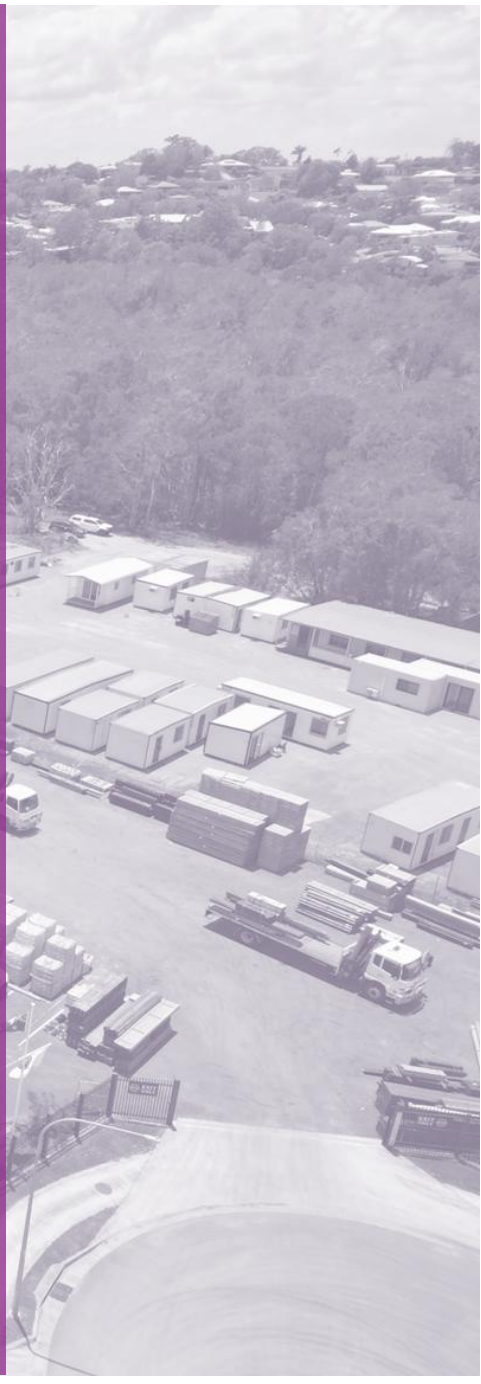
Context Engineering



Proposed Industrial Development
63 Cairns Street, Loganholme

Stormwater Management Plan

Prepared For Howell Constructions

ABN 56 650 431 637

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Report Number: C_25145 - R001

Issue	Date	Details	Author	Checked	Approved
1	19.12.25	Issue for Approval	DT	EG	NR
2	23.01.26	Issue for Approval (Updated Architectural Plans)	DT	EG	NR
3	20.03.26	Issue for Approval (Updated Stormwater Quality)	DT	NR	NR

Contents

1. Introduction 4

1.1 Associated Applications 5

1.2 Pre-Lodgement Meeting 6

2. Site Characteristics 7

2.1 Site Location 7

2.2 Land Usage 8

2.3 Topography 8

2.4 Upstream Catchments 9

2.5 Existing Stormwater Infrastructure 10

3. Proposed Drainage 11

3.1 Lawful Point of Discharge 11

3.2 Proposed Stormwater Infrastructure 11

4. Stormwater Quantity Management 12

4.1 Non-Worsening Strategy 12

4.2 Rational Method Peak Flows 14

4.2.1 Methodology 14

4.2.2 Catchment 15

4.2.3 C_{10} Value 16

4.2.4 Time of Concentration 16

4.2.5 Summarised Parameters 16

4.2.6 DRAINS Calibration – Existing Case 16

4.2.7 DRAINS Model 17

4.2.8 Flow Summary 17

4.4 Upstream Catchment Flows 18

5. Stormwater Quality Management 21

5.1 Construction Phase 21

5.2 Operational Phase 21

5.3 Catchment Source Area and Nodes 22

5.4 Proprietary Treatment Devices 22

5.4.1 OceanGuard 23

5.4.2 Ocean Protect StormFilter Cartridge 23

5.5 MUSIC Modelling Diagram 24

5.6 Maintenance 24

6. Conclusion 25

7. Disclaimer 25

Tables and Figures

Figure 1-1 Proposed Development Layout (Source: ATP Design Studio) 4
Figure 1-2 Approved Earthworks Plans – Sheet 2 (Source: Wilkinson Shaw & Associates) 5
Figure 2-1 Site Locality Plan (Source: Nearmap 2025) 7
Figure 2-2 Subject Site Zoning (Source: LCC Planning Scheme 2015) 8
Figure 2-3 Existing Topography (Source: 2023 Aerial LiDAR Survey) 9
Figure 2-5 Existing Council-Owned Stormwater Infrastructure (Source: BYD 2025) 10
Table 3-1 Lawful Point of Discharge Test 11
Figure 4-1 Locality Plan (Source: Logan Waterways & Catchment Mapping 2025) 13
Figure 4-3 Existing Catchment Layout (Source: Drawing C_25145 by Context Engineering) 15
Figure 4-4 Developed Catchment Layout (Source: C_25145 DA43 by Context Engineering) 15
Table 4-1 Rational Method Input Parameters 16
Figure 4-5 DRAINS Model 17
Table 4-3 Catchment 1 Existing vs. Developed Flows 17
Table 4-4 Catchment 2 Existing vs. Developed Flows 18
Table 4-5 Upstream Catchment Rational Method Input Parameters 18
Table 4-6 Upstream Catchment Flows 18
Table 4-7 Manning Open Channel Flow Input Parameters 19
Table 4-8 Proposed Channel Design Parameters 19
Figure 4-6 Proposed Kerb and Channel Section View 19
Table 5-1 Typical Construction Phase Pollutants 21
Table 5-2 Logan City Council Trigger Questions 21
Table 5-3 Quality Catchment Areas 22
Figure 5-1 Ocean Protect OceanGuard 23
Figure 5-2 Ocean Protect StormFilter Cartridge 23
Figure 5-3 MUSIC Model 24

Appendices

Appendix A Schematic Design Drawings
Appendix B Survey
Appendix C Architectural Plans
Appendix D Before You Dig
Appendix E Operations and Maintenance Manuals
Appendix F Code Response Report

1. Introduction

This Stormwater Management Plan has been commissioned by Howell Constructions and forms part of a 'Minor Change' application to be lodged with Logan City Council over the following parcels of land:

Property Address:	**63 Cairns Street, Loganholme**
Property Description:	**Lot 130 on SP 320462**
Client:	**Howell Constructions**
Council:	**Logan City Council**
Site Area:	**18.55 ha**
Area of Works:	**Approx. 3.24 ha**

The proposed development involves the creation of a new industrial facility comprising of 6 separate warehouse buildings over two lots defined as 'Lot A' (Lot 130 on SP320462) and 'Lot B' (Lot 120 on SP320462). The adjoining residential Lot 121 on SP320462 is to be amalgamated into Lot B, resulting in a newly configured boundary. These revised allotment boundaries are to be retained for the development, with each lot serviced independently. Figure 1-1 below details the extent of Lot A and B, with the area of works indicated in pink.



Figure 1-1 Proposed Development Layout (Source: ATP Design Studio)

This report describes the key stormwater management constraints associated with the proposed development, with the objectives of investigations listed below:

- Identify existing site conditions and drainage characteristics;
- Identify external catchments impacting the site;
- Identify a Lawful Point of Discharge in accordance with Council requirements;
- Demonstrate that the development can occur such that no actionable nuisance or adverse impact is created (Quantity Management); and
- Demonstrate that appropriate water quality objectives for the site have been achieved (Quality Management).

Based on the outcomes of the above investigations, this report provides civil engineering recommendations to address compliance with Logan City Council requirements.

1.1 Associated Applications

Available documentation accessed from the LCC online portal indicates that a MCU application was previously lodged over the subject site on 16 December 2014 and approved on 22 February 2016 under the application number MCUI/20/2014/1. The application included the following civil serviceability documentation:

- *Stormwater Management Plan* by Design Engineers Queensland; and
- *Stormwater Management Plan* by Wilkinson Shaw & Associates.

These reports were utilised to determine the existing and proposed constraints of the surrounding area.

An operational works application was subsequently lodged over the subject site on 09 November 2020 and approved on 16 November 2020 under the application number OW/176/2020. The application details operational works relating to the previously mentioned MCUI/20/2014/1, and includes the following civil engineering plans:

- *Earthworks Plan* by Wilkinson Shaw & Associates; and
- *Earthworks Cross Sections* by Wilkinson Shaw & Associates.

An additional application was lodged on 04 March 2024 and approved on 02 April 2024 under the application number OW/176/2020/A, extending the currency period of the original Operational Works approval (OW/176/2020). The earthworks associated with this Operational Works approval have substantially commenced, and the approved earthworks plans shown below in Figure 1-2 therefore establish the effective pre-developed ground levels for the site.

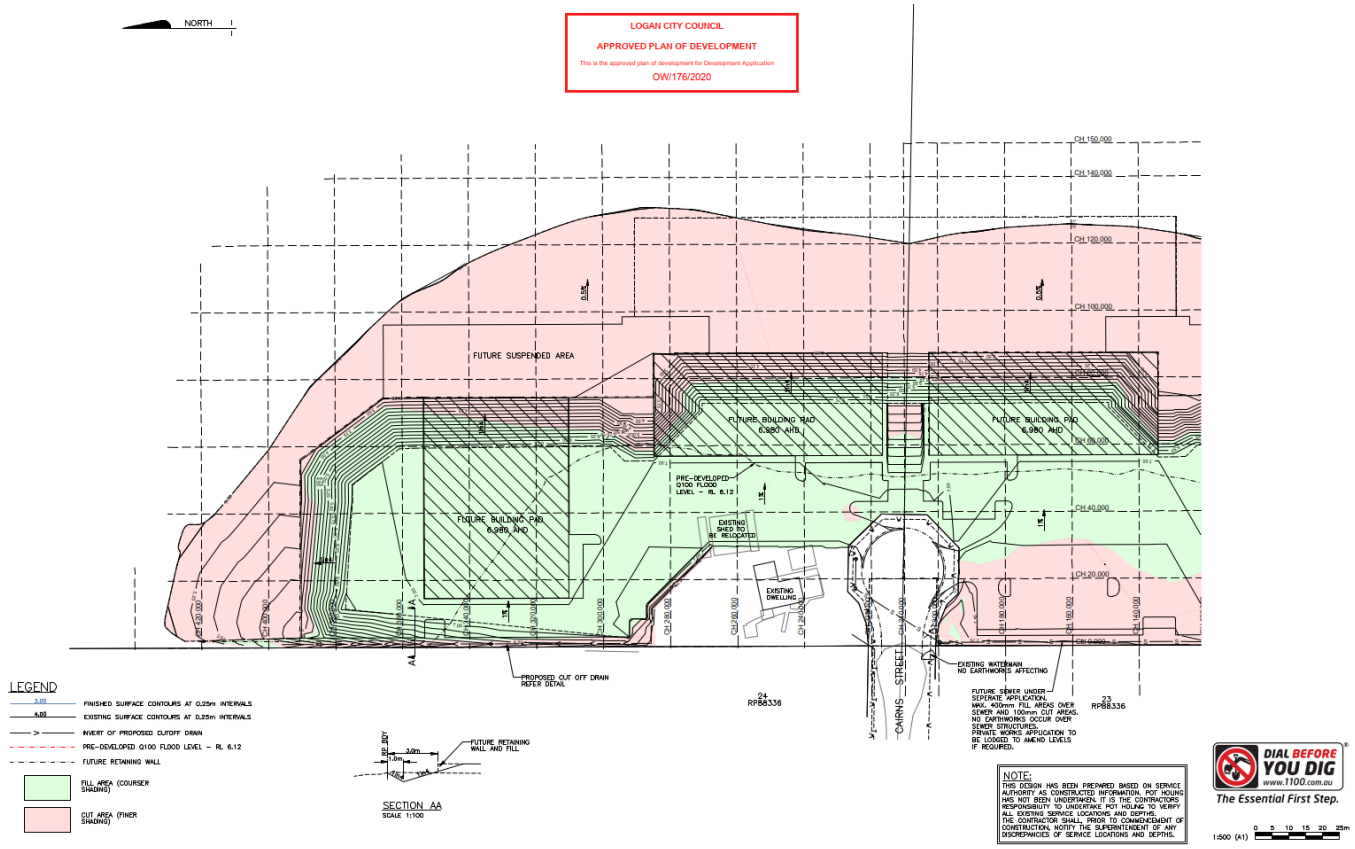


Figure 1-2 Approved Earthworks Plans – Sheet 2 (Source: Wilkinson Shaw & Associates)

While the developed contour plans show a batter extending through part of the proposed building footprint, for the purposes of this stormwater assessment the 'future suspended' ground condition has been adopted as the

existing case. This assumption aligns with the compensatory earthworks volumes allowed for in the approved OPW documentation and reflects the intended post-earthworks ground profile prior to construction of the proposed development.

1.2 Pre-Lodgement Meeting

A pre-lodgement meeting was held with Logan City Council on 07 June 2023 under PLM number PLM/151/2023 and included discussion on the necessary civil engineering requirements for the site. The following discussion points and corresponding comments from council are relevant to the stormwater management strategy presented in this report:

- Updated flood height – 6.7m AHD; and
- Waterways and Wetlands - *'A stormwater infrastructure item may only be provided in a waterway and wetland buffer area where the buffer area is degraded to such an extent that the construction of the stormwater infrastructure item would result in an enhancement to the condition and ecological function of the buffer area...'.*

Where applicable, this preliminary advice from Logan City Council has been incorporated in the analysis and recommendations of this report.

2. Site Characteristics

2.1 Site Location

The proposed development is situated on three existing allotments at 63 Cairns Street, Loganholme, described as Lot 130 on SP 320462, Lot 120 on SP 320462, and Lot 121 on SP 320462. These lots are located within the Logan City Council local government area and is zoned as 'Mixed Use' with a large portion of the site included in the 'Environmental Management and Conservation' zone under the Logan City Council Planning Scheme.

The subject site has an overall area of 18.55 ha and is bounded by Cairns Street to the west and environmental conservation area to the north, east and south.

A general locality plan is presented in Figure 2-1 below, with the subject site shown in purple and the area of works in pink.

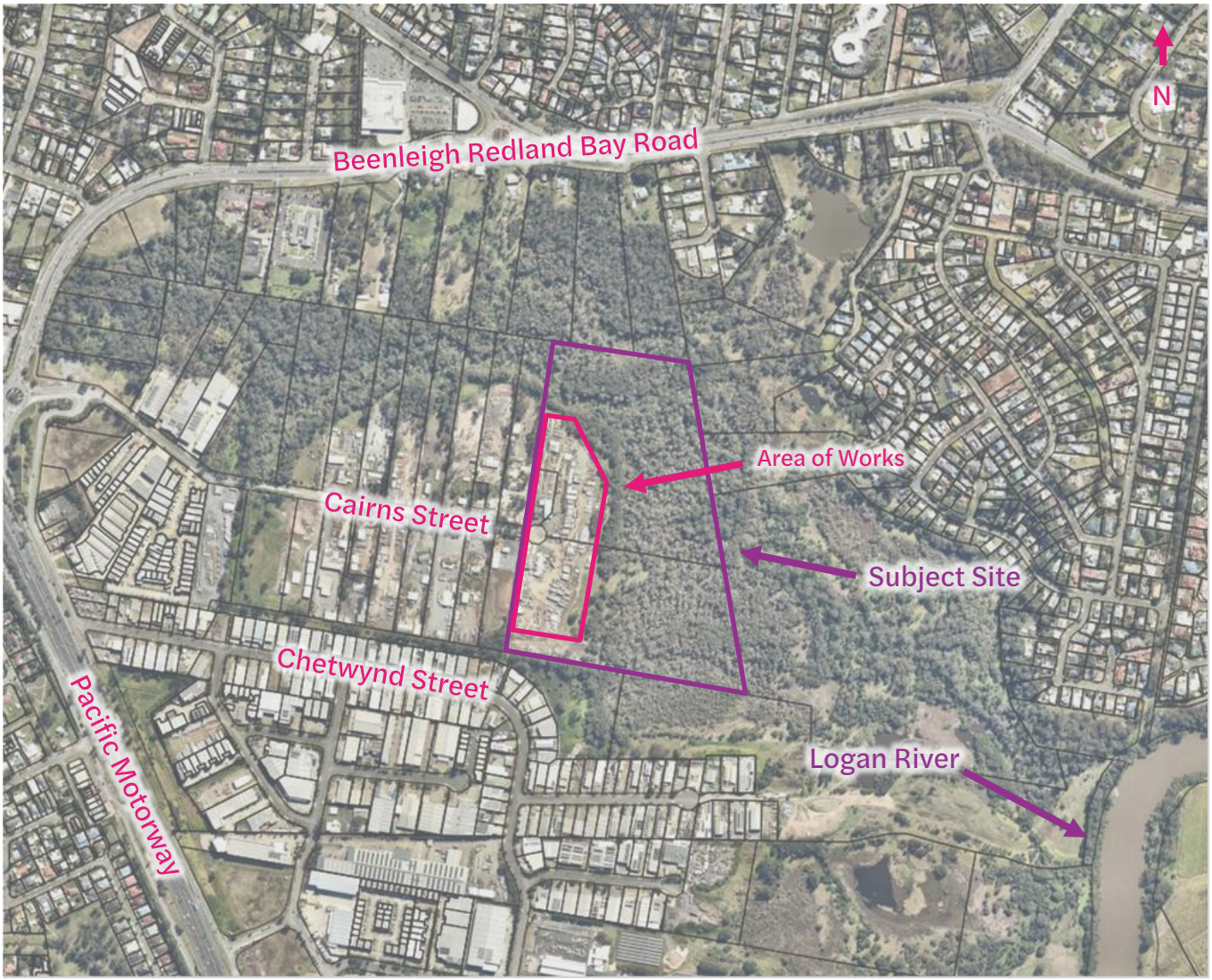


Figure 2-1 Site Locality Plan (Source: Nearmap 2025)

2.2 Land Usage

Aerial imagery indicates that the subject site is currently developed for mixed use, comprising of an industrial warehouse area across Lot 120 and 130 on SP320462, and a residential dwelling on Lot 121 on SP320462 (to be amalgamated with Lot 120 on SP320462 "Lot B"). A substantial portion of the site consists of vegetated bushland that accommodates an existing waterway corridor that forms part of the Logan River overflow system. The site is currently accessed via a crossover to Cairns Street.



Figure 2-2 Subject Site Zoning (Source: LCC Planning Scheme 2015)

2.3 Topography

The approved earthworks plans by Wilkinson Shaw & Associates as part of the Operational Works application OW/176/2020 indicate that ground levels across the allotment are intended to range from approximately 8 m AHD at the western boundary to a low point of around 2 m AHD toward the east.

The area of proposed works generally falls from west to east at an average grade of approximately 3%, while the remaining bushland portion of the site is characterised by relatively flat topography.

As these earthworks are currently under construction, the existing surveyed levels were not considered within the stormwater or flood assessment.

2.4 Upstream Catchments

2023 aerial LiDAR survey data (1 m tiles accessed from ELVIS, November 2025) indicates that the surrounding land to the north, east, and south naturally grades toward the waterway corridor within the eastern portion of the subject site. Based on the available topographic information, this corridor operates as the primary drainage path for these upstream areas. In accordance with Council's non-worsening requirements, it is assumed that the existing waterway corridor currently accommodates these contributing flows without adverse downstream impact. As such, this upstream catchment is considered self-draining to the waterway corridor and does not need to be further accounted for within the site's stormwater management assessment.

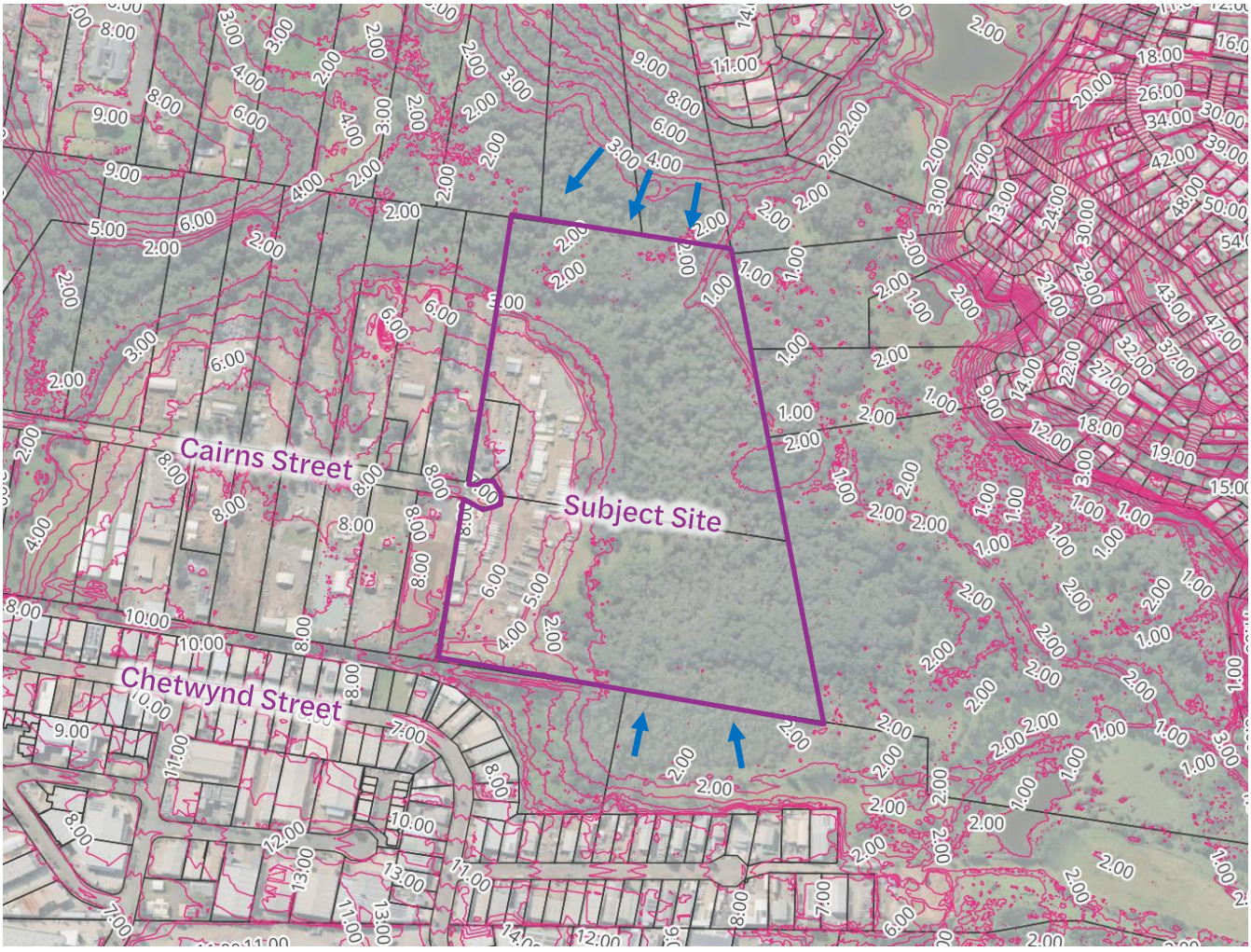


Figure 2-3 Existing Topography (Source: 2023 Aerial LiDAR Survey)

Stormwater Drainage Layout and Longitudinal Sections drawings prepared by Wilkinson Shaw & Associates define upstream catchments within the Cairns Street cul-de-sac and detail stormwater infrastructure under easement that has since been constructed for the conveyance of flows to the waterway corridor east of the subject site. The defined catchments as well as the stormwater infrastructure are represented in Figure 2-4 below.

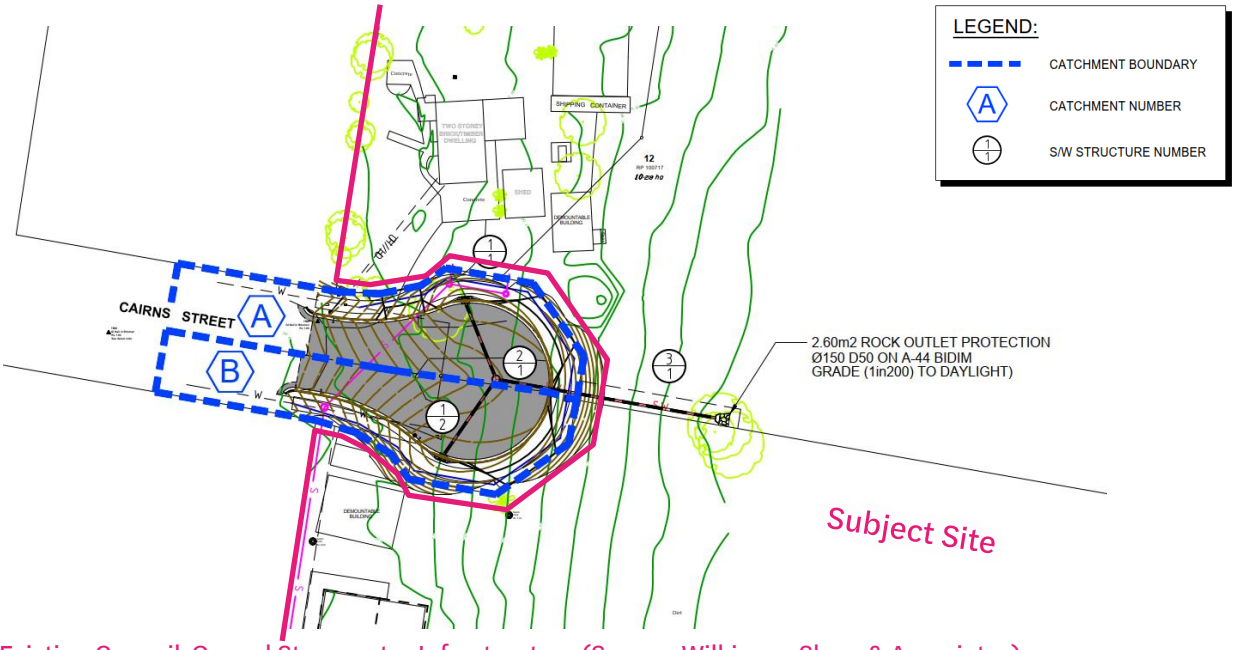


Figure 2-4 Existing Council-Owned Stormwater Infrastructure (Source: Wilkinson Shaw & Associates)

To maintain the existing discharge regime for these upstream catchments, the proposed development includes an extension of this easement drainage system further east into the site, enabling minor flows to bypass the area of works and continue discharging to the waterway corridor. An overland flow path will be provided over the infrastructure to ensure that major flows can be conveyed to the waterway corridor as currently intended.

2.5 Existing Stormwater Infrastructure

Before You Dig and LCC infrastructure mapping data indicates that there is stormwater infrastructure within the road reserve of the cul-de-sac of Cairns Street as demonstrated in Figure 2-5 below.

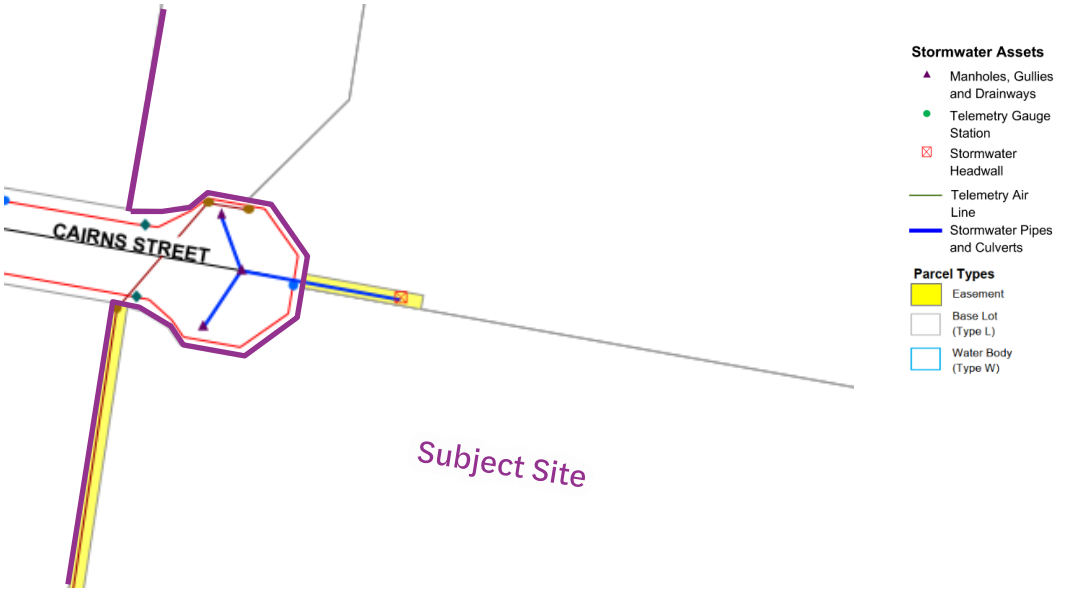


Figure 2-5 Existing Council-Owned Stormwater Infrastructure (Source: BYD 2025)

LCC infrastructure mapping confirms the presence of an existing culvert pipe and headwall drainage system adjacent to and partially within the subject site. A section of this culvert is under easement near the frontage of the site to Cairns Street, with pipes sized at 375mm.

3. Proposed Drainage

The proposed development will provide internal drainage and stormwater management in accordance with Logan City Council requirements and the Queensland Urban Drainage Manual (QUDM).

The proposed works involve the creation of a new industrial development comprising of 6 separate warehouse buildings across two separate lots and will therefore require the following minimum drainage service standards:

- **Major Drainage System:** 1% AEP (*Logan Planning Scheme 2015 Schedule 6.2.5 Part 3.6.2.2*); and
- **Minor Drainage System:** 39% AEP (*QUDM Table 7.3.1*).

The development is proposed to discharge both minor and major site-based stormwater flows to the nominated Lawful Point of Discharge.

3.1 Lawful Point of Discharge

The Lawful Point of Discharge for the site are split into three locations:

- **LPOD1 (Lot B) –** Northern extent of the site, ultimately discharging to the waterway corridor;
- **LPOD2 (Lot A) –** South-eastern corner of the site, ultimately discharging to the waterway corridor; and
- **LPOD3 (Upstream Catchment)–** Eastern portion of the site, ultimately discharging to the waterway corridor.

Flows from the proposed development will maintain the existing discharge regime, with both minor and major flows in each lot continuing to be conveyed to this waterway corridor by their respective drainage networks.

The proposed discharge of runoff from the site to this location is considered compliant with the test described in Section 3.9.1 of QUDM, as shown in Table 3-1 below.

Table 3-1 Lawful Point of Discharge Test

Criteria	Response
Will the proposed development alter the site's stormwater discharge characteristics in a manner that may substantially damage a third-party property?	Site discharge to be directed to the mapped waterway corridor in the eastern portion of the site. It is not expected that discharging to this location will cause an actionable nuisance as it is expected that the existing waterway has sufficient capacity for the developed site flows and is consistent with the pre-developed scenario.

3.2 Proposed Stormwater Infrastructure

The following additional infrastructure is required for the development to ensure that site-based flows are directed to the Lawful Point of Discharge:

- Proposed inlet pits to capture flows from the new carpark and driveway of Lot A and B;
- Pipe infrastructure;
- Roof-water connection stubs to buildings;
- Surface grading to assist in conveyance; and
- Upgrade and extension of existing infrastructure under easement at the frontage of the site.

Refer *C_25145 DA40_Stormwater Drainage Layout Plan* in Appendix A for further details.

4. Stormwater Quantity Management

The section of the report addresses peak stormwater discharging from the site and identifies whether additional infrastructure is required to ensure "non-worsening" of peak flows resulting from development on the allotment.

4.1 Non-Worsening Strategy

Non-worsening of site discharge will be achieved through:

- Maintaining the existing drainage regime to the lawful point of discharge, with both minor and major storm events continuing to drain to the mapped waterway corridor; and
- Demonstrating that the increase in site-generated flows is assumed to be negligible and is unlikely to adversely affect the capacity or function of the receiving waterway corridor.

Section 3.6.1.3 *Stormwater Quantity Infrastructure* within Schedule 6.2.5 *Infrastructure* of the Logan City Council Planning Scheme outlines the criteria for stormwater detention. The section states that, for sites located outside the Loganholme local plan area, any increase in runoff from a development is to be mitigated on-site '*unless it can be demonstrated that a downstream regional stormwater system has adequate capacity to accommodate the increased flows and that downstream infrastructure can convey the additional runoff without adverse impact'.* The section further provides that for developments within the Loganholme local plan area where a lot is not identified as requiring a lawful point of discharge and the lot contains a mapped waterway, '*the development may discharge directly to that mapped waterway'.*

A broad locality plan is detailed in Figure 4-1 below, with the subject site outlined in pink, catchment "Unnamed 43" outlined in blue, the Loganholme local plan area outlined in purple, and the Loganholme stormwater management zone outlined in red.

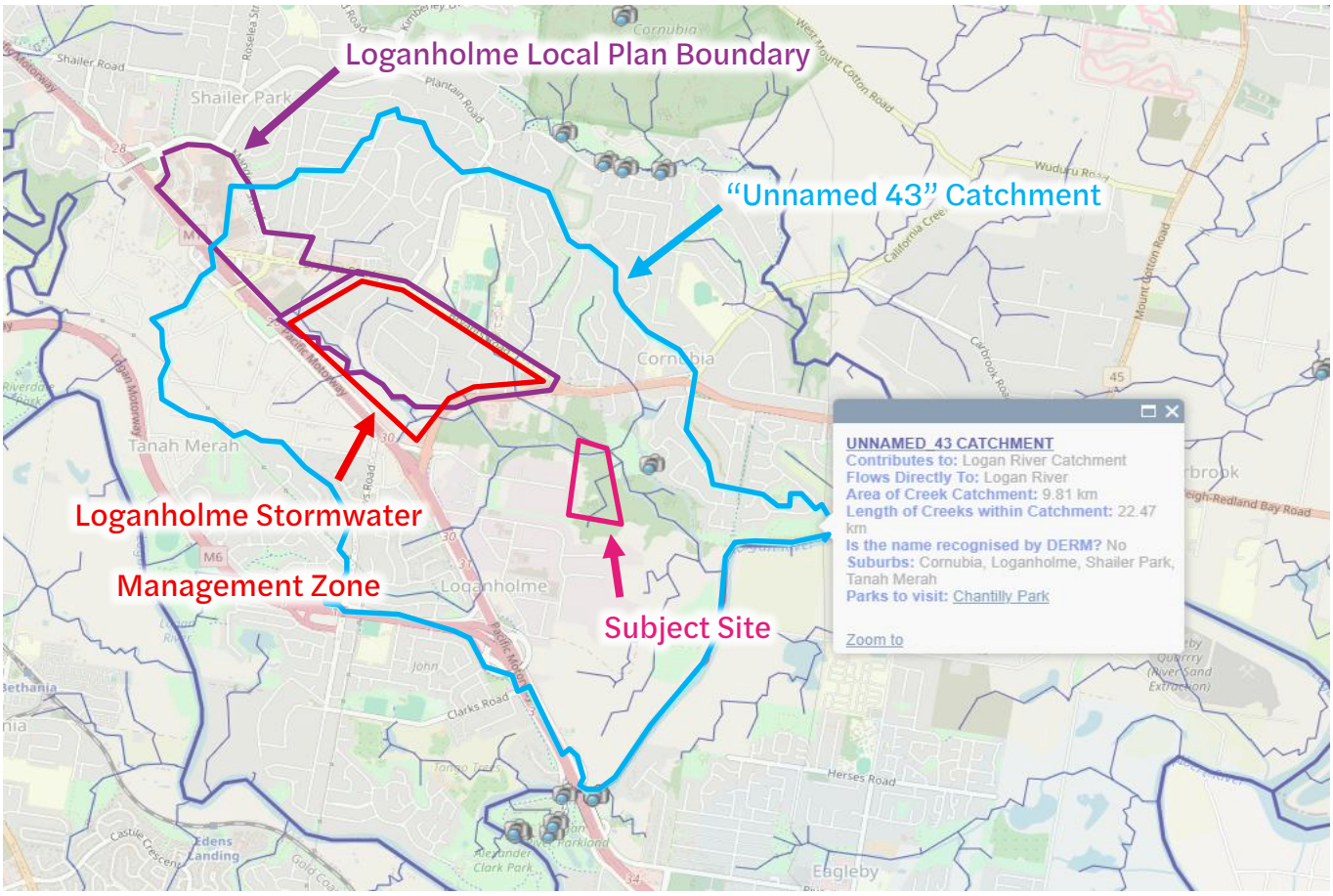


Figure 4-1 Locality Plan (Source: Logan Waterways & Catchment Mapping 2025)

Although the subject site is located just outside the Loganholme local plan and stormwater management area, it contains an internal waterway corridor that forms a direct downstream continuation of the mapped waterway corridor within the Loganholme planning area. Both corridors collectively form part of the broader "Unnamed 43" catchment, sharing the same drainage function and flow path, ultimately discharging to the Logan River.

Figure 4-2 below demonstrates that the corridor traversing the subject site comprises of established vegetation and observable natural flood storage features, which suggests a capacity to assist in the conveyance and attenuation of local and upstream flows under existing conditions.

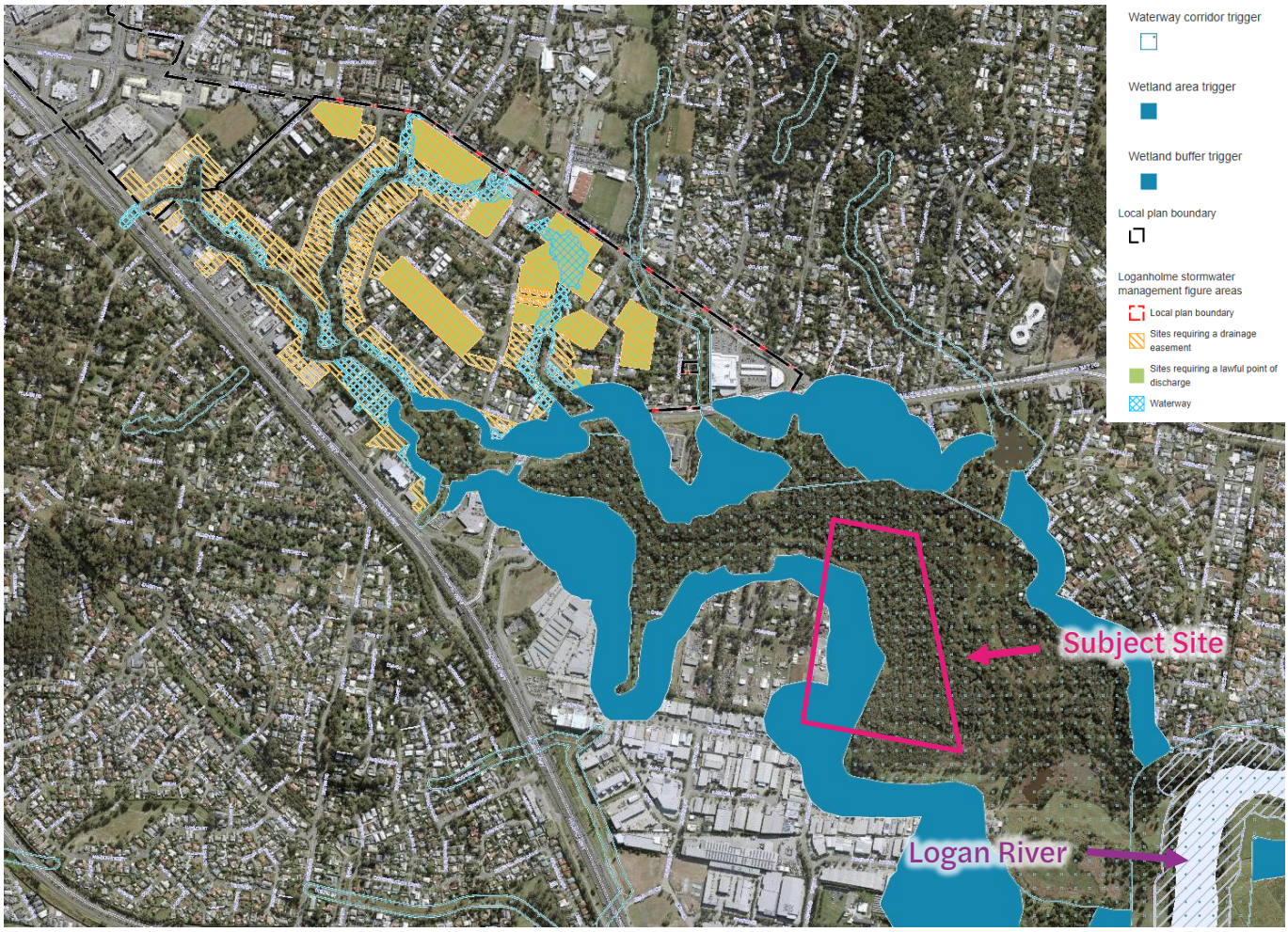


Figure 4-2 Waterway Corridor and Loganholme Planning Area (Source: LCC Planning Scheme)

On this basis, directing post-development minor and major flows toward the on-site portion of the waterway corridor is consistent with the intent of the Loganholme stormwater planning provisions, which permit direct discharge to mapped waterways where a non-worsening outcome can be demonstrated. Given the scale of the development relative to the available corridor area, its established vegetated condition, and its observed functional alignment with the mapped upstream waterway corridor within the Loganholme planning area, the proposed discharge arrangement is assumed to be an appropriate solution for the type, scale, and location of the development.

4.2 Rational Method Peak Flows

4.2.1 Methodology

The Rational Method has been utilised to estimate the peak flow of event hydrographs for each catchment within the pre-developed and post-developed scenario. The results of the Rational Method calculations are used in the following sections to:

i. Evaluate the impact of the proposed development on the surrounding infrastructure, and;
ii. Quantify the stormwater flows to each discharge location to ensure non-worsening objectives are achieved.

4.2.2 Catchment

The existing site is characterised by a high point along Cairns Street and the western boundary, grading down toward the eastern portion of the site. While earthworks levels defined in approved plans by Wilkinson Shaw & Associates within the previously lodged application OW/176/2020 have been adopted as the existing levels for assessment purposes, the actual ground levels of the site in its current undeveloped condition were utilised to delineate the existing catchments. This approach was adopted conservatively to identify flow paths and establish the time of concentration for each lot. On this basis, two catchments were defined in the pre-developed case:

- E1 – Lot A discharging easterly toward the waterway corridor; and
- E2 –Lot B discharging easterly toward the waterway corridor.

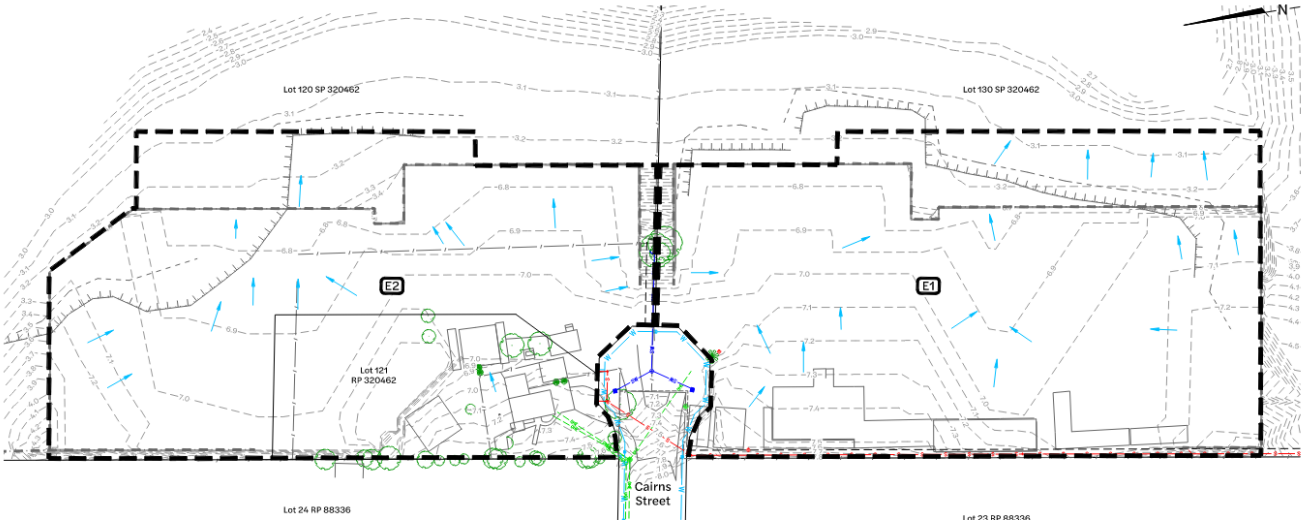


Figure 4-3 Existing Catchment Layout (Source: Drawing C_25145 by Context Engineering)

Refer drawing *C_25145 DA41_Existing Catchment Layout Plan* in Appendix A for further details.

The post-developed site is characterised by a high point in the central area of the development surrounding the existing stormwater easement. Accordingly, the developed site will have two catchments:

- D1 – Lot A discharging south-easterly toward the waterway corridor; and
- D2 –Lot B discharging north-easterly toward the waterway corridor.

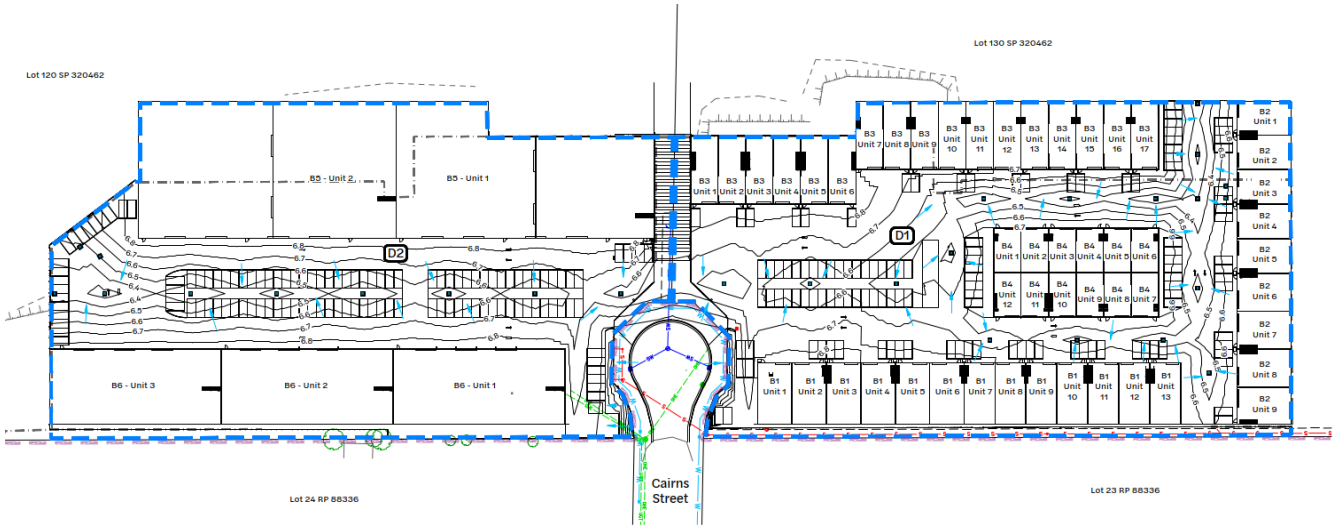


Figure 4-4 Developed Catchment Layout (Source: C_25145 DA43 by Context Engineering)

Refer drawing *C_25145 DA42_Developed Catchment Layout Plan* in Appendix A for further details.

4.2.3 C_{10} Value

The C_{10} values for the site have been based on measured Fraction Impervious (fi) areas from the site survey and architectural layouts. Measured imperviousness on the site has been compared to the values in QUDM and interpolated for determination of the C_{10} value. For the existing case, areas of bare soil are conservatively assumed to be compacted and are therefore treated as effectively impervious for the purpose of C_{10} derivation.

4.2.4 Time of Concentration

The time of concentration for each catchment was determined using methods in accordance with Section 4 of QUDM. These are conservative value representing the worst-case scenario of flow to the existing discharge location.

4.2.5 Summarised Parameters

The catchment area, fraction impervious and time of concentration of the development area have been summarised in Table 4-1 below.

Table 4-1 Rational Method Input Parameters

Catchment	Parameter	Value	Data Source/ Calculation Method
Existing E1	Area	1.654 ha	Approximated from architectural plans
	Fraction Impervious	96%	Approximated from Nearmap aerial
	Time of Concentration	11 min	QUDM Section 4.6
Existing E2	Area	1.583 ha	Approximated from architectural plans
	Fraction Impervious	98%	Approximated from Nearmap aerial
	Time of Concentration	11 min	QUDM Section 4.6
Developed D1	Area	1.654 ha	Approximated from architectural plans
	Fraction Impervious	99%	Approximated from Nearmap aerial
	Time of Concentration	7 min	QUDM Section 4.6
Developed D2	Area	1.583 ha	Approximated from architectural plans
	Fraction Impervious	99%	Approximated from Nearmap aerial
	Time of Concentration	7 min	QUDM Section 4.6

Table 4-1 demonstrates that there will be an increase in fraction impervious and a decrease in time of concentration as a result of development on the site.

4.2.6 DRAINS Calibration – Existing Case

The Rational Method has been utilised to calibrate the DRAINS ILSAX model by providing a comparison of the peak flows for each event hydrograph in the existing catchment E1, as summarised in Table 4-2 below.

Table 4-2 Existing Catchment E1 DRAINS Calibration

	$Q_{39\%}$ (m^3/s)	$Q_{18\%}$ (m^3/s)	$Q_{10\%}$ (m^3/s)	$Q_{5\%}$ (m^3/s)	$Q_{2\%}$ (m^3/s)	$Q_{1\%}$ (m^3/s)
Rational Method	0.388	0.537	0.645	0.775	0.969	1.075
DRAINS	0.447	0.564	0.676	0.773	0.885	0.976
Difference (%)	**+15%**	**+5%**	**+5%**	**0%**	**-9%**	**-9%**

The results indicate that the DRAINS model is programmed with a satisfactory level of accuracy for the purposes of this exercise.

4.2.7 DRAINS Model

The DRAINS model was developed to assess the resultant flow from each catchment independently, as shown in Figure 4-3 below.

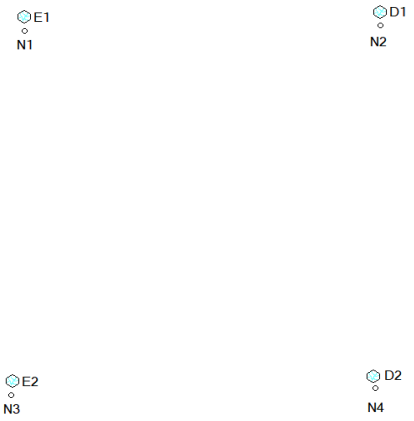


Figure 4-5 DRAINS Model

The resultant flows were therefore able to be calculated for each catchment.

4.2.8 Flow Summary

The resultant flows for each storm event for Catchment 1 and 2 have been respectively summarised in Table 4-3 and Table 4-4 below.

Table 4-3 Catchment 1 Existing vs. Developed Flows

	$Q_{39\%}$ (m^3/s)	$Q_{18\%}$ (m^3/s)	$Q_{10\%}$ (m^3/s)	$Q_{5\%}$ (m^3/s)	$Q_{2\%}$ (m^3/s)	$Q_{1\%}$ (m^3/s)
E1 (Existing)	0.447	0.564	0.676	0.773	0.885	0.976
D1 (Developed)	0.524	0.658	0.760	0.872	1.010	1.120
Difference	**+0.077**	**+0.094**	**+0.084**	**+0.099**	**+0.125**	**+0.144**
Difference (%)	**+17%**	**+17%**	**+12%**	**+13%**	**+14%**	**+15%**

Table 4-4 Catchment 2 Existing vs. Developed Flows

	$Q_{39\%}$ (m^3/s)	$Q_{18\%}$ (m^3/s)	$Q_{10\%}$ (m^3/s)	$Q_{5\%}$ (m^3/s)	$Q_{2\%}$ (m^3/s)	$Q_{1\%}$ (m^3/s)
E2 (Existing)	0.432	0.544	0.65	0.744	0.849	0.937
D2 (Developed)	0.512	0.643	0.742	0.851	0.978	1.080
Difference	**+0.080**	**+0.099**	**+0.092**	**+0.107**	**+0.129**	**+0.143**
Difference (%)	**+19%**	**+18%**	**+14%**	**+14%**	**+15%**	**+15%**

Table 4-3 and 4-4 demonstrate that there is an increase in flows from the existing case for each catchment across all storm events.

In the developed case, minor stormwater flows for events up to and including the $Q_{39\%}$ AEP will be conveyed via piped stormwater infrastructure within each lot to the receiving waterway, while major overland flows will be directed to the waterway through site-based grading for each lot. As this is an established watercourse with a large upstream catchment, it is expected that mitigation is not required as the increase in flows is assumed to be negligible in consideration of the overall waterway system.

