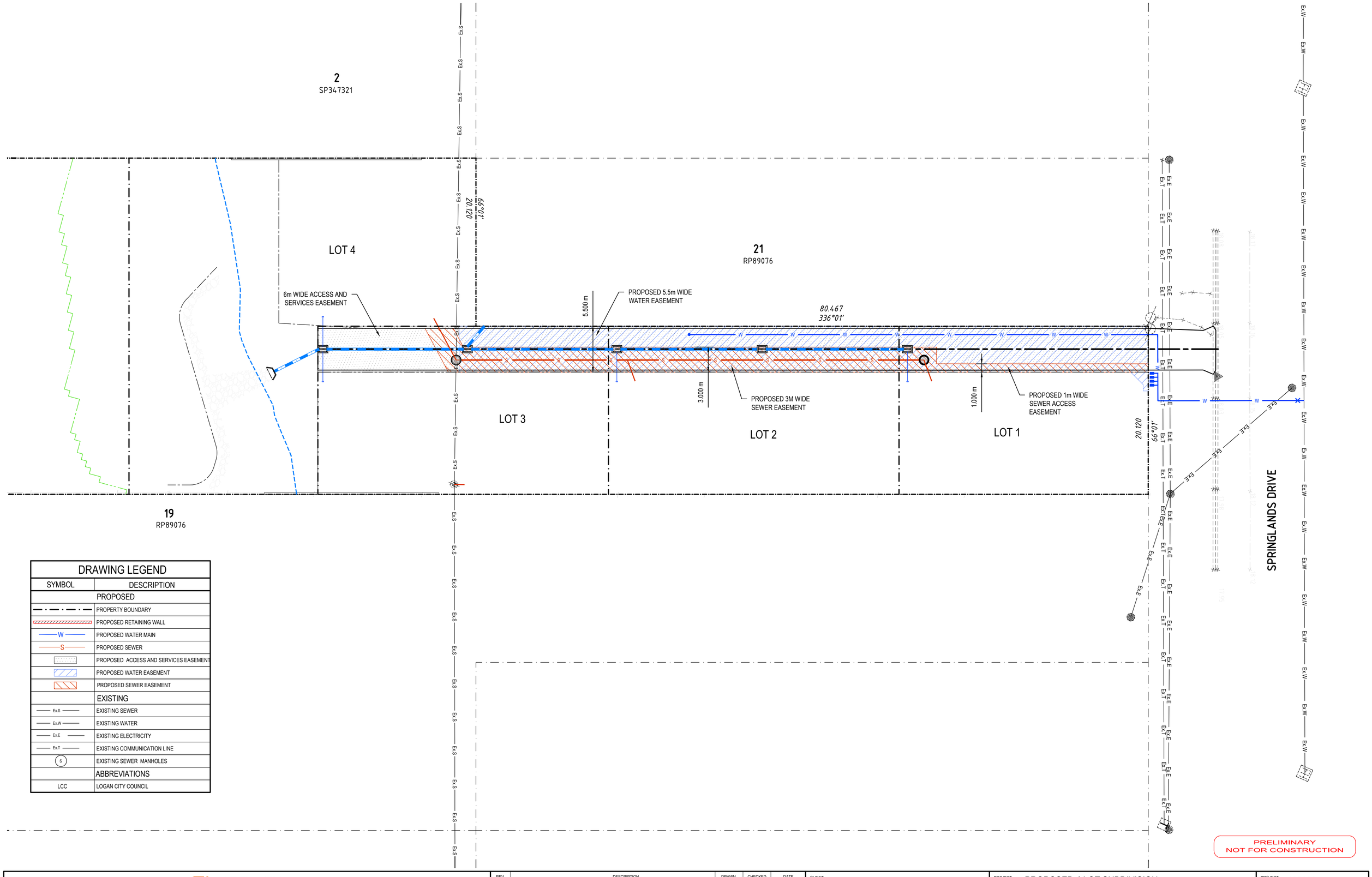
CLIENT: GGS IMPLEX PTY LTD

DESIGNED: SK | DRAWN: PC | CHECKED: SK | SCALE: 1:200

PROJECT TITLE: PROPOSED 4 LOT SUBDIVISION
18 SPRINGLANDS DRIVE
SLACKS CREEK, QLD 4127

DRAWING TITLE: CONCEPTUAL SERVICES LAYOUT PLAN

PROJECT No.: 132602
DATE: MAR 2026
SHEET SIZE: A1
DRAWING No.: DA1-2
REVISION: P1



DRAWING LEGEND

SYMBOL	DESCRIPTION
	PROPOSED
	PROPERTY BOUNDARY
	PROPOSED RETAINING WALL
W	PROPOSED WATER MAIN
S	PROPOSED SEWER
	PROPOSED ACCESS AND SERVICES EASEMENT
	PROPOSED WATER EASEMENT
	PROPOSED SEWER EASEMENT
	EXISTING
Ex.S	EXISTING SEWER
Ex.W	EXISTING WATER
Ex.E	EXISTING ELECTRICITY
Ex.T	EXISTING COMMUNICATION LINE
S	EXISTING SEWER MANHOLES
	ABBREVIATIONS
LCC	LOGAN CITY COUNCIL

PRELIMINARY
NOT FOR CONSTRUCTION

N

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

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REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