4.4 Upstream Catchment Flows

The Rational Method was used to quantify the peak flow in the $Q_{1\%}$ storm discharging into the site from the upstream catchment described in Section 2.4. The associated area, fraction imperviousness and time of concentration have been summarised below, in accordance with the methodology outlined in Section 4.2.

Table 4-5 Upstream Catchment Rational Method Input Parameters

Catchment	Parameter	Value	Data Source/ Calculation Method
Upstream Catchment	Area	1380m^2	*Stormwater Drainage Layout and Longitudinal Sections* by Wilkinson Shaw & Associates
	Fraction Impervious	99%	Approximated from Nearmap aerial imagery
	Time of Concentration	6 min	QUDM Section 4.6

Using the above parameters, the resultant peak flows for the upstream catchment were calculated and can be seen in Table 4-6 below.

Table 4-6 Upstream Catchment Flows

	$Q_{39\%}$ (m^3/s)	$Q_{18\%}$ (m^3/s)	$Q_{10\%}$ (m^3/s)	$Q_{5\%}$ (m^3/s)	$Q_{2\%}$ (m^3/s)	$Q_{1\%}$ (m^3/s)
Upstream Catchment	0.041	0.057	0.068	0.082	0.103	0.115

The required dimensions of the channel to accommodate this flow were determined through iterating Manning's open channel flow equation. The relevant inputs are specified in Table 4-7 below.

Table 4-7 Manning Open Channel Flow Input Parameters

Input	Value	Reference
Q_{input} (m^3/s)	0.072m^3/s	*Stormwater Drainage Layout and Longitudinal Sections* by Wilkinson Shaw & Associates
Slope (%)	7	Design Surface (Appendix A)
Manning's n	0.013	QUDM Table 9.3.4

The Stormwater Drainage Layout and Longitudinal Sections prepared by Wilkinson Shaw & Associates detail the flow capacity of the existing stormwater pipe infrastructure within Cairns Street, which extends into the central stormwater easement of the site. For the purposes of assessing the associated open channel, the adopted Q_{input} was derived by considering the major flow component of the $Q_{1\%}$ AEP event that bypasses the piped system, calculated as the difference between the total $Q_{1\%}$ AEP flow and the prescribed conveyance capacity of the existing pipe infrastructure. The associated design parameters and representative section views are provided in Table 4-8 and Figures 4-5, respectively.

Table 4-8 Proposed Channel Design Parameters

Design Parameter	Kerb and Channel
Width of Channel	11.0m
Depth of Channel	0.15m
$Q_{1\%}$ Peak Water Level	0.032m

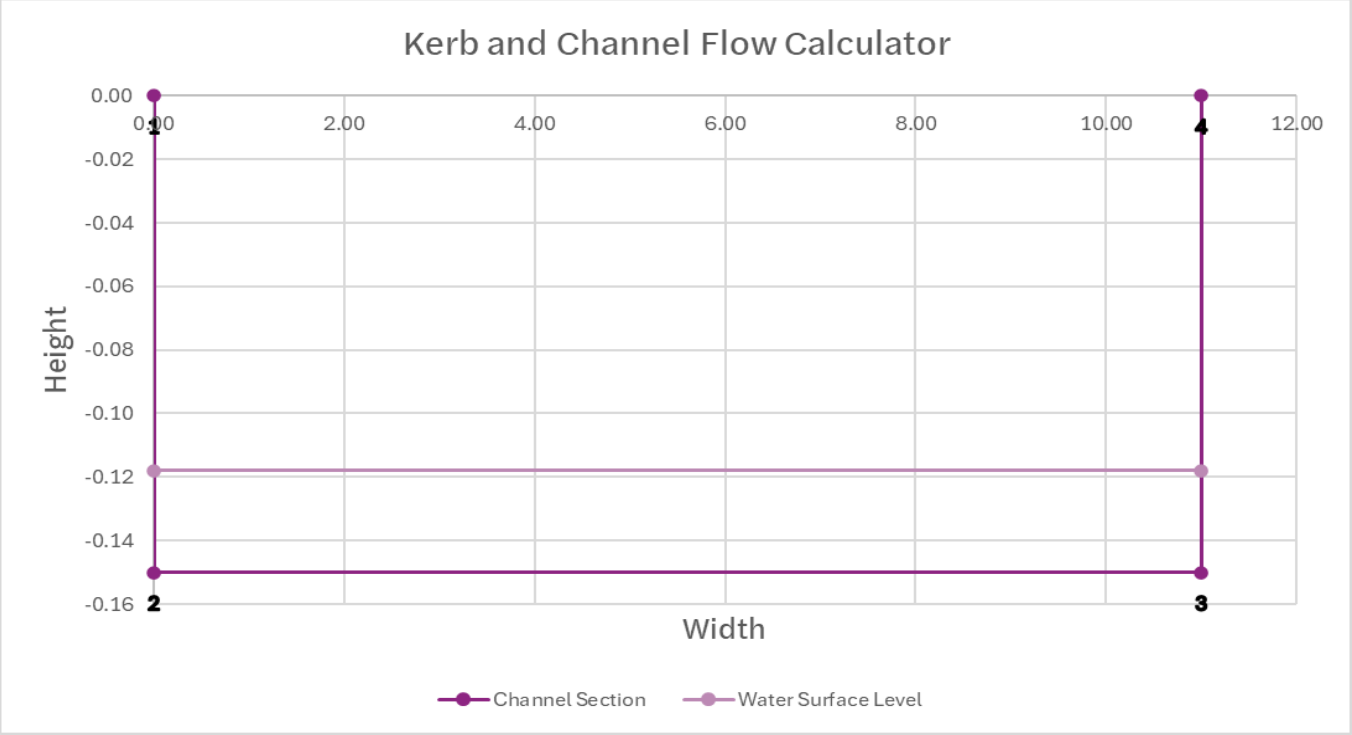


Figure 4-6 Proposed Kerb and Channel Section View

Figures 4-6 demonstrates that the kerb and channel conveyance system has capacity to convey the flows from the upstream catchment through the site. For details on the location of the channel refer to *C_25145 DA_40 Stormwater Layout Plan*.

5. Stormwater Quality Management

The objectives for stormwater quality management are outlined in Logan City Council Planning Scheme Policies and the State Planning Policy (SPP). This section of the report identifies stormwater quality requirements and treatment devices to satisfy Council and SPP requirements.

5.1 Construction Phase

The development will comply with Construction Phase water quality objectives, and best practise measures will be utilised to minimise the potential impacts of pollutants generated during construction. The pollutants that would typically be generated during construction are outlined in Table 5-1 below.

Table 5-1 Typical Construction Phase Pollutants

Pollutants	Source
Litter	Paper, construction, food packaging, cement bags, off-cuts
Sediment	Unprotected exposed soils and stockpiles during earthworks and building
Hydrocarbons	Fuel and oil spills, leaks from construction equipment
Toxic Materials	Cement slurry, asphalt prime, solvents, cleaning agents, wash waters (eg. from tile works)
pH Altering Substance	Acid sulfate soils, cement slurry

The minimisation tactics during the construction phase may include erosion and sediment control measures in accordance with Internal Erosion Control Association documentation.

5.2 Operational Phase

An assessment has been undertaken to determine whether the new development necessitates compliance operational water quality objectives per the Logan City Council questions, as outlined in Table 5-2 below.

Table 5-2 Logan City Council Trigger Questions

Logan City Council Trigger Questions	Development Response
A Material Change of Use and Preliminary Approvals	
a) the development is greater than 2,500m² and results in the creation of six or more additional dwellings	Yes
b) the impervious area of the development is greater than 25 percent and the development is	Yes
i) greater than 2,500m²	Yes
ii) located in the Loganholme local plan area	No
iii) included in the Highway business precinct of the Specialised centre zone and located between the Pacific Highway and the southern boundary of the Loganholme local plan area	No
Reconfiguring a lot	No- application does not involve a 'Reconfiguring a lot' development type.

a) the development is greater than 2,500m² and where it	N/A
i) results in an increased number of non-residential lots (e.g. industrial, commercial, etc)	N/A
ii) it results in the creation of six or more residential lots	N/A
b) located in the Loganholme local plan area and results in a total of four or more lots	N/A
c) where included in the Highway business precinct of the Specialised centre zone and located between the Pacific Highway and the southern boundary of the Loganholme local plan area and results in a total of four or more lots	

The above table indicates that the development triggers compliance with the Logan City Council water quality objectives. Therefore, the site requires additional operational water quality treatment devices.

5.3 Catchment Source Area and Nodes

For the purposes of stormwater quality assessment, the subject site was broken down into catchments using the 'split catchment' approach, as summarised in Table 5-3 below.

Table 5-3 Quality Catchment Areas

Catchment	Lot A Area (ha)	Lot B Area (ha)
Roof	0.874	0.986
Driveway	0.664	0.522
Pervious	0.107	0.075
Bypass (Pervious)	0.008	0.000

Further detail can be seen in C_25145 DA43_Quality Catchment Plan in Appendix A.

5.4 Proprietary Treatment Devices

The treatment devices within the treatment train for Lot A include:

- 9 x OceanGuards with 200µm mesh bags (OG-200); and
- 28 x Tall (690) StormFilter cartridges in a 13m² chamber.

The treatment devices within the treatment train for Lot B include:

- 9 x OceanGuards with 200µm mesh bags (OG-200); and
- 29 x Tall (690) StormFilter cartridges in a 13m² chamber.

5.4.1 OceanGuard

The OceanGuard is a basket that is installed into field or kerb inlet gully pit. The flow diverter at the top of the unit has a rigid skirt that is installed against the walls directing all incoming stormwater flows into the filtration bag. Peak flows during large storm events are able to bypass through a flow diverter. The OceanGuard is typically designed to provide stormwater treatment in ultra-urban environment by meeting water quality standard whilst increasing yield and hence cost effectiveness for developers.

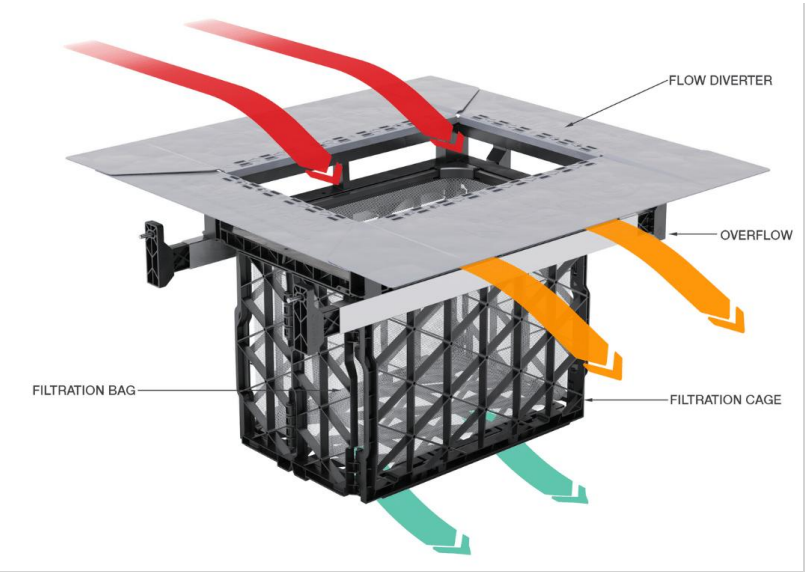


Figure 5-1 Ocean Protect OceanGuard

5.4.2 Ocean Protect StormFilter Cartridge

The Ocean Protect StormFilter Cartridge is an underground stormwater treatment device which traps and adsorbs pollutants from stormwater runoff such as total suspended solids, hydrocarbons, nutrients, metals and other common pollutants. It is comprised of one or more structures that house rechargeable, media filled cartridges. Ocean Protect Filter Cartridges are SQUIDEP (Stormwater Quality Improvement Evaluation Protocol) verified.

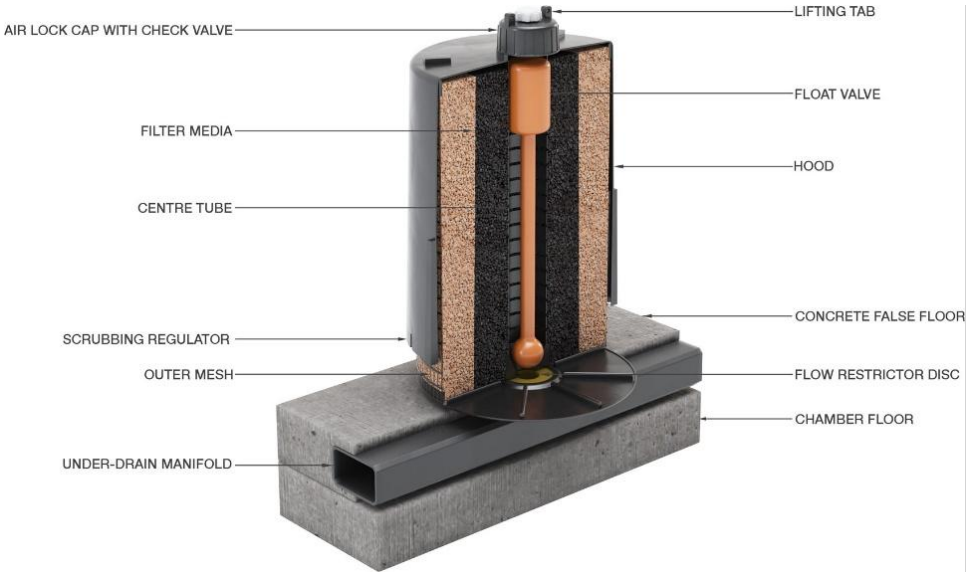


Figure 5-2 Ocean Protect StormFilter Cartridge

5.5 MUSIC Modelling Diagram

A diagrammatic layout of the MUSIC configuration used to model the proposed development is presented below in Figure 5-3.

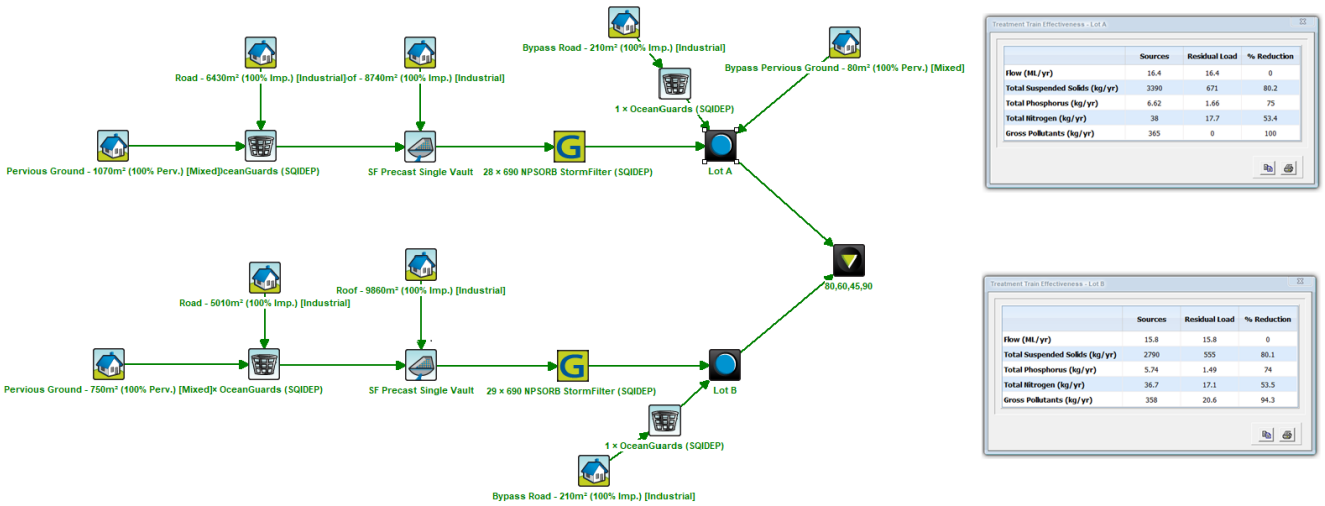


Figure 5-3 MUSIC Model

The MUSIC model was used to assess the performance of the proposed treatment train. The results of the proposed treatment train compared to the required water quality objectives are summarised in Table 5-4 below.

Table 5-4 MUSIC Modelling Results

Pollutant	Minimum Reduction in Mean Load	% Reduction (Lot A)	% Reduction (Lot B)
Total Suspended Solids	80	80.2	80.1
Total Phosphorus	60	75	74
Total Nitrogen	45	53.4	53.5
Gross Pollutants	90	100	100

The results indicate that the proposed proprietary products are sufficient in achieving the water quality objectives and exceeds the minimum required pollutant reduction targets.

5.6 Maintenance

The maintenance of internal water quality treatment is the responsibility of the developer and/or future landowner. The maintenance of proprietary treatment is to be undertaken in accordance with manufacturer guidelines and specifications.

The Operations and Maintenance Manuals for the proposed stormwater quality devices can be seen in Appendix E.

6. Conclusion

This Stormwater Management Plan has been commissioned by Howell Constructions for the Minor Change application at 63 Cairns Street, Loganholme. The proposed development involves the creation of a new industrial development comprising of 5 separate warehouse buildings across two lots.

A summary of the investigation and outcomes presented in this report are as follows:

- **Proposed Drainage (Section 3):** Lawful Point of Discharge identified as the waterway corridor traversing the Eastern portion of the subject site;
- **Stormwater Quantity Management (Section 4):** Attenuation not required due to assumed capacity of waterway corridor to accommodate developed flows from each lot within the subject site; and
- **Stormwater Quality Management (Section 5):** Ocean Protect OceanGuard and StormFilter devices utilised to achieve stormwater quality objectives for each lot within the subject site.

7. Disclaimer

This report has been prepared on behalf of and for the exclusive use of Howell Constructions and is subject to and issued in accordance with the agreement between Context Engineering.

Our investigation and analysis has been specifically catered for the particular requirements of Howell Constructions and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from Context Engineering.

Context Engineering accepts no liability or responsibility whatsoever for the report in respect of any use of or reliance upon this report by any third party.

The investigation and analysis have relied on information provided by others. We accept no responsibility for the accuracy of material supplied by others. The accuracy of the investigation, analysis and report are dependent upon the accuracy of this information.

63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix A **Schematic Design Drawings**

Existing Legend

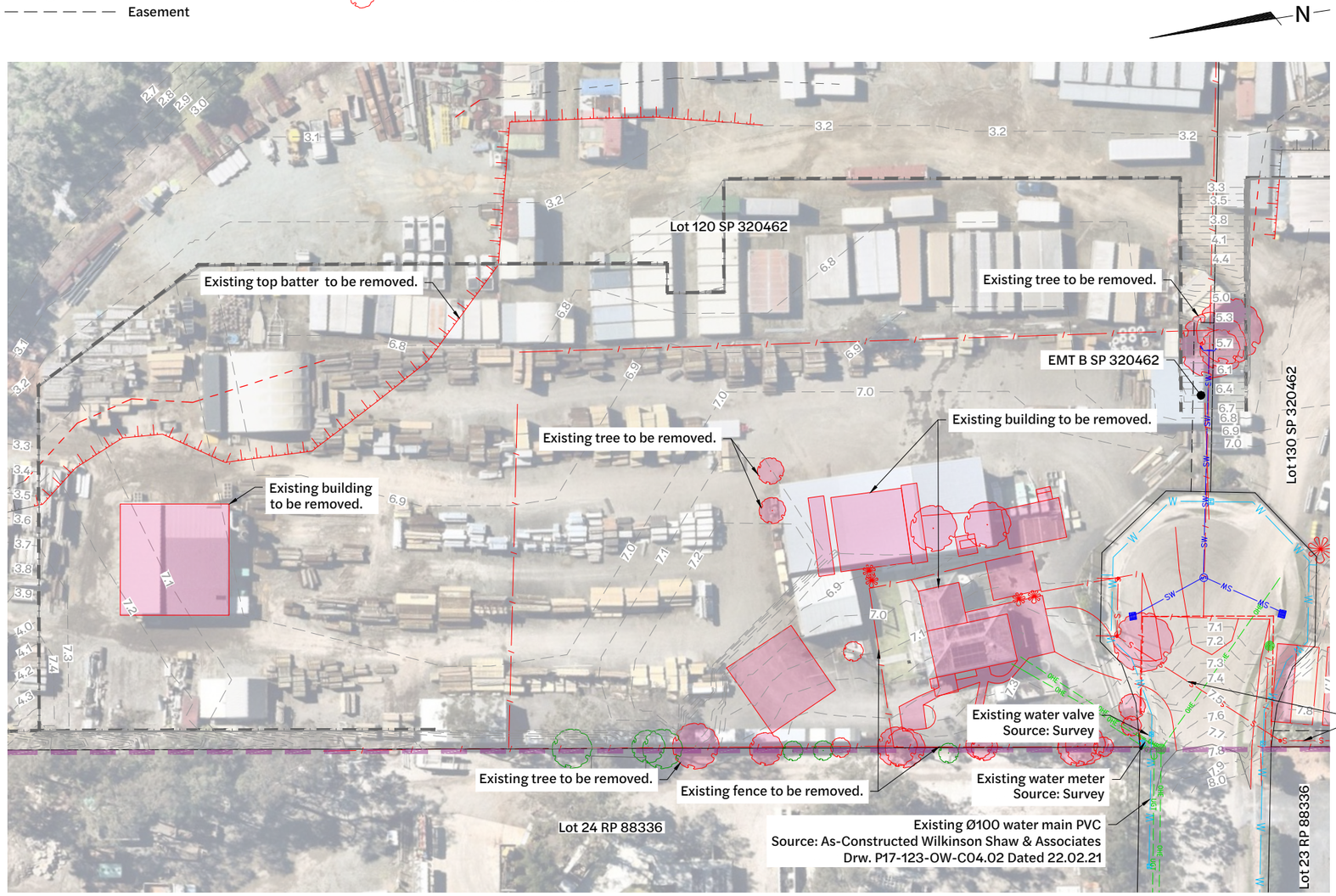
- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

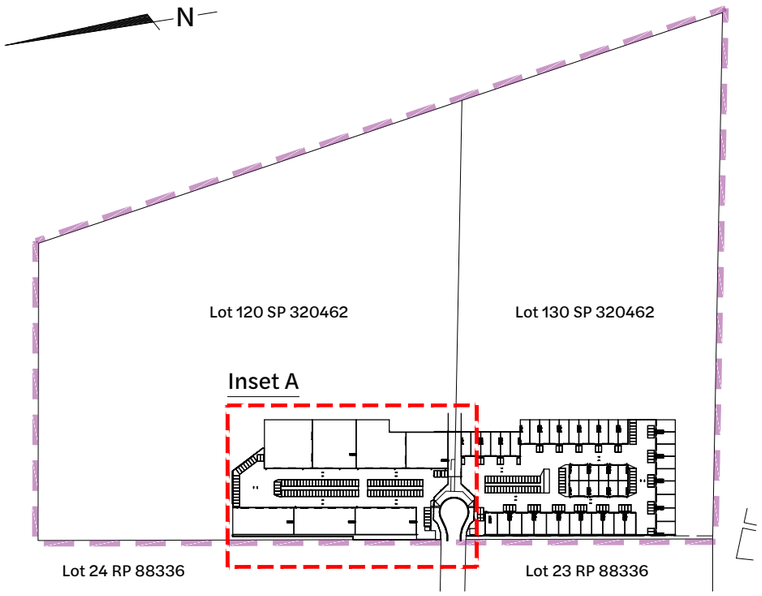
- Site Boundary
- Demolition Area
- Existing Feature to be Removed
- Tree to be Demolished



Inset A - Existing Features and Demolition Layout Plan
1:400 Scale

Matchline for Continuation
Refer to Dwg No. C_25145 DA02

Existing Ø150 PVC sewer main.
Source: As-Constructed Wilkinson Shaw & Associates
Drw. P17-123-OW-C05.03 Dated 22.02.21



Locality Plan
1:2500 Scale

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:400 4 0 4 8 12 16 20m A1
1:800 A3
1:2500 50 0 50 100m A1
1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Existing Features and Demolition Layout Plan (Sheet 1 of 2)

Project No.	Drawing No.	Revision
C_25145	DA01	3

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\6_MODEL\AUTOCAD\C_25145 DA01_EXISTING FEATURES AND DEMOLITION LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

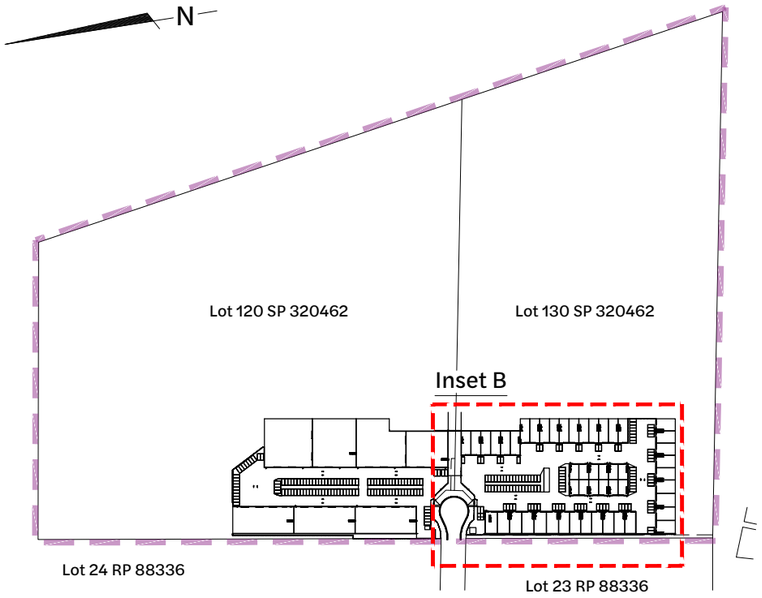
- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

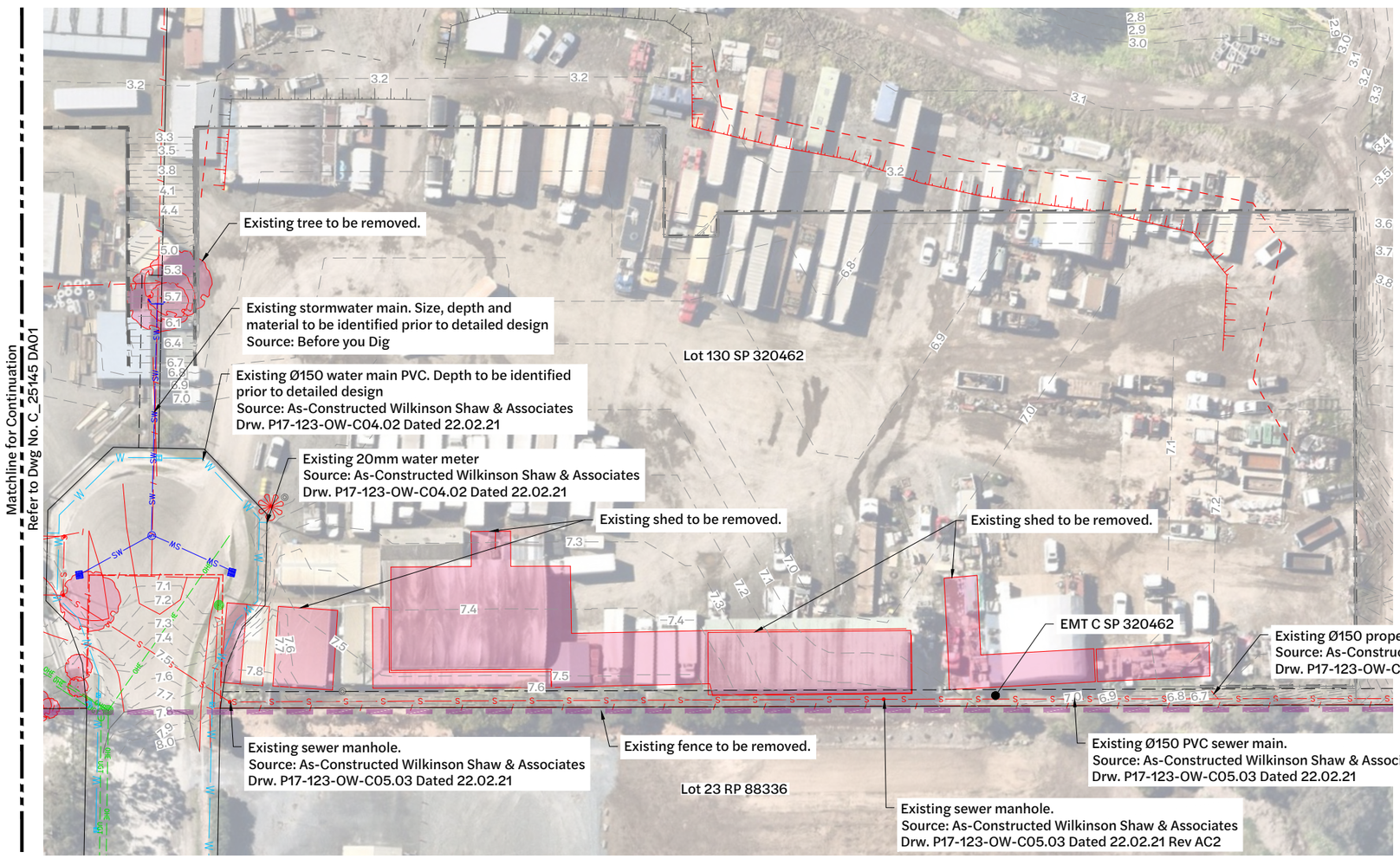
- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

- Site Boundary
- Demolition Area
- Existing Feature to be Removed
- Tree to be Demolished



Locality Plan
1:2500 Scale



Inset B - Existing Features and Demolition Layout Plan
1:400 Scale

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Note:
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QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:400 / 1:800 / 1:2500 / 1:5000 — 4 0 4 8 12 16 20m A1 A3 — 50 0 50 100m A1 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
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Drawing Title: Existing Features and Demolition Layout Plan (Sheet 2 of 2)

Project No.	Drawing No.	Revision
C_25145	DA02	3

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\6_MODEL\AUTOCAD\C_25145 DA01_EXISTING FEATURES AND DEMOLITION LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

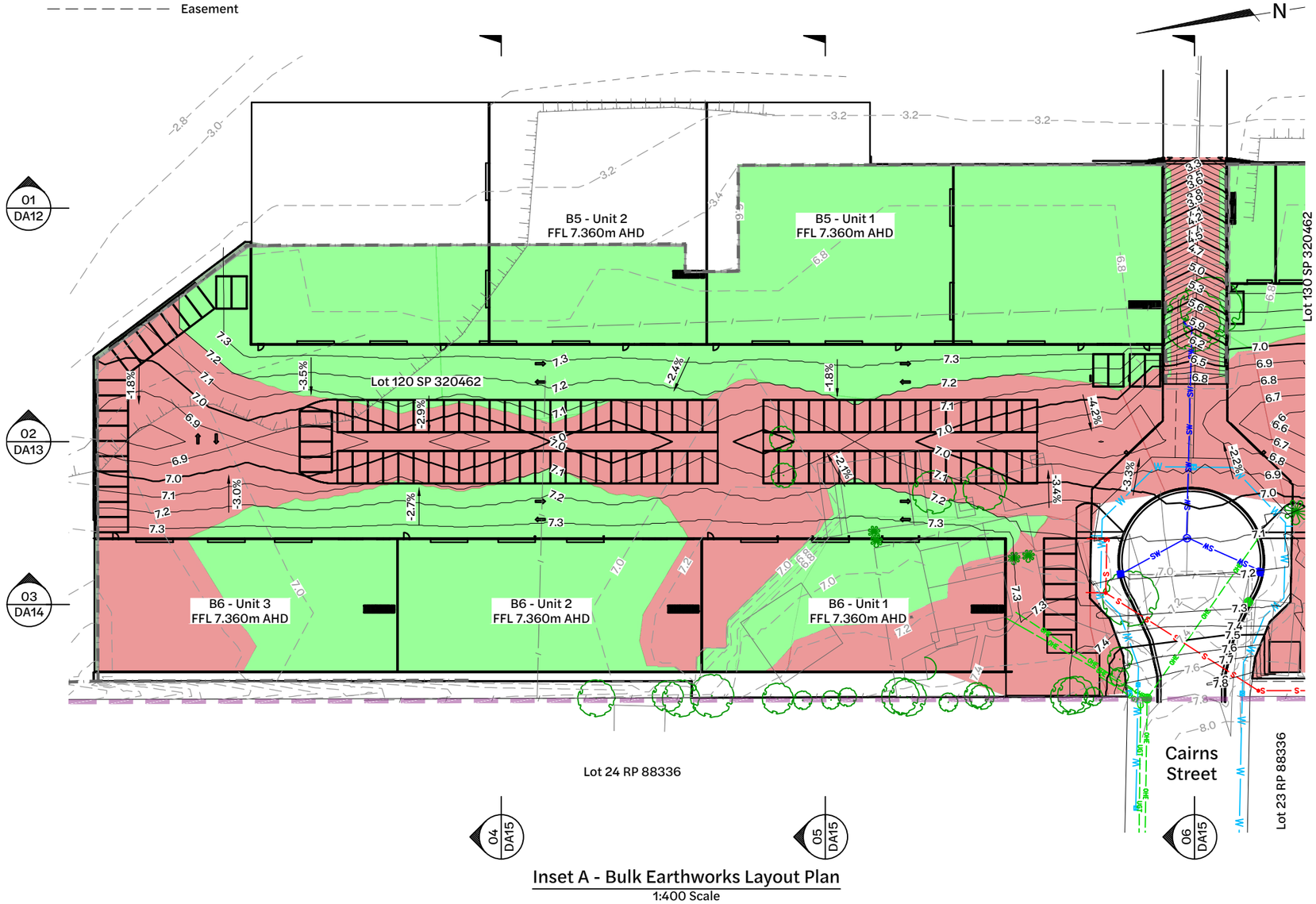
- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor

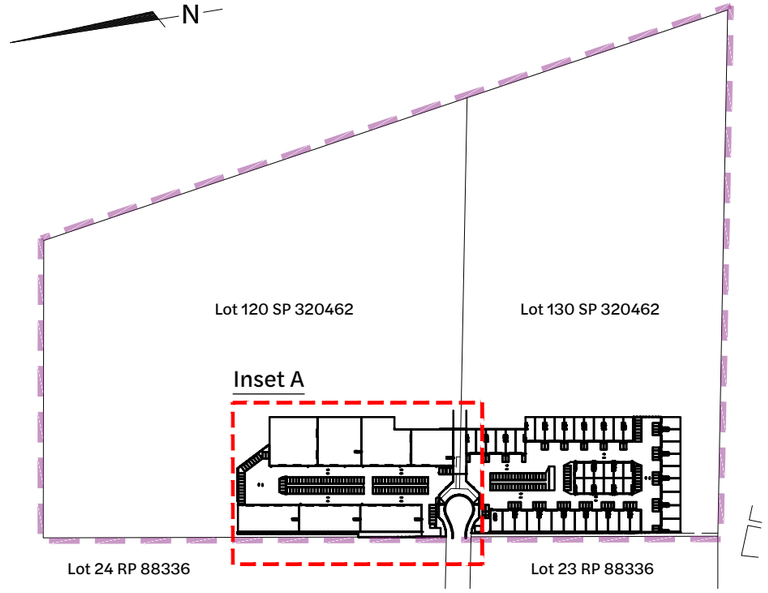
Note:
Existing contours shown incorporates both surveyed existing surface (AJS Surveys dated 09/07/2020) and design surface as per previous approval (OW/176/2020)

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.



Matchline for Continuation
Refer to Dwg No. C_25145 DA11

Inset A - Bulk Earthworks Layout Plan
1:400 Scale



Locality Plan
1:2500 Scale

Bulk Earthworks Legend
Hatching from Design surface as per previous approval (OW/176/2020) to Bulk Earthworks surface

Cut		Fill	
> 5.0m		> 5.0m	
2.0 to 5.0m		2.0 to 5.0m	
1.0 to 2.0m		1.0 to 2.0m	
0.0 to 1.0m		0.0 to 1.0m	

Earthworks Schedule
Hatching from Design surface as per previous approval (OW/176/2020) to Bulk Earthworks surface

Type	Volume (m^3)
Cut	-3,124*
Fill	2,832*
Total Balance	-292*

*Assume no strip and 200mm slab and pavement depth.

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

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3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:400, 1:800, 1:2500, 1:5000 — 4 0 4 8 12 16 20m A1 A3; 50 0 50 100m A1 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

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Context Engineering

Drawing Title: Bulk Earthworks Layout Plan (Sheet 1 of 2)

Project No.: C_25145
Drawing No.: DA10
Revision: 4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\6_MODEL\AUTOCAD\C_25145 DA10_BULK EARTHWORKS LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
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- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

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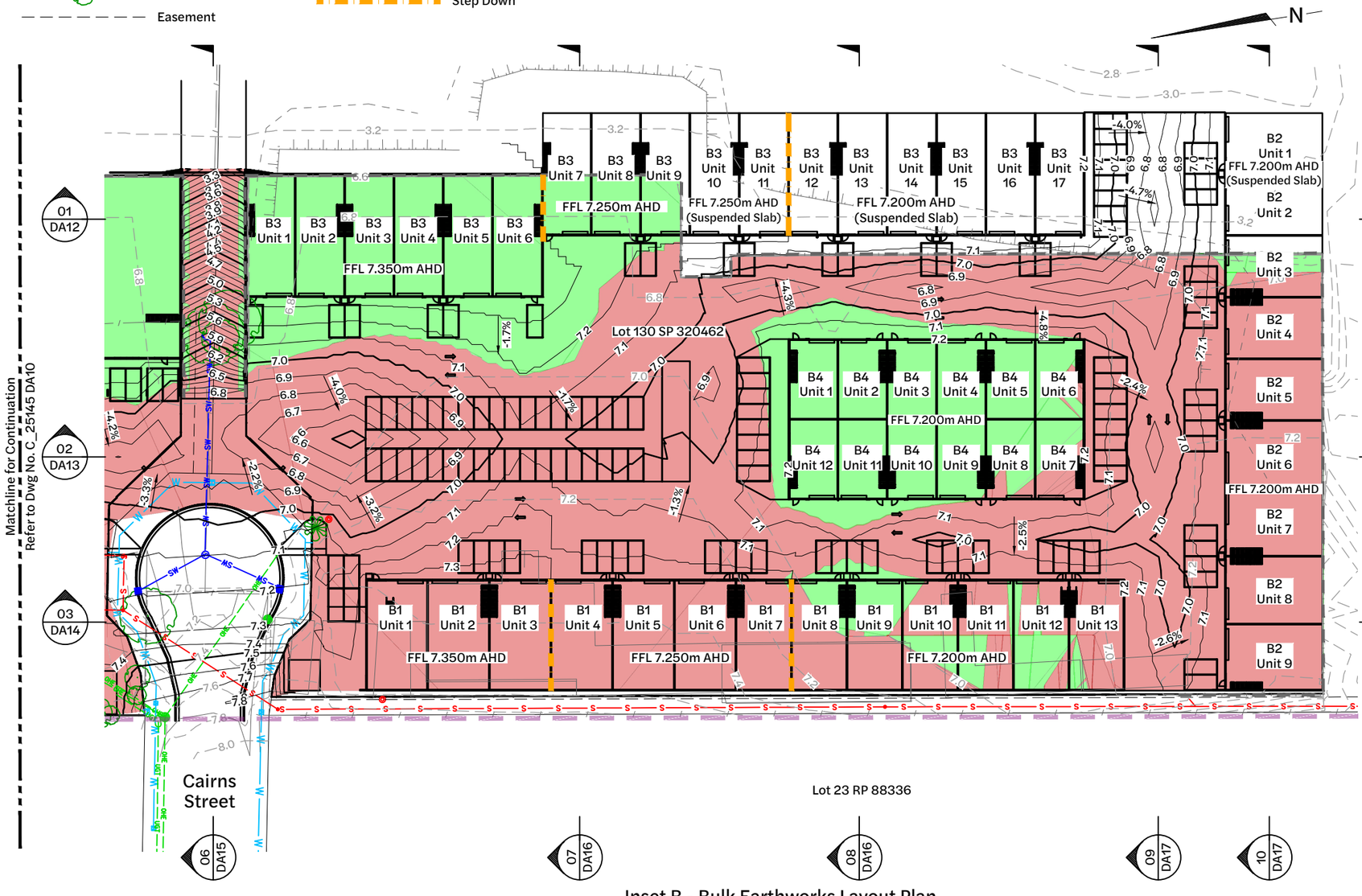
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

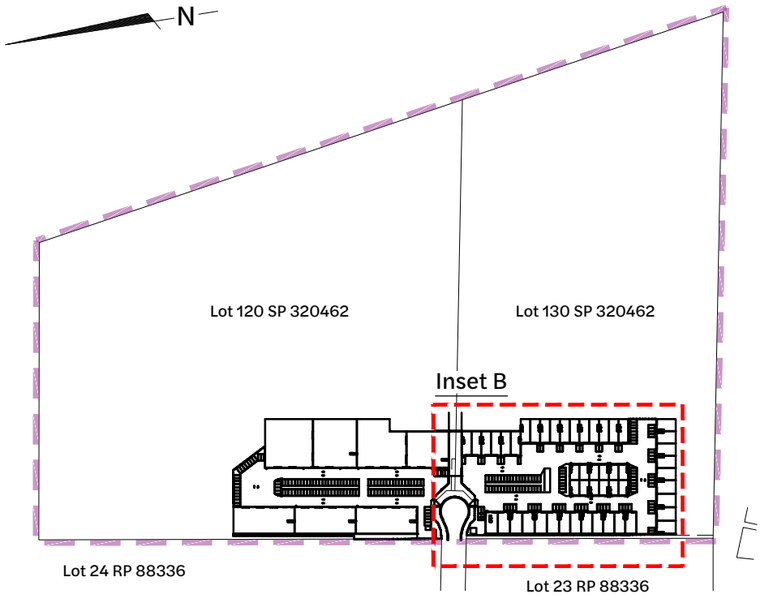
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Step Down

Note:
Existing contours shown incorporates both surveyed existing surface (AJS Surveys dated 09/07/2020) and design surface as per previous approval (OW/176/2020)

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.



Inset B - Bulk Earthworks Layout Plan
1:400 Scale



Locality Plan
1:2500 Scale

FFL 6.860m AHD

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Note:
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4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval** Not for Construction

Scale: 1:400 / 1:800 — 4 0 4 8 12 16 20m A1 / A3; 1:2500 / 1:5000 — 50 0 50 100m A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer: All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

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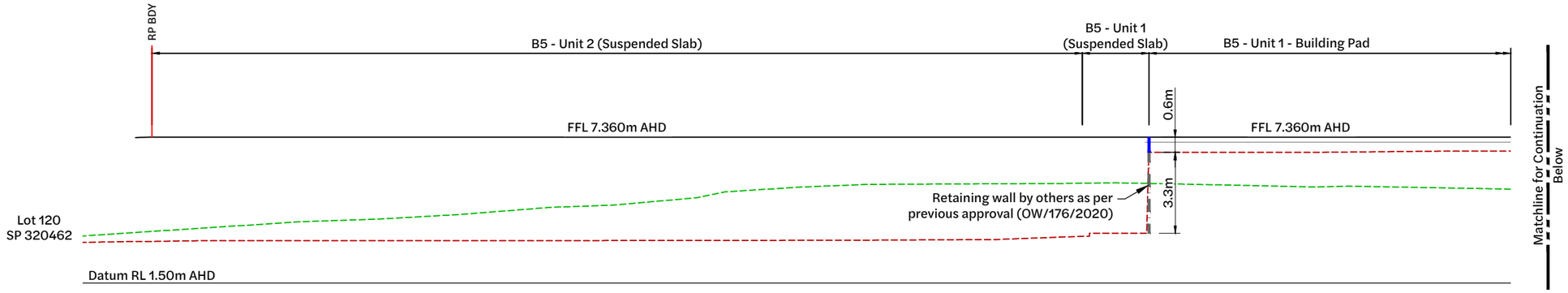
Drawing Title: Bulk Earthworks Layout Plan (Sheet 2 of 2)

Project No.: C_25145 | Drawing No.: DA11 | Revision: 4

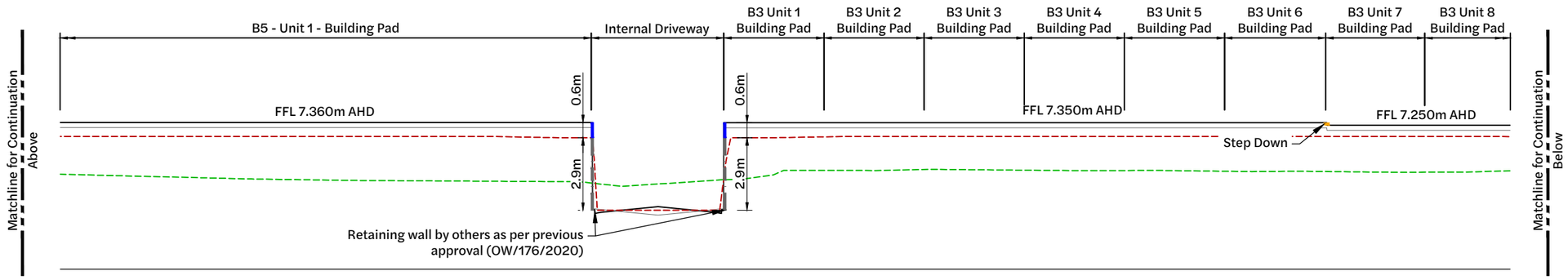
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\6_MODEL\AUTOCAD\C_25145-DA10_BULK EARTHWORKS LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Legend

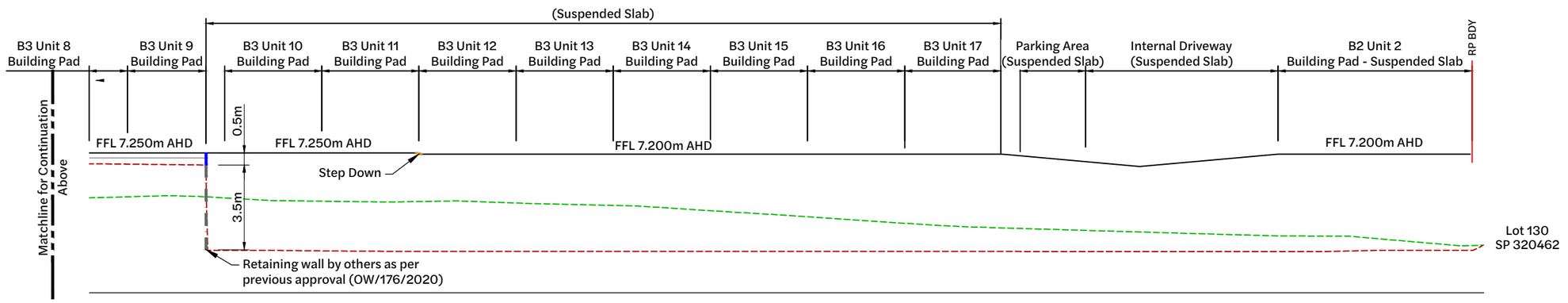
- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining wall by Others as per Previous Approval (OW/176/2020)
- Retaining Wall Modification
- Step Down



Section 01 / DA10
Horizontal: 1:200
Vertical: 1:100



Section 01 / DA10
Horizontal: 1:200
Vertical: 1:100



Section 01 / DA10
Horizontal: 1:200
Vertical: 1:100

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3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval** — Not for Construction

Scale: 1:200 2 0 2 4 6 8 10m A1 / 1:400 A3 (HORIZONTAL); 1:100 1 0 1 2 3 4 5m A1 / 1:200 A3 (VERTICAL)

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer: All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Bulk Earthworks Sections (Sheet 1 of 6)

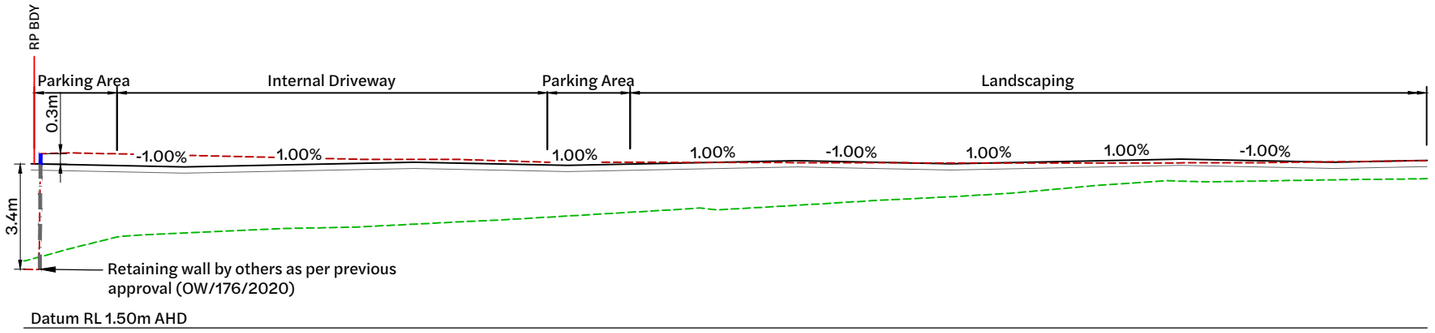
Project No. C_25145 | Drawing No. DA12 | Revision 4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\IE_MODEL\AUTOCAD\C_25145 DA12_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

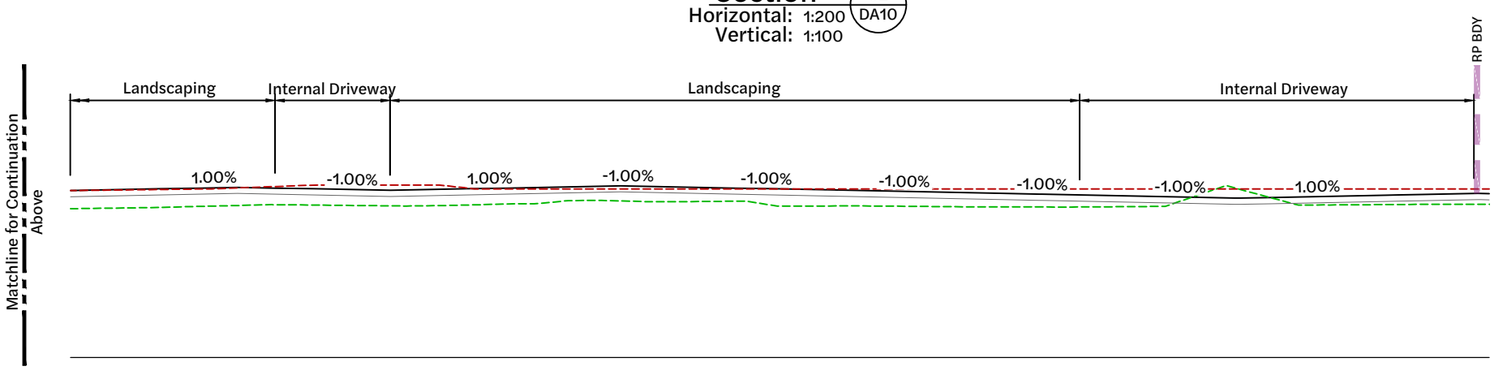
Legend

- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining Wall by Others as per Previous Approval (OW/176/2020)
- Retaining Wall Modification

Lot 120
SP 320462



Section 02 DA10
Horizontal: 1:200
Vertical: 1:100



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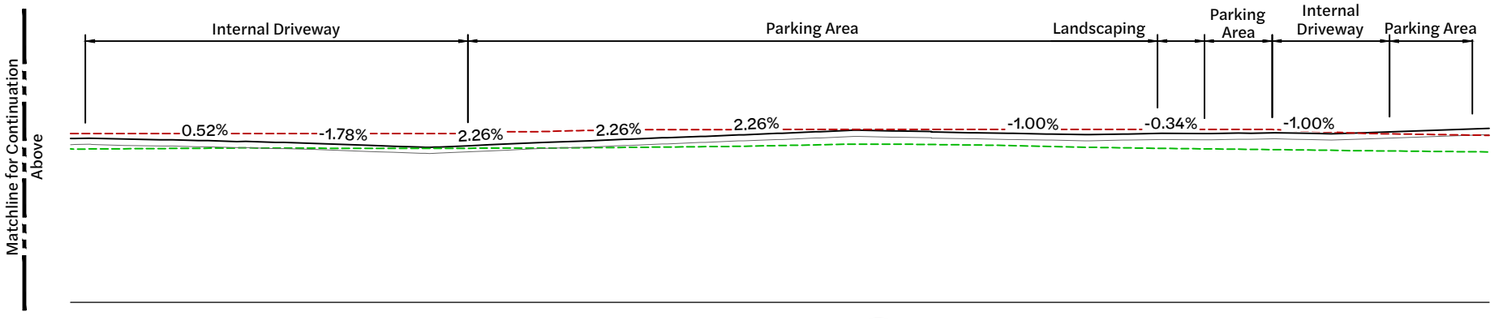
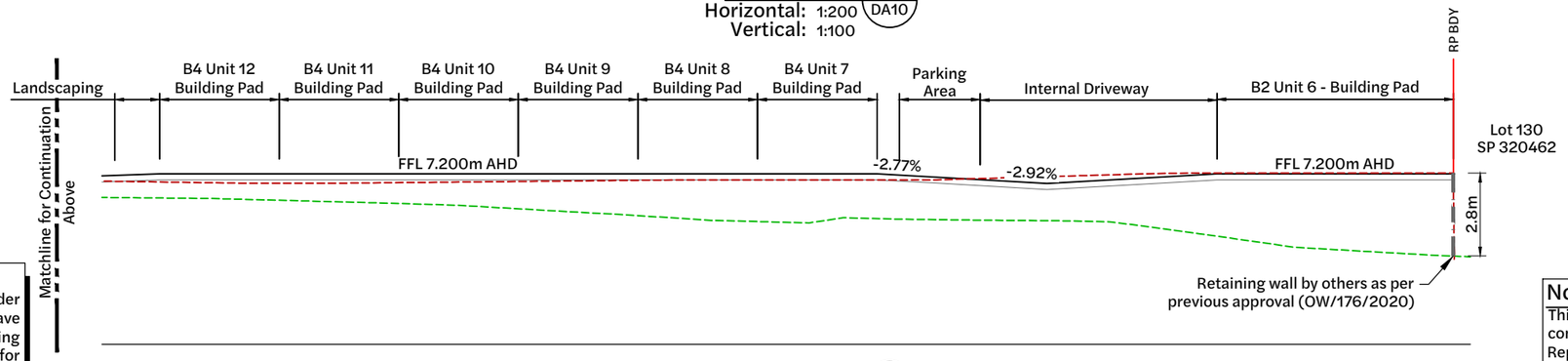
Vertical: 1:100



Section 02 DA10
Horizontal: 1:200
Vertical: 1:100



Section 02 DA10
Horizontal: 1:200
Vertical: 1:100

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R002_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:200 2 0 2 4 6 8 10m A1
1:400 A3
HORIZONTAL
1:100 1 0 1 2 3 4 5m A1
1:200 A3
VERTICAL

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

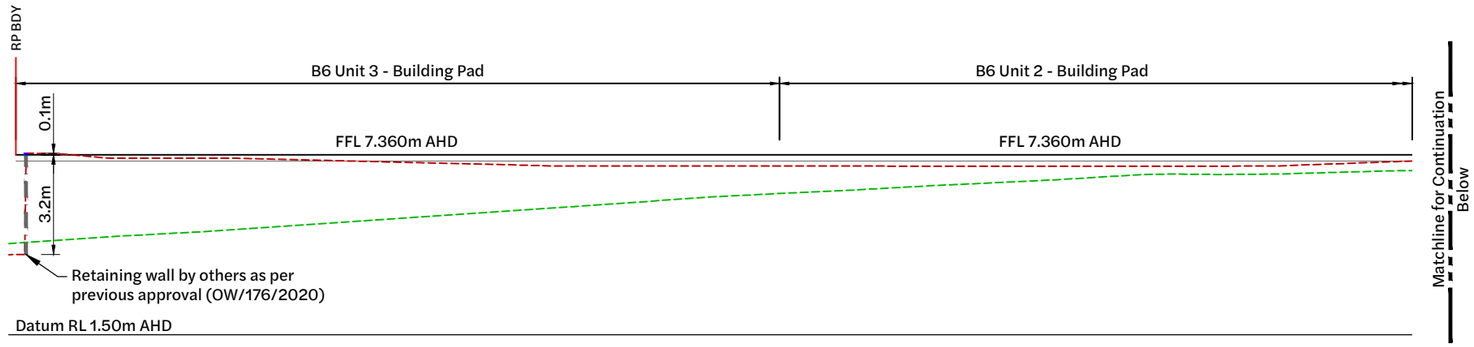
Drawing Title: Bulk Earthworks Sections (Sheet 2 of 6)

Project No.	Drawing No.	Revision
C_25145	DA13	4

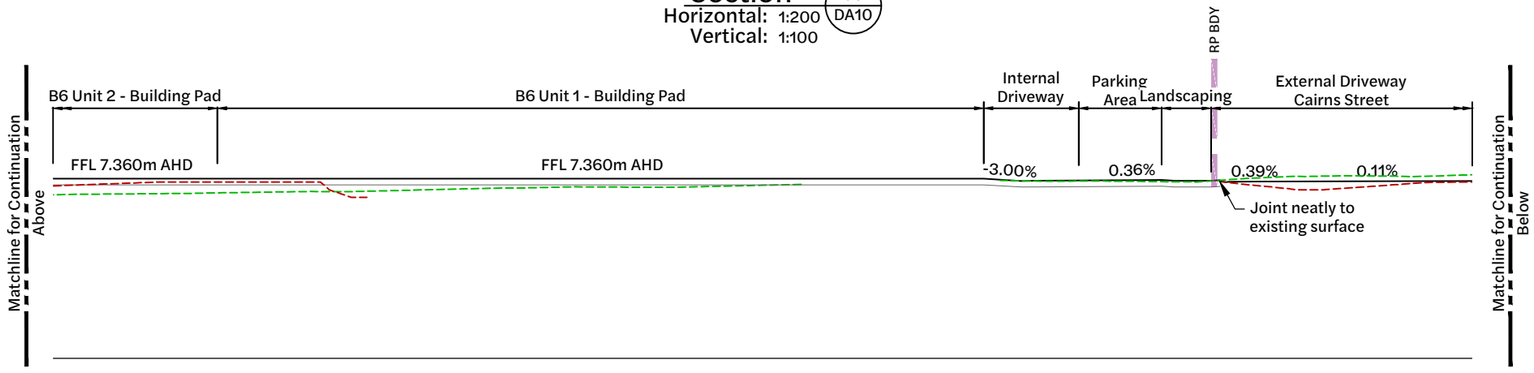
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA02_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

Legend

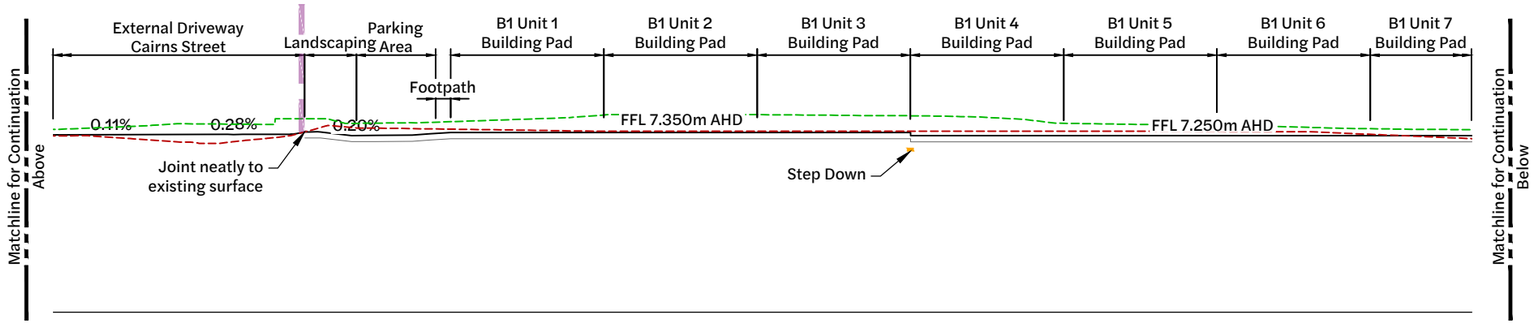
- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining Wall by Others as per Previous Approval (OW/176/2020)
- Retaining Wall Modification
- Step Down



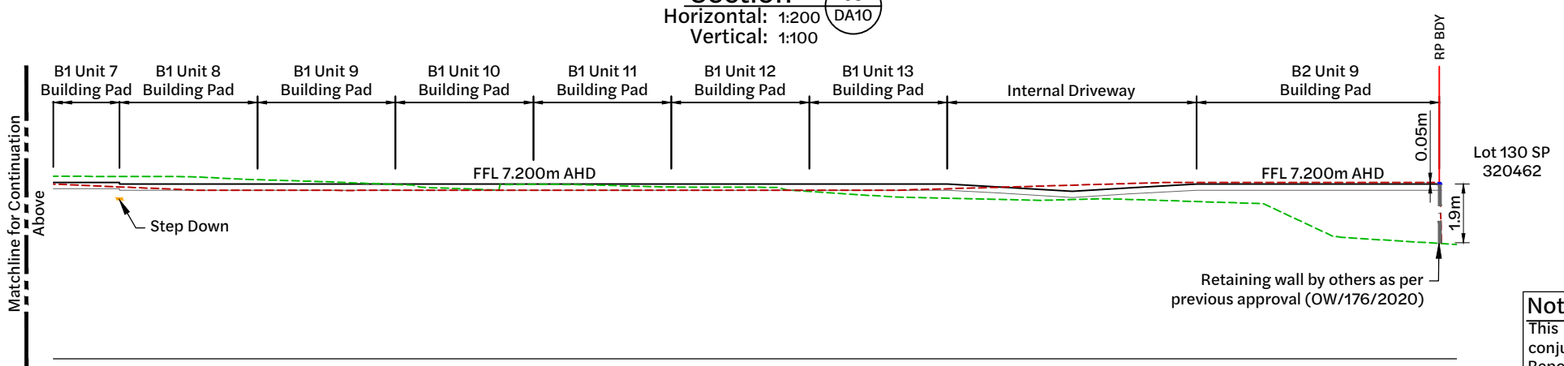
Section 03 DA10
Horizontal: 1:200
Vertical: 1:100



Section 03 DA10
Horizontal: 1:200
Vertical: 1:100



Section 03 DA10
Horizontal: 1:200
Vertical: 1:100



Section 03 DA10
Horizontal: 1:200
Vertical: 1:100

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R002_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:200 2 0 2 4 6 8 10m A1
1:400 HORIZONTAL A3
1:100 1 0 1 2 3 4 5m A1
1:200 VERTICAL A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

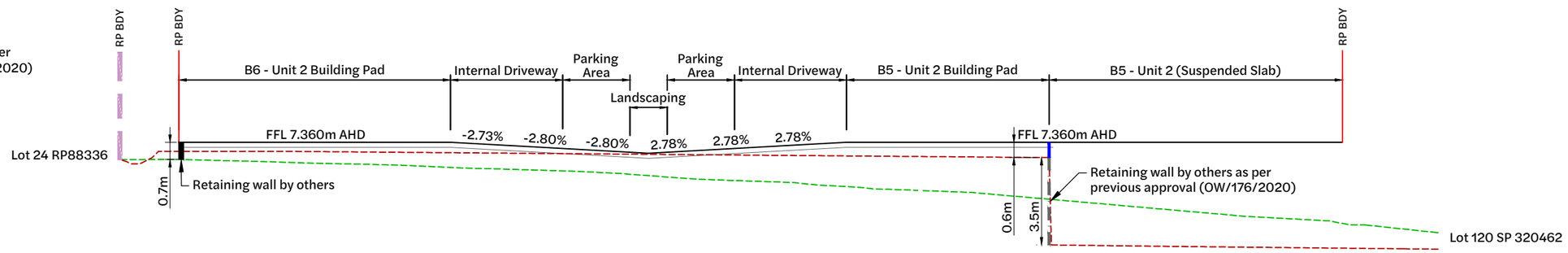
Drawing Title: Bulk Earthworks Sections (Sheet 3 of 6)

Project No. C_25145
Drawing No. DA14
Revision 4

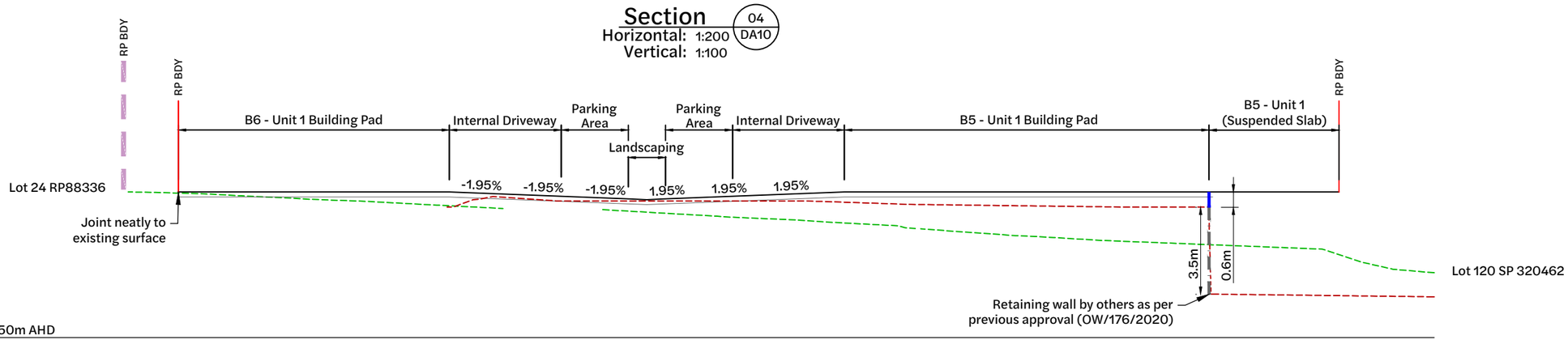
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA02_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

Legend

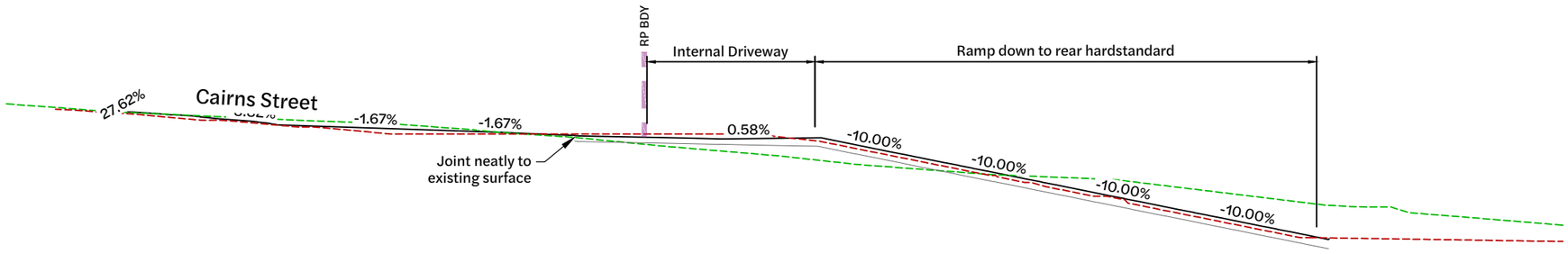
- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining Wall by Others as per Previous Approval (OW/176/2020)
- Proposed Retaining Wall
- Retaining Wall Modification



Section 04 DA10
Horizontal: 1:200
Vertical: 1:100



Section 05 DA10
Horizontal: 1:200
Vertical: 1:100



Section 06 DA10
Horizontal: 1:200
Vertical: 1:100

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.

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Note:
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Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:200 2 0 2 4 6 8 10m A1
1:400 A3
HORIZONTAL
1:100 1 0 1 2 3 4 5m A1
1:200 A3
VERTICAL

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

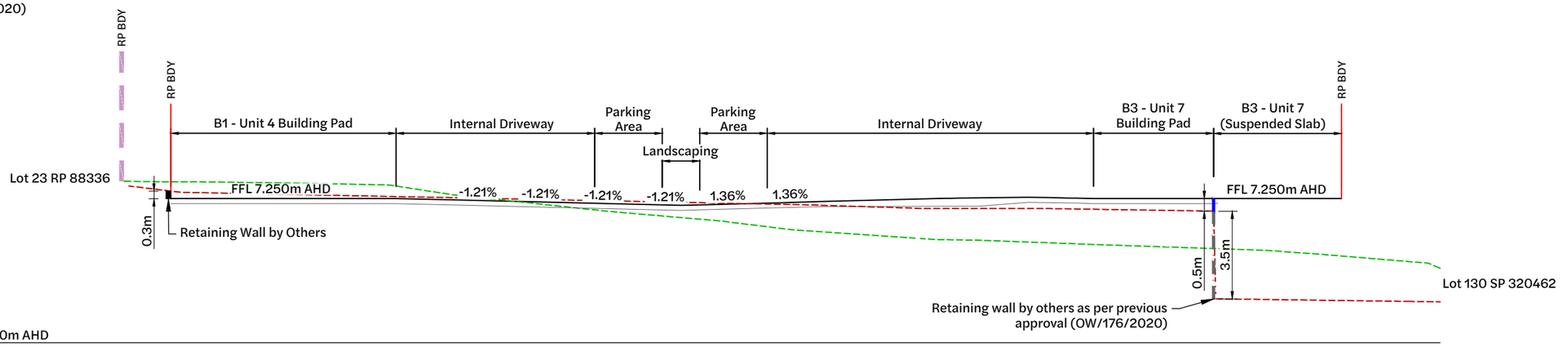
Drawing Title: Bulk Earthworks Sections (Sheet 4 of 6)

Project No. C_25145 | Drawing No. DA15 | Revision 4

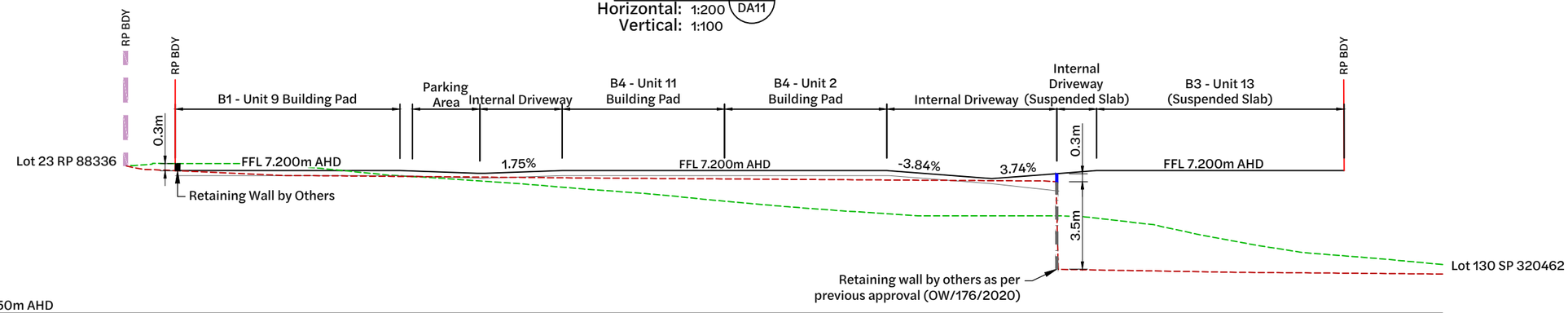
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA02_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

Legend

- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining Wall by Others as per Previous Approval (OW/176/2020)
- Proposed Retaining Wall
- Retaining Wall Modification



Section 07
Horizontal: 1:200
Vertical: 1:100 (DA11)



Section 08
Horizontal: 1:200
Vertical: 1:100 (DA11)

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.

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Note:
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Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:200 2 0 2 4 6 8 10m A1
1:400 A3
HORIZONTAL
1:100 1 0 1 2 3 4 5m A1
1:200 A3
VERTICAL

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
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Context Engineering

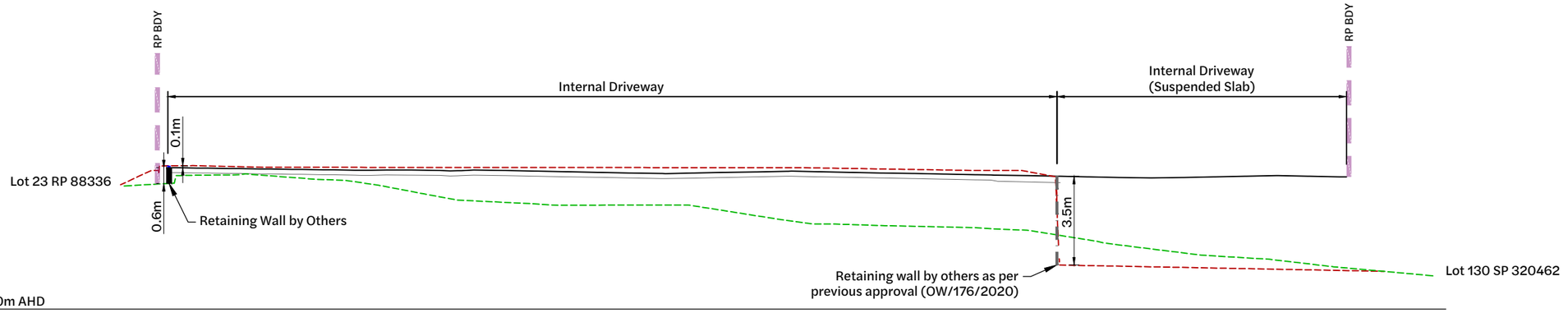
Drawing Title: Bulk Earthworks Sections (Sheet 5 of 6)

Project No.	Drawing No.	Revision
C_25145	DA16	4

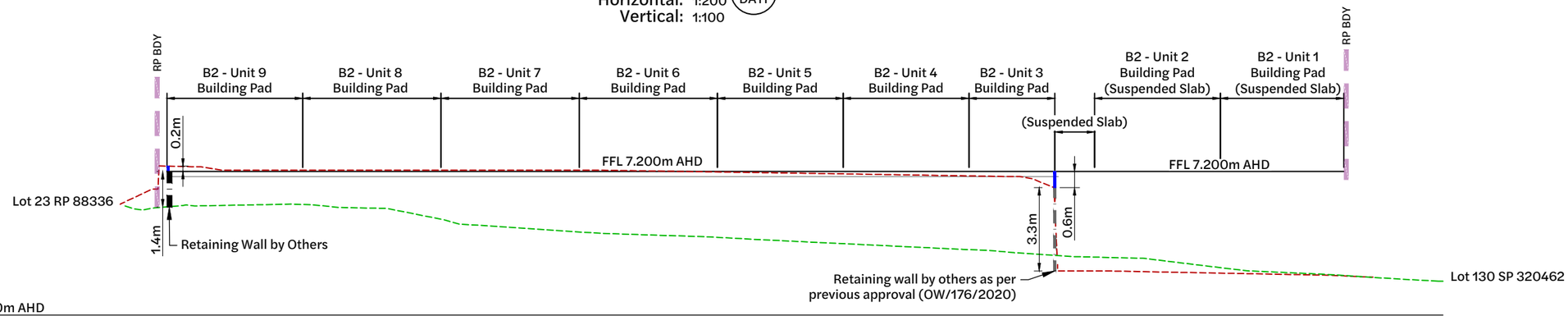
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA02_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

Legend

- Existing Surface as per Survey (AJS Surveys dated 09/07/2020)
- Design Surface as per Previous Approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/Underside of Suspended Slab
- Site Boundary
- Property Boundary
- Retaining Wall by Others as per Previous Approval (OW/176/2020)
- Proposed Retaining Wall
- Retaining Wall Modification



Section 09 DA11
Horizontal: 1:200
Vertical: 1:100



Section 10 DA11
Horizontal: 1:200
Vertical: 1:100

Note:
It is understood that the works approved under OW/176/2020 (including compensatory earthworks) have substantially commenced. Therefore, the corresponding surface has been adopted as the comparison scenario for bulk earthworks and flood storage calculations. For completeness, the surveyed surface is also shown on the sections.

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Note:
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Revision	Date	Issue Details	Drawn	Designed
1	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
2	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:200 2 0 2 4 6 8 10m A1
1:400 A3
HORIZONTAL
1:100 1 0 1 2 3 4 5m A1
1:200 A3
VERTICAL

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
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Context Engineering

Drawing Title: Bulk Earthworks Sections (Sheet 6 of 6)

Project No.	Drawing No.	Revision
C_25145	DA17	2

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA52_BULK EARTHWORKS SECTIONS.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

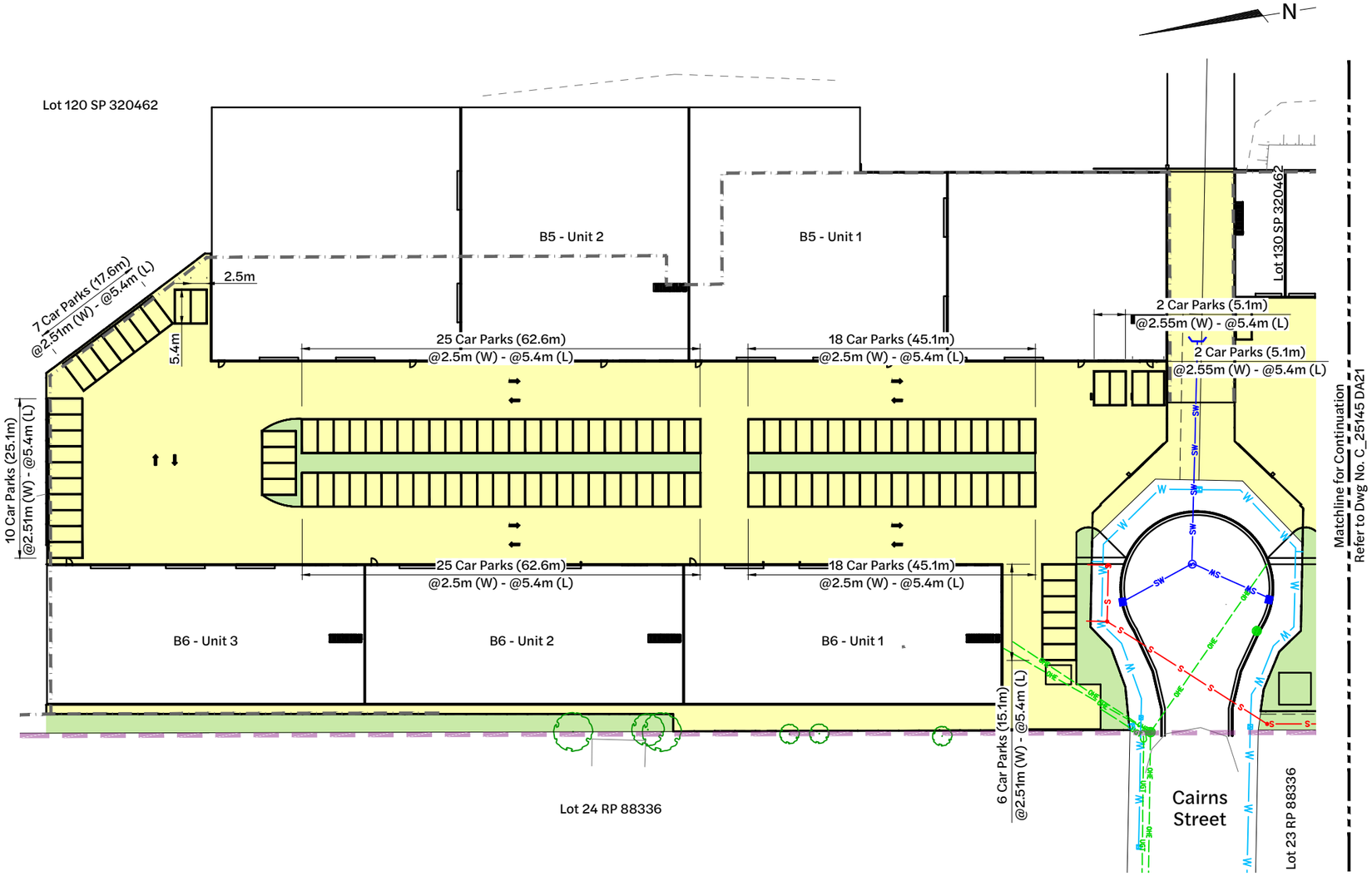
- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

- Site Boundary
- Concrete Pavement
- Grassed

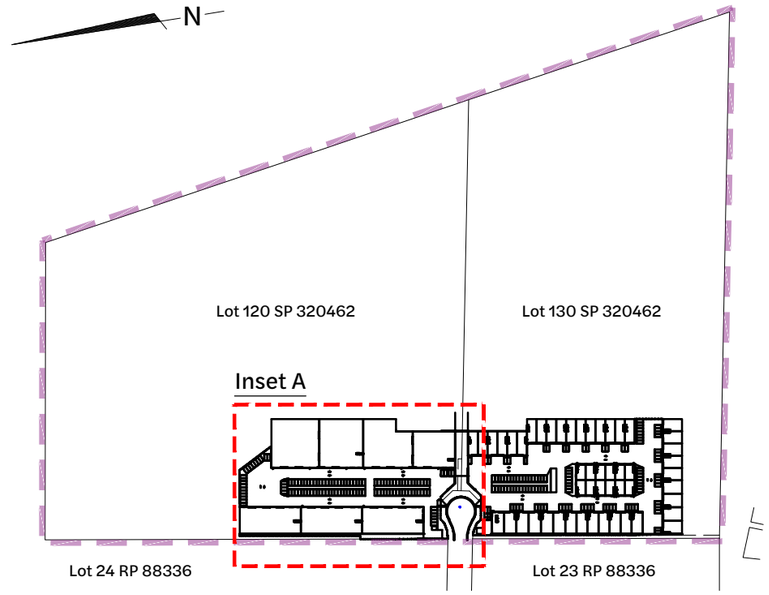
Pavement Marking Legend

Pavement Markings	Length(m)	Gap(m)	Width(mm)
Park Line	-	-	100



Inset A - Internal Roadworks Layout Plan

1:400 Scale



Locality Plan

1:2500 Scale

BEFORE YOU DIG www.byda.com.au

Note:

This drawing is conceptual only and must be viewed in conjunction with C_25145 R002_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:400 4 0 4 8 12 16 20m A1
1:800 A3
1:2500 50 0 50 100m A1
1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Internal Roadworks Layout Plan (Sheet 1 of 2)

Project No.	Drawing No.	Revision
C_25145	DA20	4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA20_INTERNAL ROADWORKS LAYOUT PLAN.DWG LAST SAVED BY: CONTE

Existing Legend

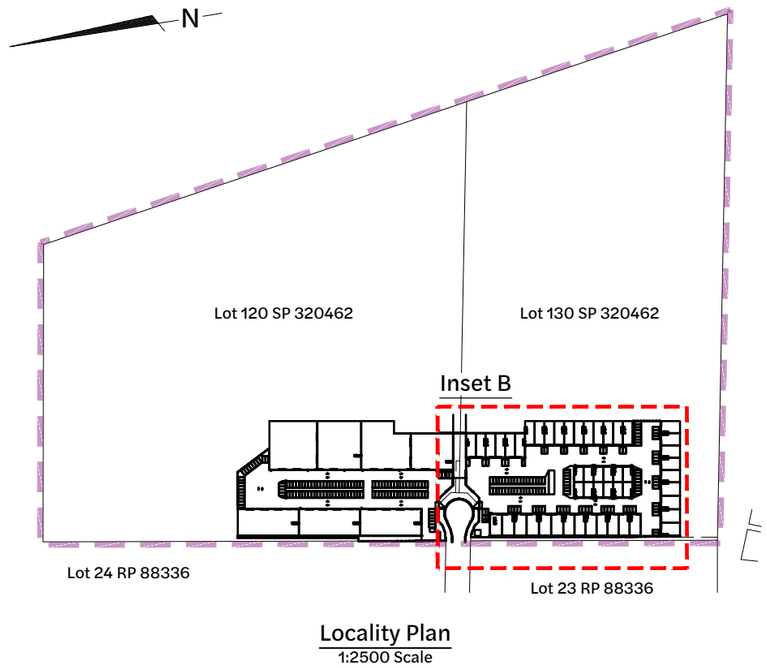
- Property Boundary
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

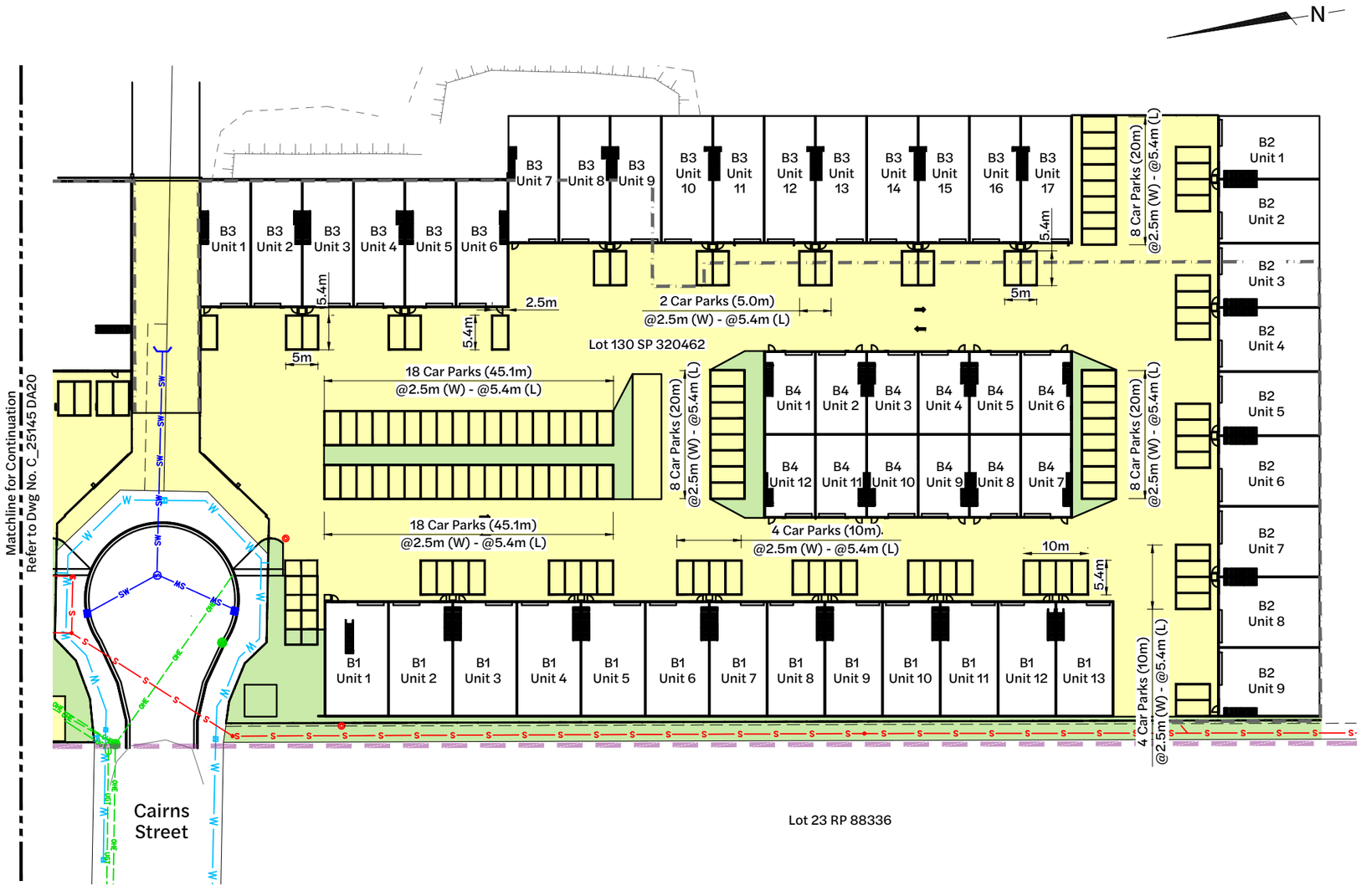
- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

- Site Boundary
- Concrete Pavement
- Grassed



Locality Plan
1:2500 Scale



Inset B - Internal Roadworks Layout Plan
1:400 Scale

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R002_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE

QR Code

Status: **Issued for Approval** Not for Construction

Scale: 1:400, 1:800, 1:2500, 1:5000 (4 0 4 8 12 16 20m A1; A3; 50 0 50 100m A1; A3)

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer: All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Internal Roadworks Layout Plan (Sheet 2 of 2)

Project No.: C_25145 | Drawing No.: DA21 | Revision: 4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\3D_MODEL\AUTOCAD\C_25145 DA20_INTERNAL ROADWORKS LAYOUT PLAN.DWG LAST SAVED BY: CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

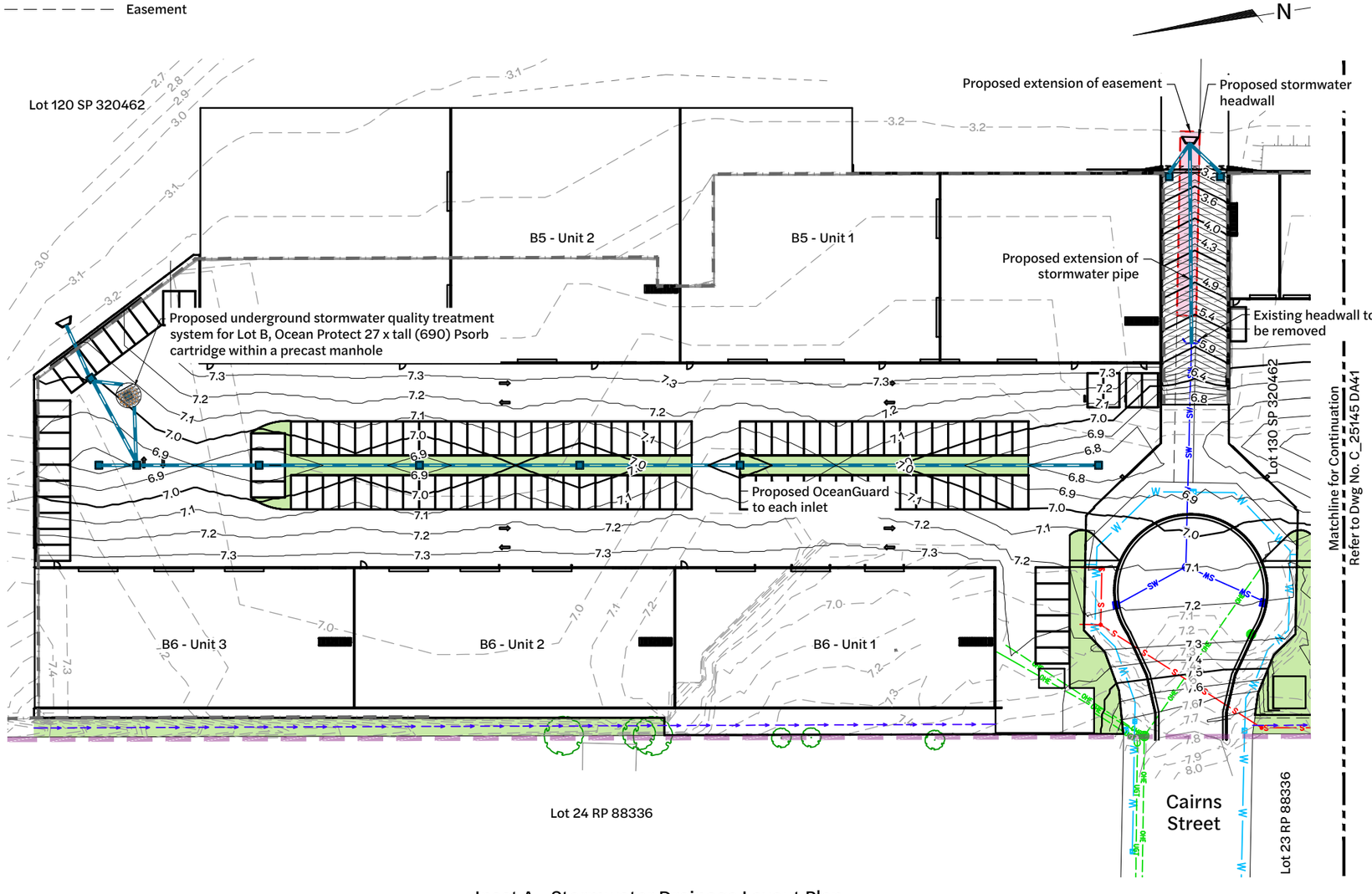
- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

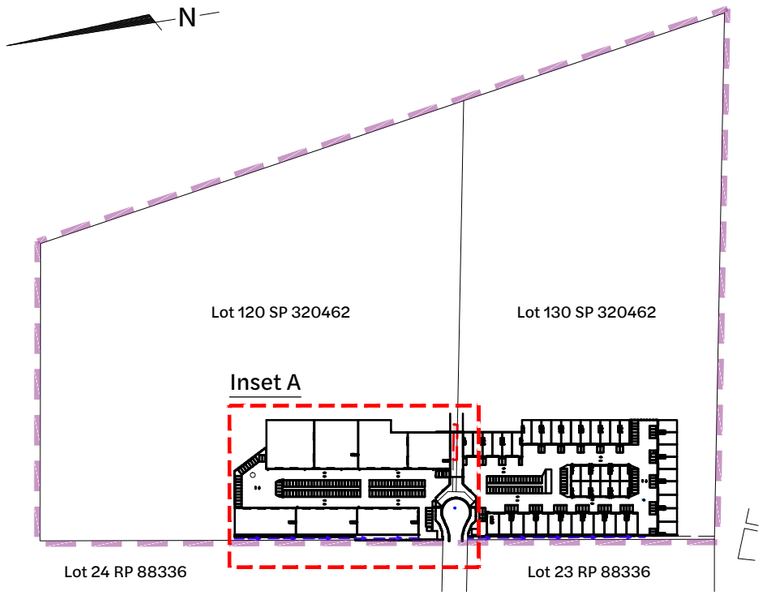
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Swale Invert

Proposed Legend

- Gully Pit
- Stormwater Drainage
- Stormwater Headwall
- Grassed
- Easement



Inset A - Stormwater Drainage Layout Plan
1:400 Scale



Locality Plan
1:2500 Scale

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG
5	04.03.26	Issued for Approval	DT	DT

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:400 4 0 4 8 12 16 20m A1
1:800 A3
1:2500 50 0 50 100m A1
1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Stormwater Drainage Layout Plan (Sheet 1 of 2)

Project No. C_25145 | Drawing No. DA40 | Revision 4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA40_STORMWATER DRAINAGE LAYOUT PLAN.DWG LAST SAVED BY:KARUN

Existing Legend

- Property Boundary
- Surface Contour (0.1)
- Water Reticulation (W)
- Water Meter
- Water Valve
- Overhead Electrical (OHE)
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

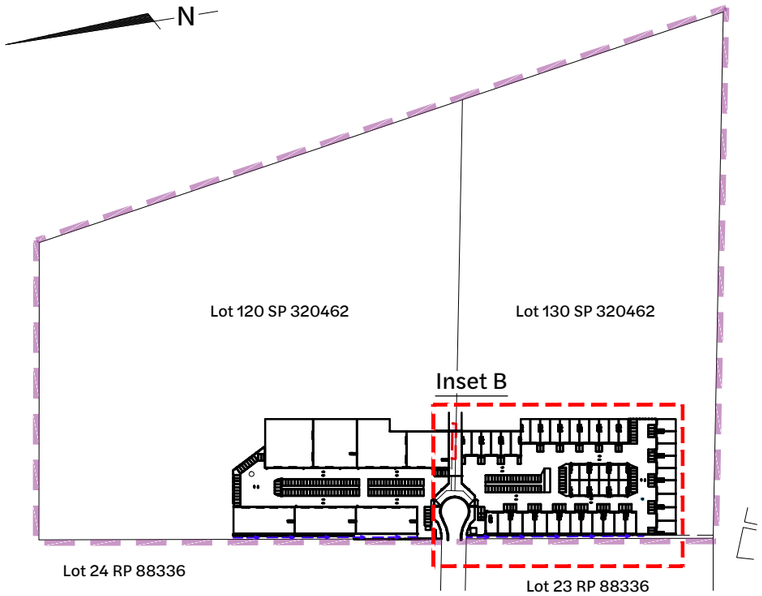
- Water Hydrant
- Sewer Reticulation (S)
- Sewer Manhole
- Stormwater Reticulation (SW)
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

Proposed Legend

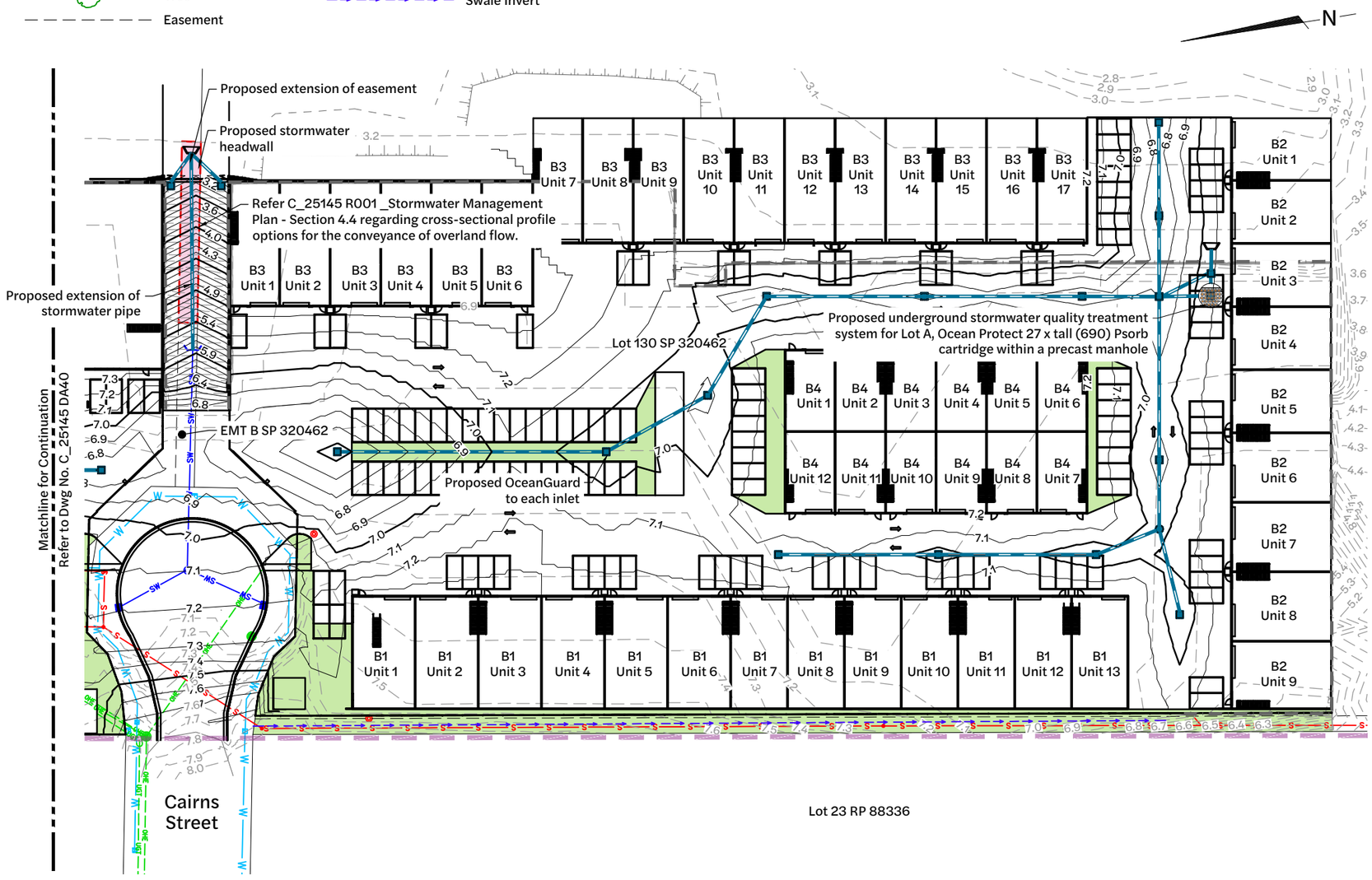
- Site Boundary
- Design Surface Contour Major (0.5)
- Design Surface Contour Minor (0.1)
- Swale Invert

Proposed Legend

- Gully Pit
- Stormwater Drainage
- Stormwater Headwall
- Stormwater Manhole
- Grassed
- Easement



Locality Plan
1:2500 Scale



Inset B - Stormwater Drainage Layout Plan
1:400 Scale

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval** — Not for Construction

Scale
1:400 4 0 4 8 12 16 20m A1
1:800 A3
1:2500 50 0 50 100m A1
1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Stormwater Drainage Layout Plan (Sheet 2 of 2)

Project No. C_25145 | Drawing No. DA41 | Revision 4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\6_MODEL\AUTOCAD\C_25145 DA40_STORMWATER DRAINAGE LAYOUT PLAN.DWG LAST SAVED BY:VARUN

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)
- Catchment Boundary
- Drainage Flow Arrow
- Catchment Label

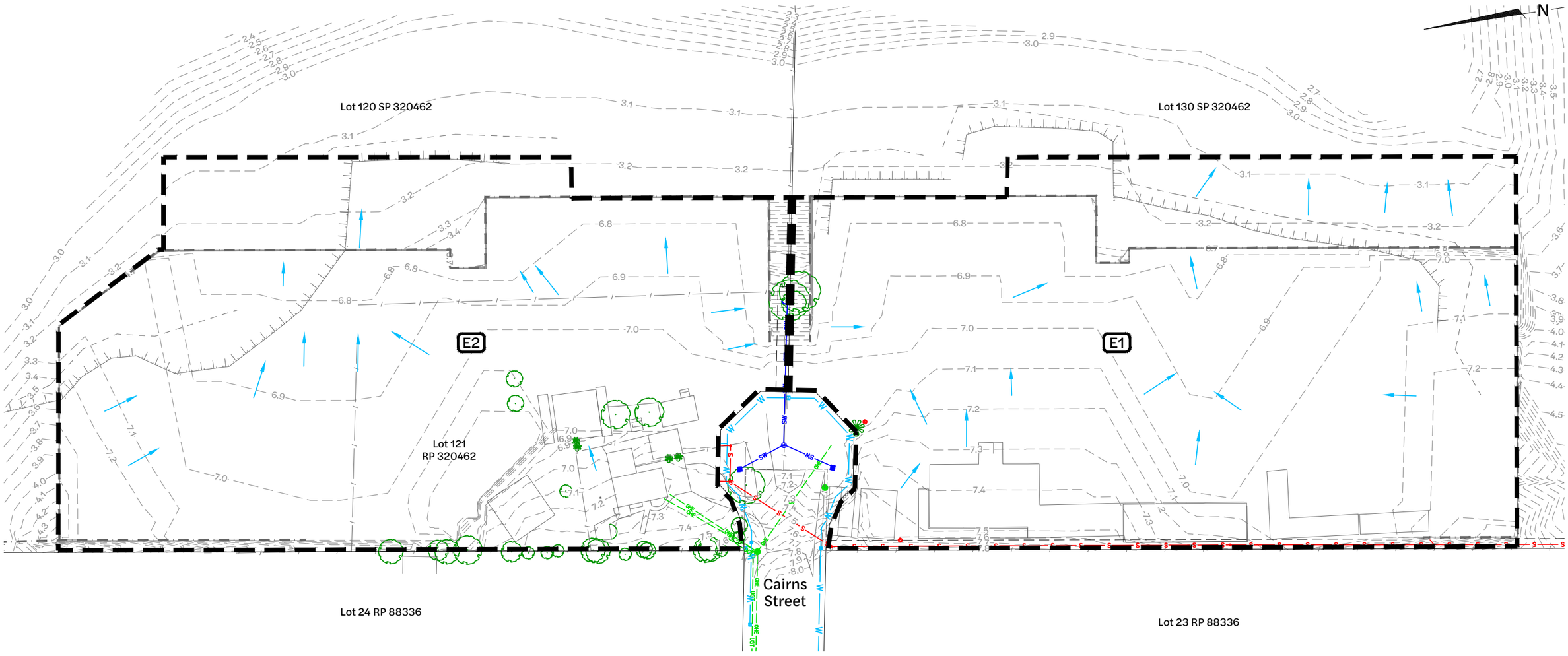
Proposed Legend

- Site Boundary

Existing Catchment		
Catchment	E1	E2
Area	15,679m²	15,538m²
Imperviousness	98%	96%
Time of Concentration	11 minutes	11 minutes

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.