SHEET 3

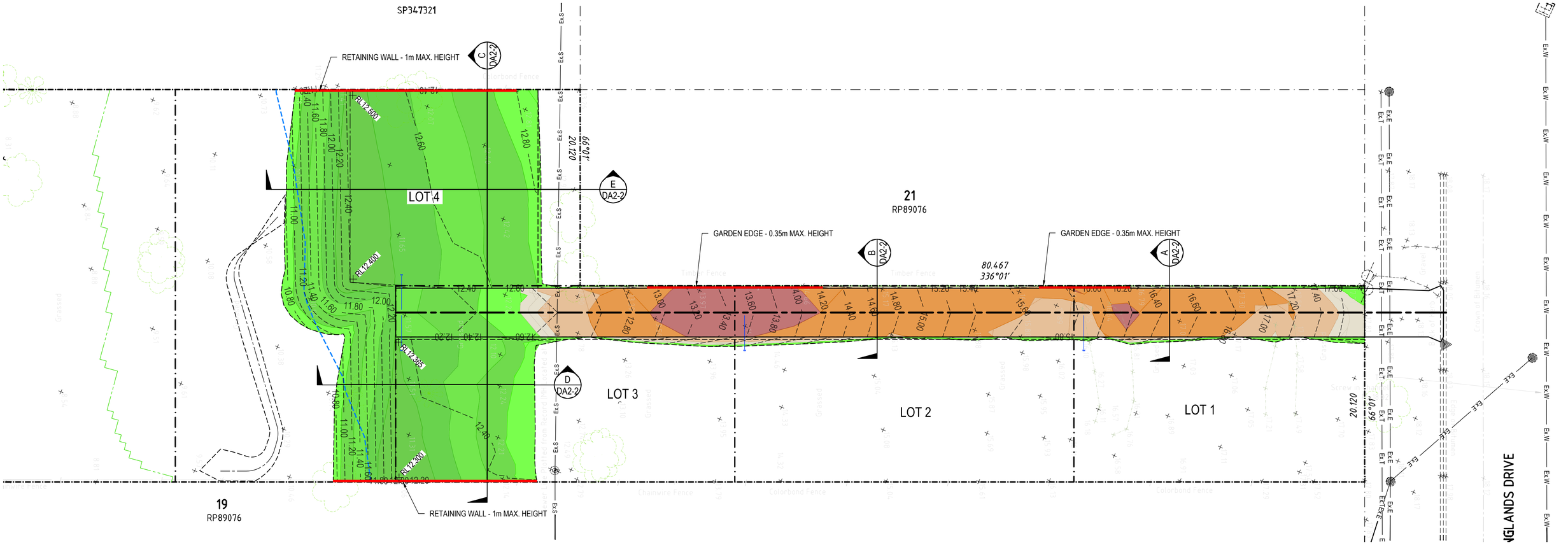
CLIENT: GGS IMPLEX PTY LTD

DESIGNED: SK | DRAWN: PC | CHECKED: SK | SCALE: 1:200

PROJECT TITLE: PROPOSED 4 LOT SUBDIVISION
18 SPRINGLANDS DRIVE
SLACKS CREEK, QLD 4127

DRAWING TITLE: CONCEPTUAL EASEMENT PLAN

PROJECT No. 132602
DATE MAR 2026
SHEET SIZE A1
DRAWING No. DA1-3
REVISION P1



DRAWING LEGEND

SYMBOL	DESCRIPTION
	PROPOSED
	PROPOSED BULK EARTHWORKS PLATFORM
	CHANGE OF GRADE LINE (RIDGE OR VALLEY)
	BULK EARTHWORKS CONTOURS
	TEMPORARY EARTHWORKS BATTER (1:2 NOMINAL)
	RETAINING WALL (REFER STRUCTURAL DRAWINGS FOR DETAILS)
	EXISTING
	EXISTING CONTOURS
Ex.D	EXISTING STORMWATER
Ex.S	EXISTING SEWER
Ex.W	EXISTING WATER
Ex.E	EXISTING ELECTRICITY
Ex.T	EXISTING COMMUNICATION LINE
S SW	EXISTING SEWER AND STORMWATER MANHOLES
	ABBREVIATIONS
LCC	LOGAN CITY COUNCIL
FFL##.###	PROPOSED FINISHED FLOOR LEVEL
BPL##.###	BULK PLATFORM / SURFACE LEVEL
U.N.O.	UNLESS NOTED OTHERWISE

CUT FILL RANGE LEGEND

Lower_value		Upper_value		Colour
-5	to	-6	m	
-4	to	-5	m	
-3	to	-4	m	
-2	to	-3	m	
-1	to	-2	m	
-0.50	to	-1	m	
-0.25	to	-0.50	m	
-0.25	to	-0.05	m	
-0.05	to	0	m	
0	to	0.05	m	
0.05	to	0.25	m	
0.25	to	0.50	m	
0.50	to	0.75	m	
0.75	to	1.00	m	
1.00	to	2.00	m	
2.00	to	3.00	m	
3.00	to	4.00	m	
4.00	to	5.00	m	

APPROXIMATE CUT FILL VOLUMES:

100mm SITE STRIPPING	-	152 m3 APPROX.
TOTAL CUT BELOW EXISTING SURFACE LEVEL	-	152 m3 APPROX.
TOTAL FILL ABOVE EXISTING SURFACE LEVEL	-	632 m3 APPROX.

NOTE:
1. THE VOLUMES STATED ABOVE REPRESENT CLEAR EXCAVATION VOLUMES ONLY AND DO NOT INCLUDE ALLOWANCES FOR TOPSOIL REMOVAL, SHRINKAGE, OR BULKING FACTORS.
2. BOX/BULK LEVELS HAVE BEEN CALCULATED BASED ON:
   - A NOMINAL 300 MM DEPTH BELOW THE PROPOSED DRIVEWAY FINISHED SURFACE LEVELS (FS).
   - ADDITIONAL FILL OVER LOTS 3 AND 4 TO ACCOMMODATE GRAVITY SEWER CONNECTION.
3. APPROVED EROSION AND SEDIMENT CONTROL (ESC) MEASURES MUST BE FULLY IMPLEMENTED AND MAINTAINED PRIOR TO THE COMMENCEMENT OF ANY BULK EARTHWORKS.
4. DETAILED EXCAVATION ASSOCIATED WITH SERVICE TRENCHES, RETAINING WALL FOOTINGS, BATTERS, EDGE THICKENING, AND SIMILAR ELEMENTS IS EXCLUDED FROM THE STATED BULK EARTHWORKS VOLUMES.

PRELIMINARY
NOT FOR CONSTRUCTION

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

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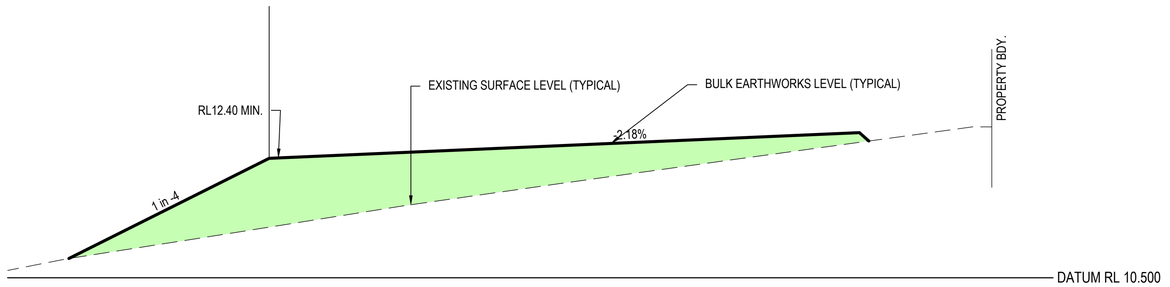
REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