Existing Catchment Plan
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE

QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Existing Catchment Plan

Project No.	Drawing No.	Revision
C_25145	DA42	3

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA42_EXISTING CATCHMENT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Water Hydrant
- Sewer Reticulation
- Easement

Existing Legend

- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole
- Retaining wall by others as per previous approval (OW/176/2020)

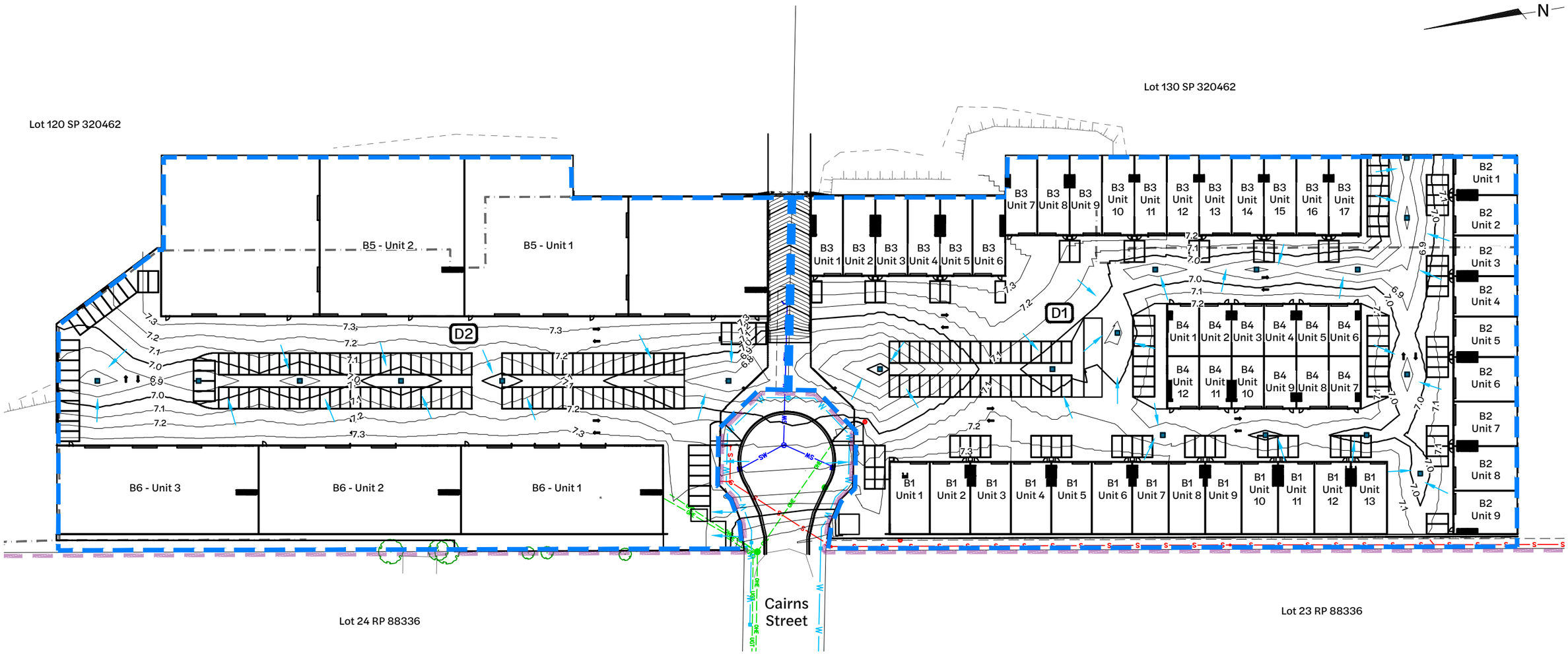
Proposed Legend

- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Catchment Boundary
- Drainage Flow Arrow
- Catchment Label

Developed Catchment		
Catchment	D1	D2
Area	15,679m²	15,538m²
Imperviousness	99%	99%
Time of Concentration	7 minutes	7 minutes

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.



Developed Catchment Plan
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Developed Catchment Plan

Project No.	Drawing No.	Revision
C_25145	DA43	5

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\IE_MODEL\AUTOCAD\C_25145 DA43_DEVELOPED CATCHMENT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole

Proposed Legend

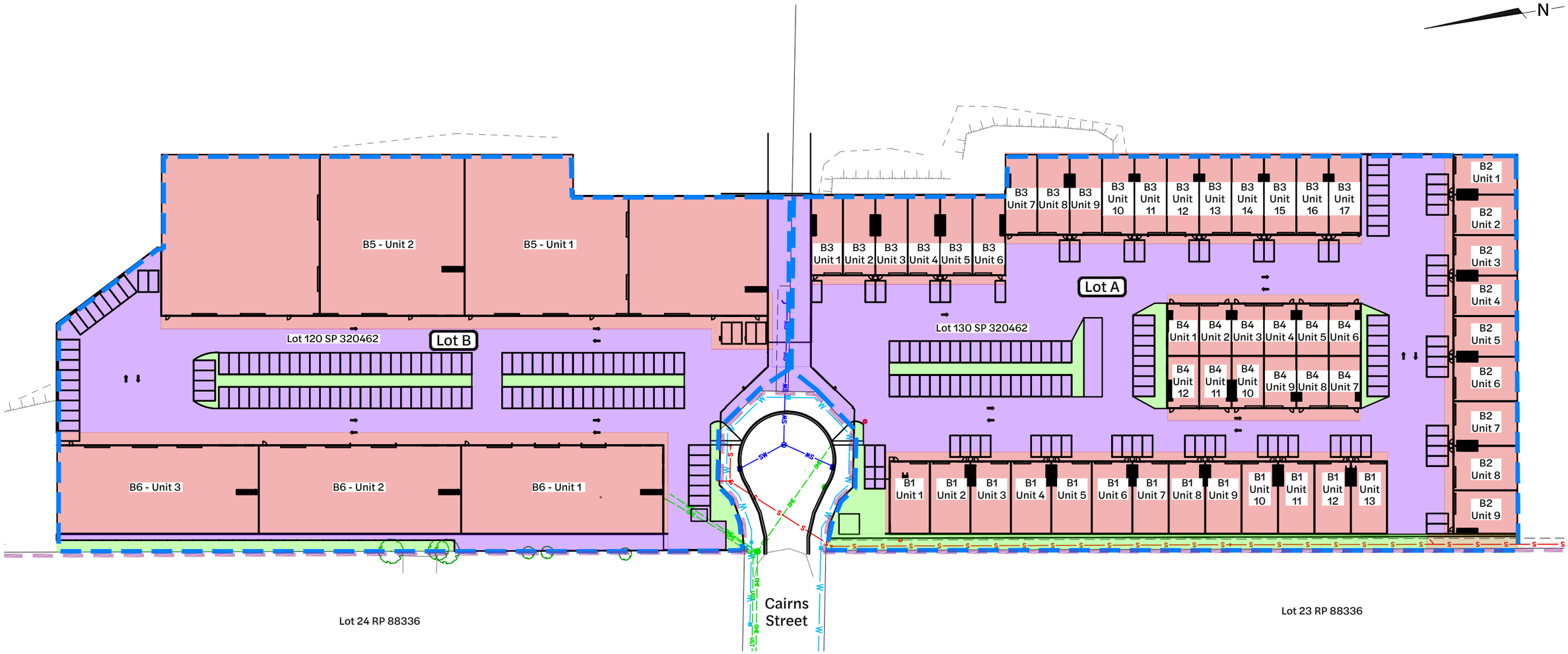
- Site Boundary
- Catchment Boundary

Quality Catchment Area

Legend	Description	Lot A Area (ha)	Lot B Area (ha)
	Roof	0.874	0.986
	Driveway	0.664	0.522
	Pervious	0.107	0.075
	Bypass (Pervious)	0.008	0.000

BEFORE YOU DIG www.byda.com.au

Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.



Quality Catchment Plan
1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	14.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	DT
4	18.02.26	Issued for Approval	CG	CG
5	04.03.26	Issued for Approval	DT	DT

QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

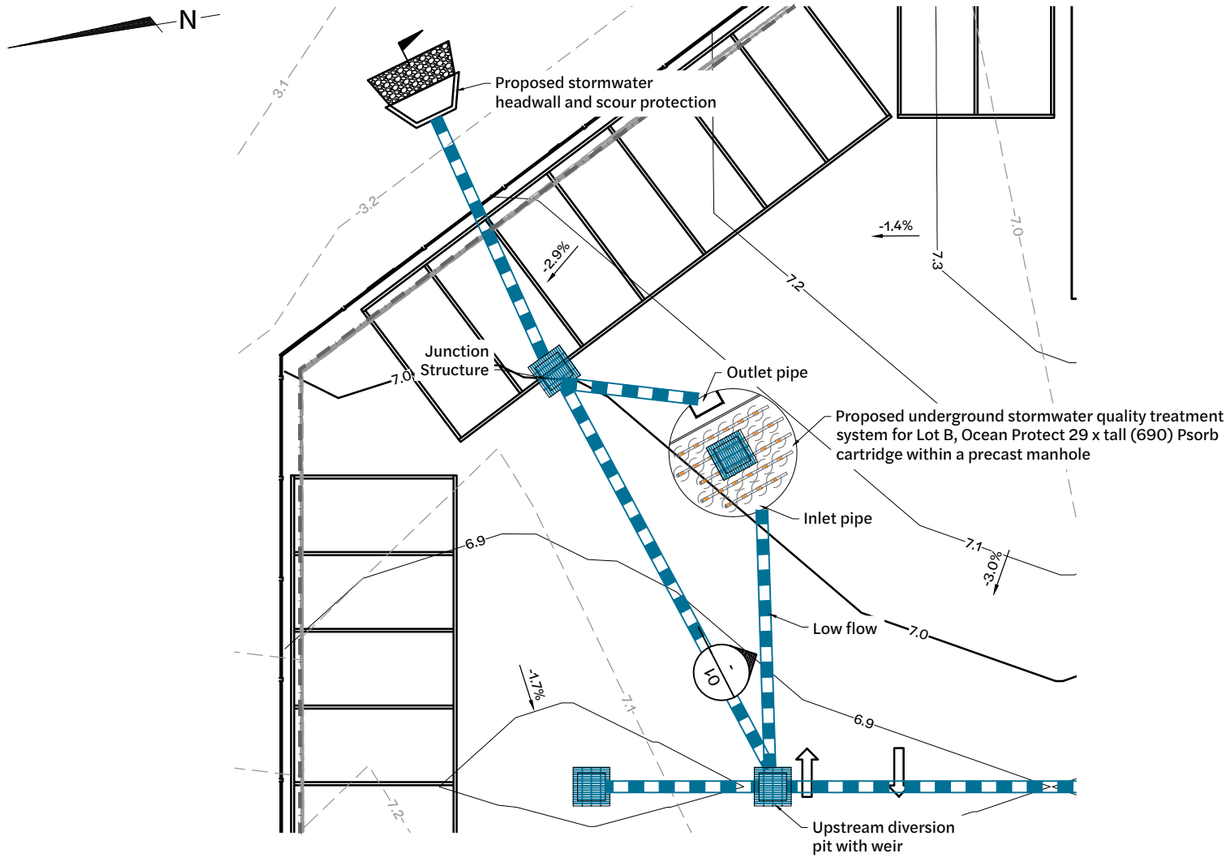
Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

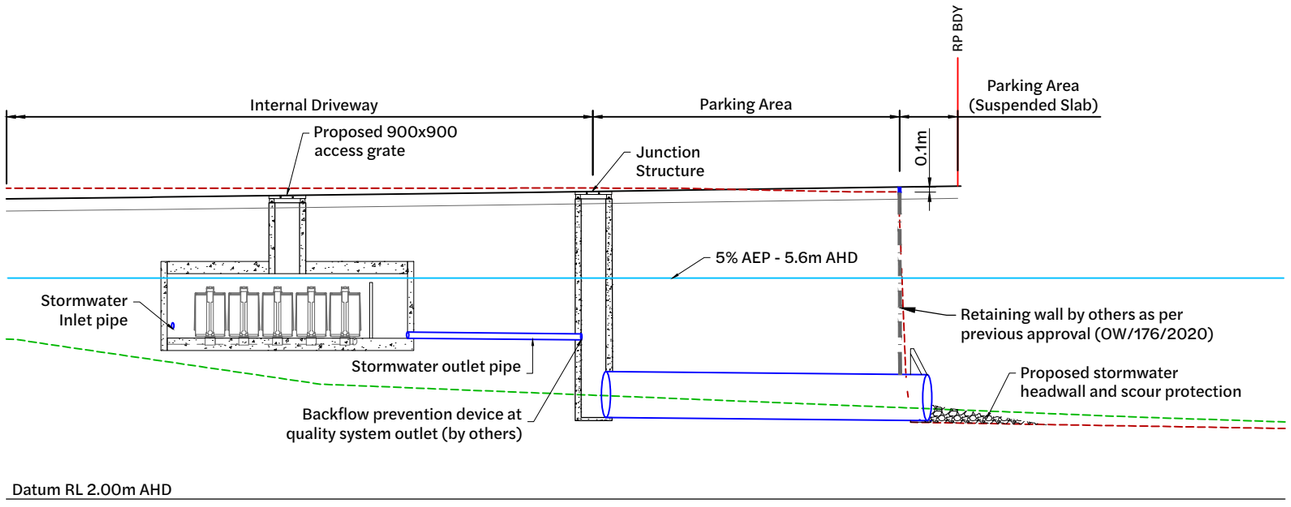
Drawing Title: Quality Catchment Plan

Project No. C_25145 | Drawing No. DA44 | Revision 3

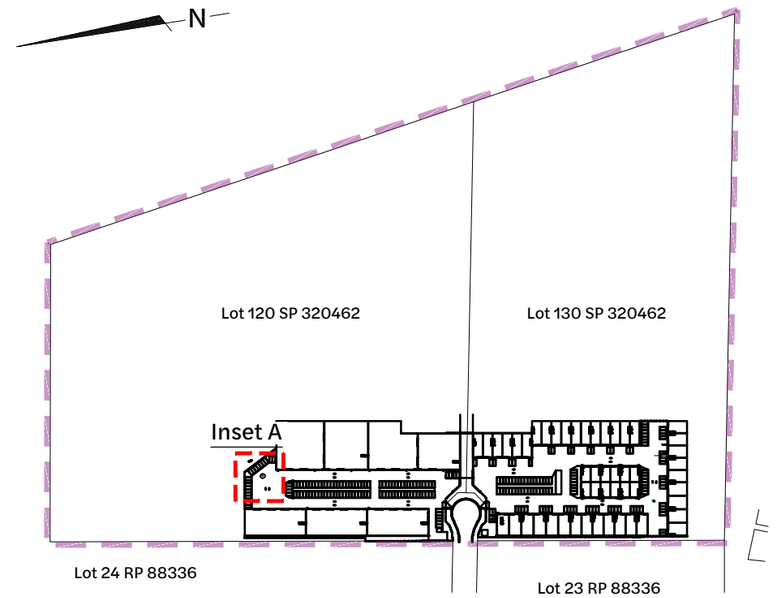
FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA44_QUALITY CATCHMENT PLAN.DWG LAST SAVED BY:VARUN



Inset A - Stormwater Quality Treatment Detail Plan View
1:100 Scale



Section 01 - Stormwater Quality Treatment Section Plan View
1:50 Scale



Locality Plan
1:2500 Scale

Existing Legend
- Property Boundary
- Surface Contour (0.1)
- Retaining wall by others as per previous approval (OW/176/2020)
- Retaining wall extension

Proposed Legend
- Site Boundary
- Design Surface Contour Major (0.5)
- Design Surface Contour Minor (0.1)
- Gully Pit
- Stormwater Drainage
- Proposed Stormwter Headwall

Section Legend
- Existing Surface as per survey (AJS Surveys dated 09/07/2020)
- Design surface as per previous approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/underside of suspended slab
- Property Boundary

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Stormwater Management Plan by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG
5	04.03.26	Issued for Approval	DT	DT

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:50 1 0.5 0 1 2m A1
1:100 A3
1:100 1 0 1 2 3 4 5m A1
1:200 A3
1:2500 50 0 50 100m A1
1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

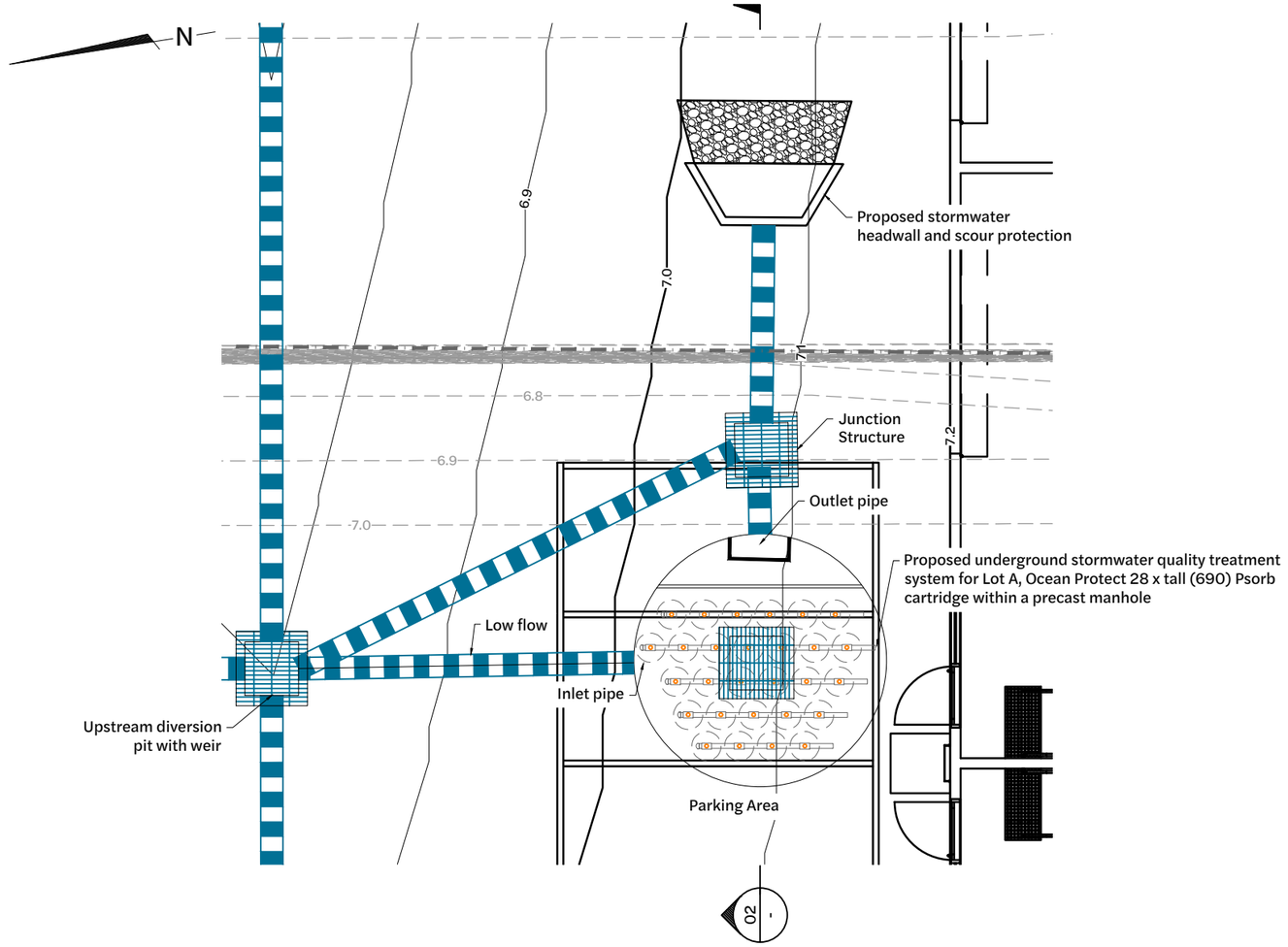
Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Stormwater Structure Details (Sheet 1 of 2)

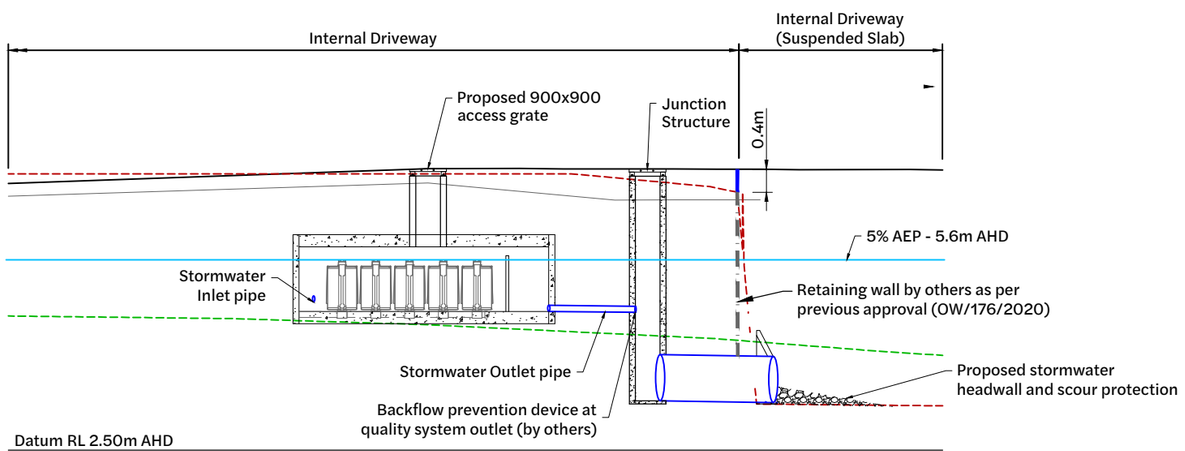
Project No. C_25145 | Drawing No. DA45 | Revision 3

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA45_STORMWATER STRUCTURE DETAILS.DWG LAST SAVED BY:CONTE



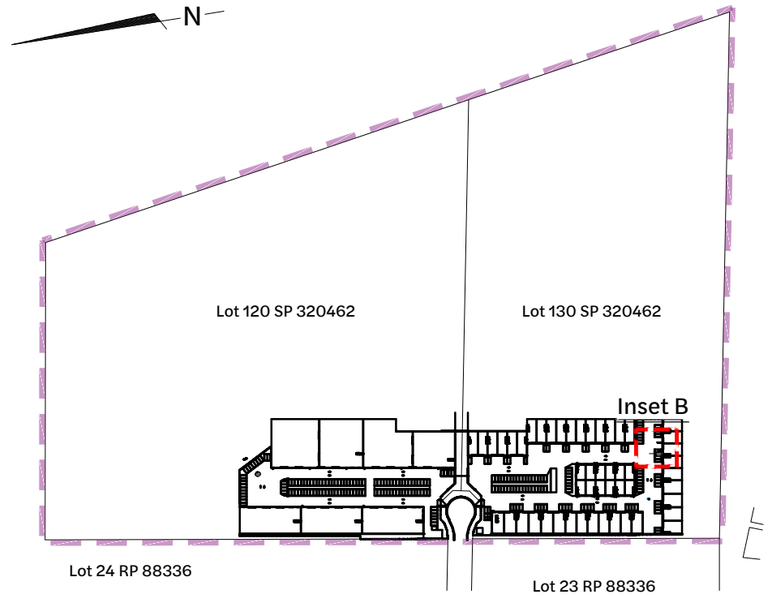
Inset B - Stormwater Quality Treatment Detail Plan View

1:50 Scale



Section 02 - Stormwater Quality Treatment Section Plan View

1:50 Scale



Locality Plan

1:2500 Scale

Existing Legend

- Property Boundary
- 0.1 Surface Contour
- Retaining wall by others as per previous approval (OW/176/2020)
- Retaining wall extension

Proposed Legend

- Site Boundary
- 0.5 Design Surface Contour Major
- 0.1 Design Surface Contour Minor
- Gully Pit
- Stormwater Drainage
- Proposed Stormwter Headwall

Section Legend

- Existing Surface as per survey (AJS Surveys dated 09/07/2020)
- Design surface as per previous approval (OW/176/2020)
- Proposed Design Surface
- Proposed Bulk Earthworks Surface/underside of suspended slab
- Property Boundary

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Note:
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Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval** Not for Construction

Scale: 1:50, 1:100, 1:2500, 1:5000 — A1, A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer: All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Stormwater Structure Details (Sheet 2 of 2)

Project No.	Drawing No.	Revision
C_25145	DA46	5

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\16_MODEL\AUTOCAD\C_25145 DA45_STORMWATER STRUCTURE DETAILS.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

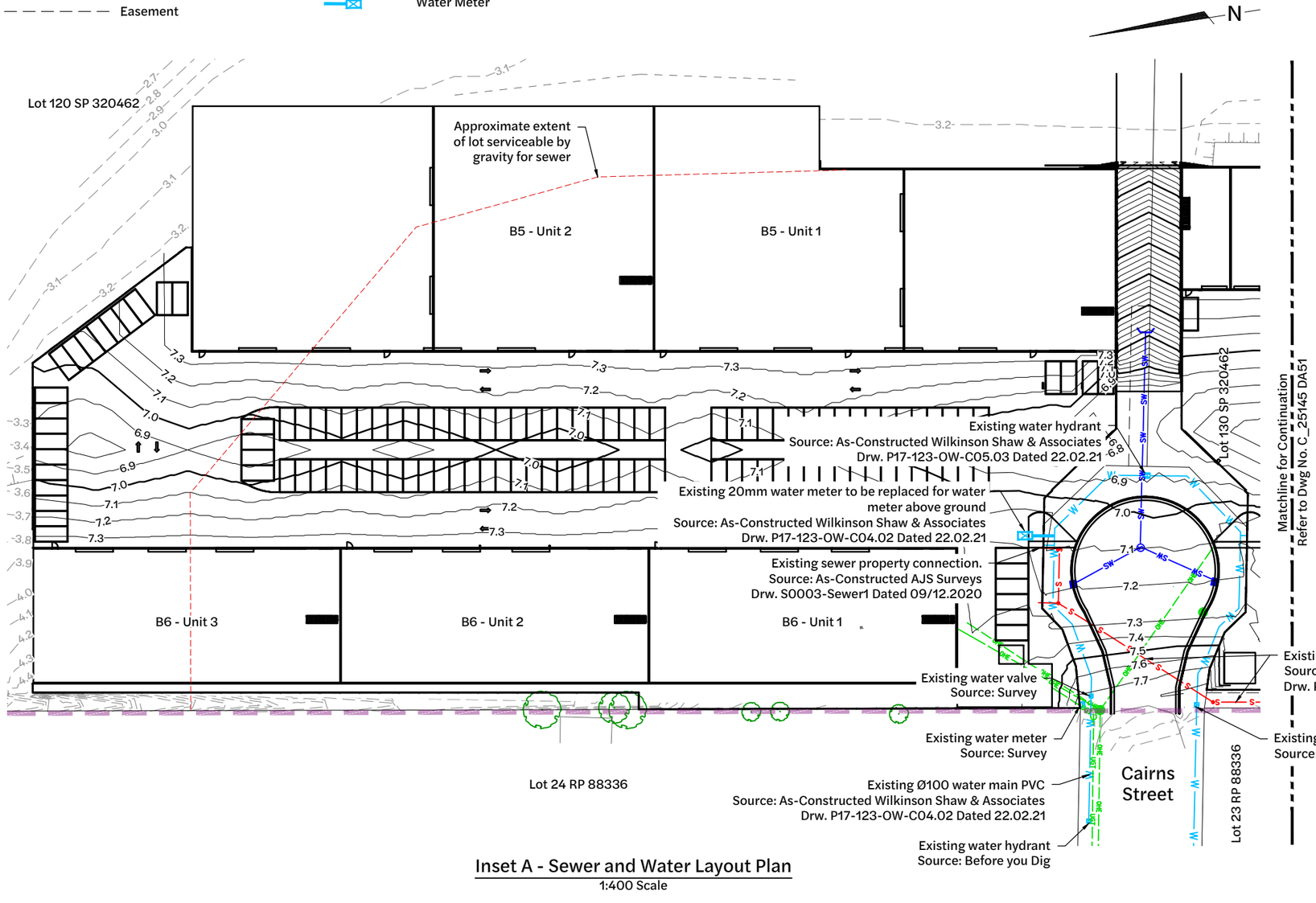
Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole

Proposed Legend

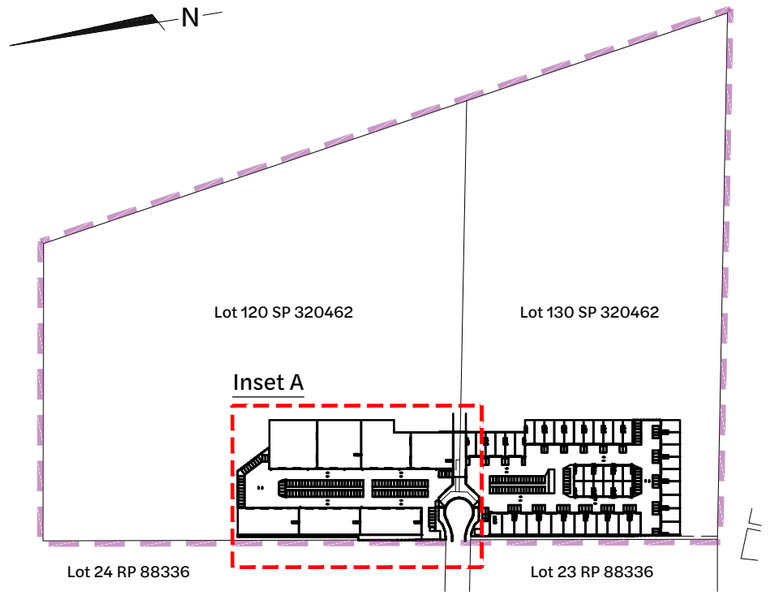
- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Extent of Gravity Serviceability
- Water Meter

Note:
Extent of serviceability based on 450mm cover and 1 in 100 grade



Inset A - Sewer and Water Layout Plan

1:400 Scale



Locality Plan

1:2500 Scale

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE
4	18.02.26	Issued for Approval	CG	CG

QR Code

Status: **Issued for Approval**
Not for Construction

Scale
1:400 / 1:800 — 4 0 4 8 12 16 20m — A1 / A3
1:2500 / 1:5000 — 50 0 50 100m — A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
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Context Engineering

Drawing Title: Water & Sewer Layout Plan (Sheet 1 of 2)

Project No.	Drawing No.	Revision
C_25145	DA50	5

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\IE_MODEL\AUTOCAD\C_25145 DA50_WATER & SEWER LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree
- Easement

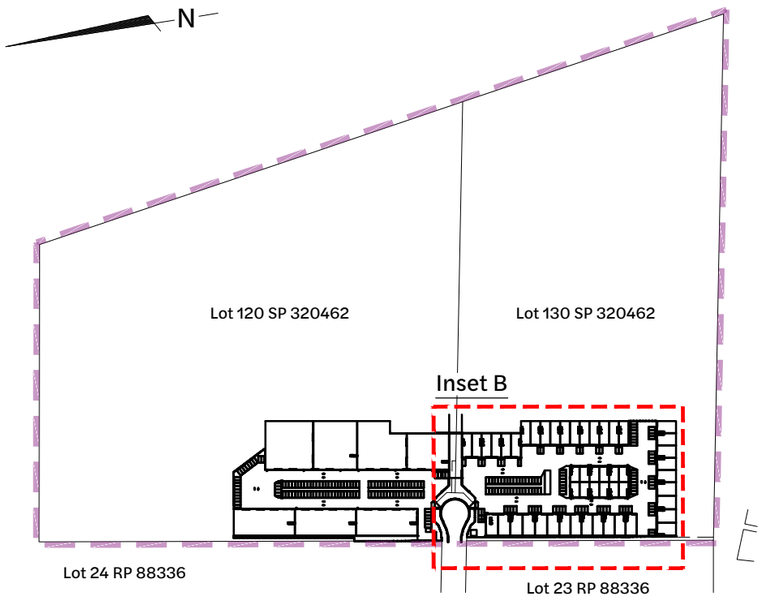
Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole

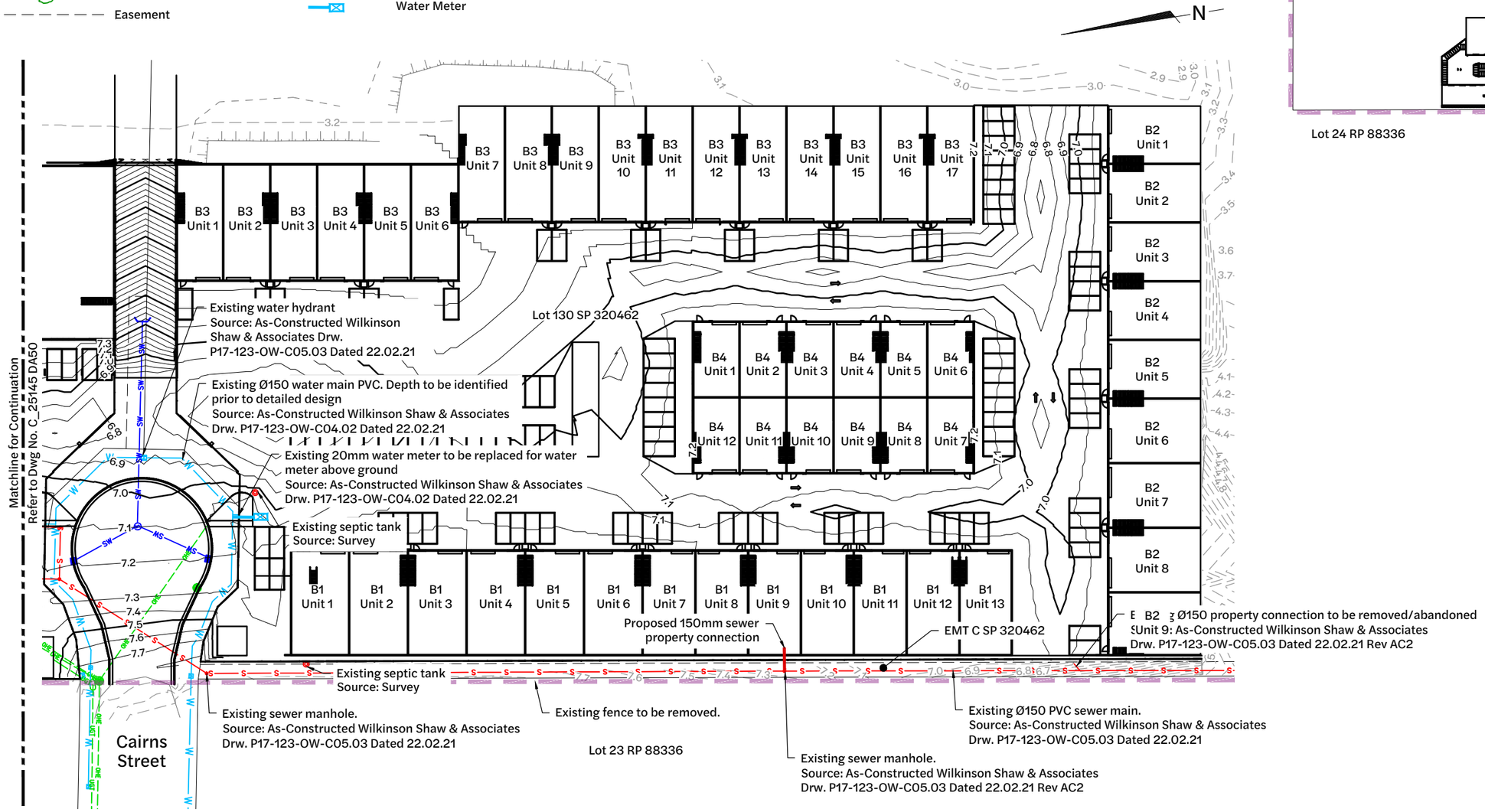
Proposed Legend

- Site Boundary
- Design Surface Contour Major
- Design Surface Contour Minor
- Sewer Reticulation
- Water Meter

Note:
Extent of serviceability based on 450mm cover and 1 in 100 grade



Locality Plan
1:2500 Scale



Inset B - Sewer and Water Layout Plan
1:400 Scale

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Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R001_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE

QR Code

Status: **Issued for Approval**
Not for Construction

Scale: 1:400 4 0 4 8 12 16 20m A1; 1:800 A3; 1:2500 50 0 50 100m A1; 1:5000 A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer
All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Water & Sewer Layout Plan (Sheet 2 of 2)

Project No.: C_25145
Drawing No.: DA51
Revision: 5

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA50_WATER & SEWER LAYOUT PLAN.DWG LAST SAVED BY:CONTE

Existing Legend

- Property Boundary
- Surface Contour
- Water Reticulation
- Water Meter
- Water Valve
- Overhead Electrical
- Telstra Pit
- Power Pole
- Fence
- Bottom of Bank
- Top of Bank
- Concrete
- Tree

Existing Legend

- Water Hydrant
- Sewer Reticulation
- Sewer Manhole
- Stormwater Reticulation
- Stormwater Inlet Pit
- Stormwater Headwall
- Stormwater Manhole

Proposed Legend

- Site Boundary
- Proposed Sediment Fence (or as directed by Site Superintendent)
- Temporary Exit Washdown Grate
- Proposed Area of Disturbance
- Inlet Protection

Sediment Basin Calculations

1.	Sediment Basin		= "Type F"
2.	Settling Volume		= 400 * Cv * 3.249 (Ha) = 649.8m³
	Where:	Cv Area	= 0.5 (Open Soil) = 0.610ha
3.	Sediment Storage Volume		= 50% * Settling Volume = 325m³

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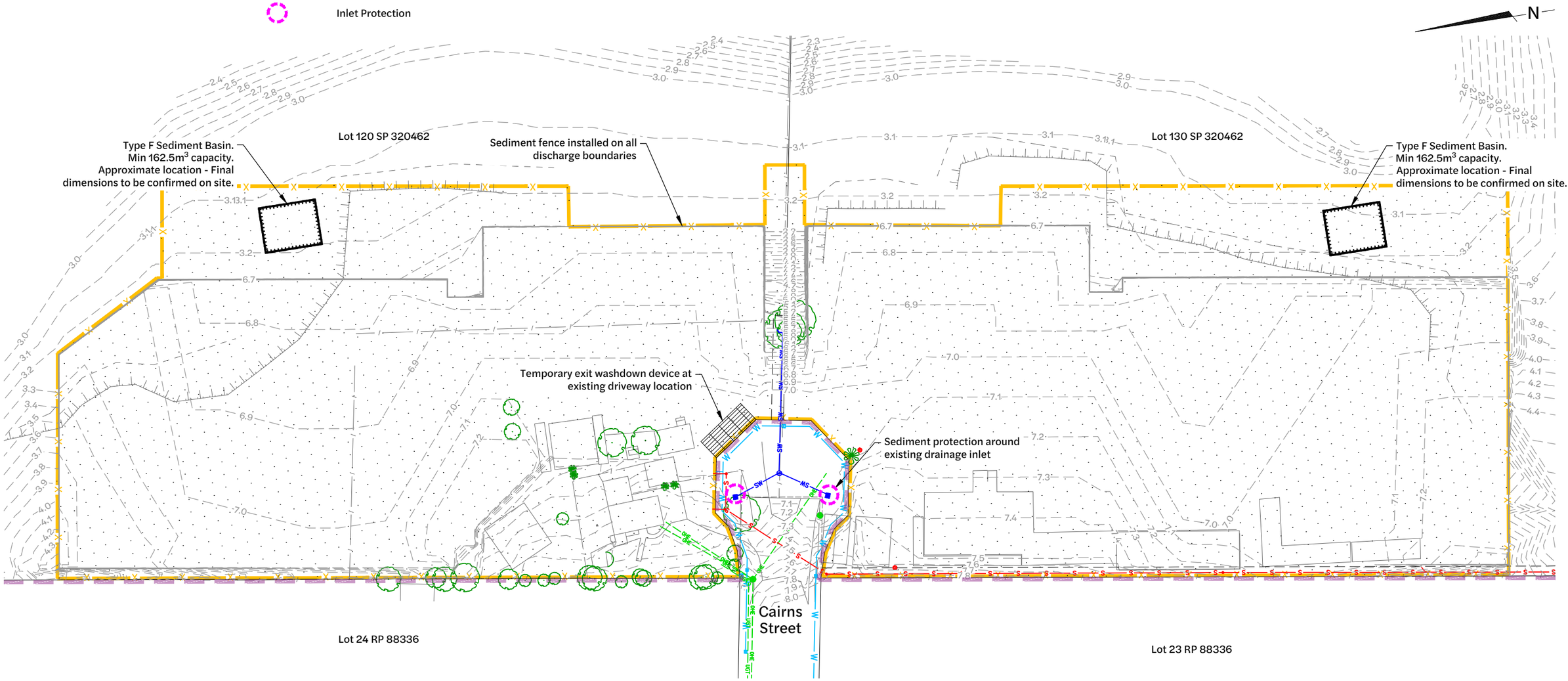
Note:
This drawing is conceptual only and must be viewed in conjunction with C_25145 R002_Engineering Services Report by Context Engineering. The proposed design is preliminary, based on available information at the time of issue and is subject to change as part of refinements undertaken within the detailed design phase.



Erosion and Sediment control Layout Plan

1:500 Scale

Revision	Date	Issue Details	Drawn	Designed
1	19.12.25	Issued for Approval	PD	JE
2	23.01.26	Issued for Approval (Update Architectural plans)	PD	JE
3	29.01.26	Issued for Approval (Update Architectural plans)	PD	JE

QR Code

Status: **Issued for Approval** — Not for Construction

Scale: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

Client: Howell constructions

Project: **60-63 Cairns Street, Loganholme**

Disclaimer: All dimensions to be checked on site by contractor prior to construction. Use written dimensions only, do not scale.

Context Engineering

Drawing Title: Erosion & Sediment Control Layout Plan

Project No.	Drawing No.	Revision
C_25145	DA80	4

FILE: Z:\PROJECTS\C_25145 - 63 CAIRNS STREET LOGANHOLME\E_MODEL\AUTOCAD\C_25145 DA80_EROSION & SEDIMENT CONTROL LAYOUT PLAN.DWG LAST SAVED BY:CONTE

63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix B **Survey**

CONTOUR & DETAIL SURVEY

AJS SURVEYS
SURVEYING • PLANNING • DEVELOPMENT
incorporating LJ Hewitt & Co
P: 07 3823 2144 E: mail@ajs.net.au
W:www.ajssurveys.com.au

N

23
RP 88336

SHED
(concrete)

Gutter Level 13.72
Roof Level 15.59
Gutter Level 13.71
Roof Level 15.56

7.50
7.50
8°47'55"
20.218

Dirt
Concrete
Dirt
Concrete
Dirt
Dirt
Dirt
Dirt
Dirt
Grass
Thick Vegetation

6.00
6.12
6.50
5.50
5.00
4.50
3.50
4.00

Top of Bank
Bottom of Bank
Wire Mesh Fence
Mesh Fence

T*S4/400
T*S4/260
T*S3/200
T*S4/400
T*S4/300

Sewer Manhole SL 7.29 IL 3.37
Stormwater Manhole SL 7.30 (unable to locate IL due to debris)
Sewer Manhole SL 7.44 IL 3.59

58
RP 136121
59
RP 136121
60
RP 136121

LEGEND

- LIGHT POLE
- OP ORIGINAL PEG
- POWER POLE
- FIRE HYDRANT
- VALVE
- SEWER MANHOLE
- ROOFWATER PIT
- POWER BOX
- TELSTRA PIT
- RETAINING WALL
- STORMWATER MANHOLE
- GAS SUPPLY/GAS CYLINDER
- TEMPORARY BENCH MARK (TBM)
- PERMANENT SURVEY MARK
- GULLY GRATE
- WATER METER
- SIGN
- HEADWALL/CROSSOVER
- ROCK WALL
- PALM
- TREE

Horizontal Datum

GDA - Geodetic Datum Australia

Scale 1:150 – Lengths are in Metres.

2 0 2 4 6 8 10 12 14 16 18 20 22

Contours shown on this plan denote existing ground level at time of survey and are not be used to determine maximum building heights.

No survey marks were located at time of survey.
It is recommended that an Identification Survey be carried out prior to any construction.
All boundary positions are approximate only.

Levels shown on this plan are correct in relation to the benchmarks placed on this plan.
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REVISIONS			
			C
			B
09/07/2020	Add extra detail and add boundaries from field survey.	PDR	A

ASSOCIATED CONSULTANTS:
WILLATON GROUP

SURVEYOR HRN
DRAWN MJE
DATE 8-8-19
CHECKED HRN

LEVEL DATUM:
AHD
DERIVED FROM PSM #138088 (RL 13.742m)

CLIENT:
Mr Shane Murrihy

SITE:
60 Cairns Street, Loganholme
Lot 12 on RP 100717

SCALE 1:150 (A0)
PLAN REF: S0003-D2A-1

Contours shown on this plan denote existing ground level at time of survey and are not be used to determine maximum building heights.

Subject lot boundary dimensions and area are derived from field survey.

Levels shown on this plan are correct in relation to the benchmarks placed on this plan.
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Prior to any demolition, excavation or construction on the site, the relevant authorities should be contacted for accurate location of all services.

LEGEND

- LIGHT POLE
- ORIGINAL PEG
- POWER POLE
- FIRE HYDRANT
- VALVE
- SEWER MANHOLE
- ROOFWATER PIT
- POWER BOX
- TELSTRA PIT
- RETAINING WALL
- STORMWATER MANHOLE
- GAS SUPPLY/GAS CYLINDER
- TEMPORARY BENCH MARK (TBM)
- PERMANENT SURVEY MARK
- GULLY GRATE
- WATER METER
- SIGN
- HEADWALL/CROSSOVER
- ROCK WALL
- PALM
- TREE

24
RP 88336

121
SP 320462
4000m²

120
SP 320462
9·783ha

12
RP 100717
10·219 ha

130
SP 320462
8·256ha

CAIRNS STREET

TWO STOREY BRICK/TIMBER DWELLING
Floor Level 9.86
Floor Level 7.32
DECK
Stairs
Outline of lower level
Concrete
Grass
Gravel
Bitumen
Dirt
VKHG
Concrete
Toilets
SHIPPING CONTAINER
SHIPPING CONTAINER
DEMOUNTABLE BUILDING
DEMOUNTABLE BUILDING
DEMOUNTABLE BUILDING
CONTAINER
SHED (concrete)
Concrete
Gravel
Grass
Dirt

Wire Mesh Fence
Timber Fence
Edge of Bitumen
Water Line Approximate Only Plotted from Council Records
Power Pole #57854
Power Pole
Septic Tank SL 7.43
Septic Tank SL 8.00
Bottom of Bank
Top of Bank

TBM
GI Nail in Bitumen
RL 7.85
See datum note

TBM
Dumpy Peg
RL 7.53
See datum note

T*S1/250
T*S5/400
T*S3/250
T*S3/150
T*S3/150
T*S3/300
T*S6/300
T*S6/300
T*S3/200
T*S4/250
T*S4/250
T*S6/350
T*S6/350
T*S3/300
T*S3/300
T*S4/350
T*S9/850
T*S7/700
T*S7/600
T*S4/250
T*S4/350
T*S5/500
T*S3/250
T*S5/700

103°05'9
71.58
188°48'55"
6.00
6.12
7.00
6.50
5.00
4.00
8.00
7.50
6.12
6.00
7.00
6.50
5.00
4.00
6.84
6.408
273°26'40"
4.715
235°04'25"
8.565
280°04'25"
5.104
13.669
325°04'25"
6.835
109°04'25"
6.835
109°04'25"
6.402
107°09'15"
6.408
121°18'25"
4.715
145°04'25"
13.669
100°04'25"
13.668
55°04'25"
30.627
225°14'40"

Roof Level 11.48
Roof Level 13.73
Roof Level 10.76
Roof Level 11.06
Roof Level 13.73
Roof Level 10.78
Gutter Level 13.72
Roof Level 15.59

Horizontal Datum

GDA - Geodetic Datum Australia

Scale 1:150 – Lengths are in Metres.

2 0 2 4 6 8 10 12 14 16 18 20 22

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W:www.ajssurveys.com.au

CONTOUR & DETAIL SURVEY

REVISIONS			
			C
			B
09/07/2020	Add extra detail and add boundaries from field survey.	PDR	A

ASSOCIATED CONSULTANTS:
WILLATON GROUP

SURVEYOR HRN
DRAWN MJE
DATE 8-8-19
CHECKED HRN

LEVEL DATUM: AHD
DERIVED FROM PSM #138088 (RL 13.742m)

CLIENT: Mr Shane Murrihy

SITE: 60 Cairns Street, Loganholme
Lot 12 on RP 100717

SCALE 1:150 (A0)
PLAN REF: S0003-D2A-2

No survey marks were located at time of survey.
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LEGEND

- LIGHT POLE
- OP ORIGINAL PEG
- POWER POLE
- FIRE HYDRANT
- V VALVE
- SEWER MANHOLE
- R ROOFWATER PIT
- POWER BOX
- TELSTRA PIT
- RETAINING WALL
- S STORMWATER MANHOLE
- G GAS SUPPLY/GAS CYLINDER
- TEMPORARY BENCH MARK (TBM)
- PERMANENT SURVEY MARK
- GULLY GRATE
- W WATER METER
- SIGN
- HEADWALL/CROSSOVER
- ROCK WALL
- PALM
- TREE

N

225·365

8°48'55"

100°04'25"
43·001

7·58
188°48'55"

Dirt
Grass
Gravel
VKHG
Wire Mesh Fence
Timber Fence
Top of Bank
Bottom of Bank
T*S6/400
T*S5/250
T*S6/300
T*S7/250
T*S5/400
2.50
3.00
3.50
4.00
4.50
5.00
5.50
6.00
6.50
24
RP 88336
120
SP 320462
9·783ha

Horizontal Datum

GDA - Geodetic Datum Australia

Scale 1:150 – Lengths are in Metres.

2 0 2 4 6 8 10 12 14 16 18 20 22

CONTOUR & DETAIL SURVEY

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REVISIONS			
			C
			B
09/07/2020	Add extra detail and add boundaries from field survey.	PDR	A

ASSOCIATED CONSULTANTS: **WILLATON GROUP**

SURVEYOR HRN
DRAWN MJE
DATE 8-8-19
CHECKED HRN

LEVEL DATUM: **AHD**
DERIVED FROM PSM #138088 (RL 13.742m)

CLIENT: **Mr Shane Murrihy**

SITE: **60 Cairns Street, Loganholme**
Lot 12 on RP 100717

SCALE 1:150 (A0)
PLAN REF: S0003-D2A-3

CONTOUR & DETAIL SURVEY

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LEGEND

- LIGHT POLE
- ORIGINAL PEG
- POWER POLE
- FIRE HYDRANT
- VALVE
- SEWER MANHOLE
- ROOFWATER PIT
- POWER BOX
- TELSTRA PIT
- RETAINING WALL
- STORMWATER MANHOLE
- GAS SUPPLY/GAS CYLINDER
- TEMPORARY BENCH MARK (TBM)
- PERMANENT SURVEY MARK
- GULLY GRATE
- WATER METER
- SIGN
- HEADWALL/CROSSOVER
- ROCK WALL
- PALM
- TREE

N

120
SP 320462
9·783 ha

12
RP 100717
10·219 ha

Gravel, Dirt, Grass, Wire Mesh Fence, Top of Bank, Bottom of Bank, T*S4/250, T*S4/300, T*S0/500, T*S3/250, T*S5/700, ONTAINER, Stairs, 71.58, 188°48'55", 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 5.50, 6.00, 6.12, 6.50

Horizontal Datum

GDA - Geodetic Datum Australia

Scale 1:150 – Lengths are in Metres.

2 0 2 4 6 8 10 12 14 16 18 20 22

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REVISIONS			
			C
			B
09/07/2020	Add extra detail and add boundaries from field survey.	PDR	A

ASSOCIATED CONSULTANTS: WILLATON GROUP

SURVEYOR HRN | DRAWN MJE | DATE 8-8-19 | CHECKED HRN

LEVEL DATUM: AHD
DERIVED FROM PSM #138088 (RL 13.742m)

CLIENT: Mr Shane Murrihy

SITE: 60 Cairns Street, Loganholme
Lot 12 on RP 100717

SCALE 1:150 (A0)
PLAN REF: S0003-D2A-4

CONTOUR & DETAIL SURVEY

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W:www.ajssurveys.com.au

130
SP 320462
8·256 ha

Septic Tank SL 7.43

Wire Mesh Fence

Dirt
Grass
Top of Bank
Bottom of Bank

Horizontal Datum

GDA - Geodetic Datum Australia

Scale 1:150 – Lengths are in Metres.