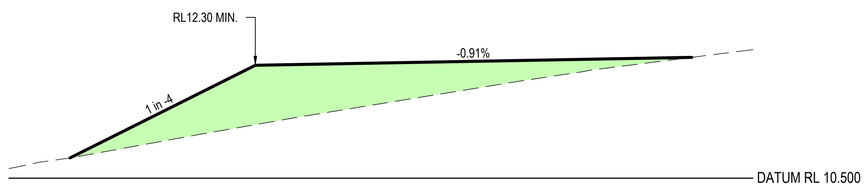
SHEET 4

CLIENT	GGS IMPLEX PTY LTD		
DESIGNED	SK	DRAWN	PC
CHECKED	SK	SCALE	1:200

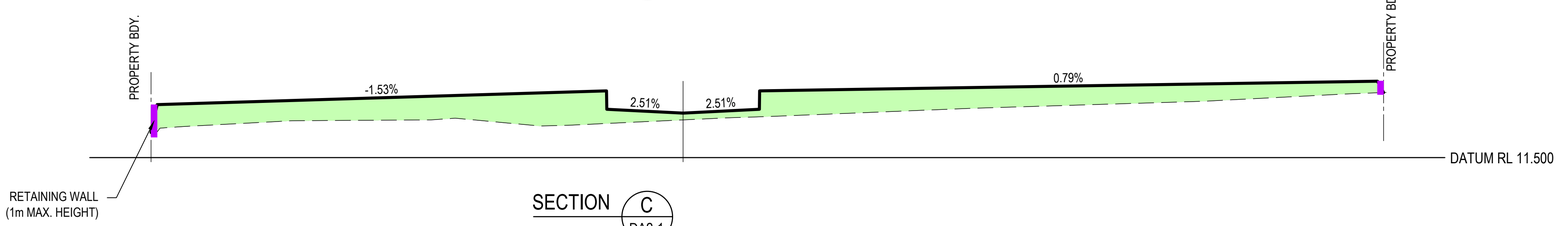
PROJECT TITLE	PROPOSED 4 LOT SUBDIVISION 18 SPRINGLANDS DRIVE SLACKS CREEK, QLD 4127	PROJECT No.	132602
		DATE	MAR 2026
		SHEET SIZE	A1
DRAWING TITLE	CONCEPTUAL BULK EARTHWORKS PLAN	DRAWING No.	DA2-1
		REVISION	P1



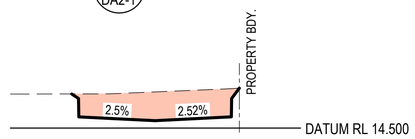
SECTION E
DA2-1



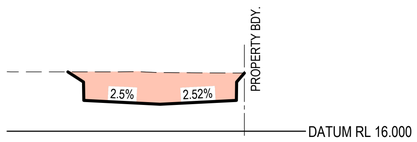
SECTION D
DA2-1



SECTION C
DA2-1



SECTION B
DA2-1



SECTION A
DA2-1

AREA OF CUT

AREA OF FILL

PRELIMINARY
NOT FOR CONSTRUCTION

1:100 H 0 1 2 3 4 5m
1:50 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:100 HORIZONTAL
1:50 VERTICAL
AT ORIGINAL SIZE

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REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