2 0 2 4 6 8 10 12 14 16 18 20 22

LEGEND

- LIGHT POLE
- ORIGINAL PEG
- POWER POLE
- FIRE HYDRANT
- VALVE
- SEWER MANHOLE
- ROOFWATER PIT
- POWER BOX
- TELSTRA PIT
- RETAINING WALL
- STORMWATER MANHOLE
- GAS SUPPLY/GAS CYLINDER
- TEMPORARY BENCH MARK (TBM)
- PERMANENT SURVEY MARK
- GULLY GRATE
- WATER METER
- SIGN
- HEADWALL/CROSSOVER
- ROCK WALL
- PALM
- TREE

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REVISIONS			
			C
			B
09/07/2020	Add extra detail and add boundaries from field survey.	PDR	A

ASSOCIATED CONSULTANTS: WILLATON GROUP

SURVEYOR HRN
DRAWN MJE
DATE 8-8-19
CHECKED HRN

LEVEL DATUM: AHD
DERIVED FROM PSM #138088 (RL 13.742m)

CLIENT: Mr Shane Murrihy

SITE: 60 Cairns Street, Loganholme
Lot 12 on RP 100717

SCALE 1:150 (A0)
PLAN REF: S0003-D2A-5

CAIRNS ST

121

120

130

7.50 7.00 6.50 6.00 5.50

AS CONSTRUCTED LEVELS

AJS SURVEYS
SURVEYING · PLANNING · DEVELOPMENT
17 Judd Street, Gumdale, Qld 4154
P: 07 3823 2144 E: mail@ajs.net.au
W:www.ajssurveys.com.au

REVISIONS	ASSOCIATED CONSULTANTS:	SURVEYOR BRC	DATE 03/03/2023	LEVEL DATUM:	CLIENT:	SITE:	SCALE 1:425
		DRAWN BRC	CHECKED	AHD PSM 138088 RL:13.742m	WILKINSON SHAW	Cairns St, LOGANHOLME	PLAN REF: S0003- Levels

63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix C **Architectural Plans**

DEVELOPMENT SUMMARY

60-63 CAIRNS STREET, LOGANHOLME

SITE AREA: X m²

TOTAL BUILDING AREA

LOT A:
TOTAL BUILDING = 9,833.9 m²
UNITS = 51

PARKING RATES

1/100 SQM = 98.33 (99)

PROVIDED: 122

REFER AREA CALCULATION TABLE BELOW

TOTAL BUILDING AREA

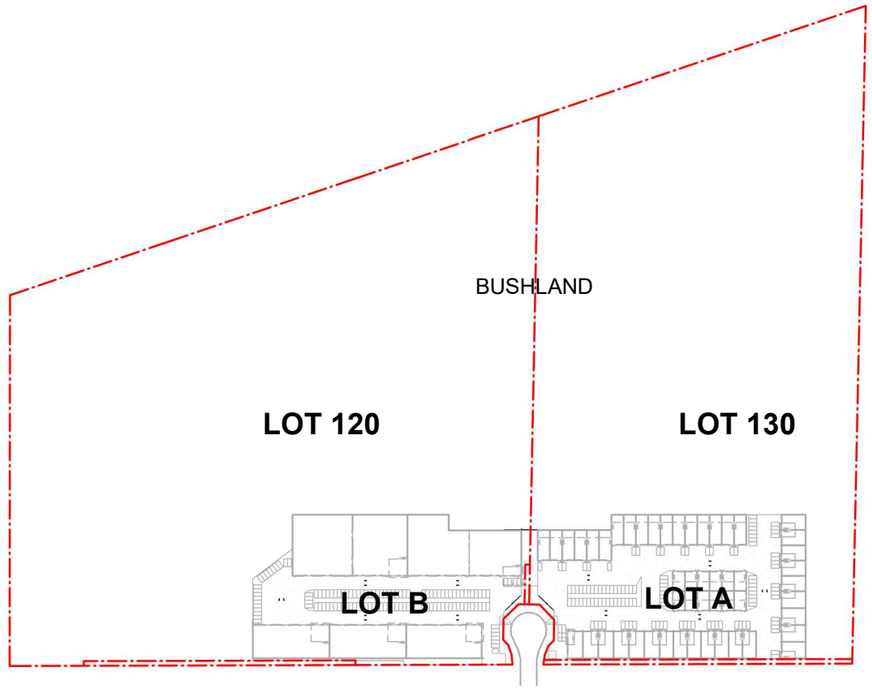
LOT B:
TOTAL BUILDING = 9547.7 m²
UNITS = 5

PARKING RATES

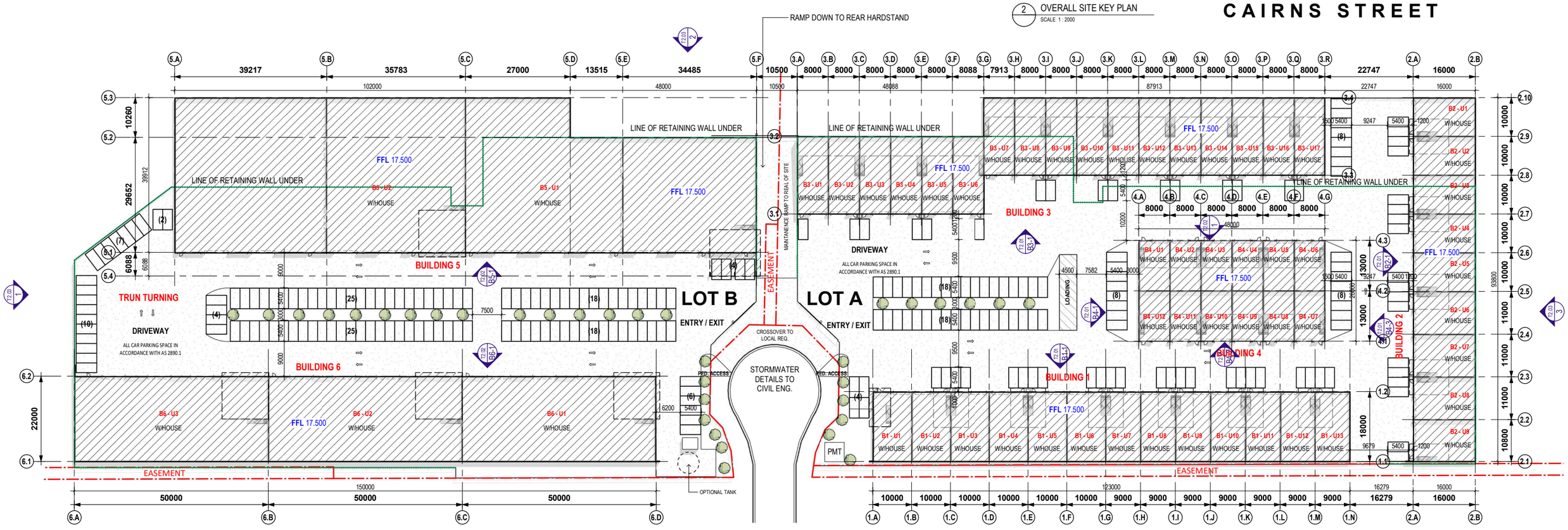
1/100 SQM = 95.48 (96)

PROVIDED: 119

REFER AREA CALCULATION TABLE BELOW



2 OVERALL SITE KEY PLAN
SCALE 1 : 2000



1 OVERALL SITE PLAN
SCALE 1 : 500

PROPOSED INDUSTRIAL/ COMMERCIAL DEVELOPMENT

TP ISSUE

T0.03

60-63 CAIRNS STREET, LOGANHOLME

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THIS DRAWING HAS BEEN PRODUCED BASED ON INFORMATION SUPPLIED BY OTHERS. WHILE ALL ATTEMPTS HAVE BEEN MADE TO ENSURE THE ACCURACY OF THE DRAWING, ATP DESIGN STUDIO WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED.

0 1 2 5 10 SCALE As indicated

SCALE: 200 @ A3 (SCALE:100 @ A1)

DRAWING NAME
OVERALL SITE PLAN

ADDRESS
60-63 CAIRNS STREET, LOGANHOLME

PROJECT No.	SHEET NUMBER	REV.	DATE
25-074	T0.03	ISSUE 1	23.01.26

A: 6/3990 Pacific Highway Loganholme QLD 4129
E. www.ATPdesignstudio.com
P. 04 23 535 120
E. andrew@ATPdesignstudio.com

QBCC : 15183066
ABN : 74 739 848 180

ATP DESIGN STUDIO
BUILDING & INTERIOR DESIGN STUDIO

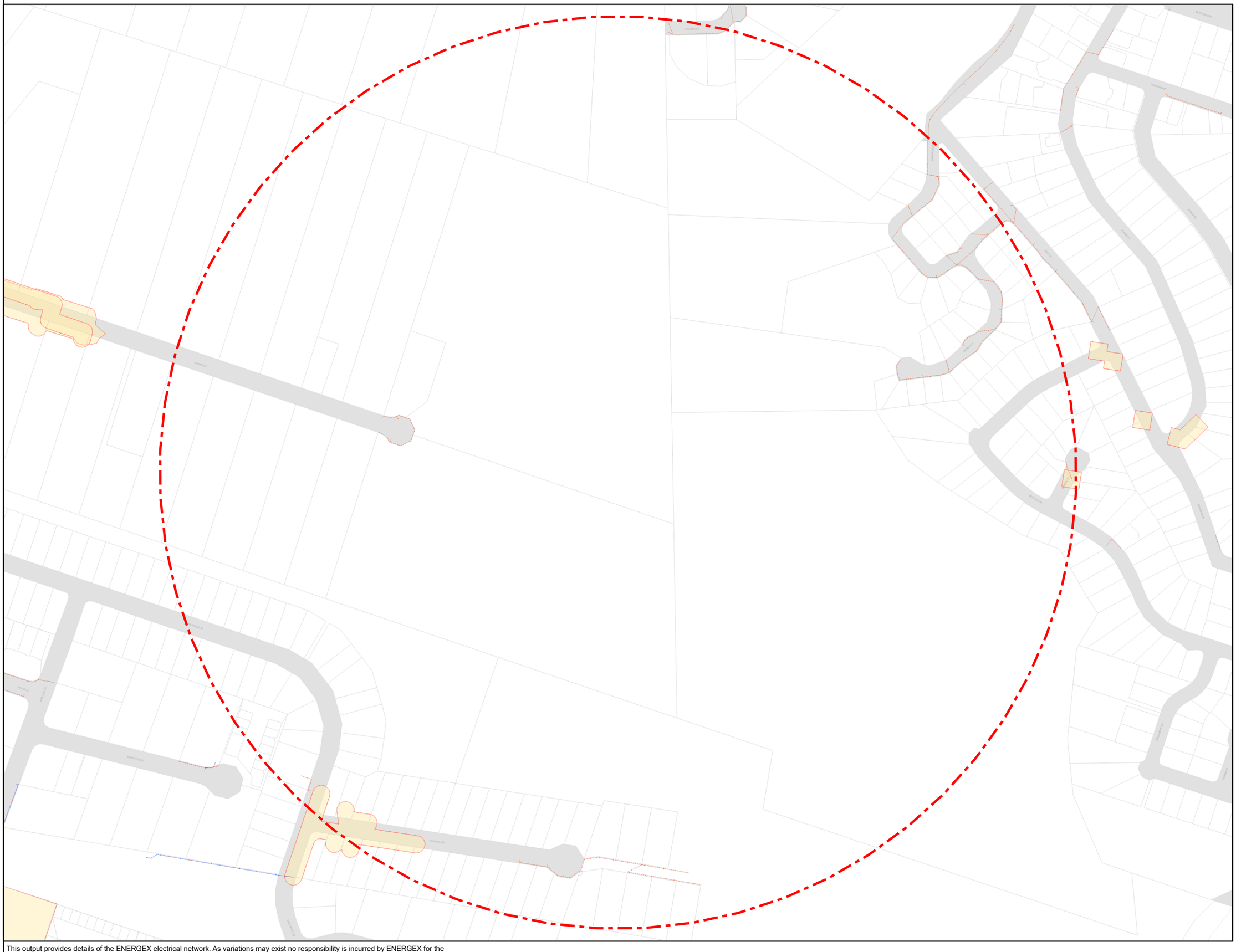
63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix D **Before You Dig**

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX BYDA map, then ENERGEX shall be contacted immediately.

For Emergency Situations
Please Call 13 19 62



energex

BYDA

Sequence: 264371782
Date: 18/11/2025

Scale: 1:3884
Tile No: **OVERVIEW**

LEGEND

- Substation
- Cable Marker
- Pit
- Pole
- Pillar
- LV Cable (up to 1kV)
- HV Cable (1kV – <33kV)
- HV Cable (33kV and over)
- Pit Boundary
- Planned Work Area

AS5488 Category “D” Plan

N
W E
S

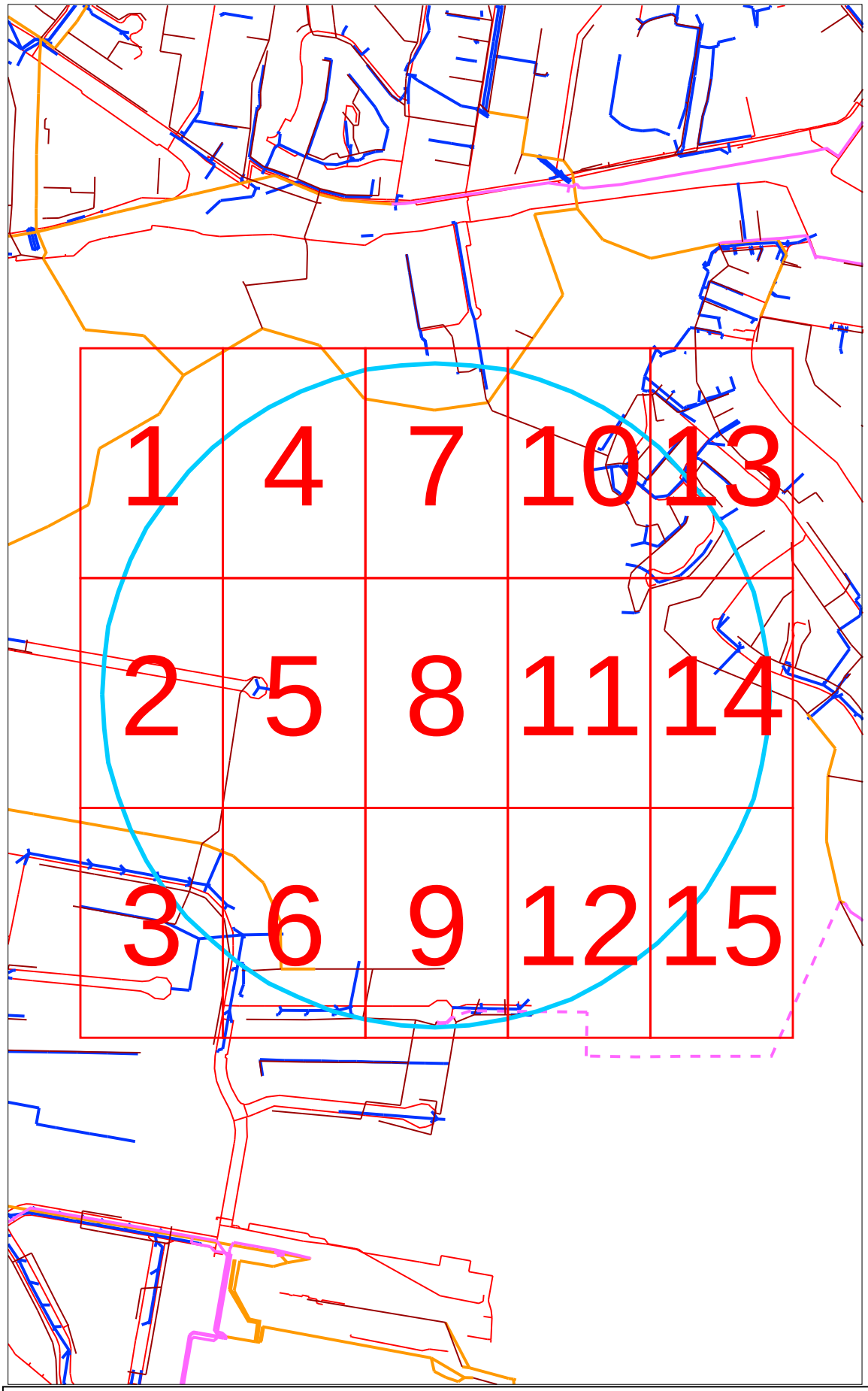
DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor Pelican Corp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

This output provides details of the ENERGEX electrical network. As variations may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

Overview Map

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station – Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:6000

0 0.07km

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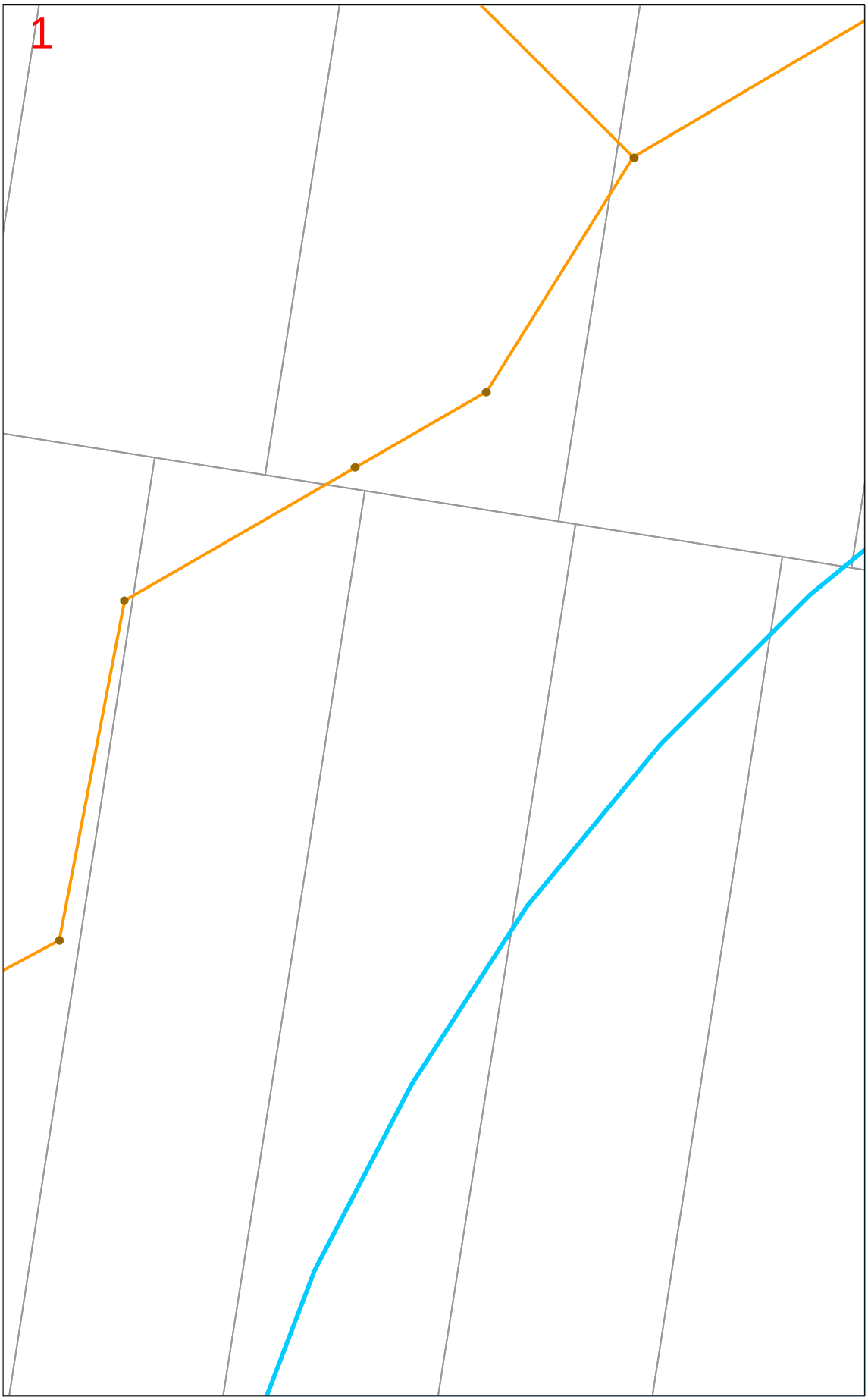
Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including but not limited to "workplace health and safety".

Map 1

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

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- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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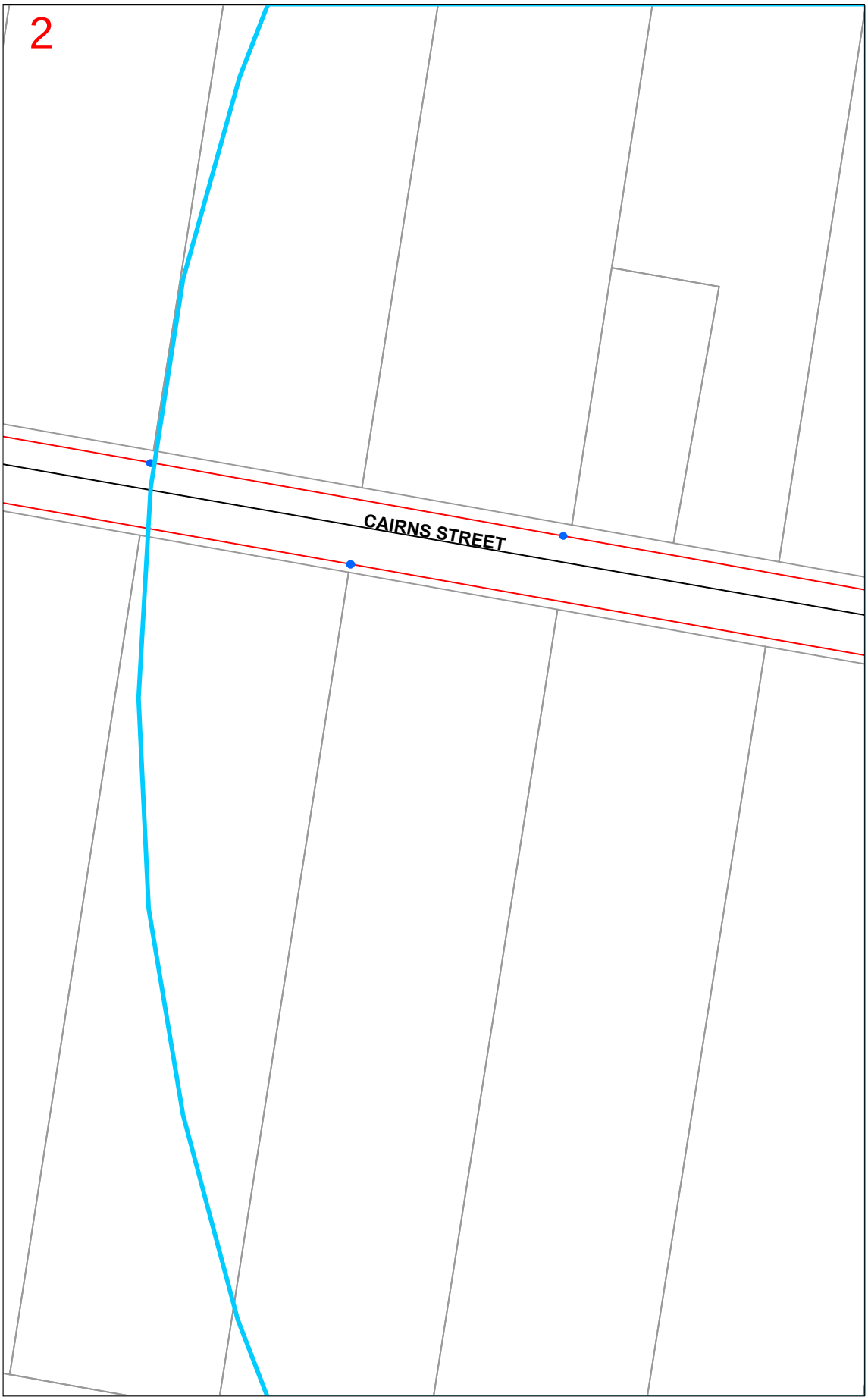
LOGAN CITY COUNCIL

Map 2

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

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- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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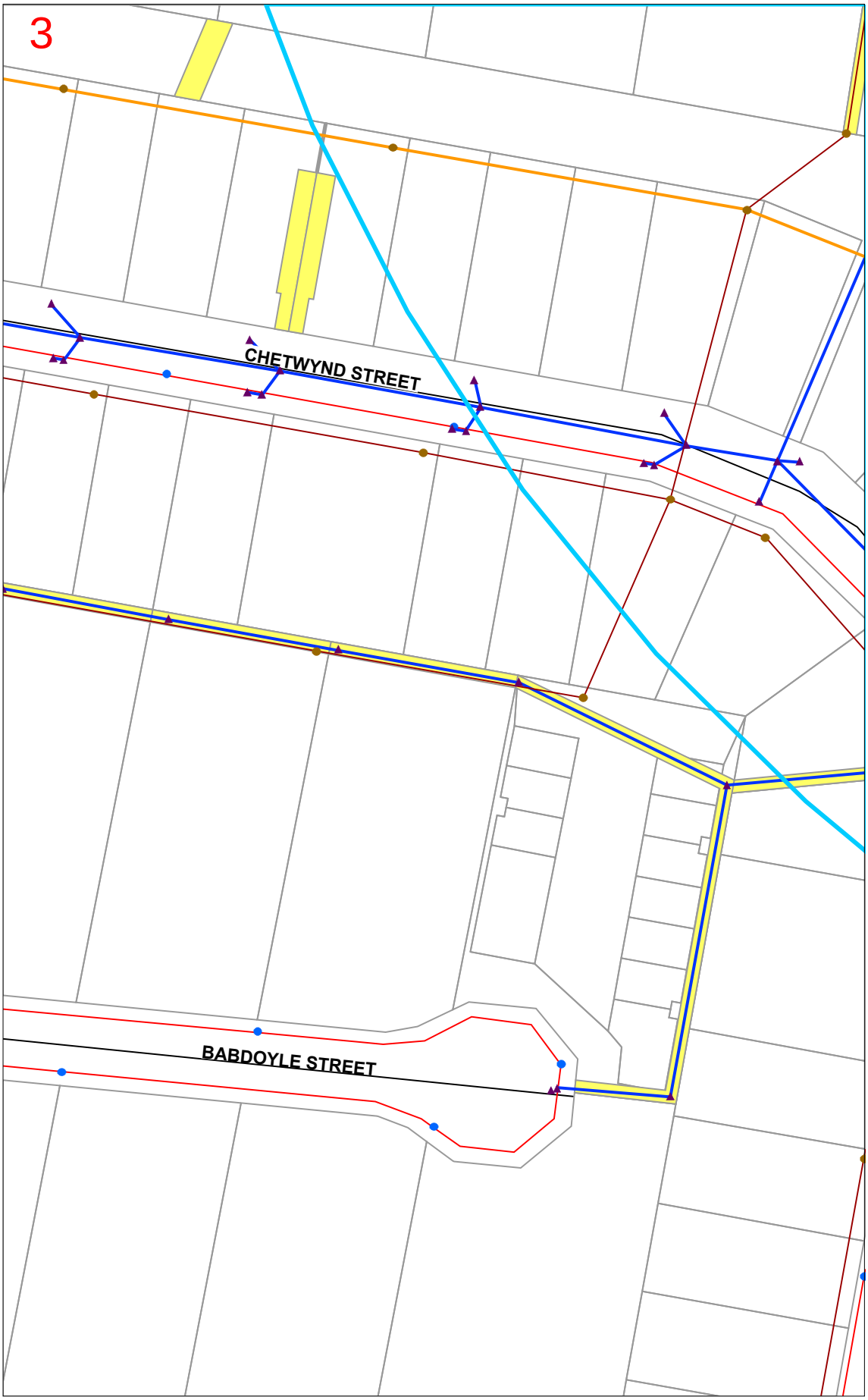
LOGAN CITY COUNCIL

Map 3

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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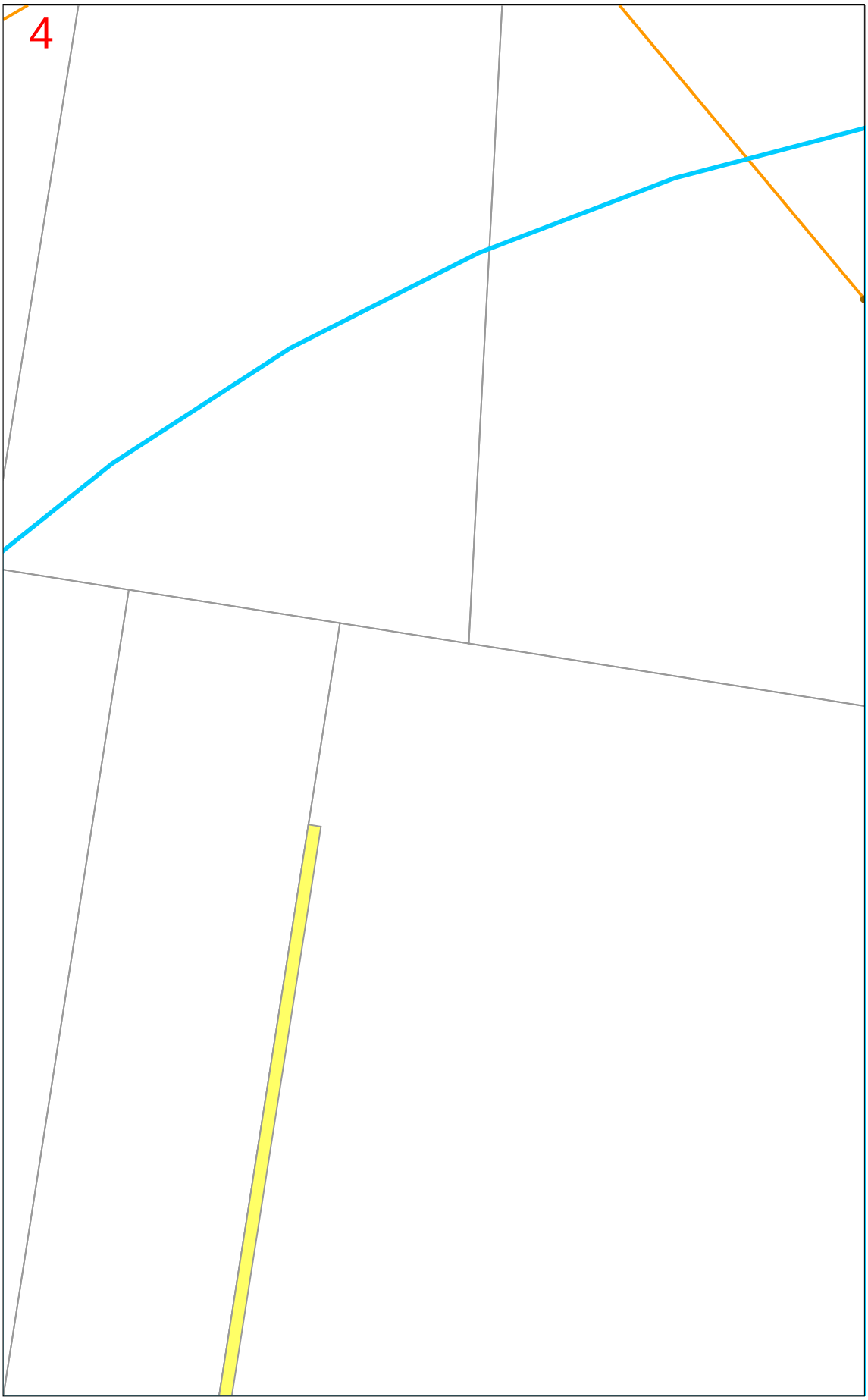
LOGAN CITY COUNCIL

Map 4

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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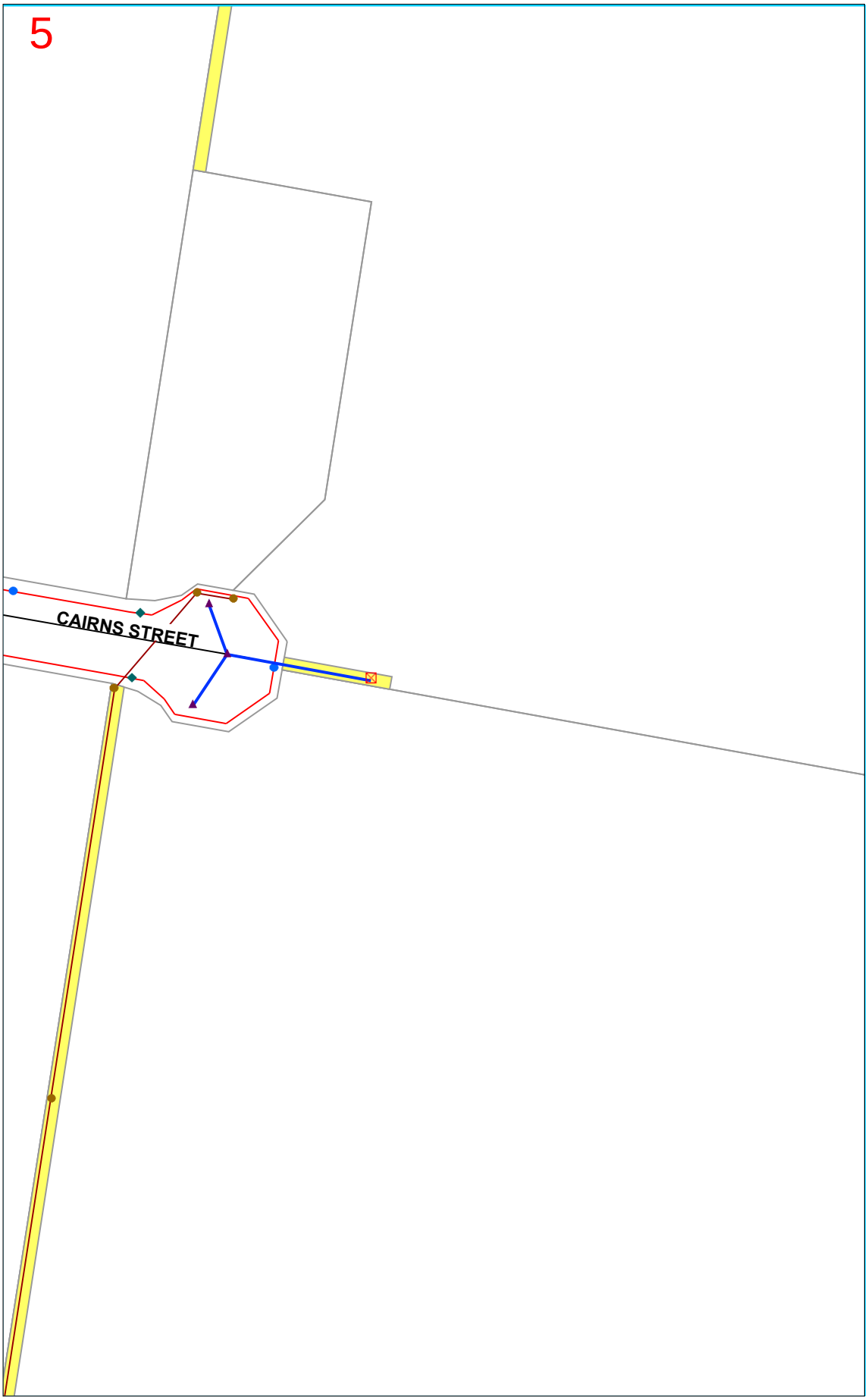
LOGAN CITY COUNCIL

Map 5

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

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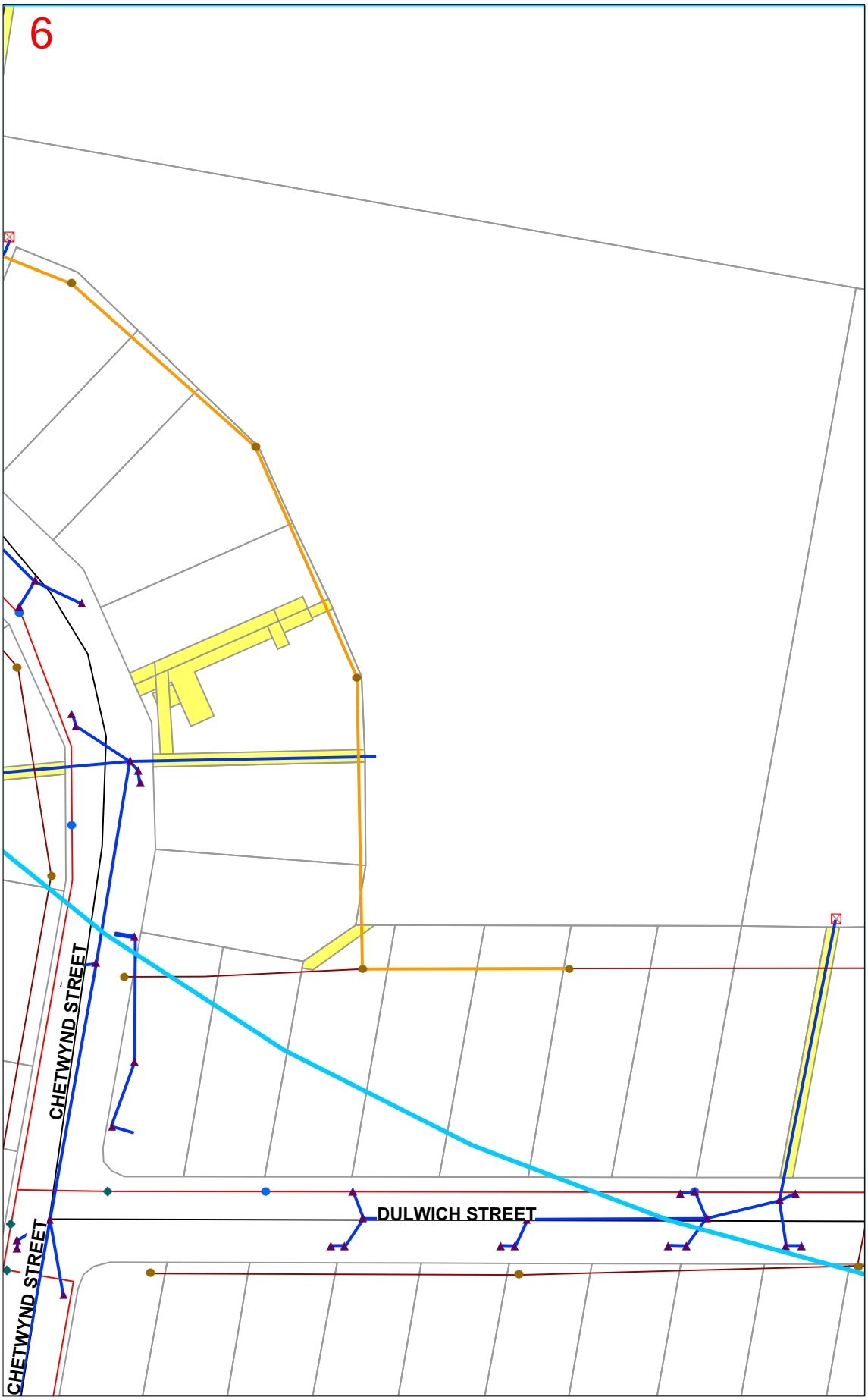
LOGAN CITY COUNCIL

Map 6

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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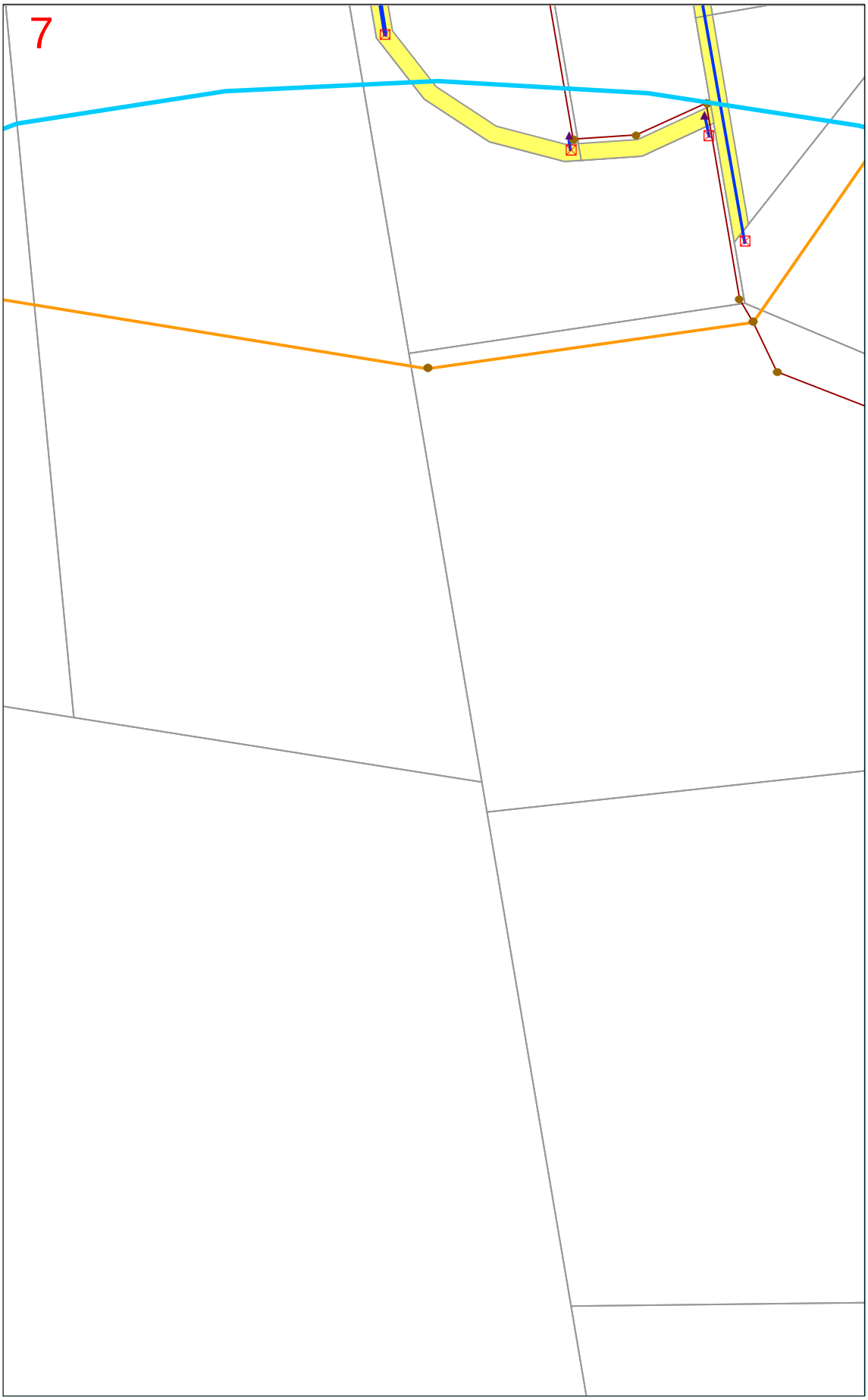
Map 7

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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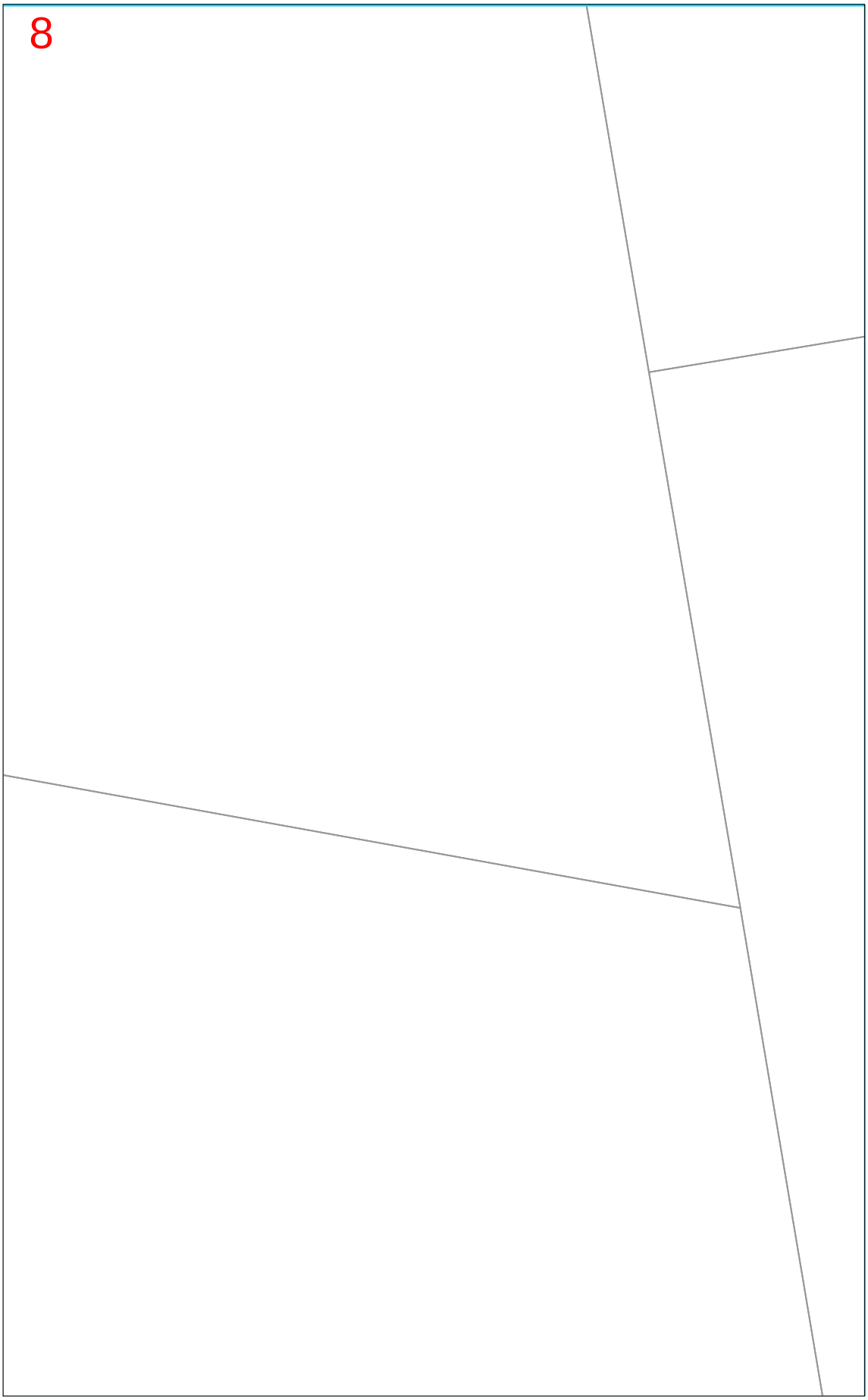
Map 8

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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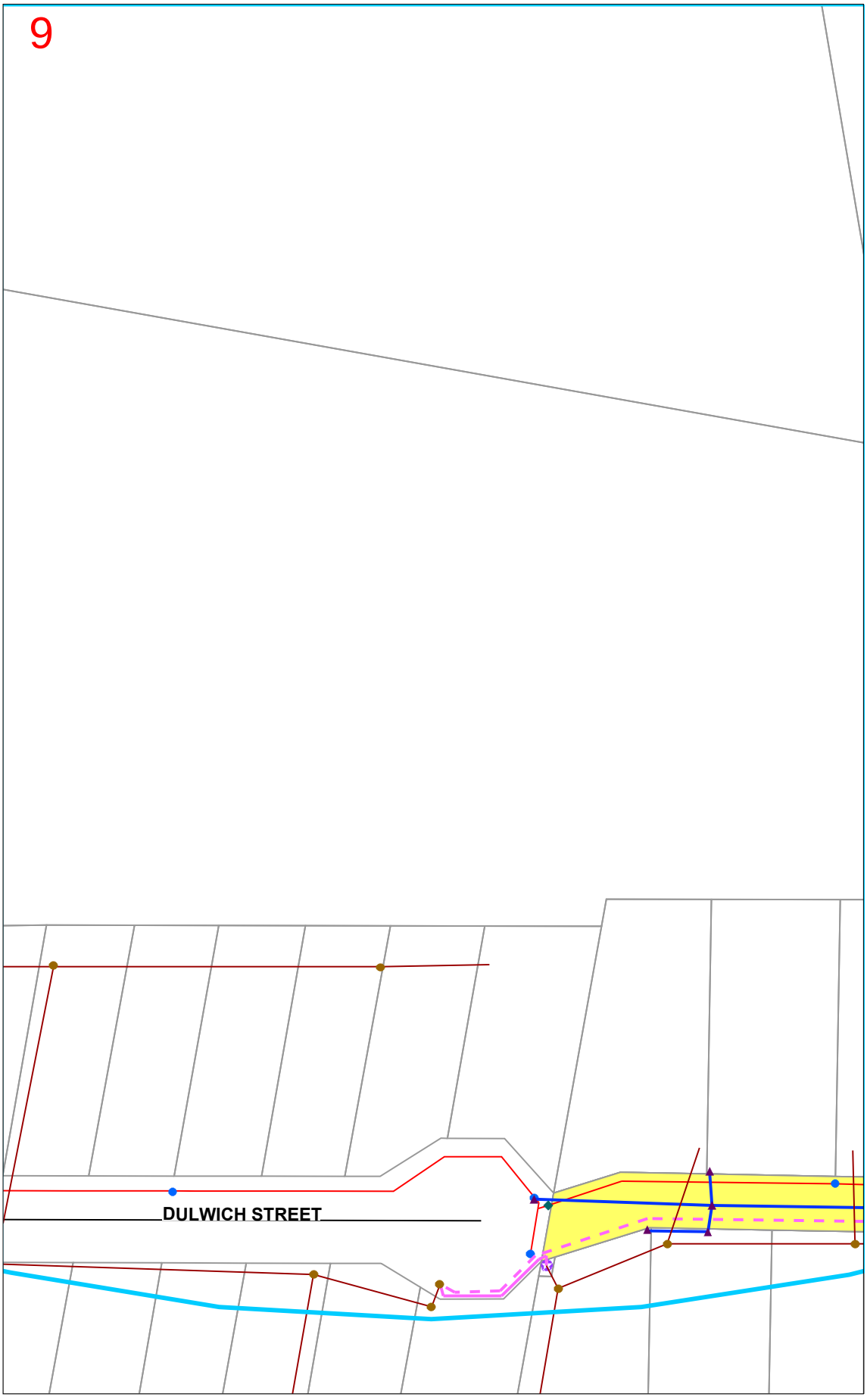
LOGAN CITY COUNCIL

Map 9

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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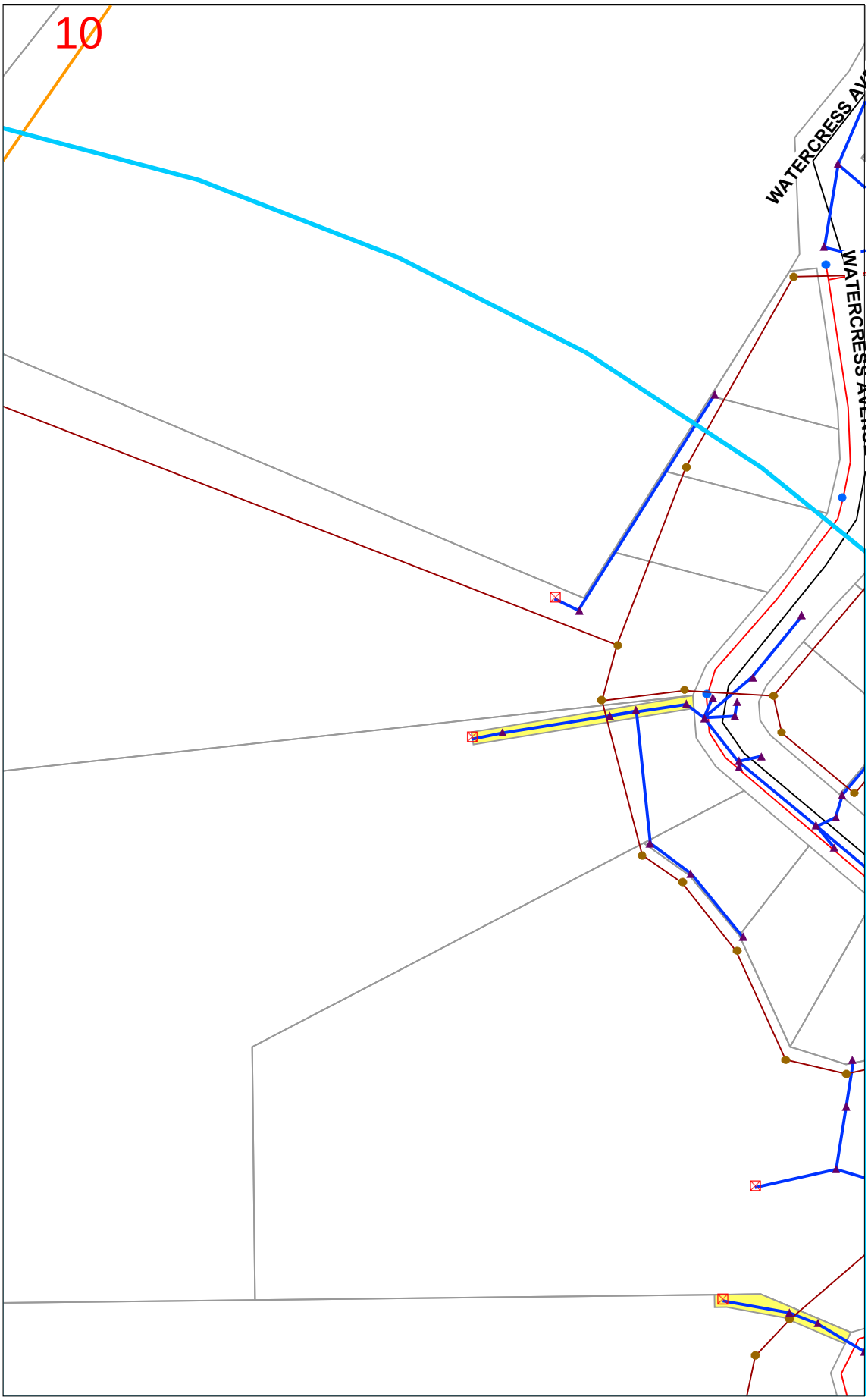
LOGAN CITY COUNCIL