SHEET 5

CLIENT GGS IMPLEX PTY LTD

DESIGNED SK | DRAWN PC

CHECKED SK | SCALE AS SHOWN

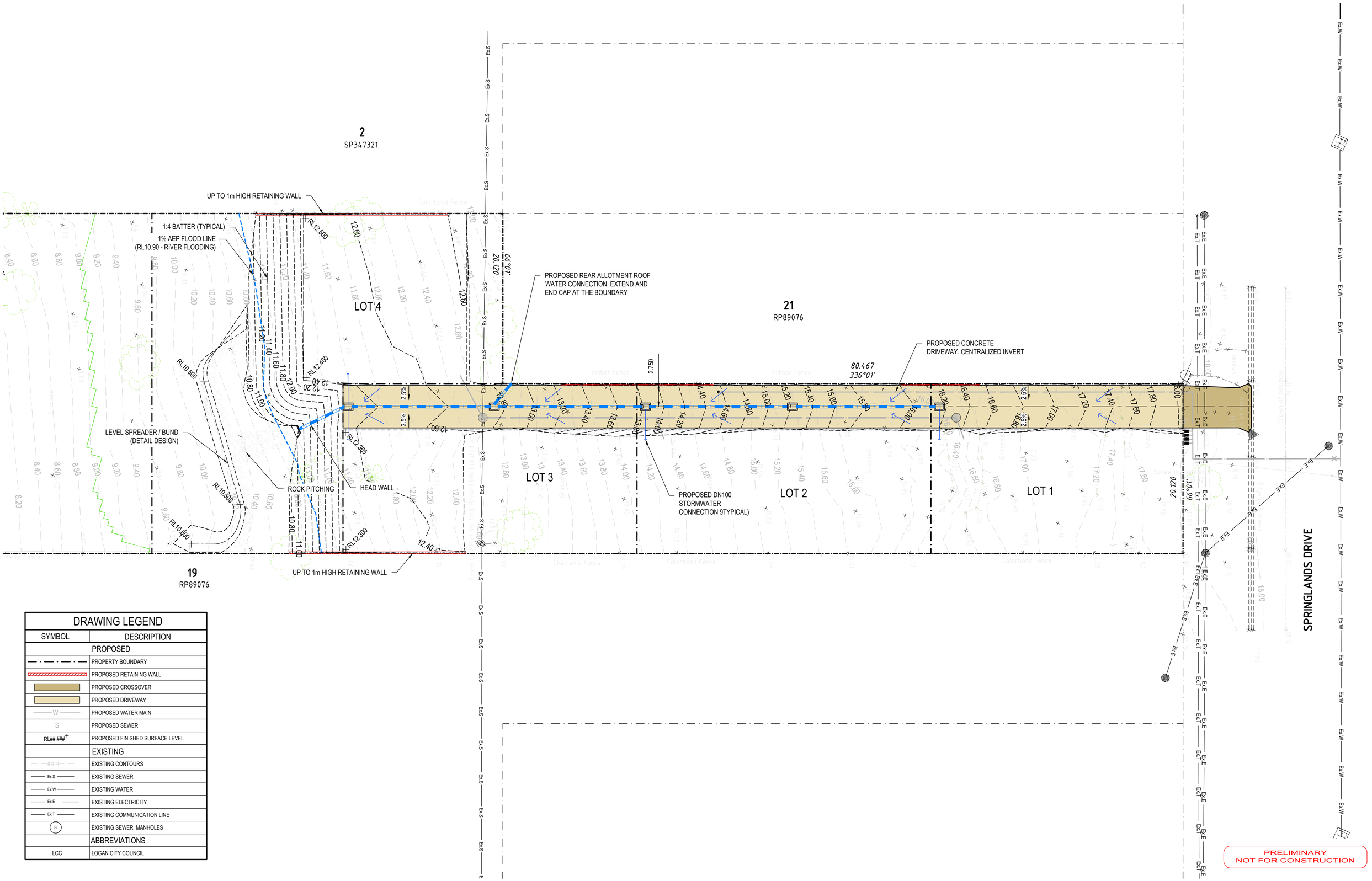
PROJECT TITLE PROPOSED 4 LOT SUBDIVISION
18 SPRINGLANDS DRIVE
SLACKS CREEK, QLD 4127

DRAWING TITLE BULK EARTHWORKS SECTIONS

PROJECT No. 132602

DATE MAR 2026 | SHEET SIZE A1

DRAWING No. DA2-2 | REVISION P1



DRAWING LEGEND

SYMBOL	DESCRIPTION
	PROPOSED
	PROPERTY BOUNDARY
	PROPOSED RETAINING WALL
	PROPOSED CROSSOVER
	PROPOSED DRIVEWAY
W	PROPOSED WATER MAIN
S	PROPOSED SEWER
RL##.###+	PROPOSED FINISHED SURFACE LEVEL
	EXISTING
	EXISTING CONTOURS
Ex.S	EXISTING SEWER
Ex.W	EXISTING WATER
Ex.E	EXISTING ELECTRICITY
Ex.T	EXISTING COMMUNICATION LINE
S	EXISTING SEWER MANHOLES
	ABBREVIATIONS
LCC	LOGAN CITY COUNCIL