Map 10

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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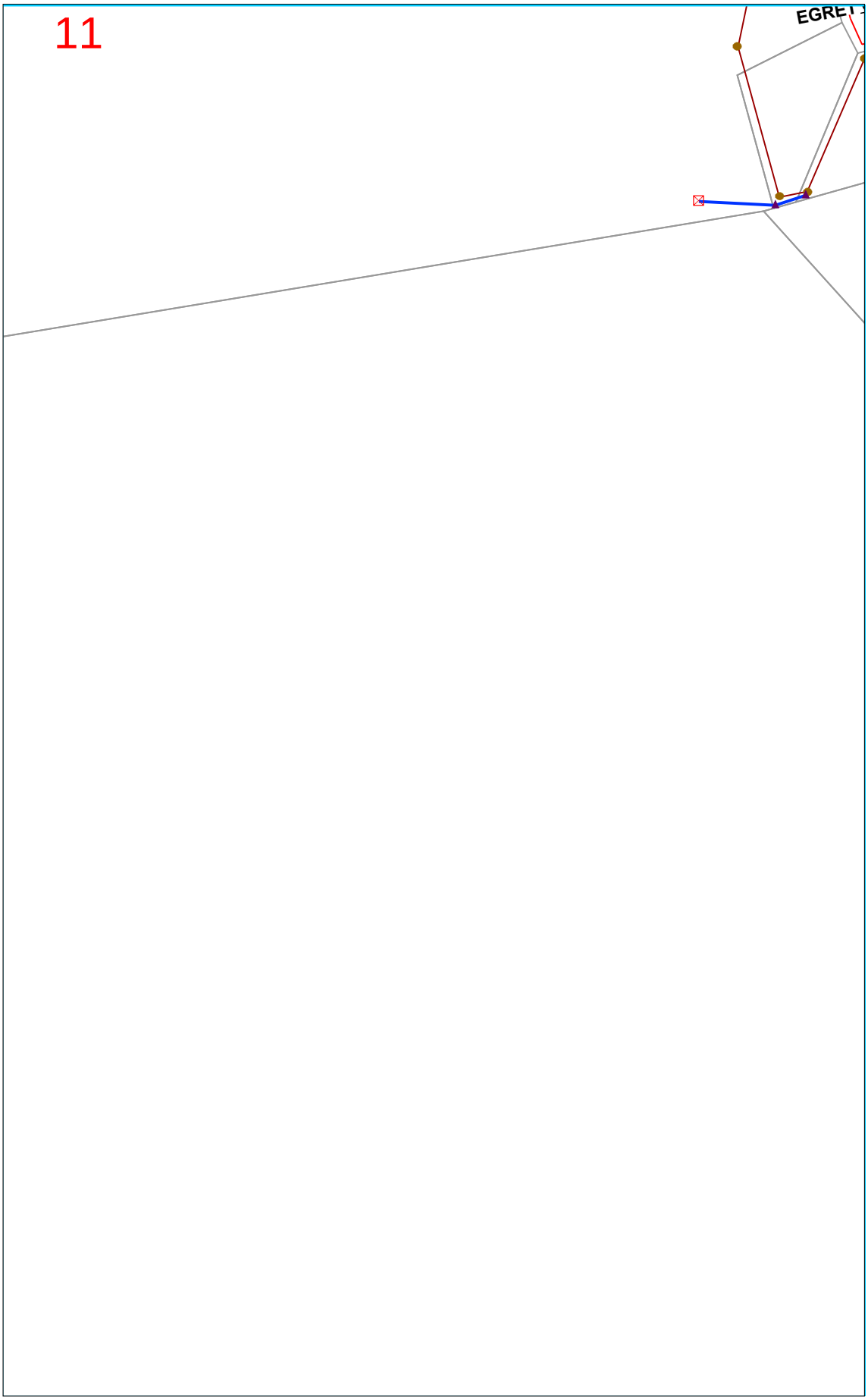
Map 11

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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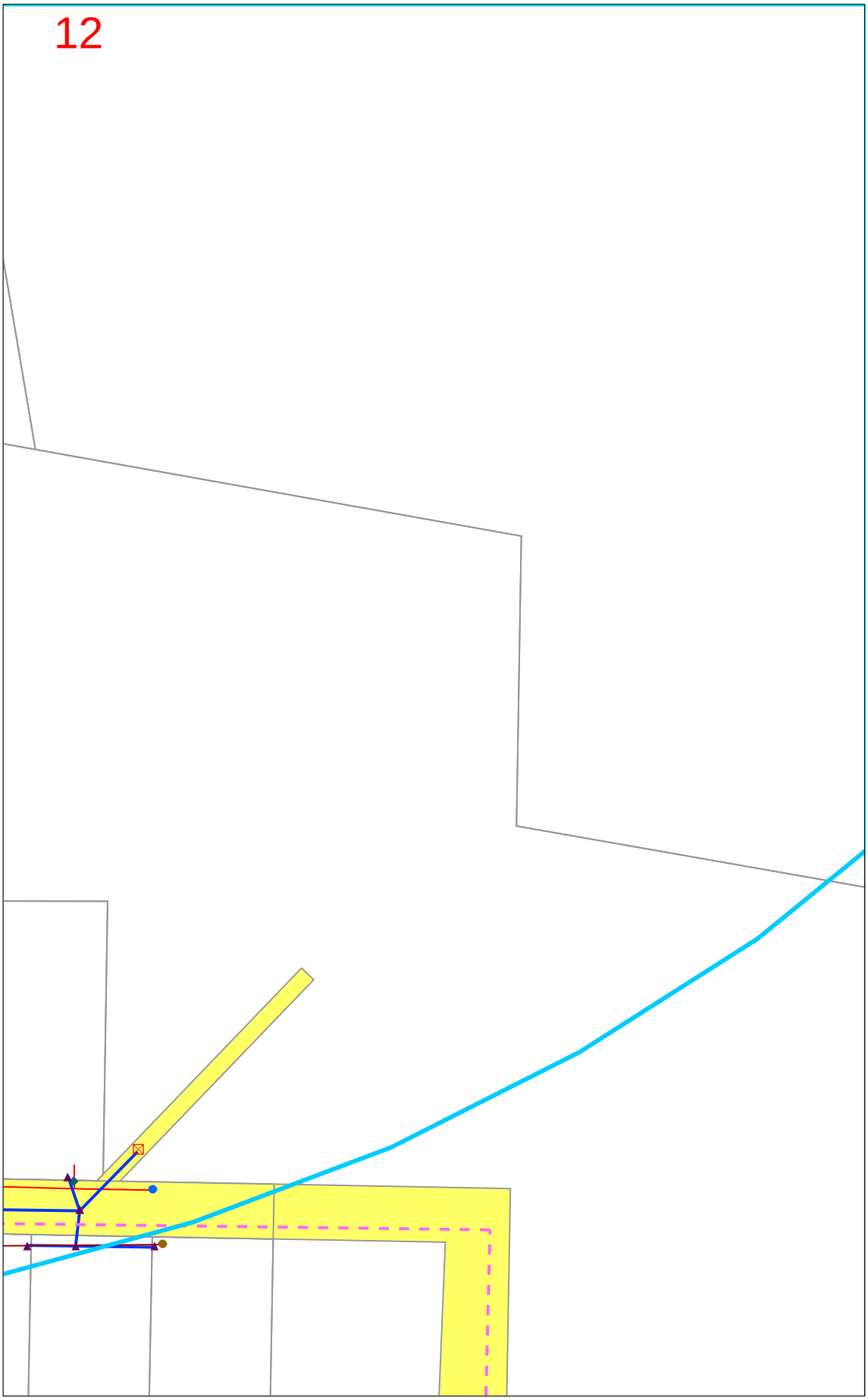
LOGAN CITY COUNCIL

Map 12

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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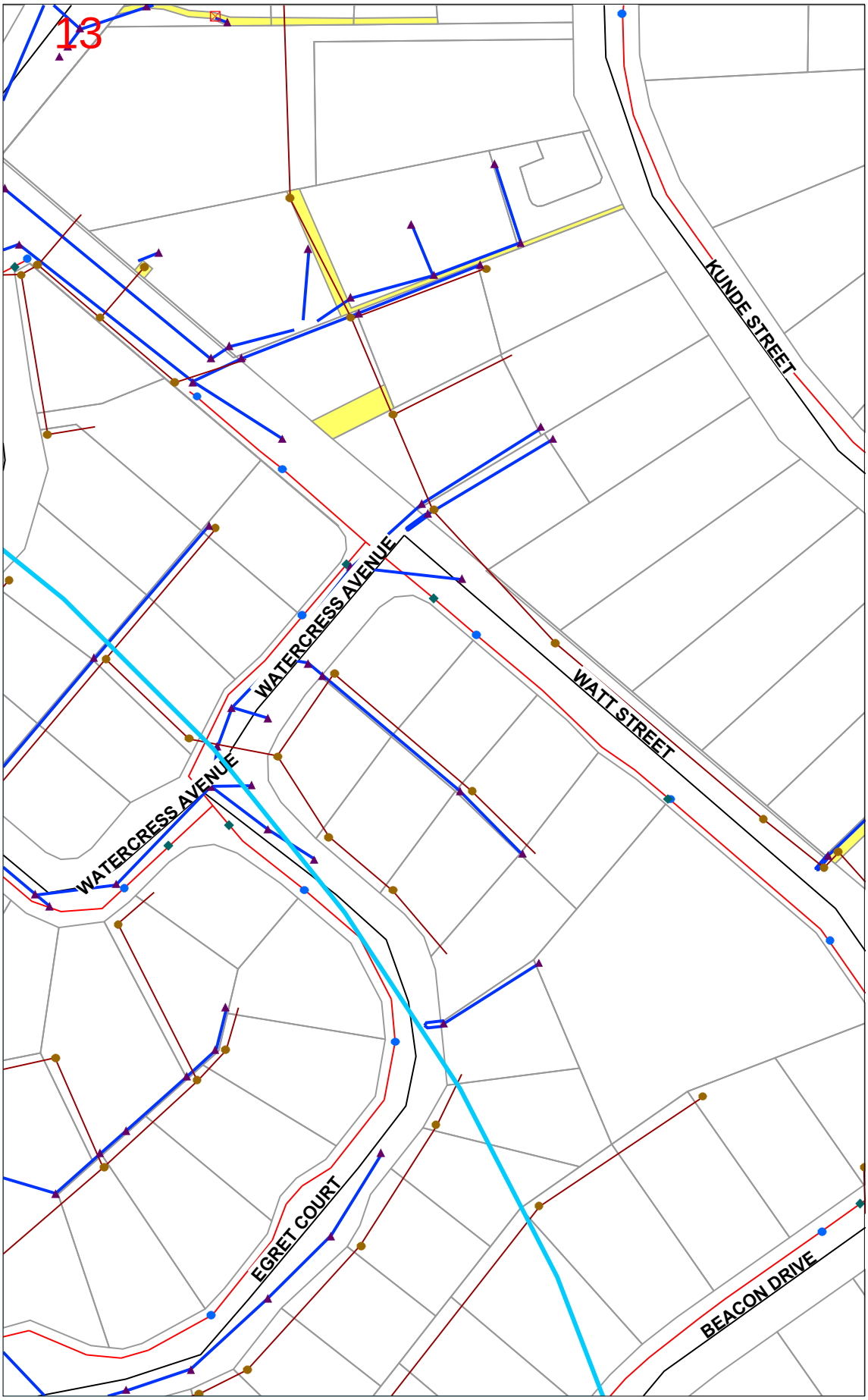
LOGAN CITY COUNCIL

Map 13

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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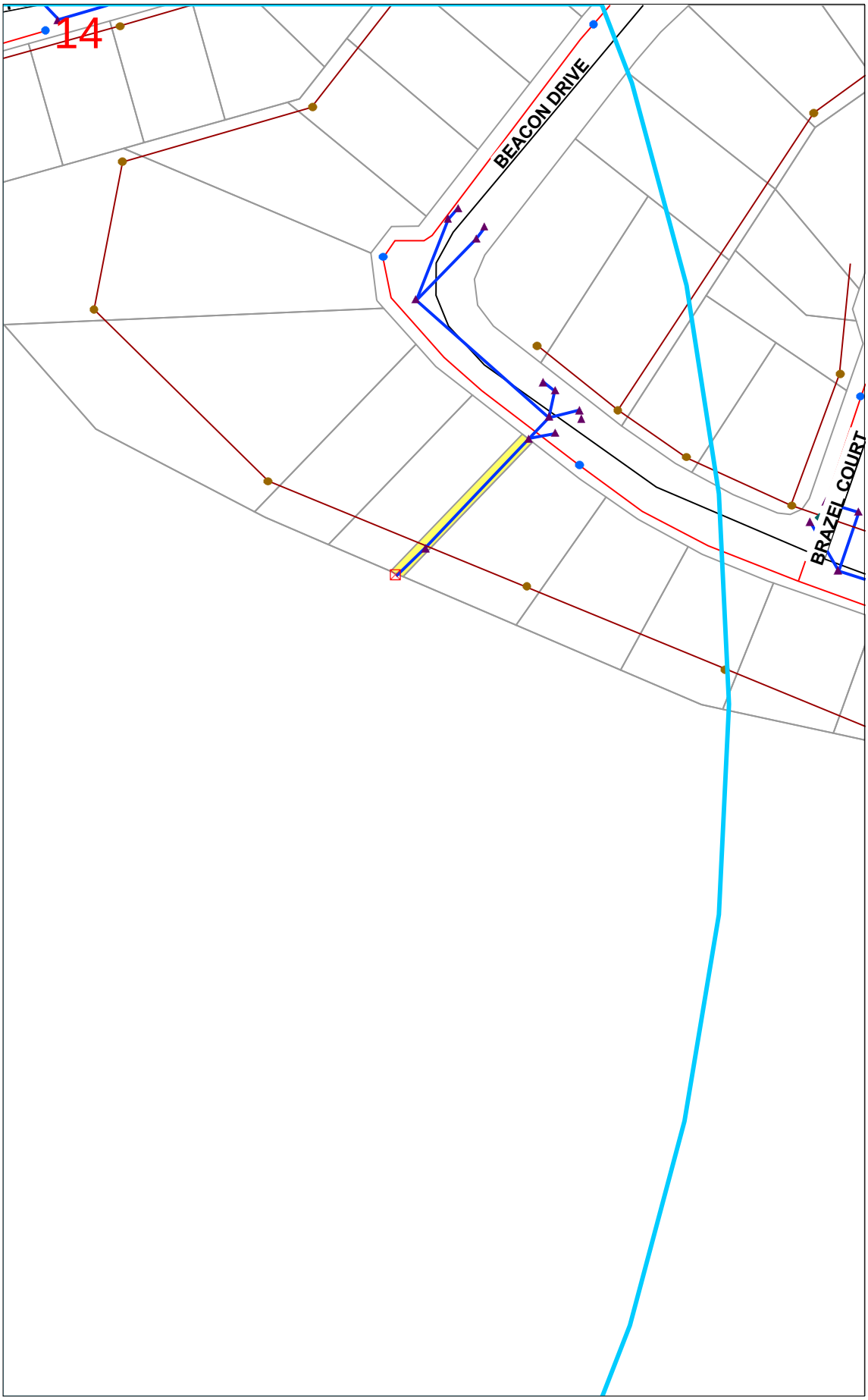
Map 14

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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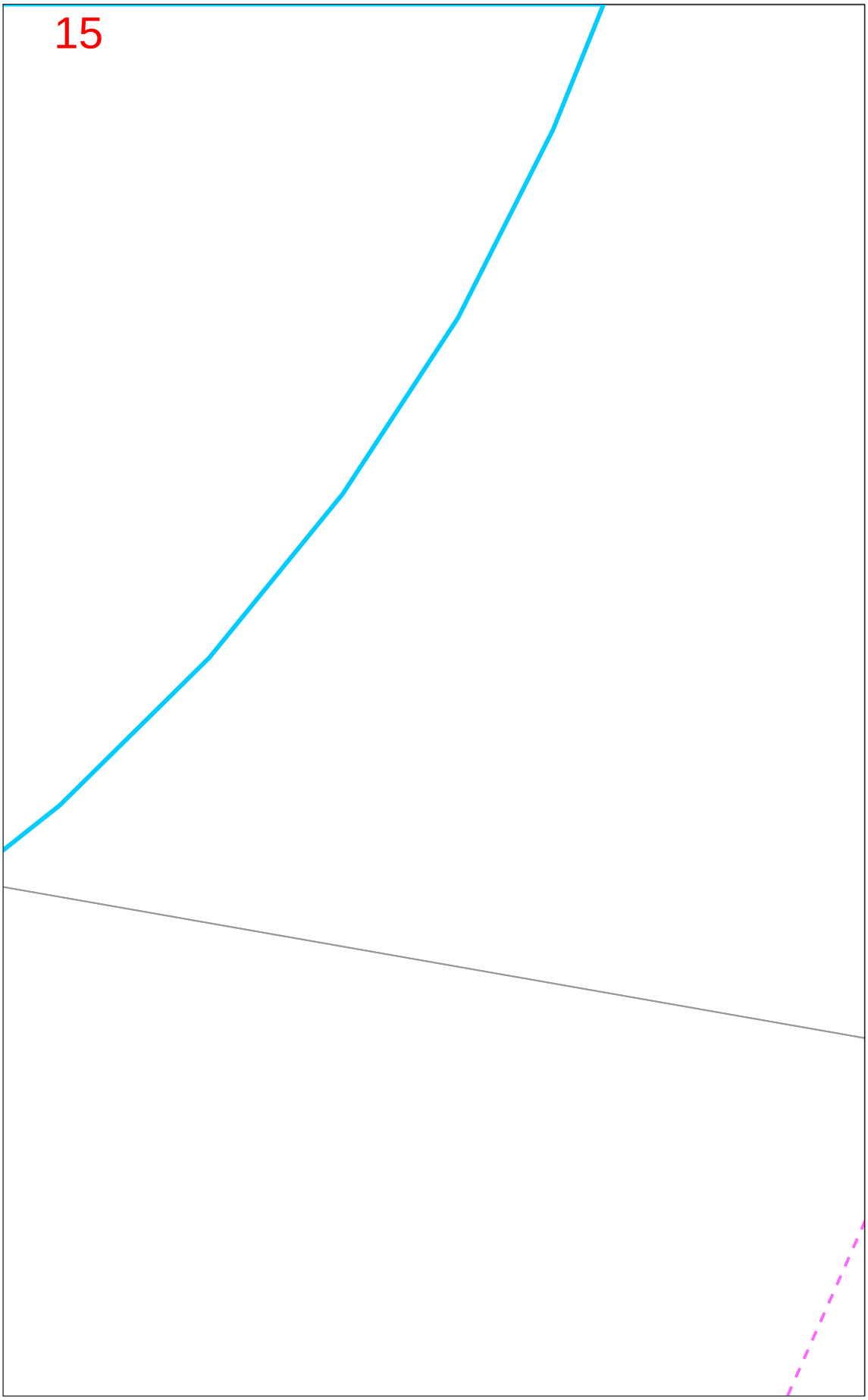
Map 15

Sequence No: 264371781

63-65 Cairns Street Loganholme



LEGEND:

- Affected BYDA Work Area
- 1 Detail Map

Sewer Assets

- Sewerage Pump Station - Existing
- Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- Valve - Existing
- Valve - Retired
- Water Supply Line - Existing
- Water Supply Line - Retired

Stormwater Assets

- Manholes, Gullies and Drainways
- Telemetry Gauge Station
- Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Electrical Assets

- Lights
- Pits
- Switchboards
- Electrical Conduits

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N

1:1000

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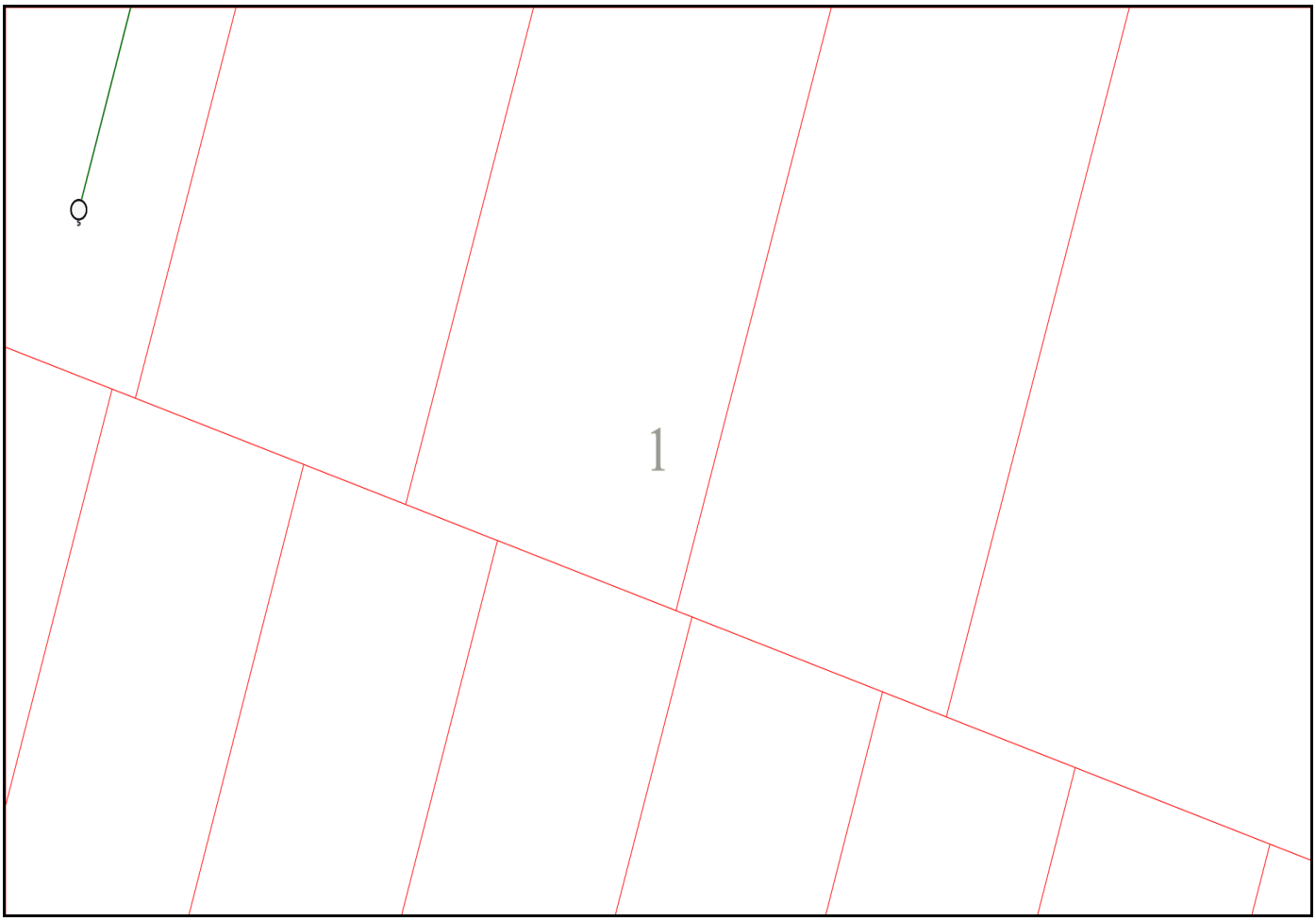
Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including but not limited to "workplace health and safety".

LEGEND

34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m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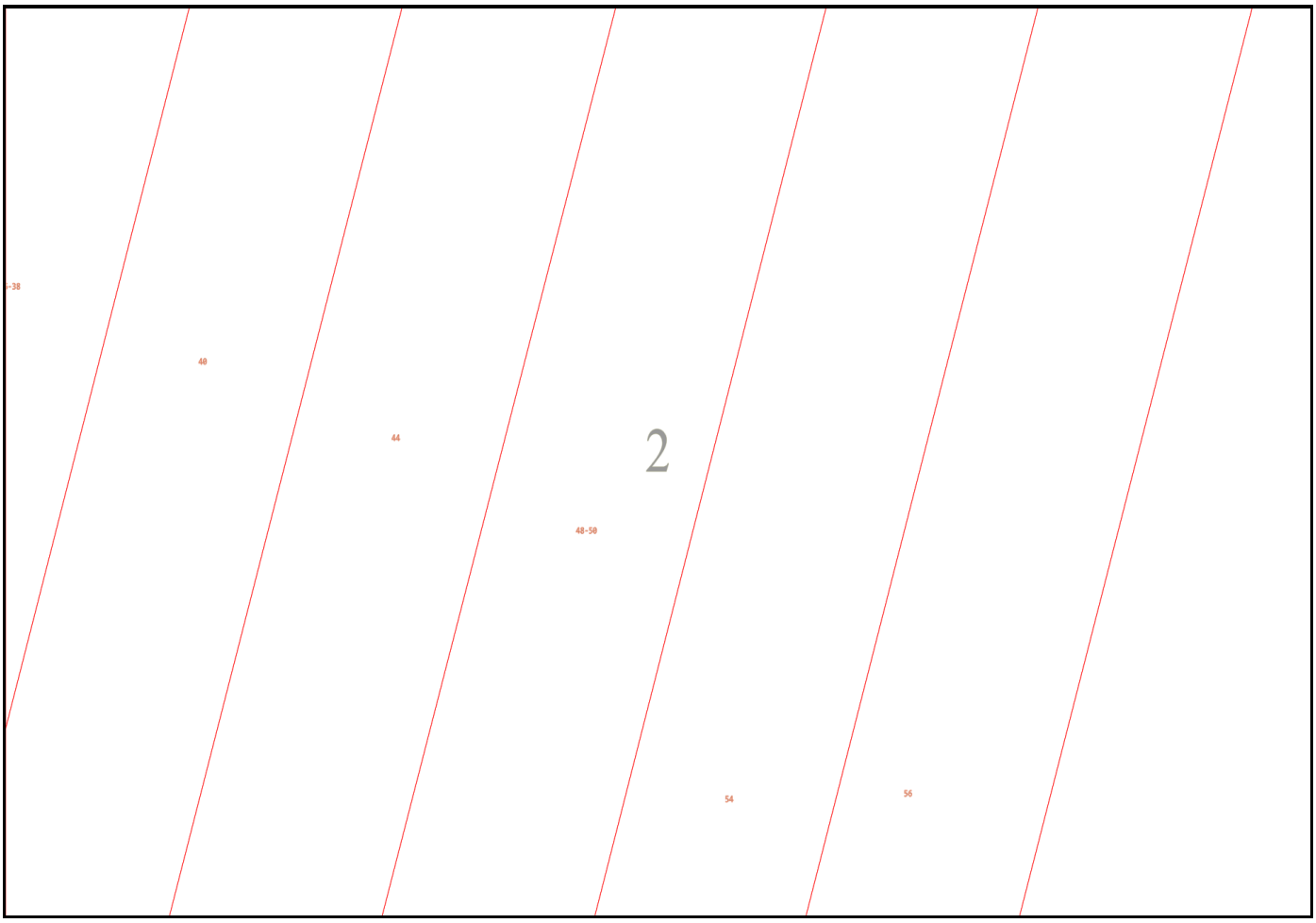
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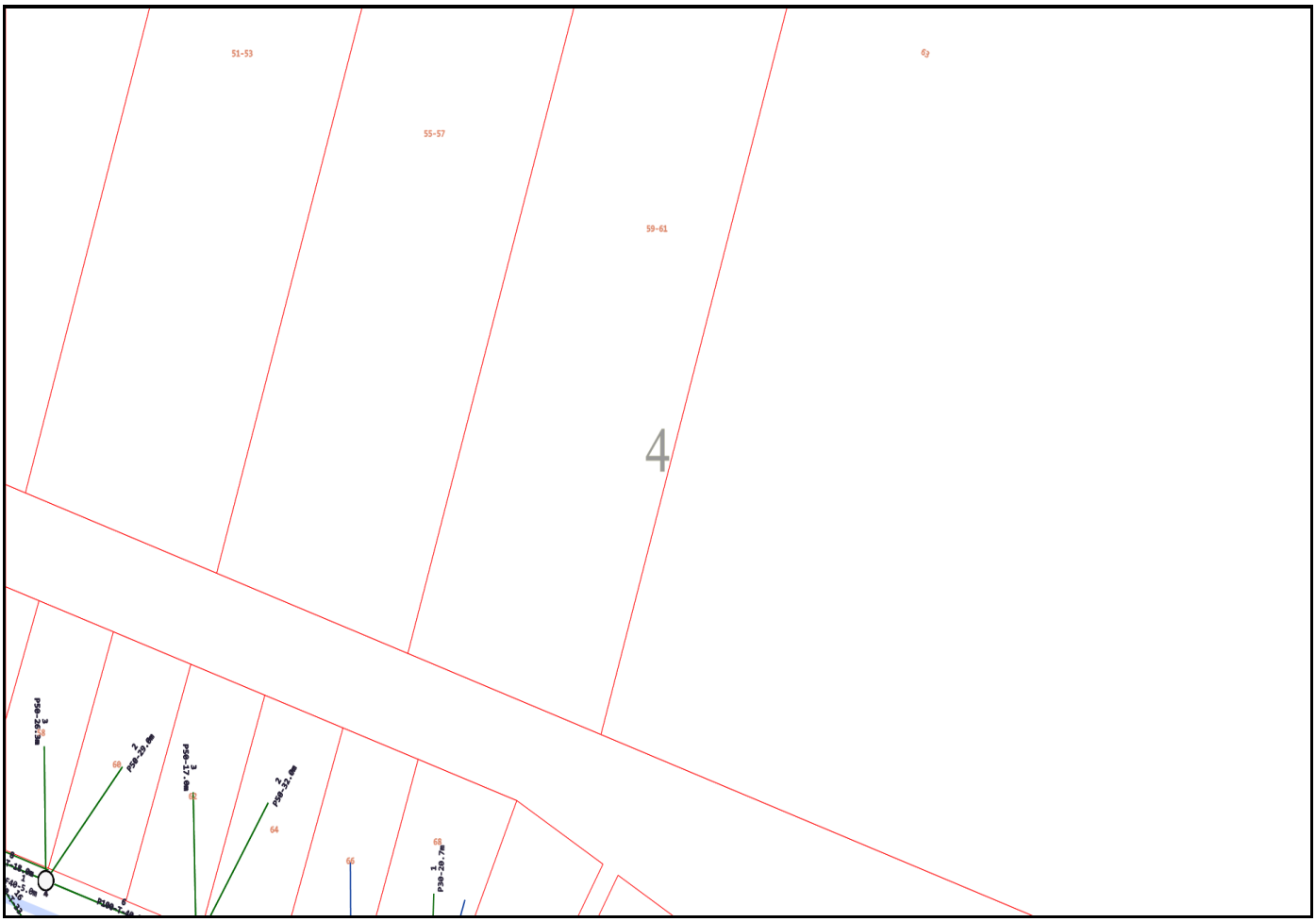