PRELIMINARY
NOT FOR CONSTRUCTION

N

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

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REV.	DESCRIPTION	DRAWN	CHECKED	DATE
A	ISSUED FOR REVIEW	PC	SK	30/03/2026

SHEET 6

CLIENT: GGS IMPLEX PTY LTD

PROJECT TITLE: PROPOSED 4 LOT SUBDIVISION
18 SPRINGLANDS DRIVE
SLACKS CREEK, QLD 4127

DESIGNED: SK | DRAWN: PC | CHECKED: SK | SCALE: 1:200

DRAWING TITLE: CONCEPT STORMWATER DRAINAGE PLAN

PROJECT No.: 132602
DATE: MAR 2026
SHEET SIZE: A1
DRAWING No.: DA3-1
REVISION: P1

Appendix E: LCC Code Compliance Tables

9.4.2 Filling and excavation code

9.4.2.1 Application

1. This code applies to:
    a. material change of use:
        i. that is accepted development (subject to requirements) or code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;
        ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - local plans in Part 5 - Tables of assessment;
    b. reconfiguring a lot:
        i. that is code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
        ii. that is impact assessable in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
    c. operational work that is accepted development (subject to requirements) and code assessable operational work - filling or excavation for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.8.1 - Operational work.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

9.4.2.2 Purpose

1. The purpose of the code is to protect premises, people and natural processes from adverse impacts associated with filling or excavation.
2. The purpose of the code will be achieved through the following overall outcomes:
    a. development protects:
        i. natural physical processes and ecosystems;
        ii. existing and planned infrastructure;
        iii. personal health and safety and premises;

iv. visual amenity.

9.4.2.3 Assessment benchmarks for assessable development and requirements for accepted development

Part A - Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development

Table 9.4.2.3.1 - Filling and excavation code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
For accepted development (subject to requirements) and assessable development		
Protection of natural processes and ecosystems		
PO1 The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	**AO1** The discharge of sediments and pollutants to a waterway or stormwater network complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The developer has been notified, and an erosion and sediment control plans will be developed during detail design stage.
PO2 Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	**AO2** Topsoil and spoil is stockpiled to comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The developer has been notified and will comply with this requirement.
PO3 Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	**AO3** Filling complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The development will comply with this requirement. Further details will be provided during detail design stage.
Protection of existing and planned infrastructure		
PO4 Filling or excavation works do not adversely affect	**AO4** Filling or excavation works comply with part 3.3 -	Complies

infrastructure, including any services.	Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	
Protection and enhancement of personal health and safety and premises		
PO5 Filling or excavation works do not adversely affect personal health and safety.	**AO5** Filling or excavation works comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The developer has been notified and will comply with this requirement.
Surface water flow		
PO6 Surface water drainage does not cause any of the following: a. ponding on any premises; or b. a hazard or adversely affect personal health and safety and premises; or c. diversion or concentration of flow from or onto adjoining premises or infrastructure.	**AO6** Surface water drainage complies with part 3.3 - Filling or excavation standards in Planning scheme policy 5 - Infrastructure.	The development will comply with this requirement.
Batters		
PO7 A batter: a. does not adversely affect the natural physical processes and ecosystems; b. protects existing and planned infrastructure; c. is safe, stable and easily maintained; d. is landscaped to enhance visual amenity.	**AO7** A batter is designed and constructed to comply with the standards specified in 3.3.6 - Batters and retaining walls in Planning scheme policy 5 - Infrastructure.	The development will comply with this requirement.
Retaining walls		
PO8 A retaining wall:	**AO8** A retaining wall is designed and constructed to	The development will comply with this requirement.

a. is not constructed of timber and is not located on existing or proposed lot boundaries, or movement networks; b. does not adversely affect the natural physical processes and ecosystems; c. is located to avoid conflict with adjoining premises; d. is located such that existing and planned infrastructure is not adversely affected; e. protects the visual amenity of adjoining premises or a public open space; f. is located within the premises that is being filled; g. is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot; h. is safe and stable; i. enables easy access for maintenance.	comply with the standards specified in section 3.3.6.2 - Retaining walls in Planning scheme policy 5 - Infrastructure.	
Filling of a dam		
PO9 The filling of a dam: a. does not adversely affect the natural physical processes and ecosystems; b. creates a safe and stable surface; c. is integrated into the landscape.	**AO9** The filling of a dam complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	Not Applicable

9.4.3 Infrastructure code

9.4.3.1 Application

1. This code applies to:
    a. material change of use:
        i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;
        ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - Local plans in Part 5 - Tables of assessment;
    b. reconfiguring a lot:
        i. that is code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
        ii. made impact assessment in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
    c. operational work that is infrastructure work:
        i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column Table 5.8.1 - Operational work in Part 5 - Tables of assessment.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

9.4.3.2 Purpose

1. The purpose of the code is to ensure that infrastructure is provided to service development.
2. The purpose of the code will be achieved through the following overall outcomes:
    a. development protects the existing infrastructure and planned infrastructure networks being the:
        i. movement network;
        ii. park network;

iii. water network;
iv. sewerage network;
v. stormwater network;
vi. other networks including electricity, gas and telecommunications;
vii. land for community facilities network;

b. development other than operational work provides infrastructure that is necessary to service the development, including elements of:
i. a safe, efficient and legible road network;
ii. a safe, efficient and legible public transport network;
iii. a safe, efficient and legible cycle network;
iv. a safe, efficient and legible pedestrian network;
v. a safe, efficient and legible parks network;
vi. a safe and efficient water network;
vii. a safe and efficient sewerage network;
viii. a safe and efficient stormwater network;
ix. safe and efficient other networks including electricity, gas and telecommunications;
x. a safe and efficient road lighting network;
xi. land for a community facilities network;

c. development integrates with existing and planned infrastructure networks;
d. infrastructure is designed and constructed to deliver a standard of service that is efficient and equitable;
e. the cost to the community for the life of the infrastructure is minimised by providing for a suitable design life, ease of maintenance and ease of replacement;
f. development appropriately manages refuse and recycling storage and collection;
g. infrastructure protects personal health and safety and premises;
h. infrastructure protects environmental values.

9.4.3.3 Assessment benchmarks for assessable development and requirements for accepted development

Part A - Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development

Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments

For accepted development (subject to requirements) and assessable development		
Provision, design, construction and location of infrastructure		
PO1 Development is demonstrated to be capable of being serviced by necessary infrastructure.	**AO1** Reports, plans and drawings are provided in accordance with part 2 of Planning scheme policy 5 - Infrastructure.	Complies
PO2 Development: a. provides necessary infrastructure to service the development; b. provides that the design, construction and location of necessary infrastructure: i. protects existing and planned infrastructure networks; ii. services proposed development; iii. integrates with existing and planned infrastructure networks; iv. delivers a standard of service that is efficient and equitable; v. minimises the cost to the community for the life of the infrastructure by providing a suitable design life, ease of maintenance and ease of replacement; vi. protects personal health, safety and premises; vii. protects environmental values.	**AO2** Development: a. in a water supply service area connects to the water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code; b. not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres; c. in a sewerage supply service area connects to the waste water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code; d. not in a sewerage supply service area complies with part 1 of the Queensland Plumbing and Wastewater Code; e. provides stormwater infrastructure in accordance with part 3.6 of Planning scheme policy 5 - Infrastructure; f. provides a movement network infrastructure in accordance with part 3.4 of Planning scheme policy 5 - Infrastructure; g. provides parks in accordance with part 3.12 of Planning scheme policy 5 -	A02 Development a. Complies c. Complies e.Complies

	Infrastructure; h. provides road lighting in accordance with part 3.5 of Planning scheme policy 5 - Infrastructure; i. provides electricity reticulation in accordance with part 3.8 of Planning scheme policy 5 - Infrastructure; j. provides gas and telecommunications reticulation in accordance with part 3.9 of Planning scheme policy 5 - Infrastructure. k. is consistent with the general planning layouts in part 7.2 of Planning scheme policy 5 - Infrastructure. Editor's note - The delivery of any part of a network identified in the plans for trunk infrastructure is governed by Part 4 - Local government infrastructure plan.	
Location of development		
PO3 Development is located to protect trunk infrastructure networks.	**AO3** Development is located outside a network identified in Local government infrastructure plan map LGIP-03.00 to 08.00 Plans for trunk infrastructure in Schedule 3 - Local government infrastructure plan mapping and tables.	Development complies
Fire fighting		
PO4 Development in a water service area accessed by common private title provides: a. fire hydrant infrastructure; b. unimpeded access for emergency services vehicles. Editor's note - The term common private title refers to areas such as access roads in community title developments or	**AO4** Development in a water service area involving a material change of use or reconfiguring a lot where, or to be, accessed by common private title ensures that fire hydrant placement and technical requirements for streets and access ways are in accordance with:	A04 a. Will be designed accordingly