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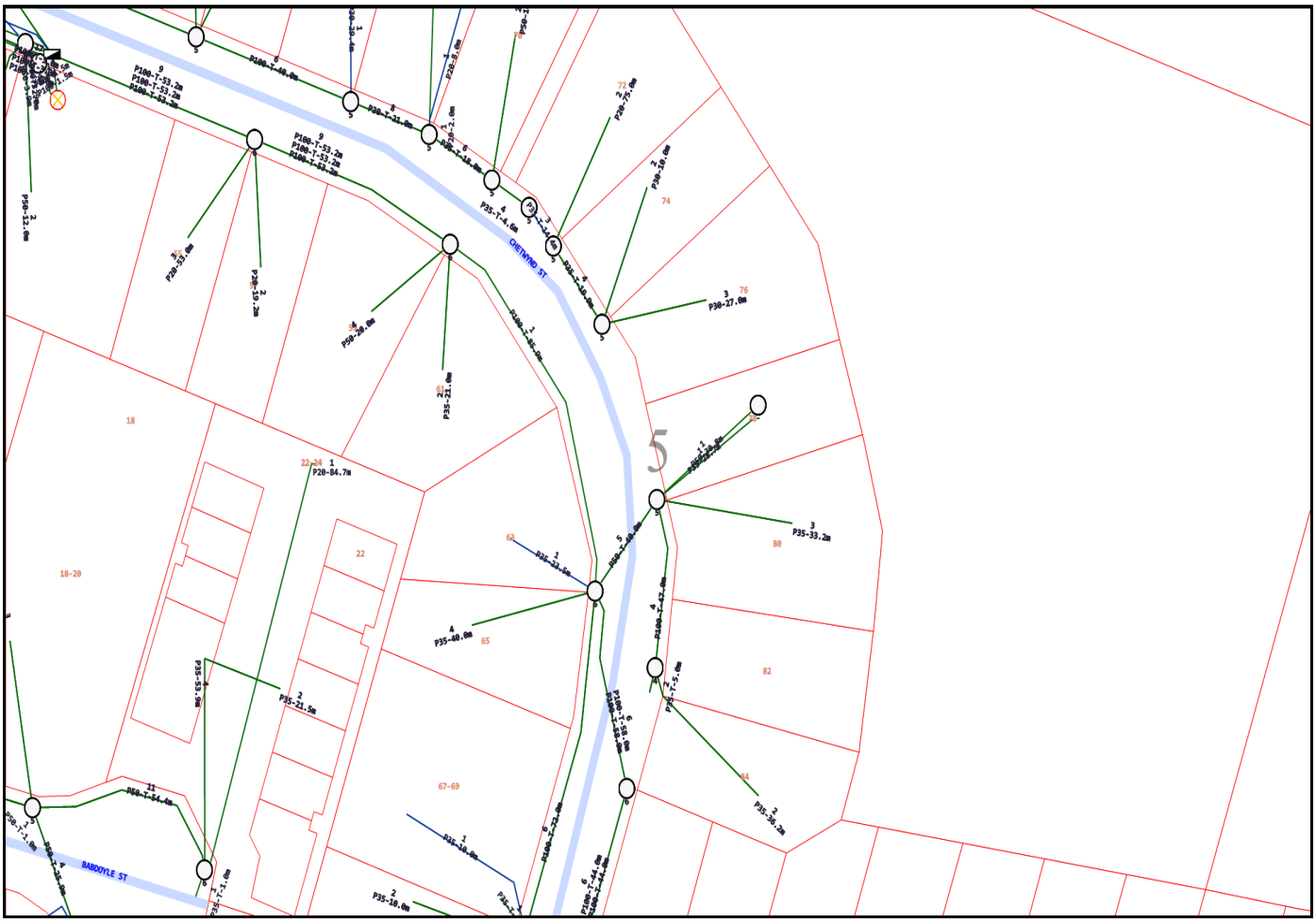
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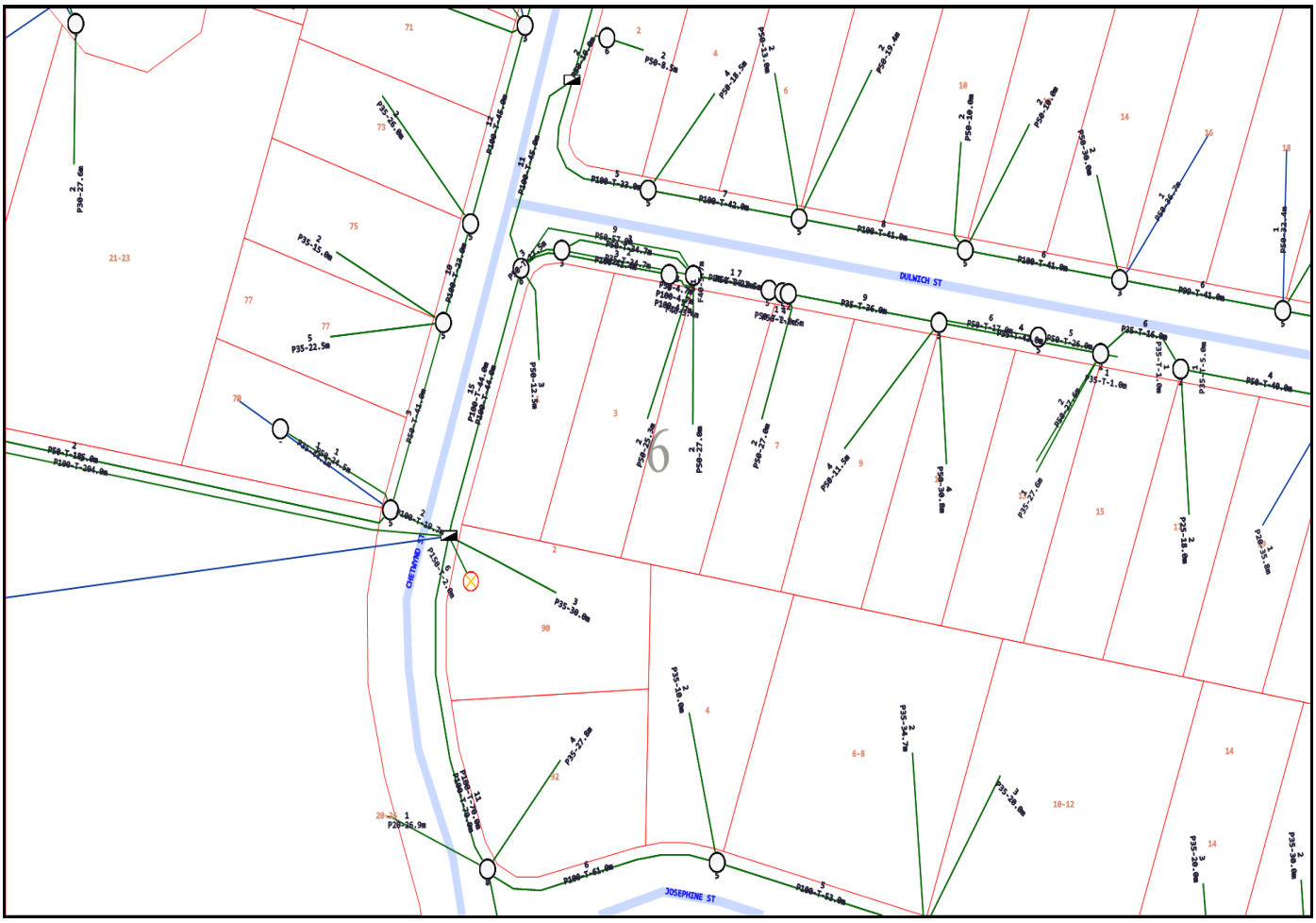
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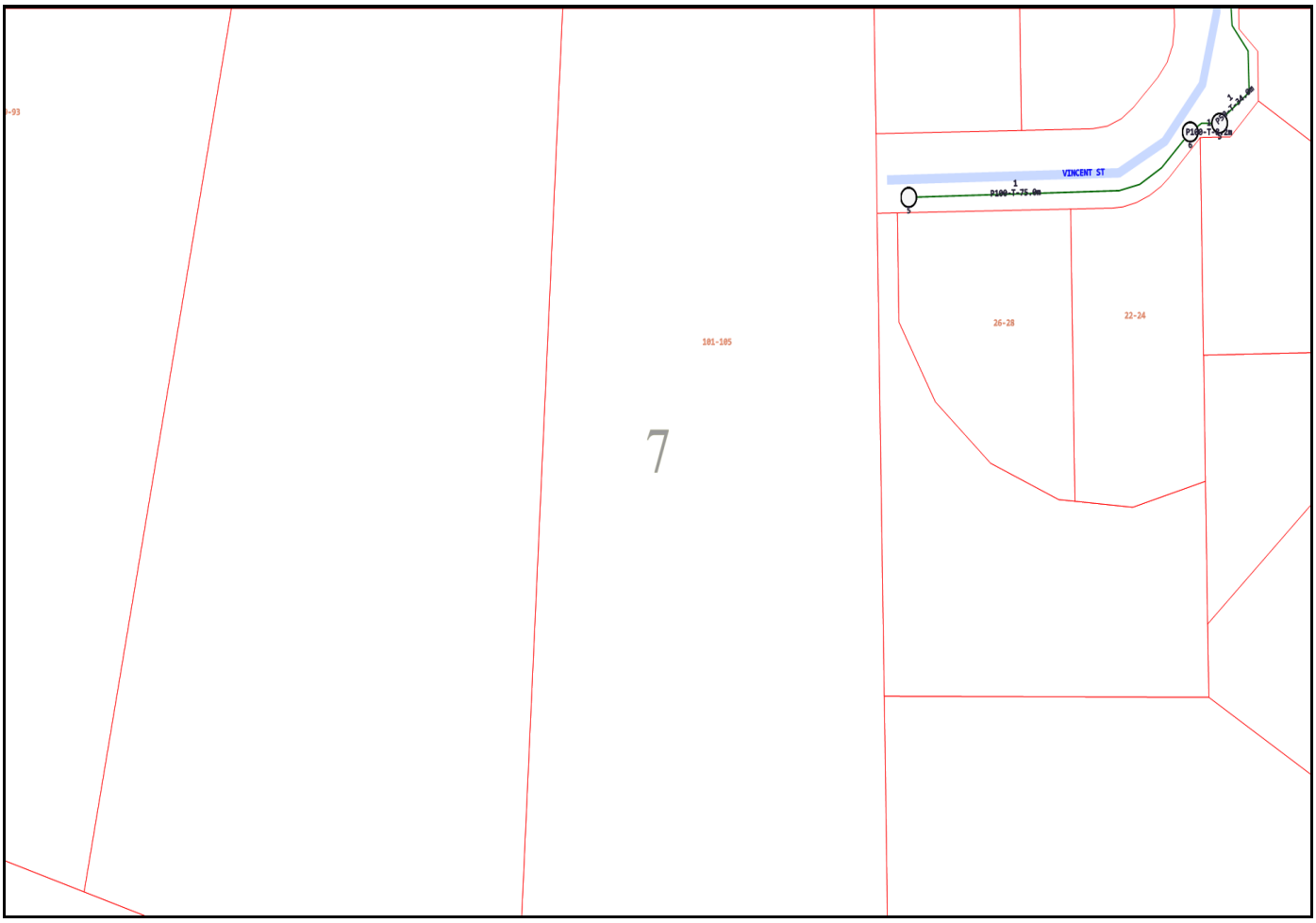
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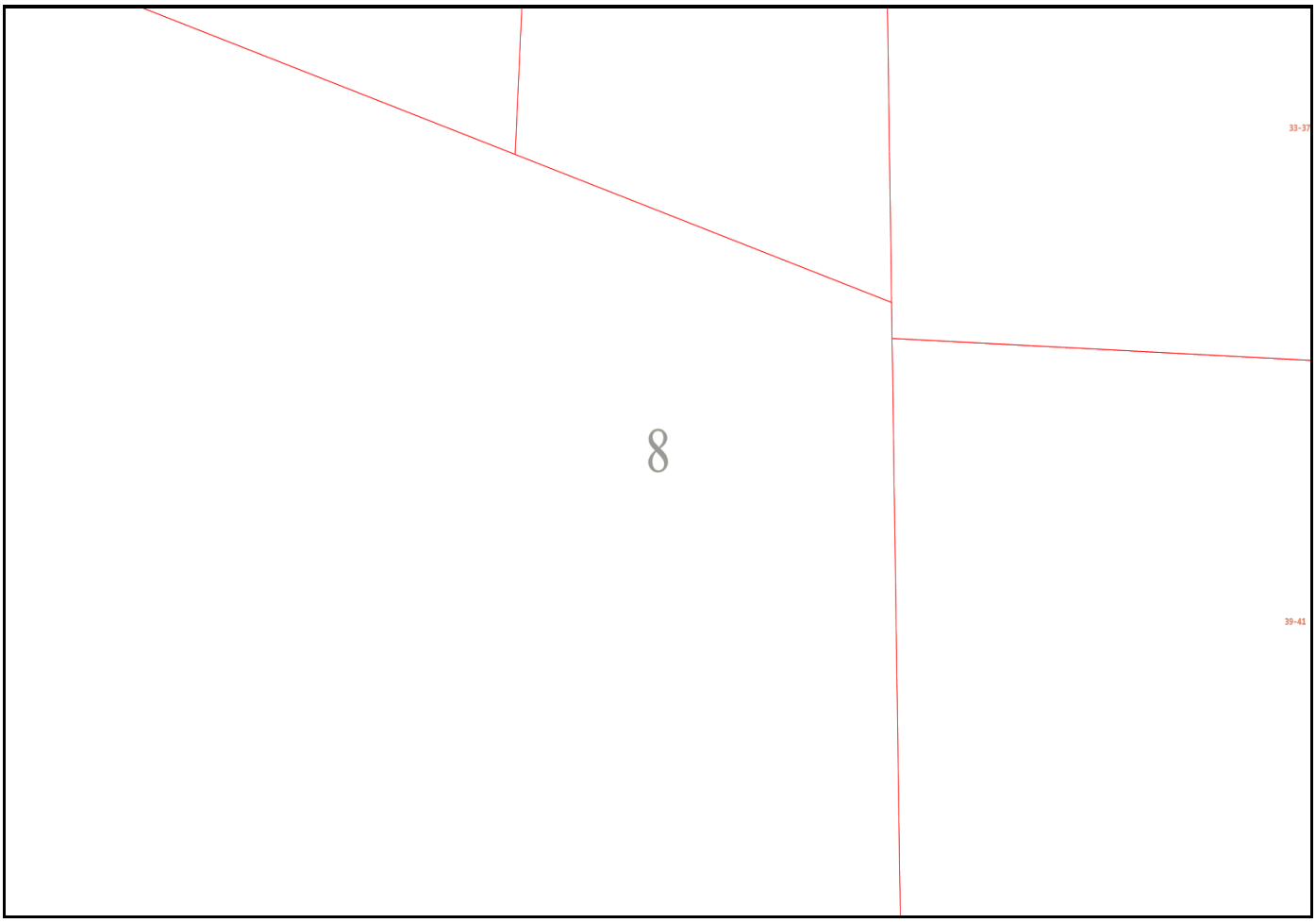
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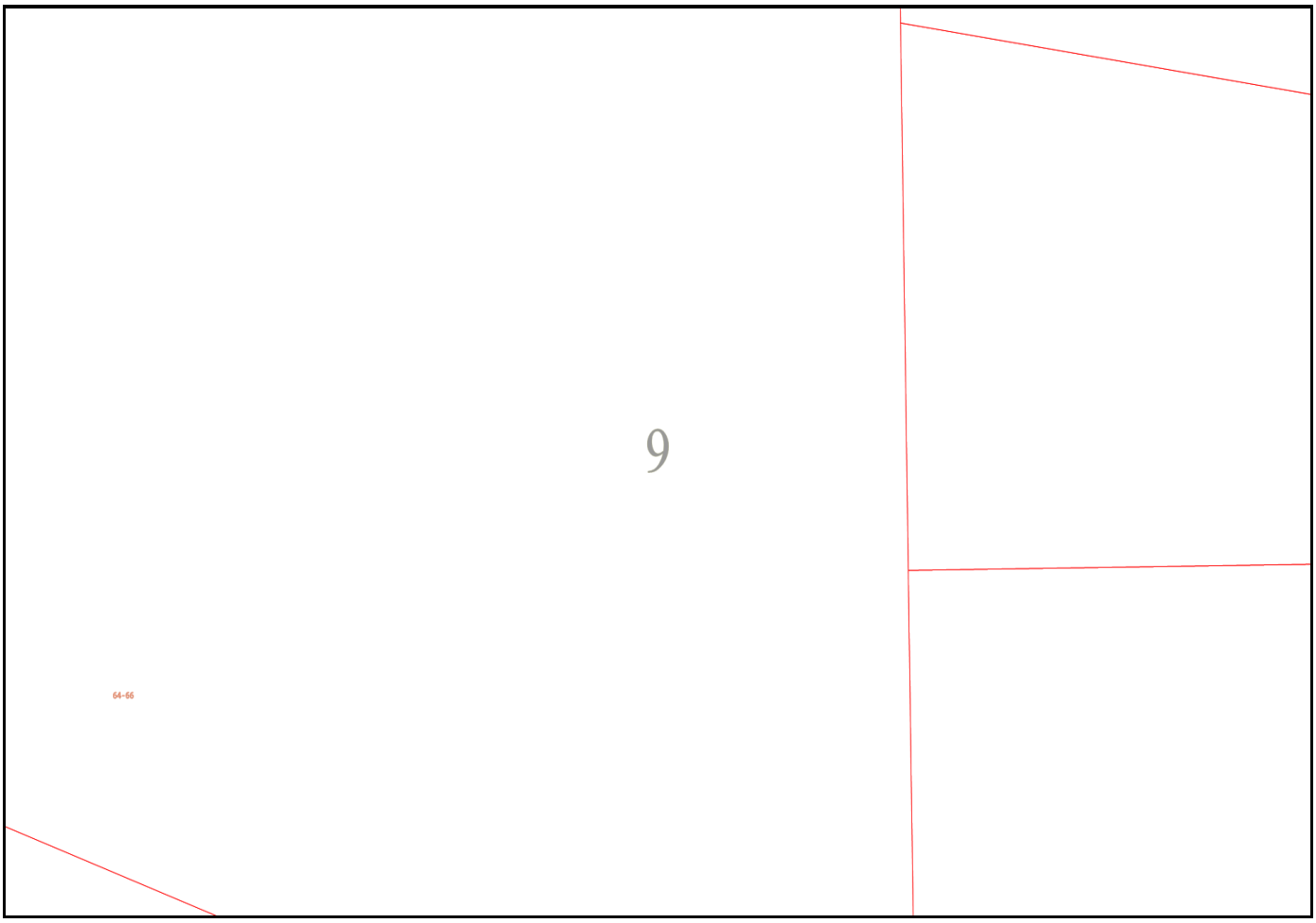
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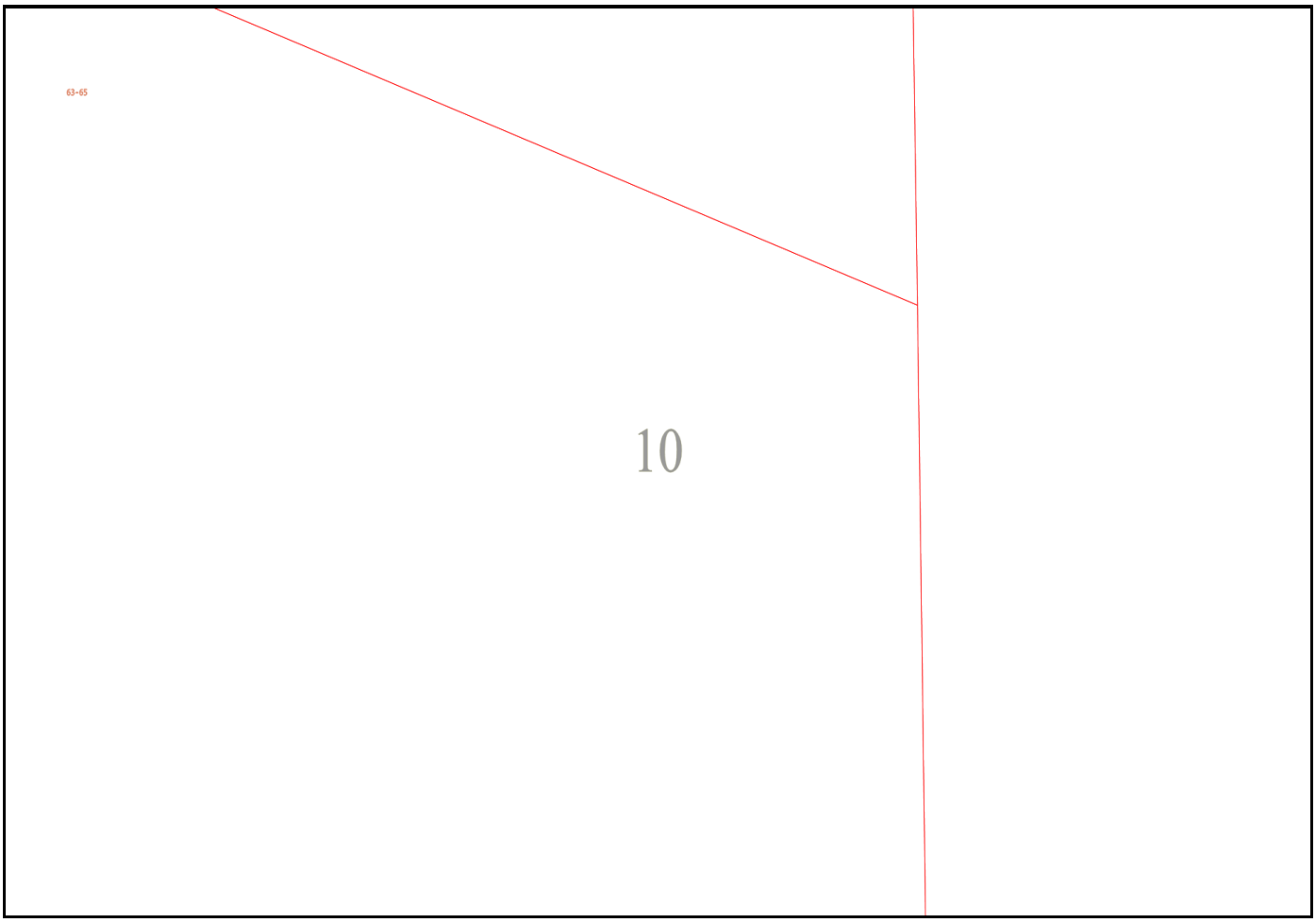
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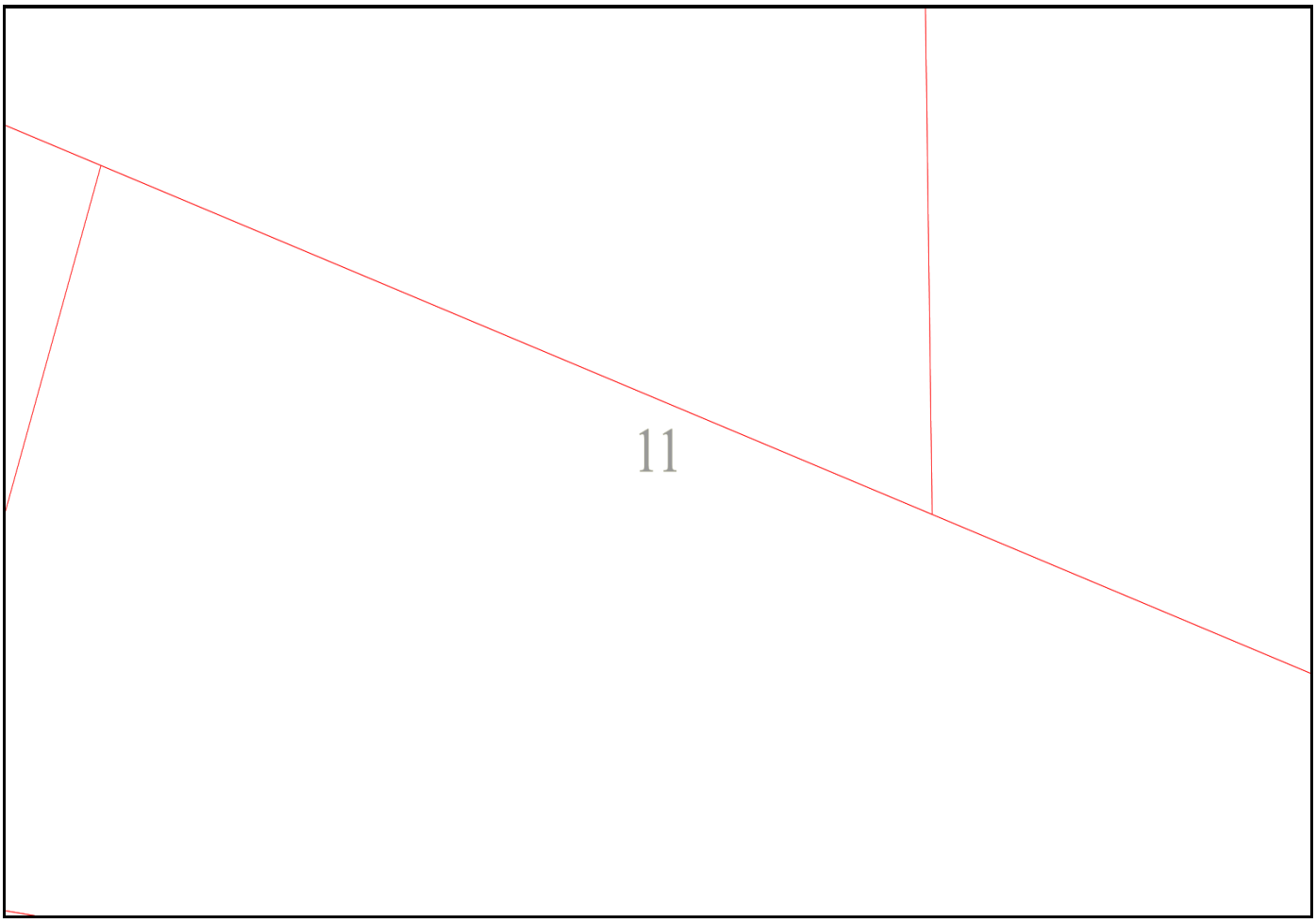
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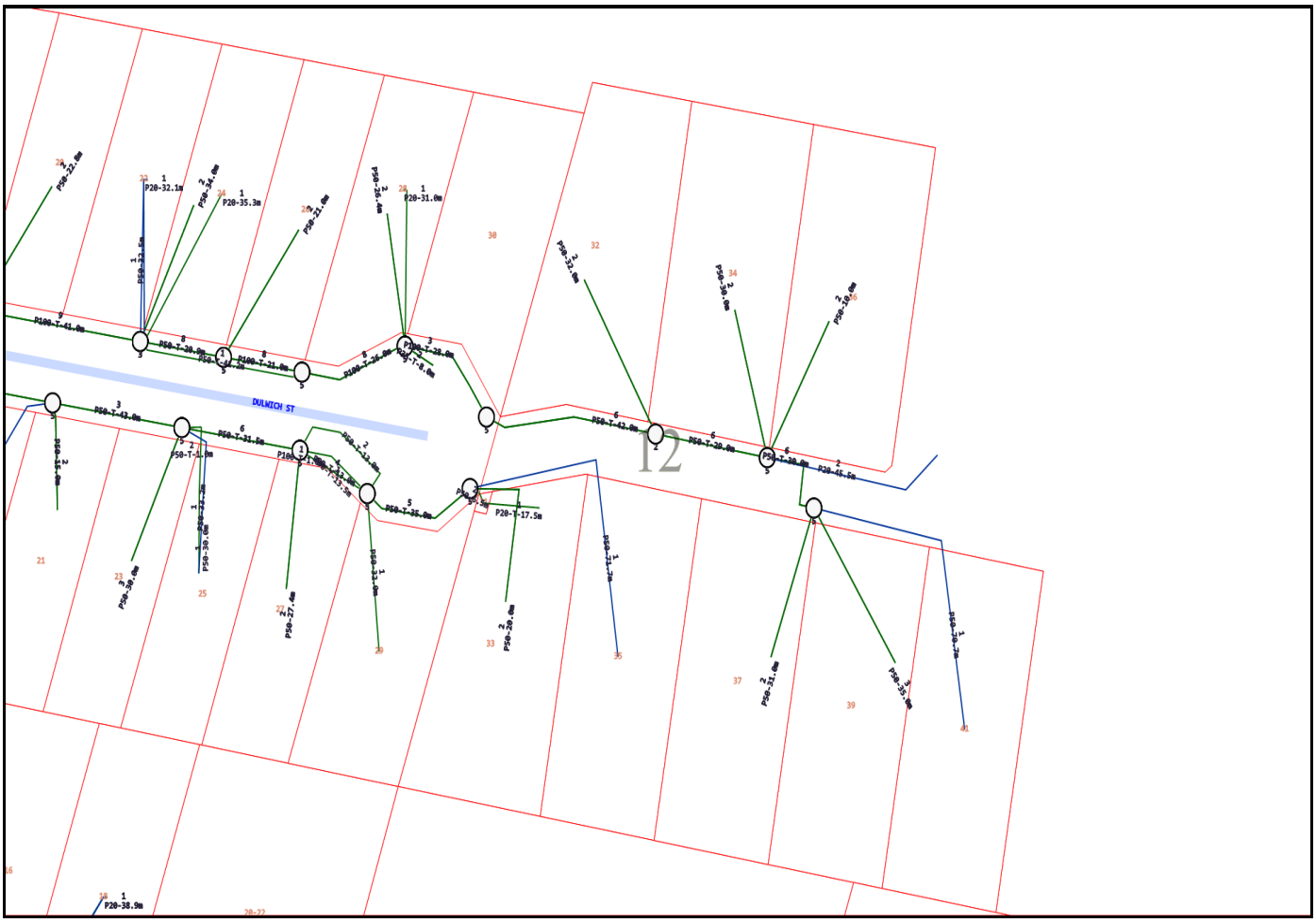
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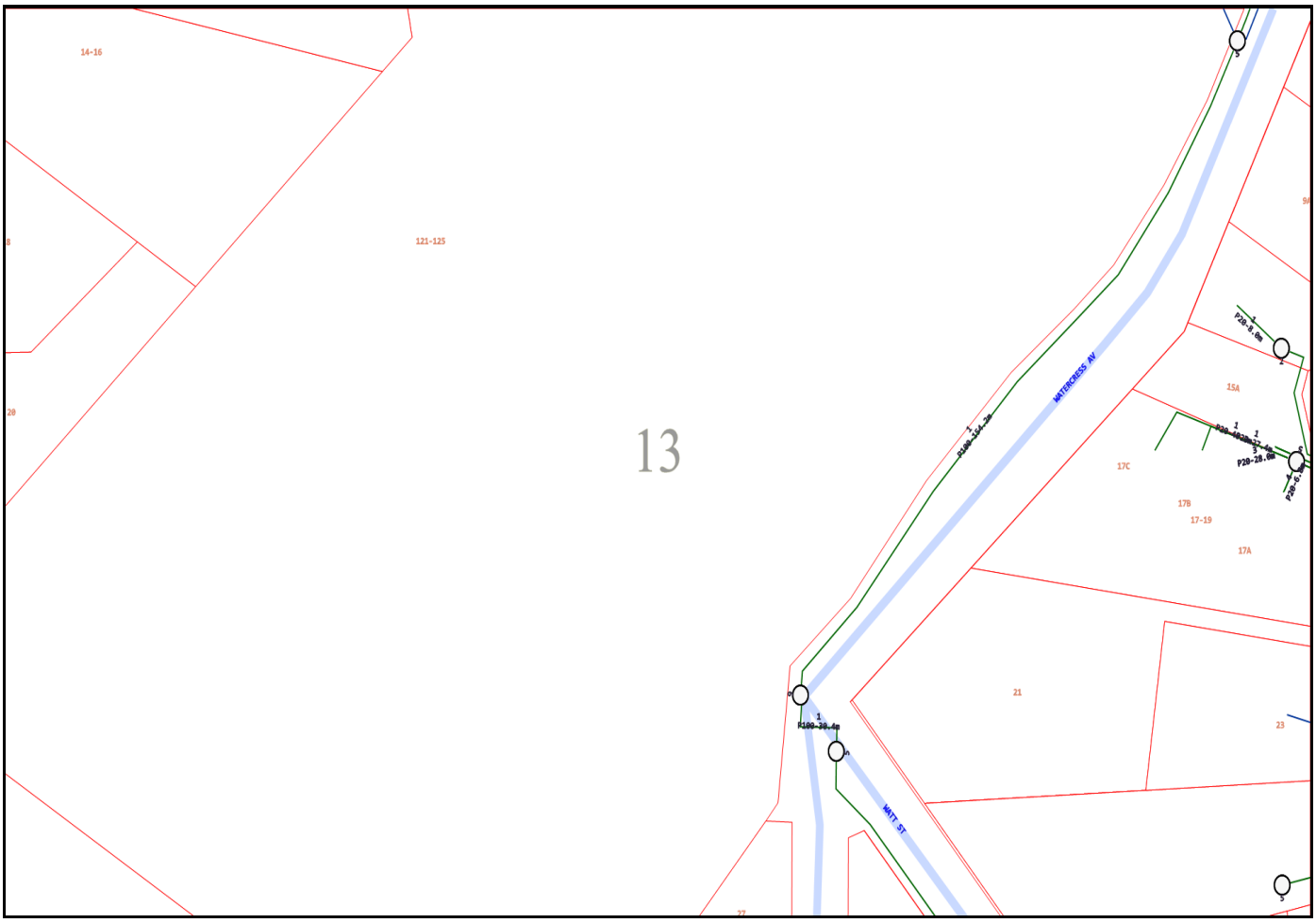
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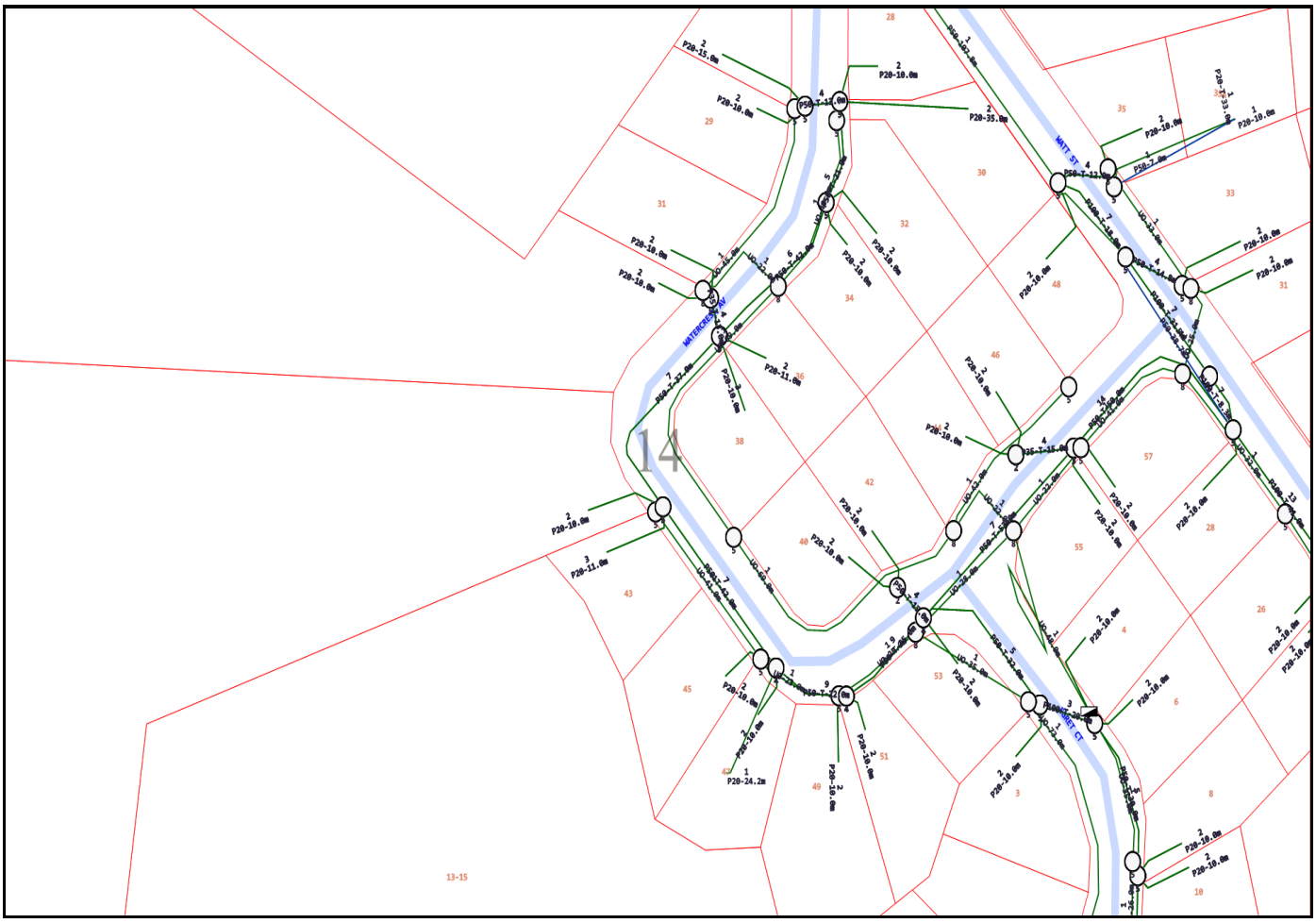
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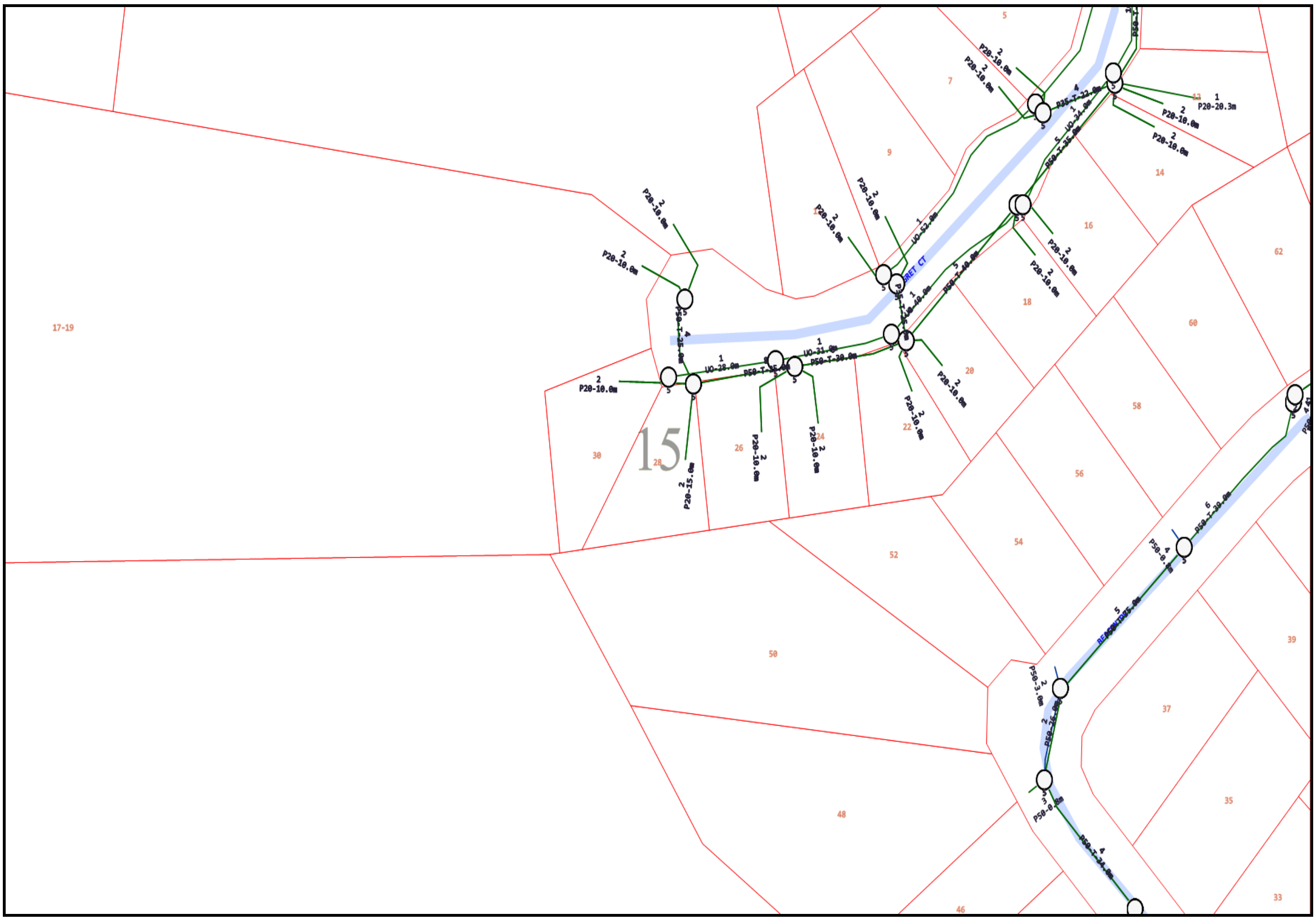
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UO-28.0m
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UO-31.0m
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UO-52.0m
1
UO-40.0m
5
P50-T-40.0m
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P35-T-22.0m
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UO-34.0m
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P50-T-35.0m
1
P20-20.3m
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P50-T-39.0m
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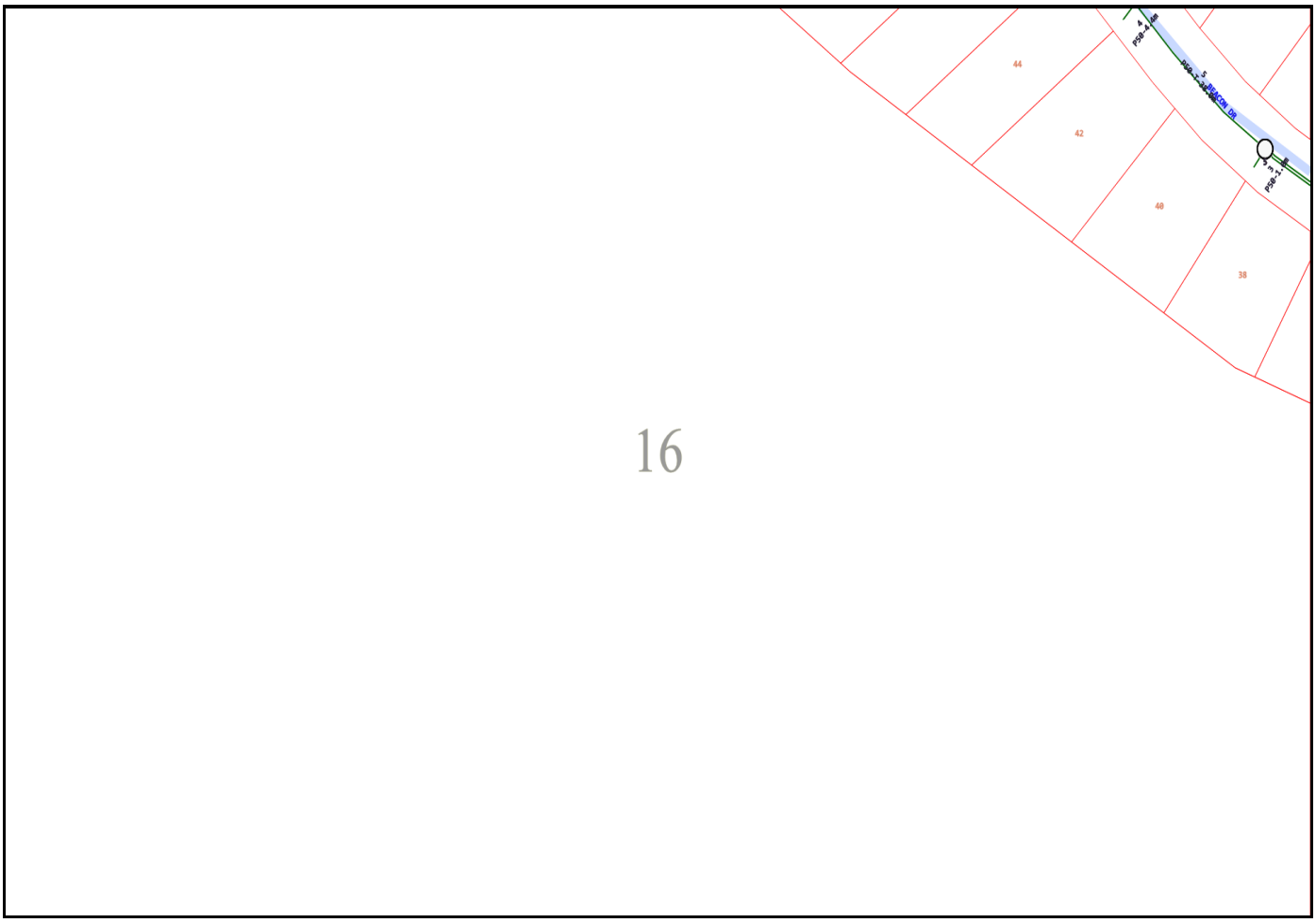
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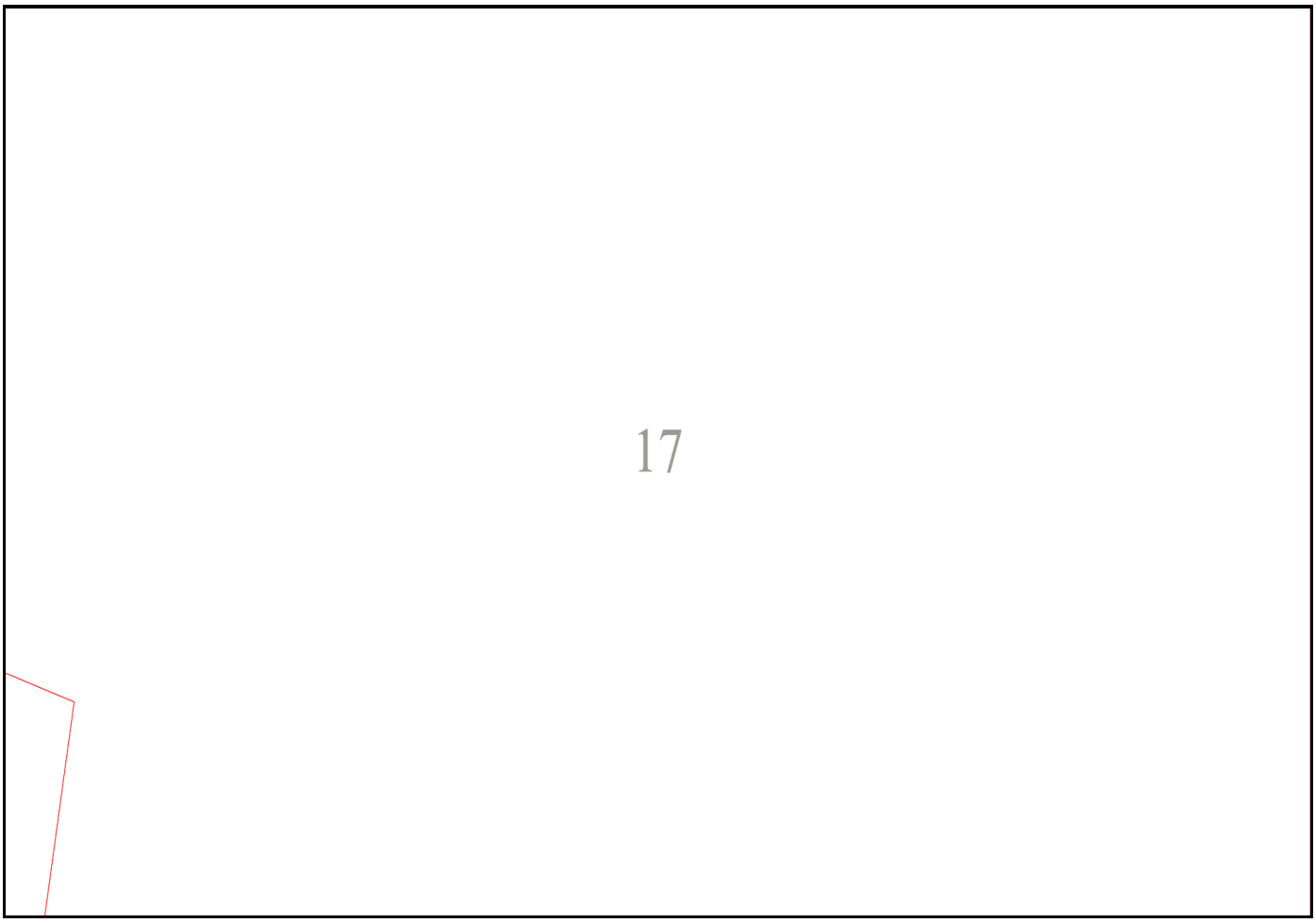
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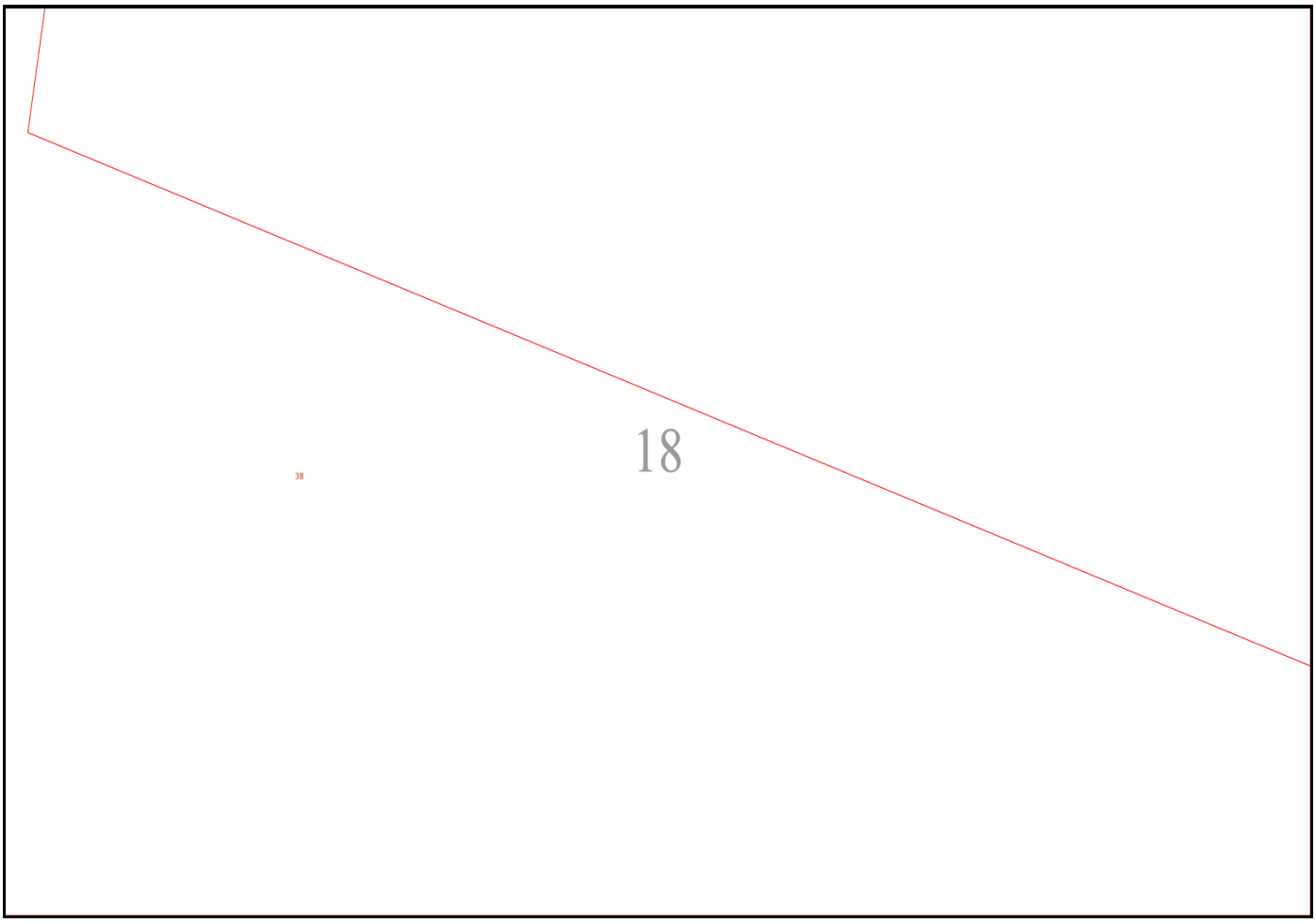