strata title unit access, which are private and under group or body corporate control.	a. Australian Standard (AS) 2419.1 - 2005 *Fire hydrant installations*; b. QFES: *Fire Hydrant and vehicle access guidelines for residential, commercial and industrial lots*.	
PO5 Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting purposes.	**AO5** Development: a. is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or b. has on-site water storage in accordance with Table 9.4.3.3.2 - Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is: i. a separate tank; or ii. a reserve section in the bottom part of the main water supply tankwater tank. Editor's note - The requirement in AO5 is: - in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development; - reflected in AO5 in Table 8.2.3.3.1 - Bushfire hazard overlay code: accepted development (subject to requirements) and assessable development.	A05 a. Will be designed accordingly
Waste management		
PO6 Development provides refuse and recycling	**AO6.1** Development provides refuse and recycling	Not applicable

collection and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.	collection and storage facilities in accordance with Planning scheme policy 9 - Waste management. **AO6.2** Development ensures that the location and design of refuse and recycling collection and storage facilities does not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note - Planning scheme policy 9 - Waste management provides guidance on how to achieve this outcome.	
Disposal of trade waste		
PO7 The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.	**AO7** The disposal of trade waste in a sewerage supply service area complies with the sewer admission standards in section 3.2.6 - Sewer admission standards in Planning scheme policy 3 - Environmental management.	Not applicable
Roof water drainage and surface water drainage		
PO8 Development provides stormwater infrastructure for the drainage of the premises so as not to cause any of the following: a. ponding of stormwater on the premises; b. a hazard to personal health and safety; c. damage to premises; d. an increased risk of flooding to premises within the catchment.	**AO8** Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	The development Complies
Natural flow of surface water		

PO9 Development provides that the natural flow of surface water is: a. not altered so as to cause a risk to personal health and safety or damage to property; b. not increased in intensity, velocity or frequency; c. not concentrated onto adjoining premises.	**AO9** Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	Complies
Water sensitive urban design		
PO10 Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to: a. protecting existing natural features and ecological processes; b. protecting the natural hydrologic behaviour of catchments; c. protecting the existing natural flow and water quality regimes of waterways; d. protecting water quality of surface and ground waters; e. minimising demand on the water network; f. minimising sewage discharges to the natural environment; g. integrating water into the landscape to enhance visual and ecological values.	**AO10** Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	Best management practices will be implemented.
Movement network		
PO11 The projected traffic levels for a use do not adversely affect the planned standards of service	**AO11** Development does not cause or contribute to projected traffic levels:	Not applicable

for a road or intersection.	a. exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in Planning scheme policy 5 - Infrastructure; or b. exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in Planning scheme policy 5 - Infrastructure.	
Integrated movement concept report		
PO12 Development which generates more than 3,000 vehicle trips per average weekday is designed to integrate the movement network to minimise the transportation costs required to service the use.	**AO12** Development which generates more than 3,000 vehicle trips per average weekday provides an integrated movement concept report which integrates the planning of the movement network in accordance with part 2 and 3 of Planning scheme policy 5 - Infrastructure.	Not Applicable
For assessable development only		
Land use and transport integration		
PO13 Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5,000m^2 or more: a. supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities; b. enhances connectivity between existing and future public passenger transport facilities and other transport modes; c. optimises the walkable catchment to existing and future public passenger	**AO13** No acceptable outcome provided.	Not Applicable

transport facilities; d. provides for direct and safe access to and use of existing or future public passenger transport facilities. Note - SPP code: Land use and transport integration in Appendix 4 of the state planning policy provides guidance to achieve this outcome.		

Table 9.4.3.3.2 - Water storage for fire fighting

Column 1 Lot size / use type	Column 2 Water requirement
For each residential lot:	
a. less than 1,000m^2	5,000 litres
b. between 1,000m^2 and less than 1 hectare	10,000 litres
c. greater than 1 hectare	20,000 litres
Multiple dwelling	5,000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5,000 litres or the prevailing rural fire brigade standard