Emergency Contacts

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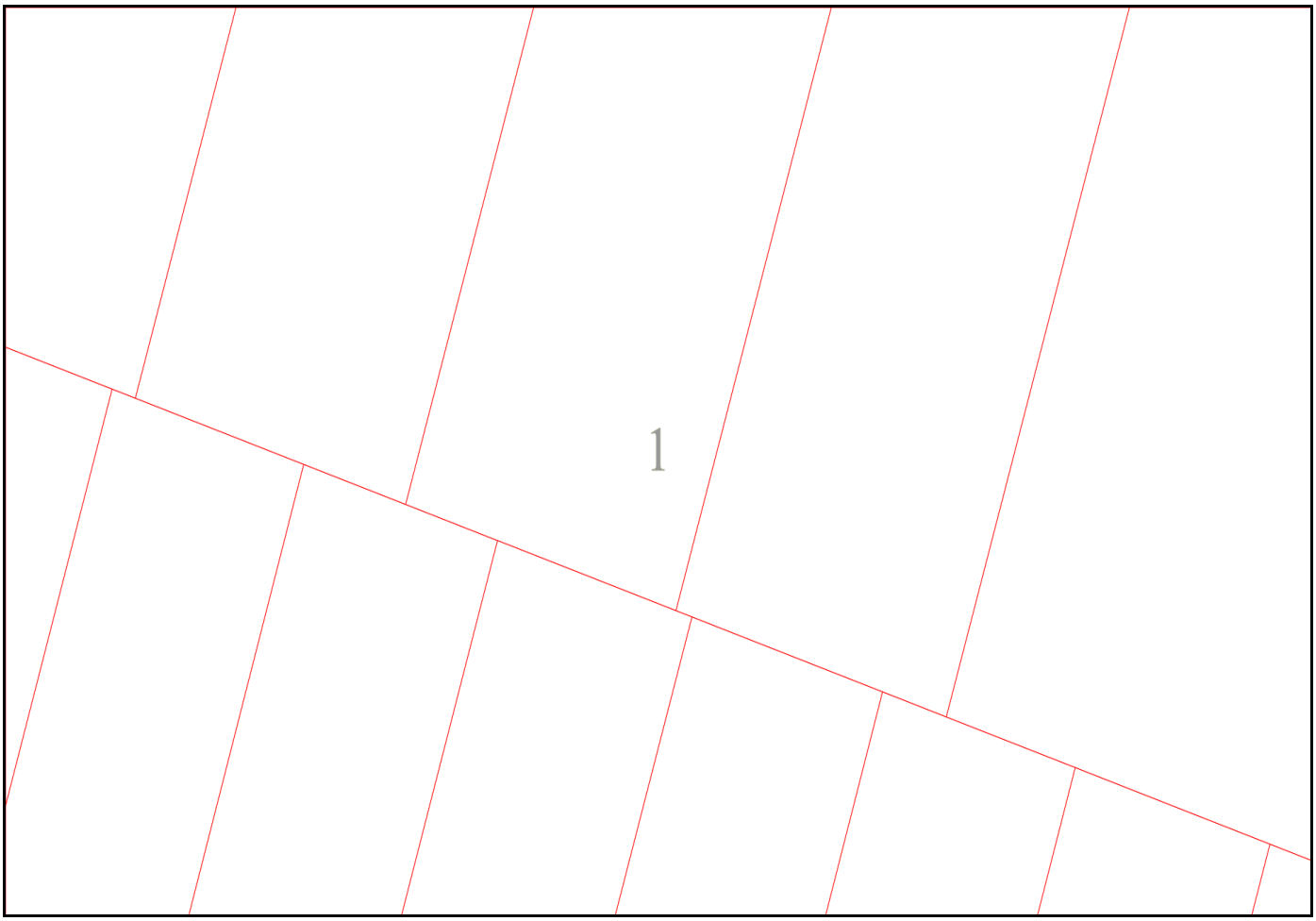
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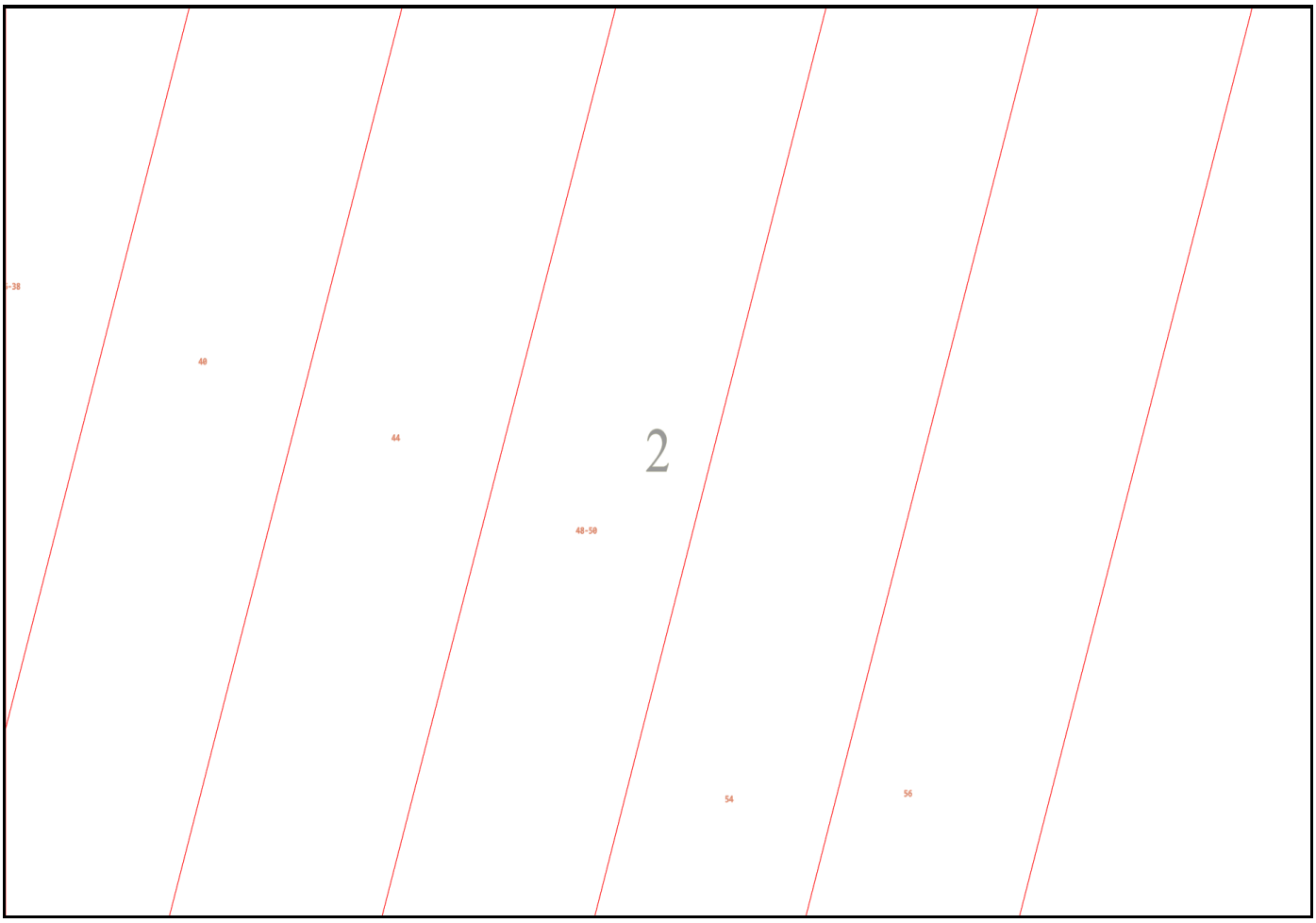
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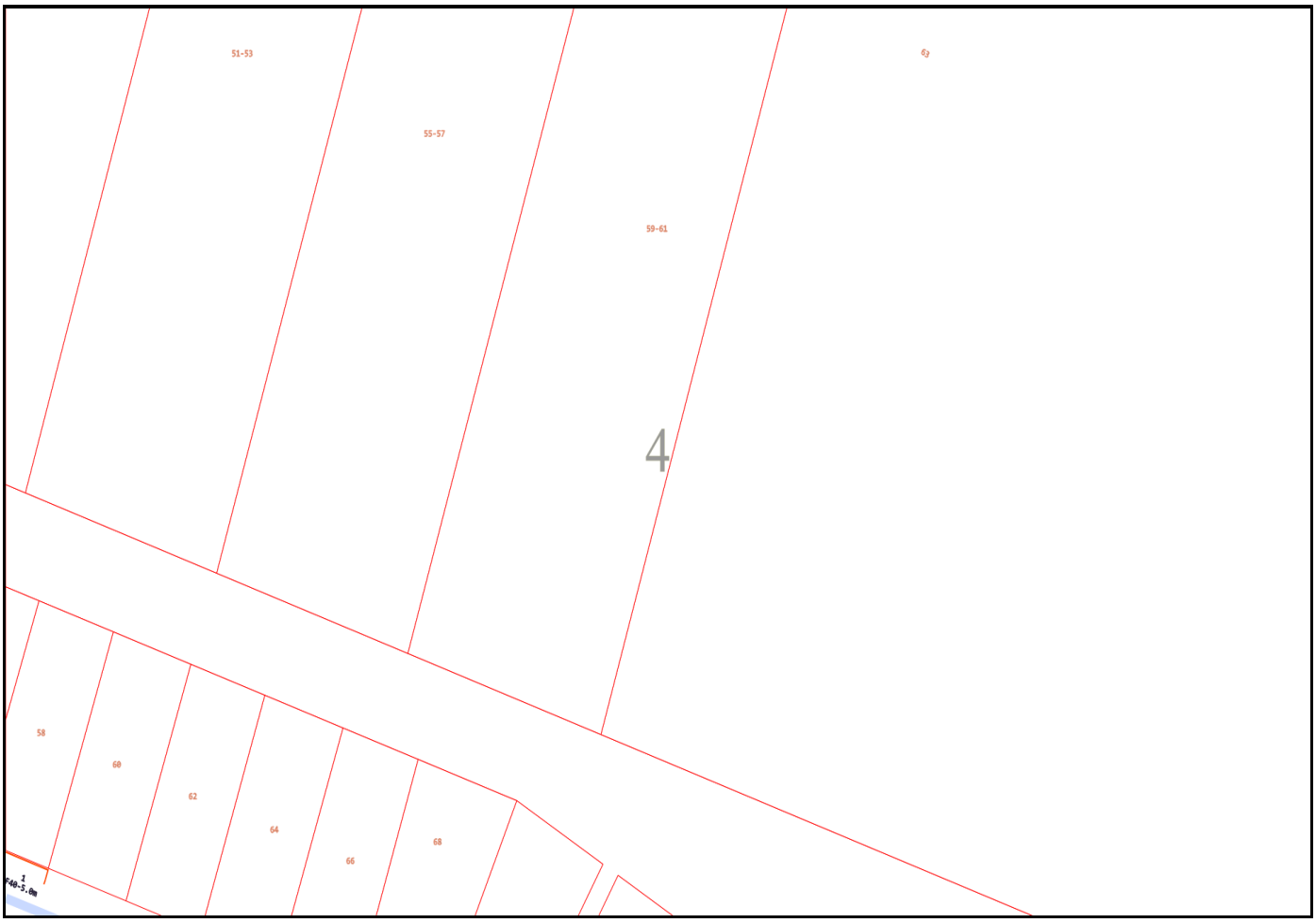
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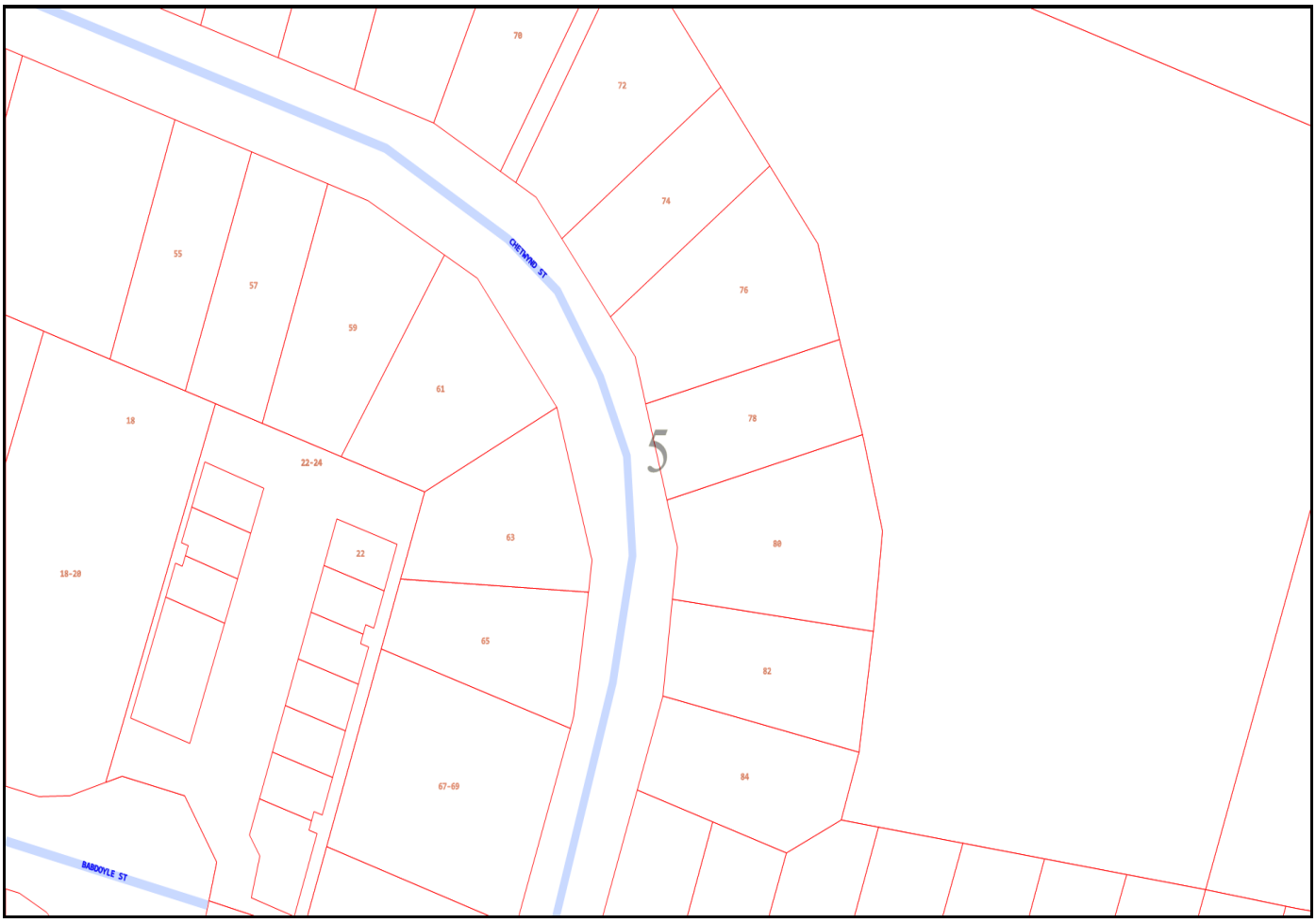
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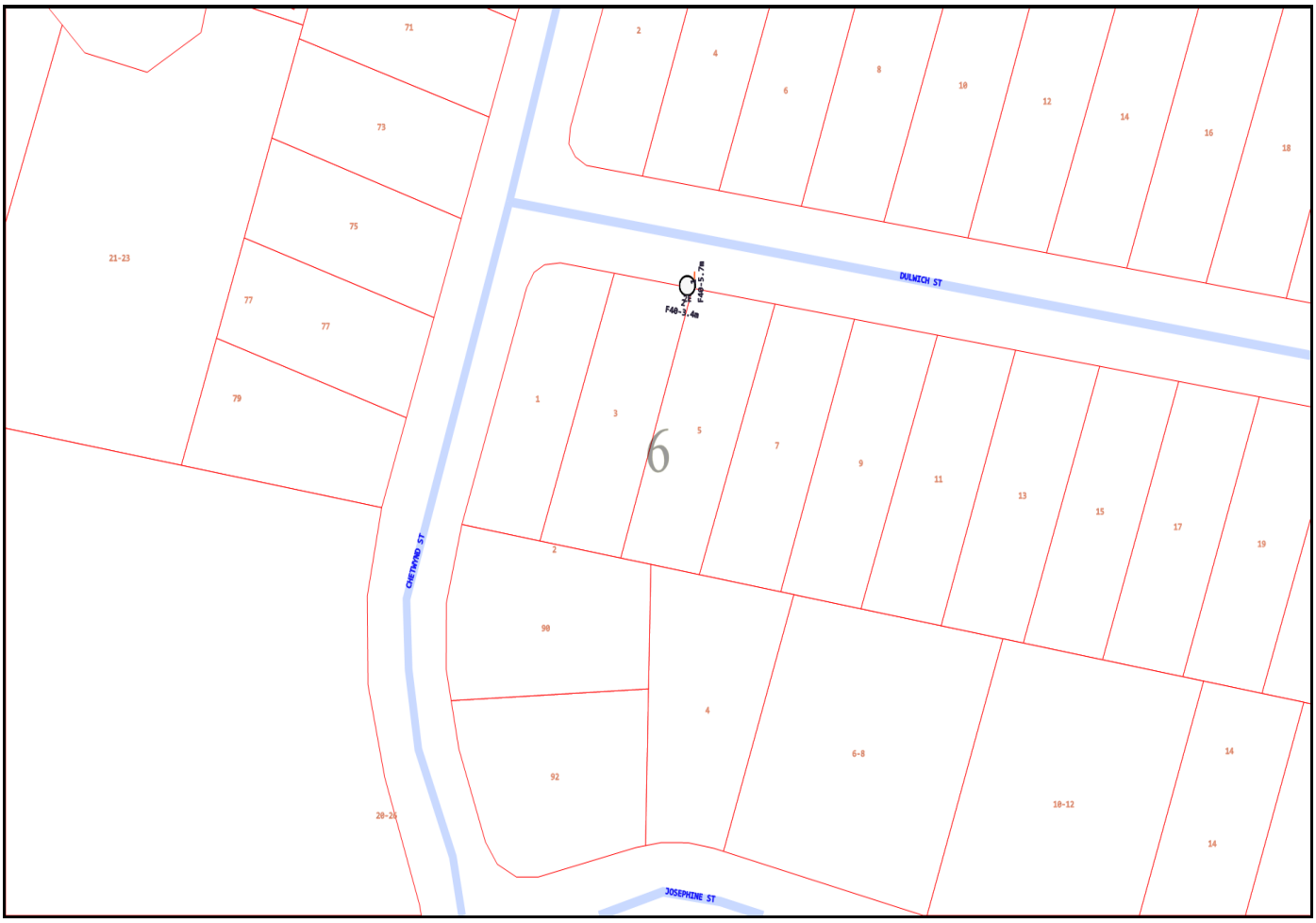
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F40-5.7m
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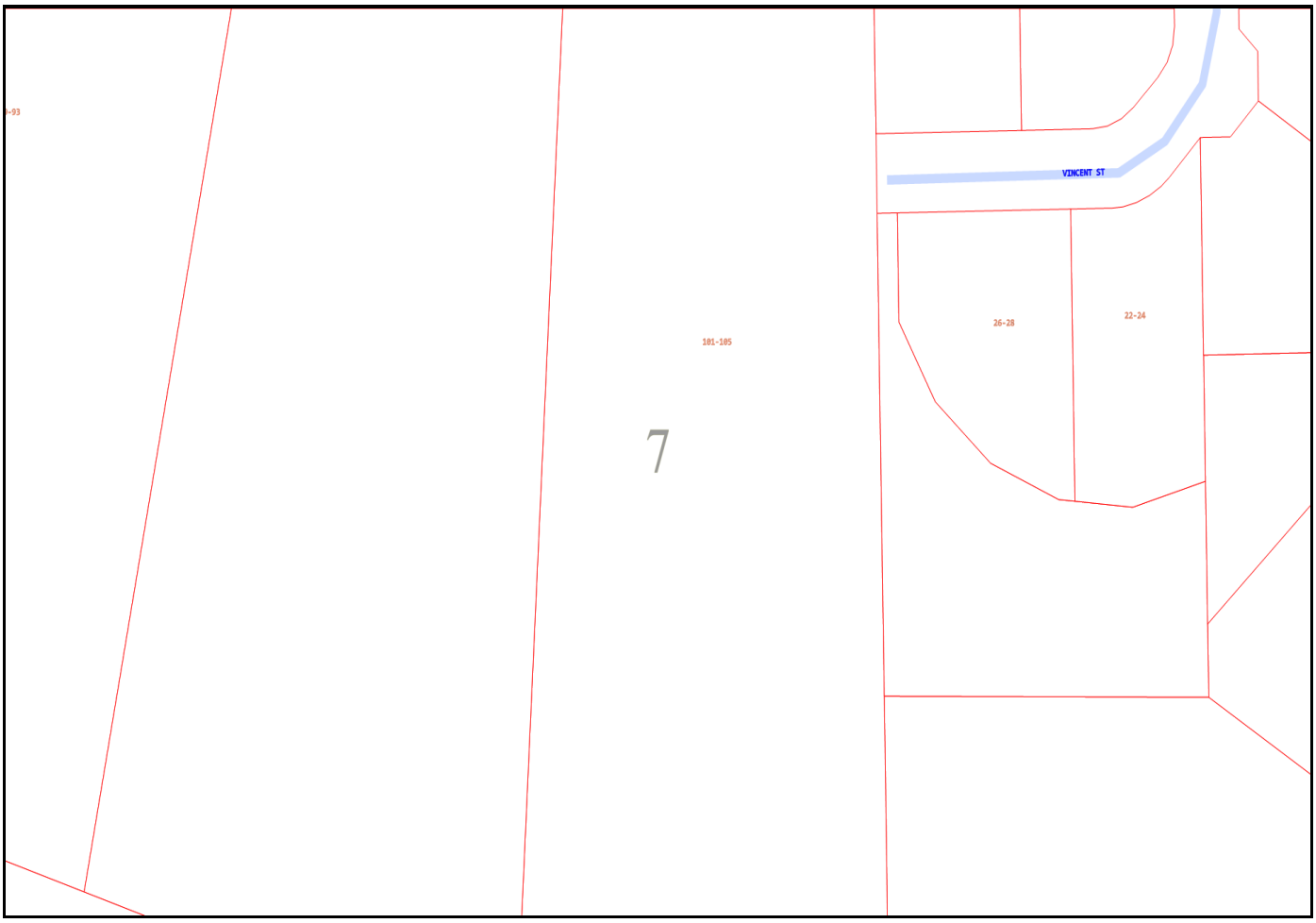
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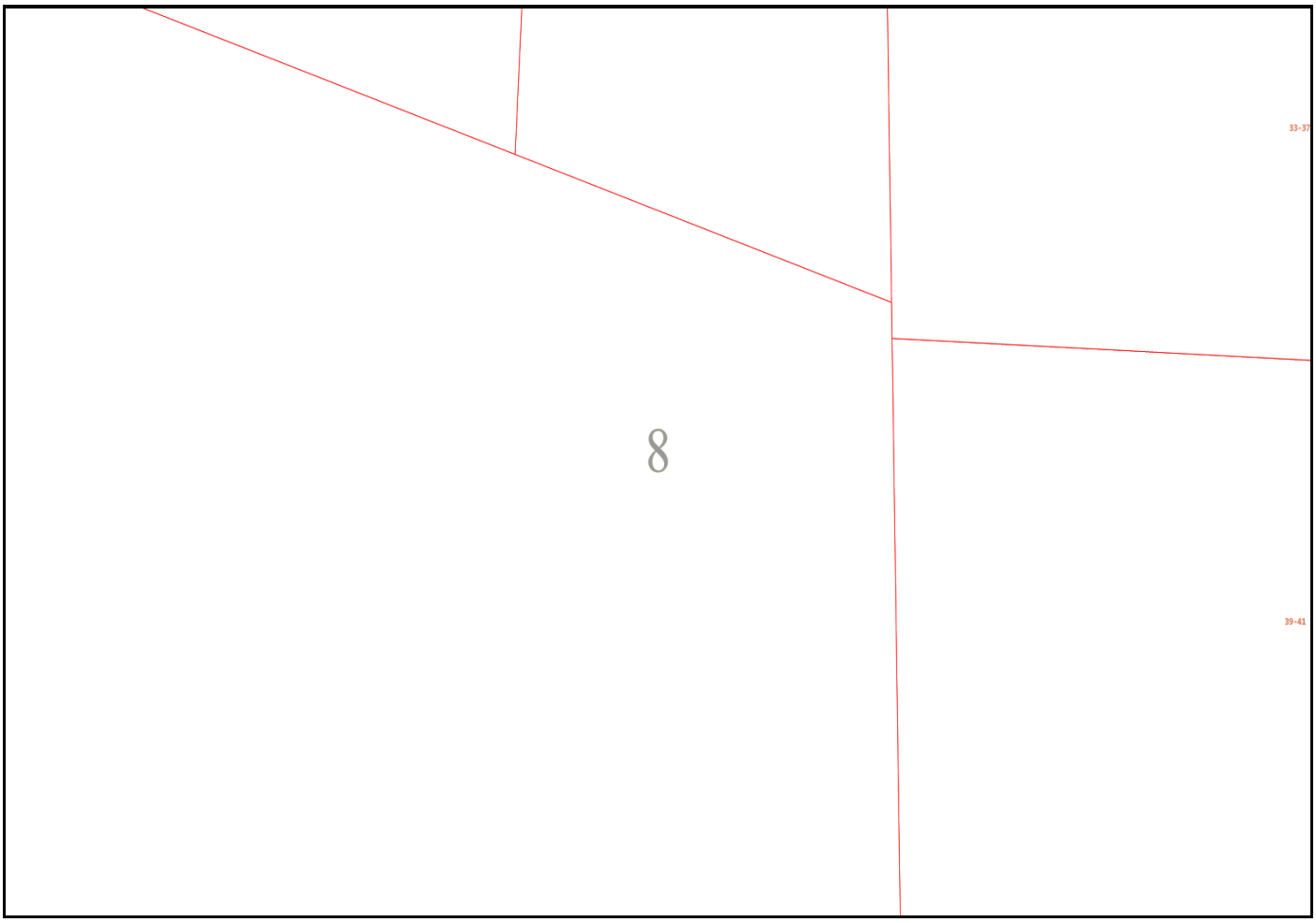
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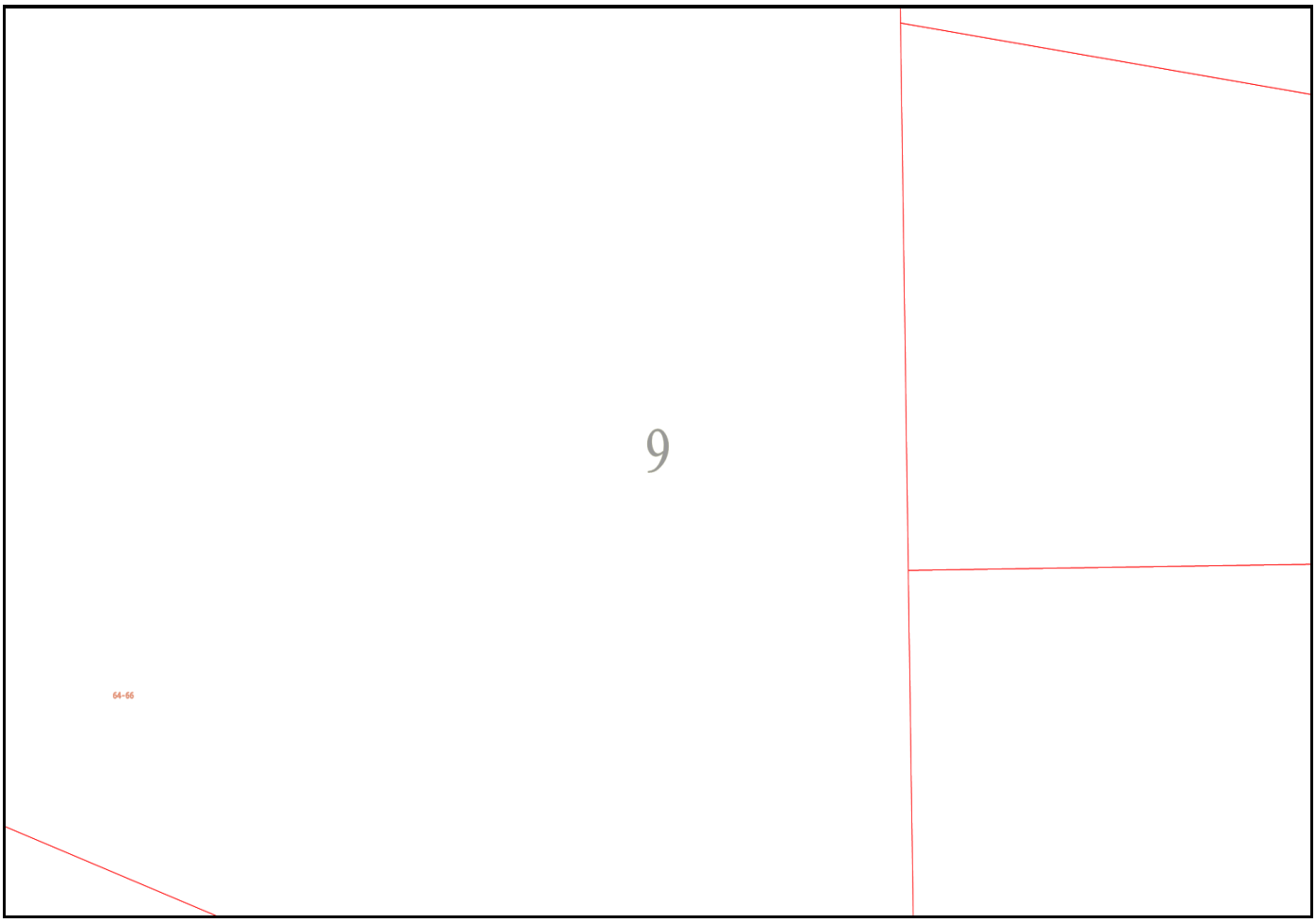
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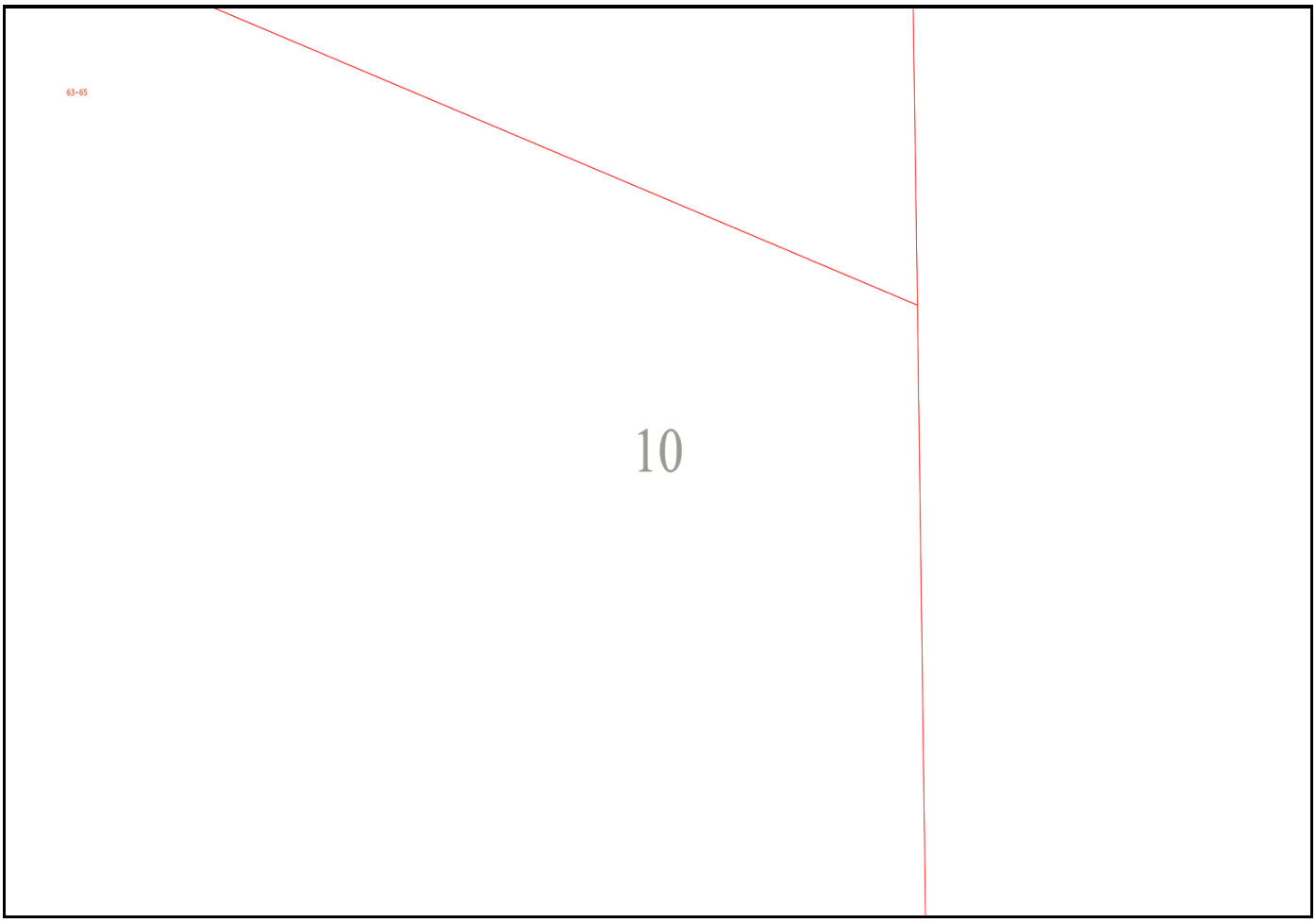
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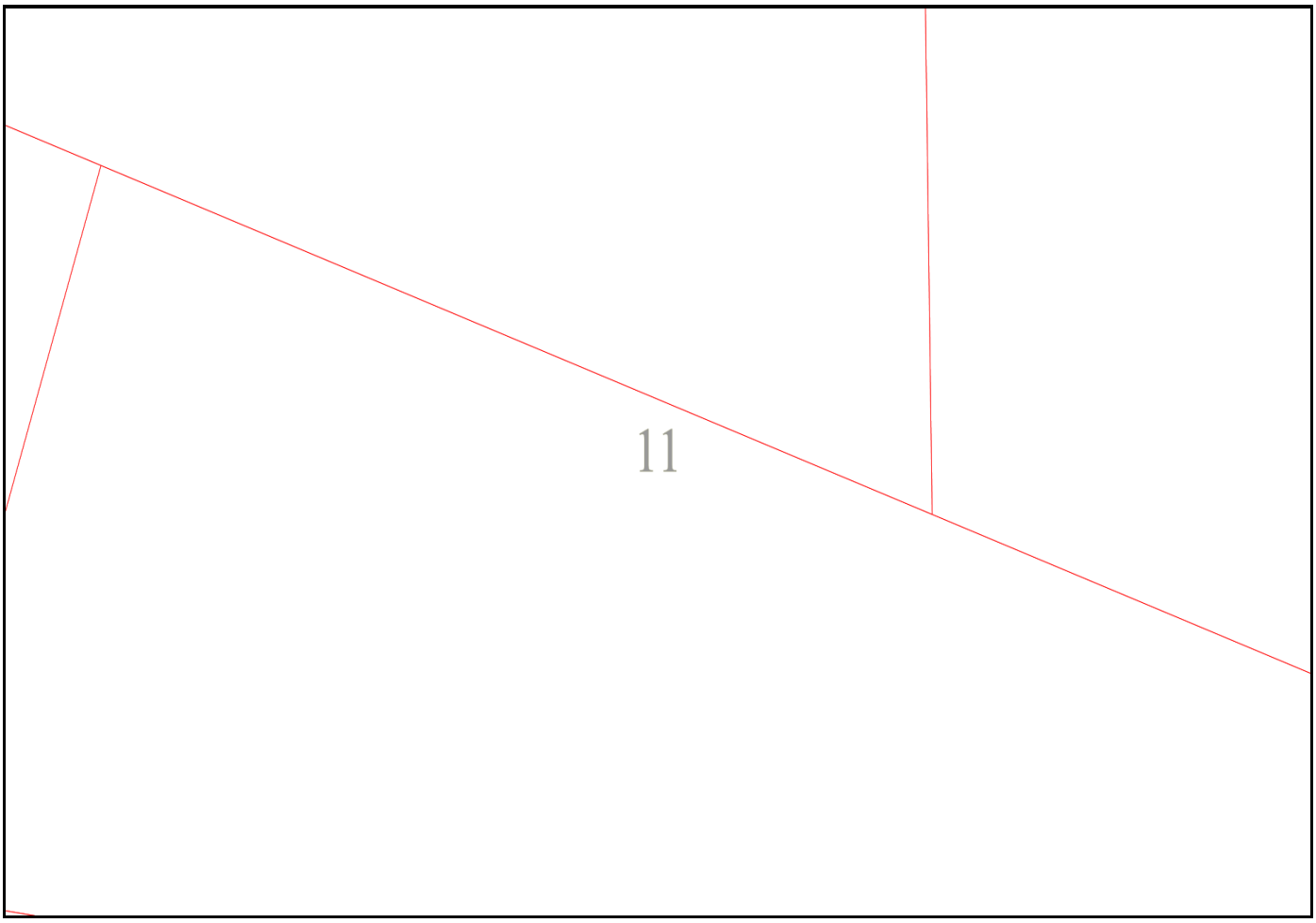
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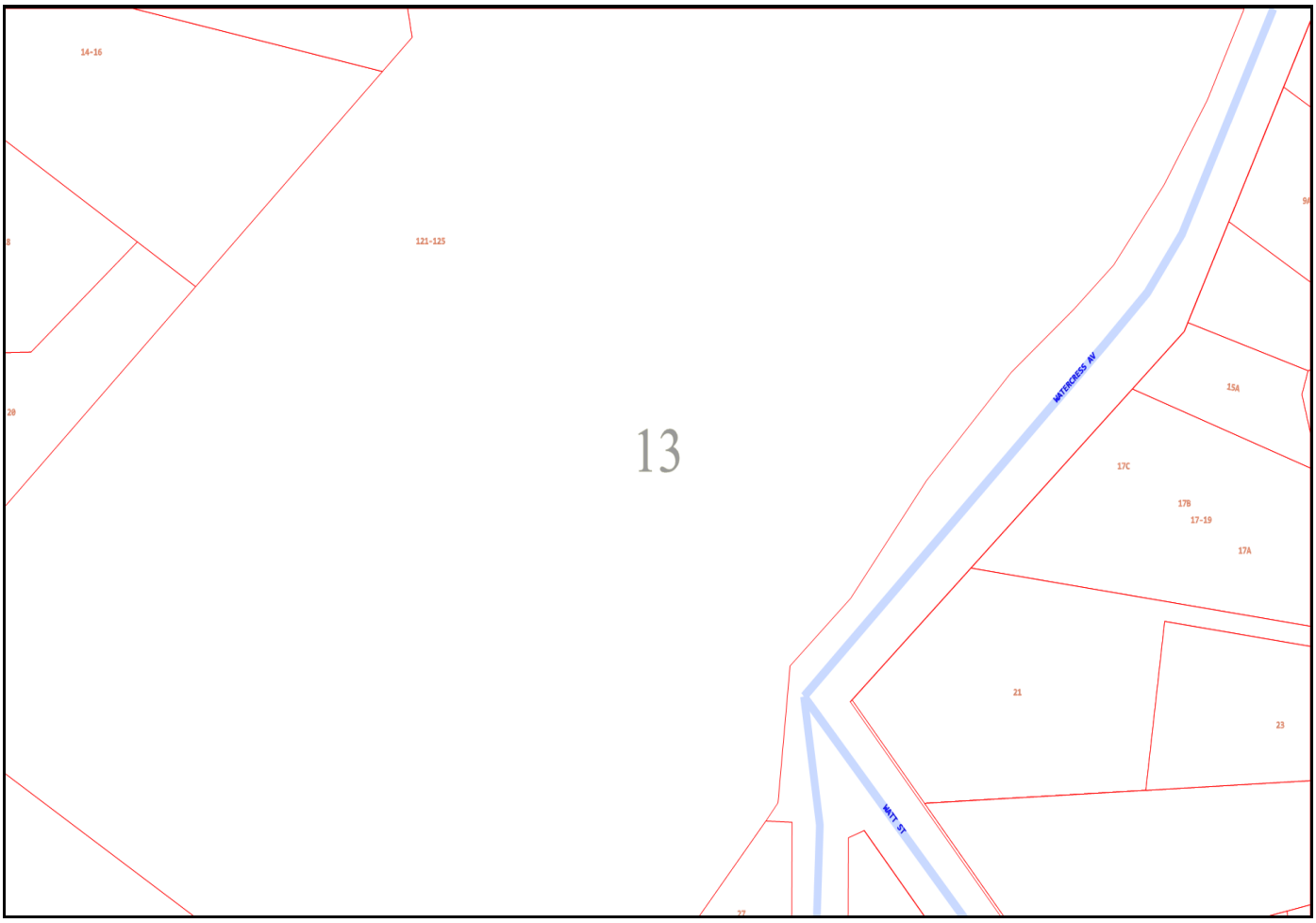
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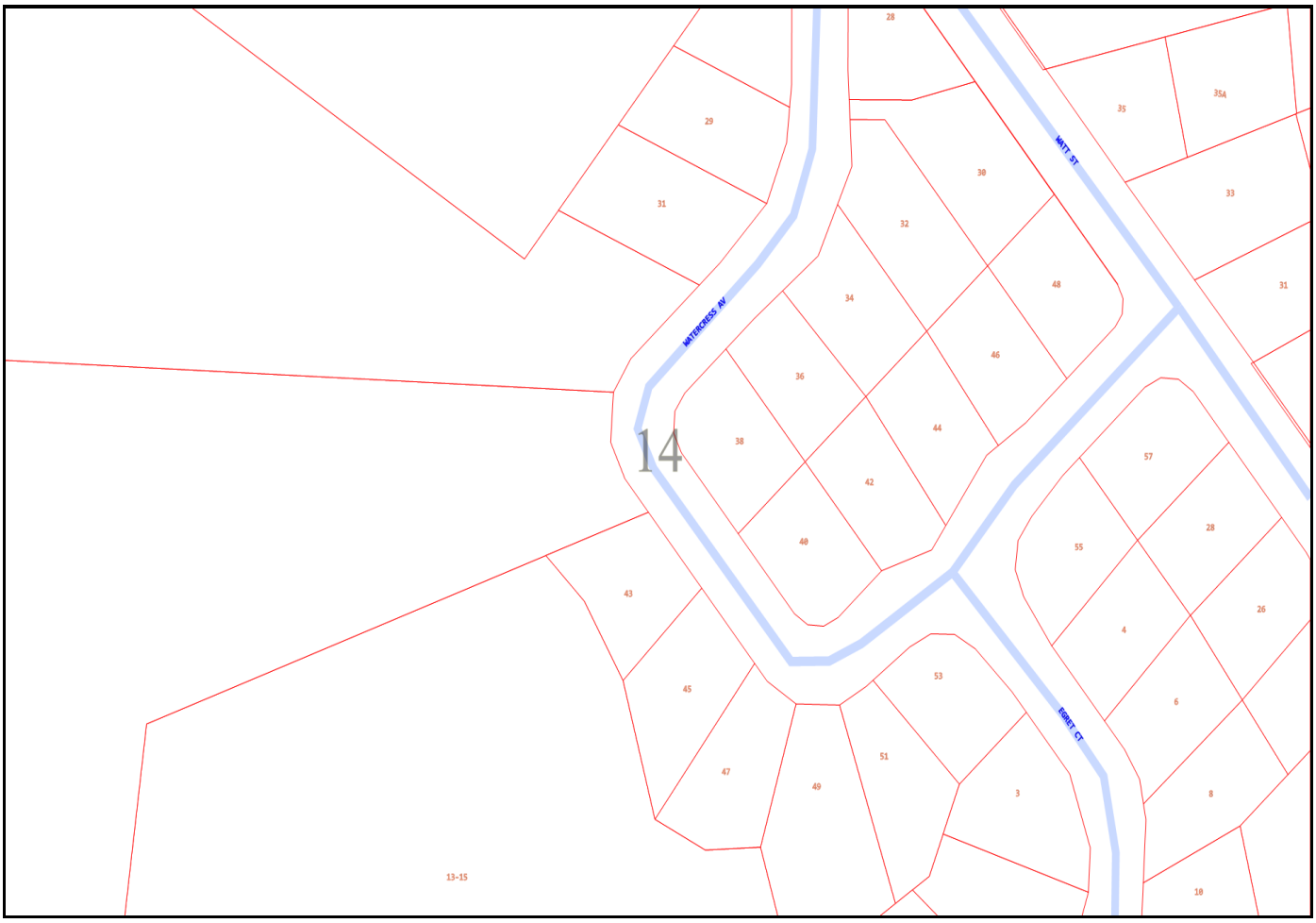
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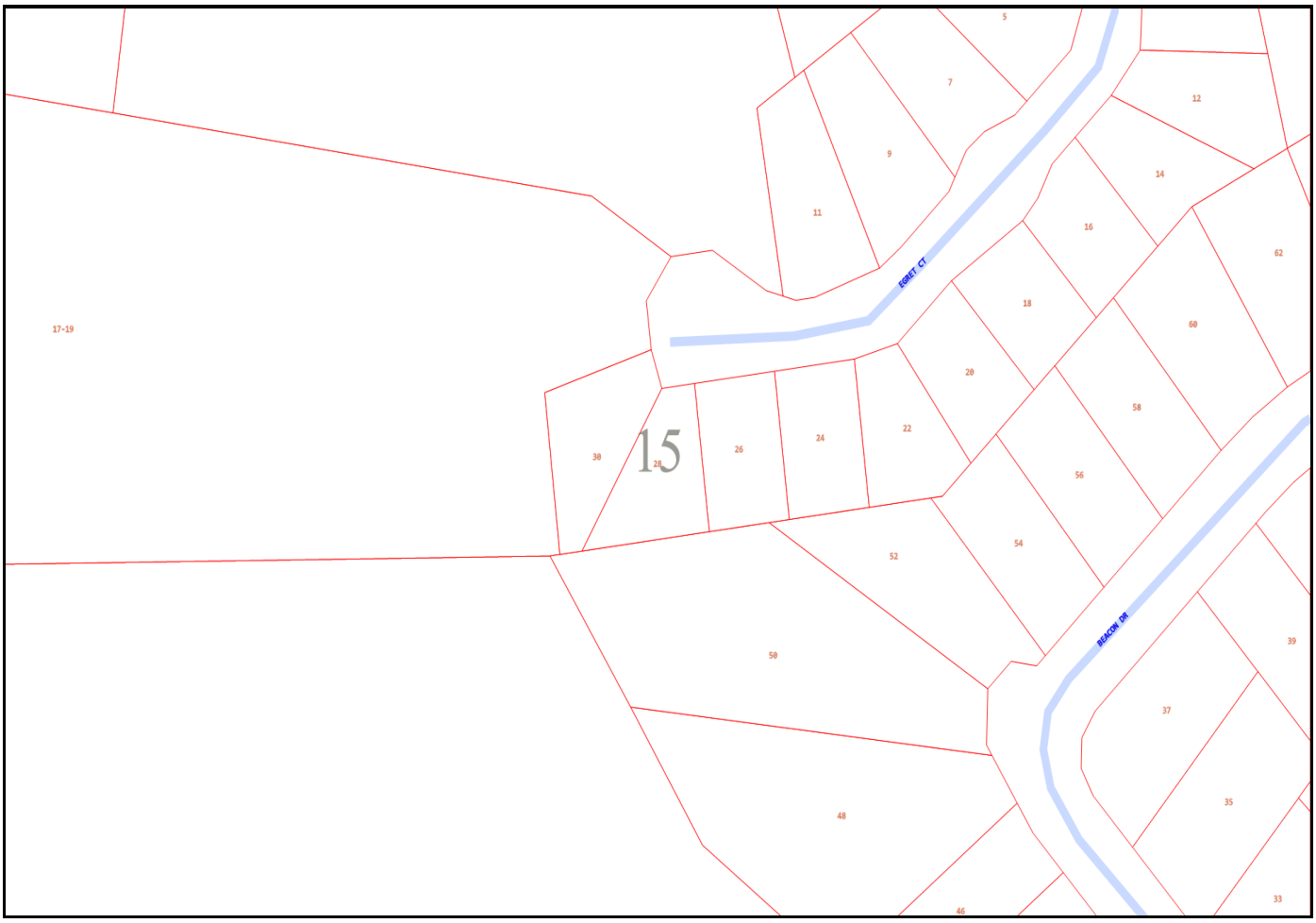
WATT ST
ESSEX CT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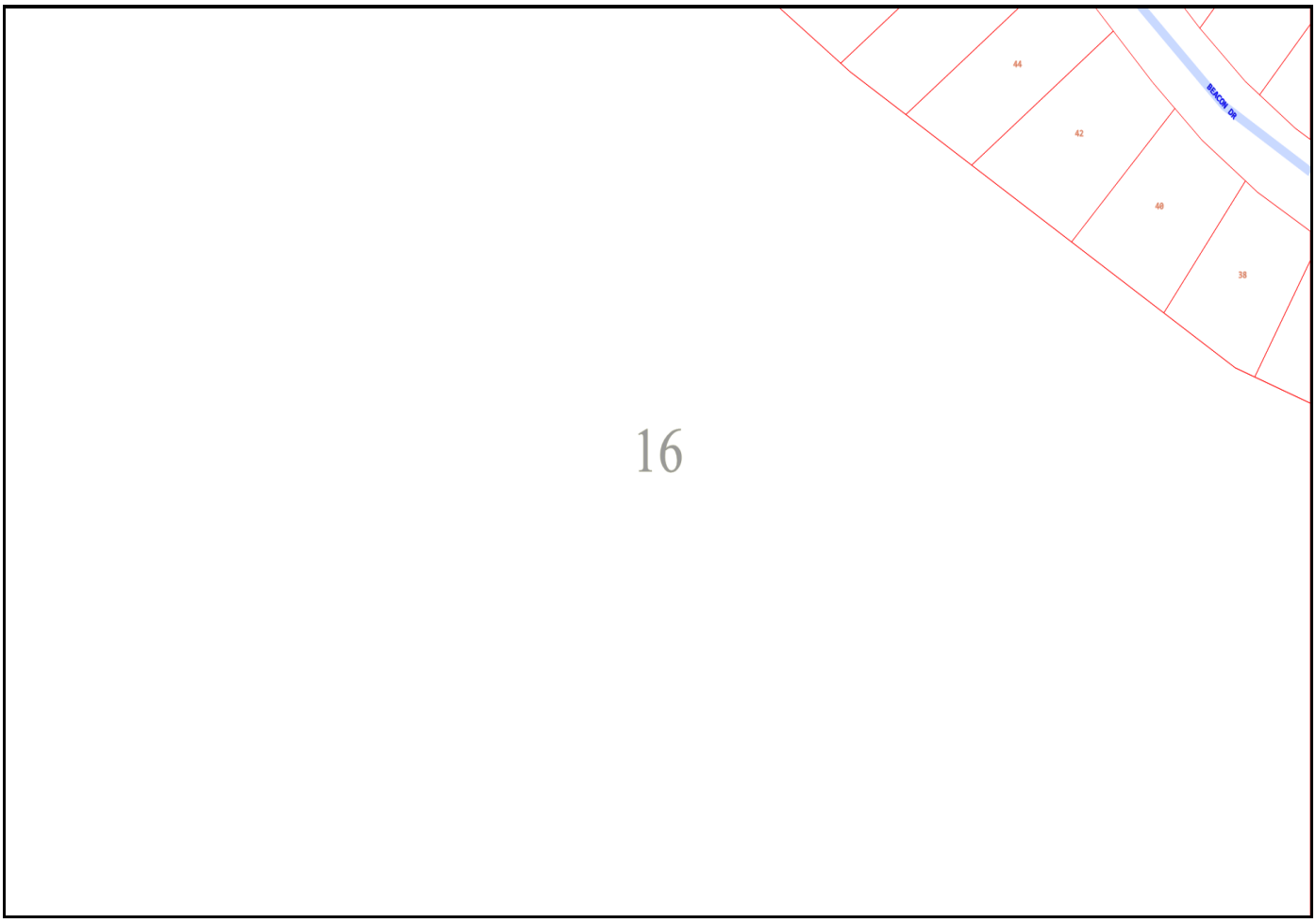
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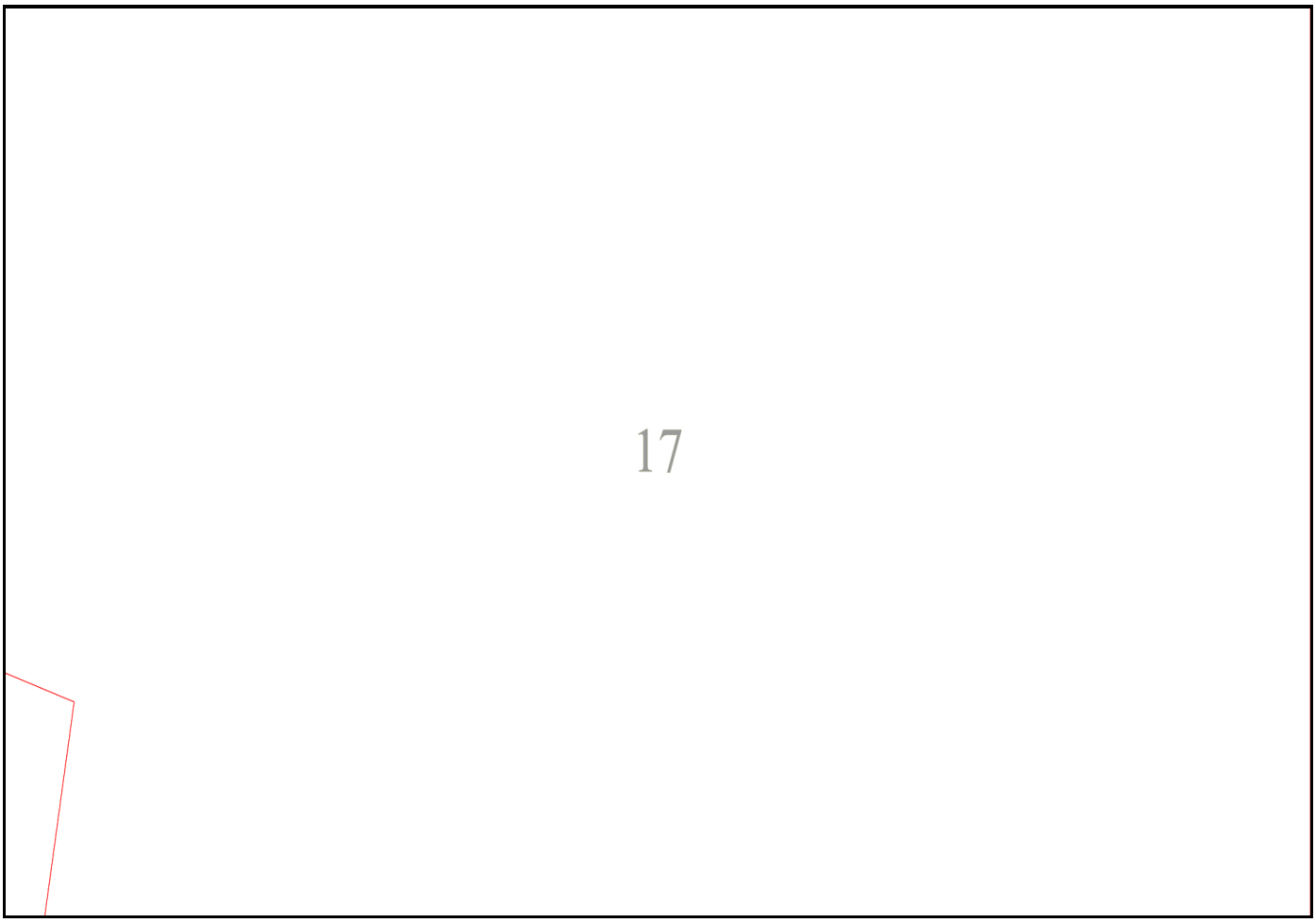
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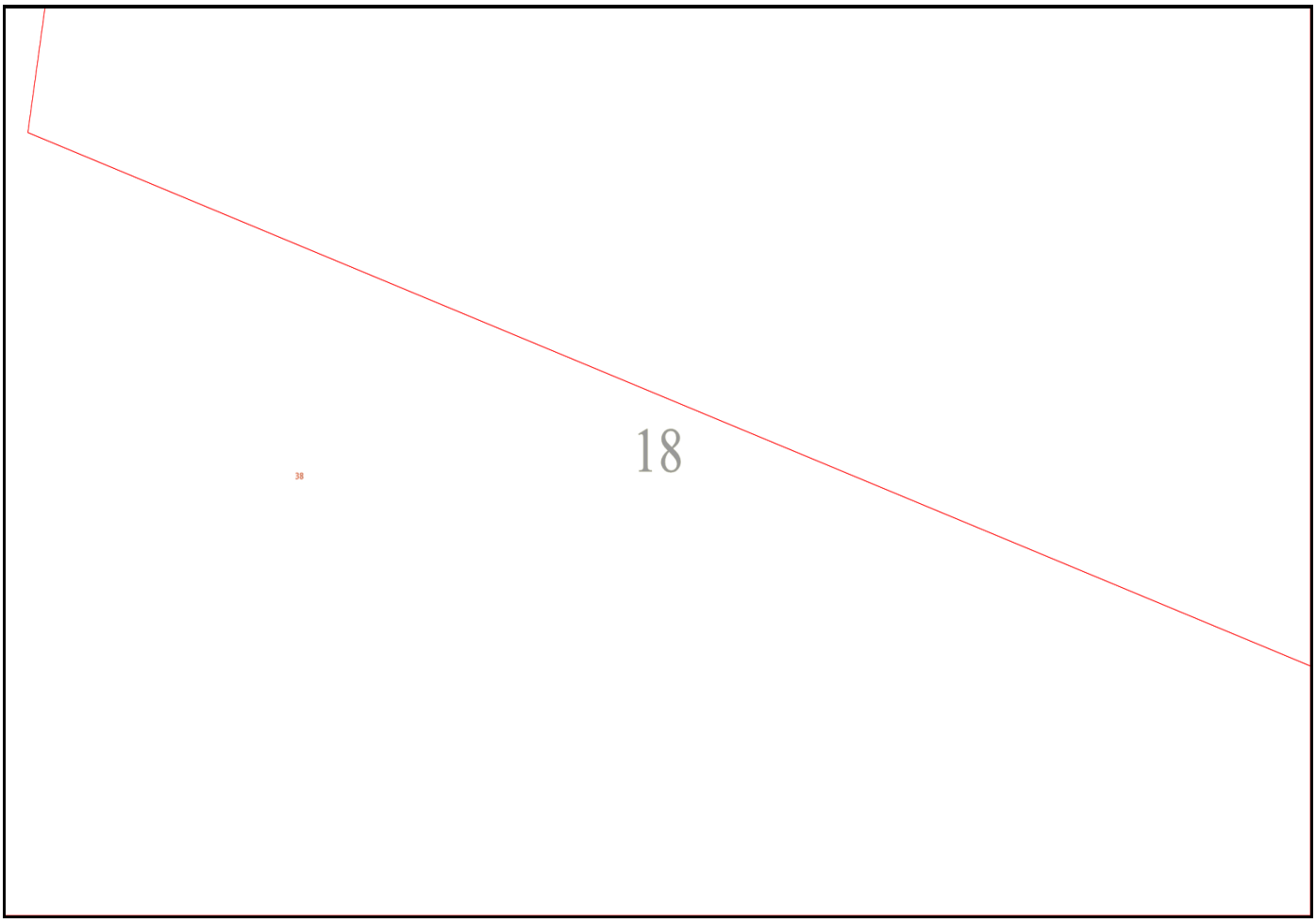

Emergency Contacts

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Sequence Number: 264371780

Date Generated: 18 Nov 2025

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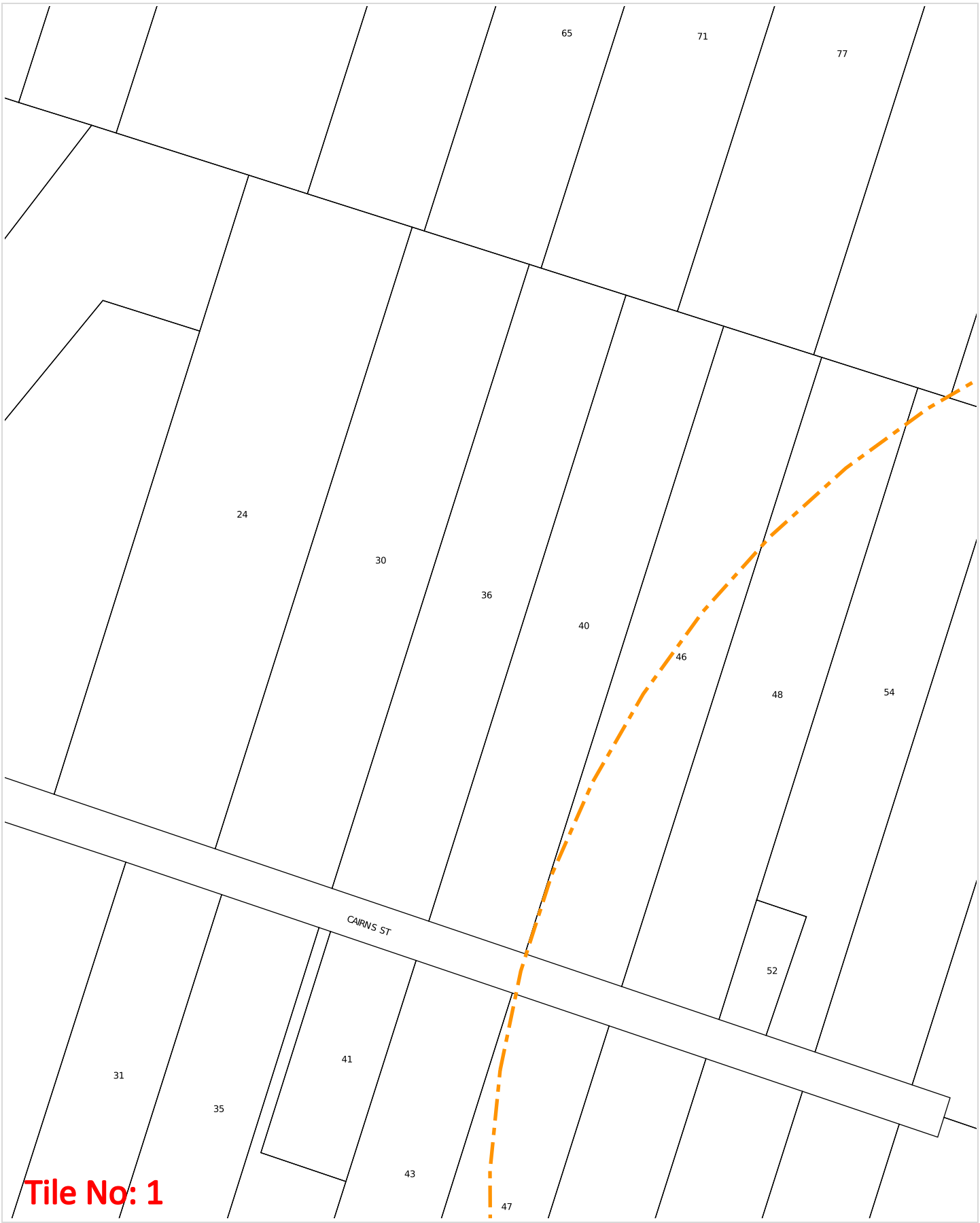
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208



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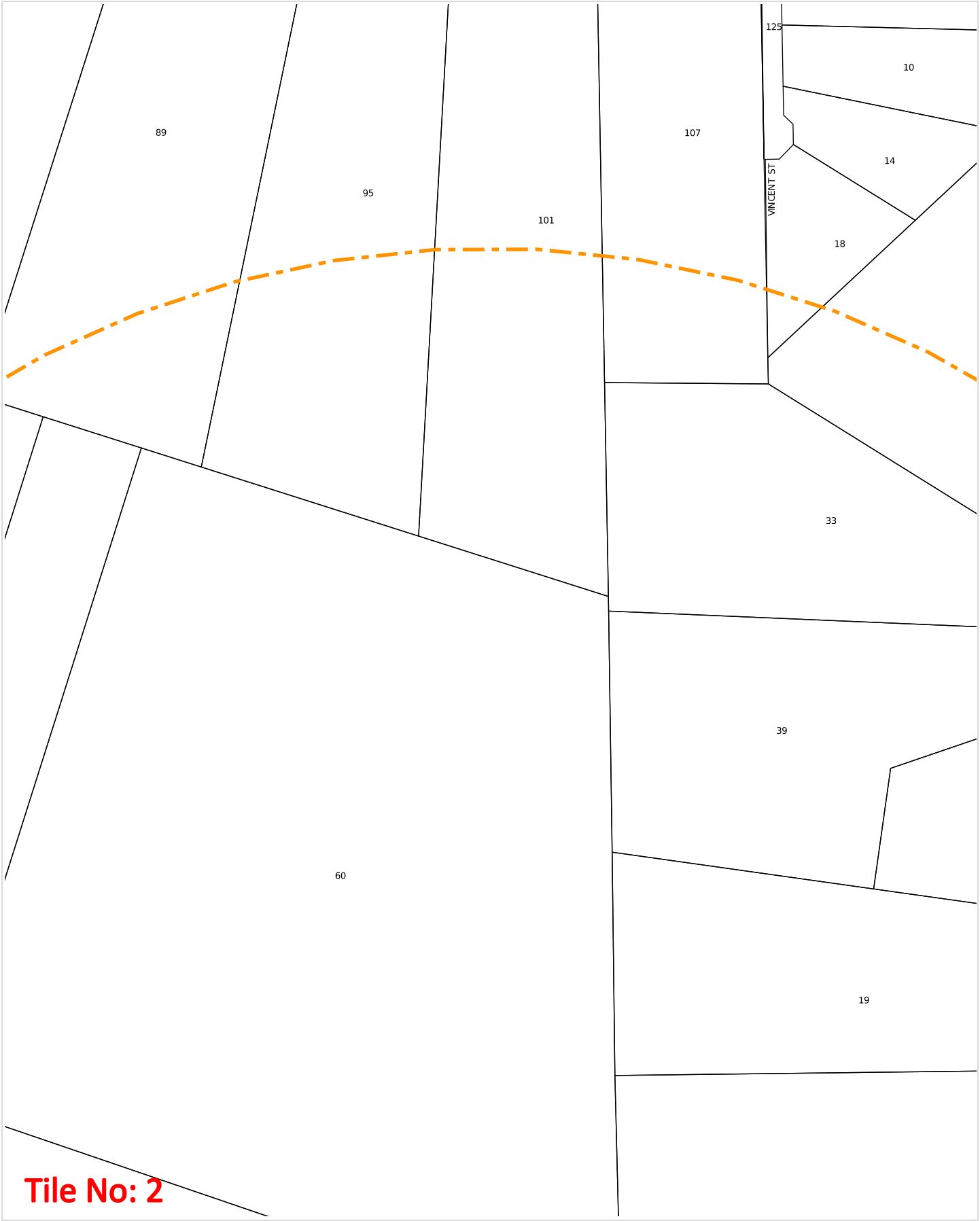

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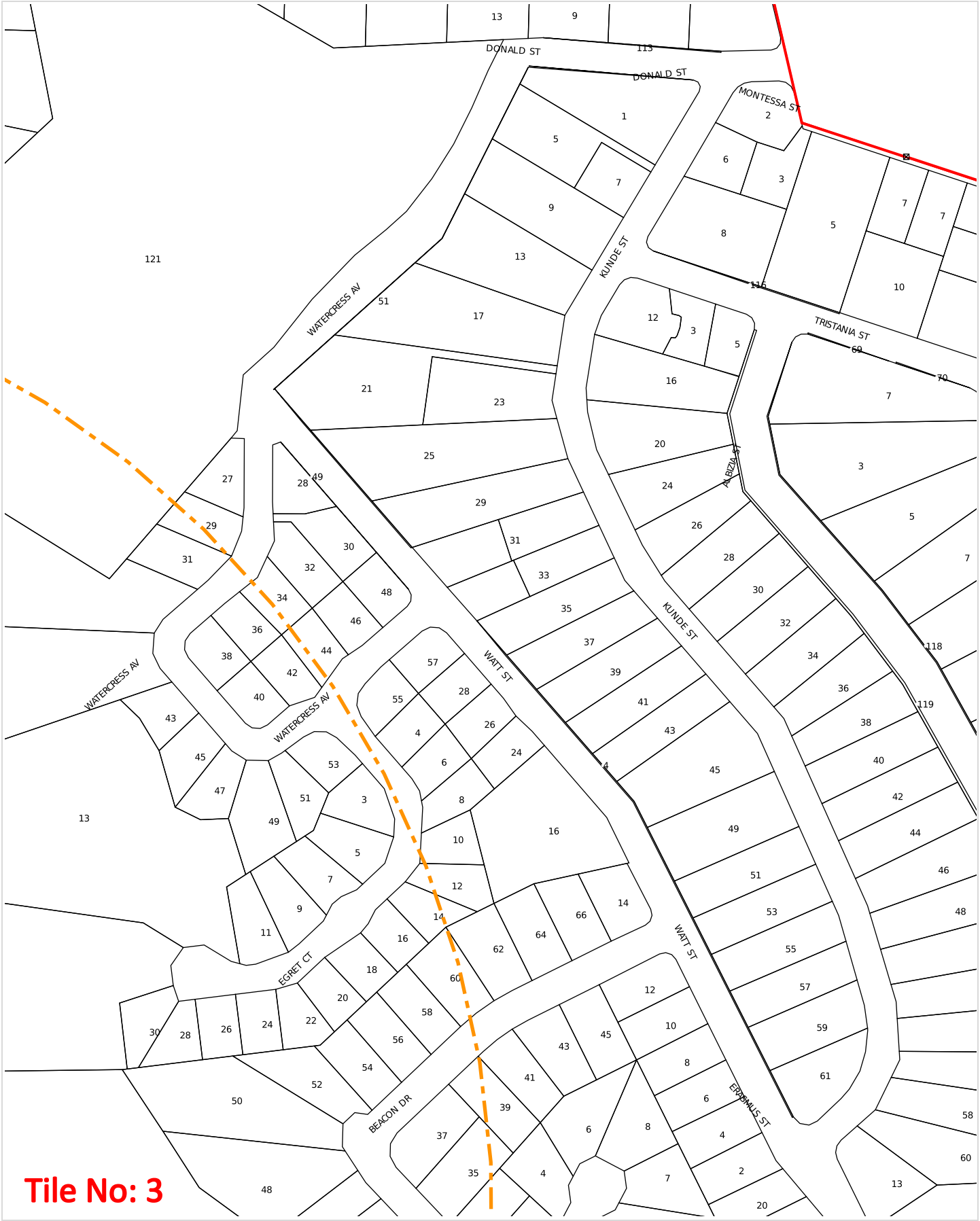

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Tile No: 6

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63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix E **Operations and Maintenance Manuals**

OCEAN PROTECT

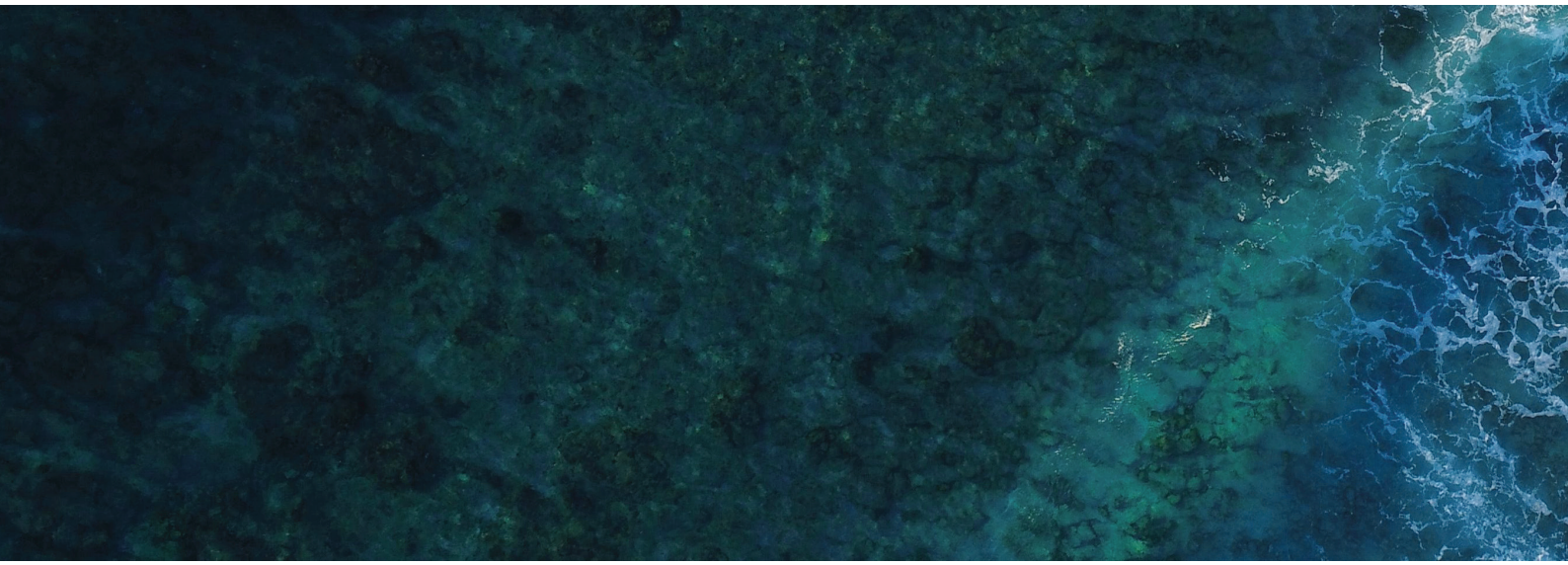
StormFilter®

Operations & Maintenance Manual



Stopping Pollution Entering Waterways

11/24



www.oceanprotect.com.au

Introduction	3
Health and Safety	4
How does it work?	5
Maintenance Procedures	6
Maintenance Services	8



Introduction

The primary purpose of stormwater treatment devices is to capture and prevent pollutants from entering waterways, maintenance is a critical component of ensuring the ongoing effectiveness of this process. The specific requirements and frequency for maintenance depends on the treatment device and pollutant load characteristics of each site. This manual has been designed to provide details on the cleaning and maintenance processes for the StormFilter®, as recommended by us.

The StormFilter® is designed and sized to meet stringent regulatory requirements. It removes the most challenging target pollutants (including total suspended solids, soluble heavy metals, oil, particulate and soluble nutrients) using a variety of media. For more than two decades, StormFilter® has helped clients meet their regulatory needs and, through ongoing product enhancements, the design continues to be refined for ease of use and improved performance.

Why do I need to perform maintenance?

Adhering to the inspection and maintenance schedule of any stormwater treatment device is essential to ensuring that it functions properly throughout its design life.

During each inspection and clean, details of the mass, volume and type of material that has been collected by the device should be recorded. This data will assist with the revision of future management plans and help determine maintenance interval frequency. It is also essential that qualified and experienced personnel carry out all maintenance (including inspections, recording and reporting) in a systematic manner.

Maintenance of your stormwater management system is essential to ensuring ongoing at-source control of stormwater pollution. Maintenance also helps prevent structural failures (e.g. prevents blocked outlets) and aesthetic failures (e.g. debris build up), but most of all ensures the long term effective operation of the StormFilter®.

Health and Safety

Access to a StormFilter® system requires removing access covers/grates, and it is necessary to enter a confined space. Pollutants collected by the StormFilter® will vary depending on the nature of your site. There is potential for these materials to be harmful. For example, sediments may contain heavy metals, carcinogenic substances or objects such as broken glass and syringes. For these reasons, all aspects of maintaining and cleaning your StormFilter® require careful adherence to Occupational Health and Safety (OH&S) guidelines.

It is important to note that the same level of care needs to be taken to ensure the safety of non-work personnel. As a result, it may be necessary to employ traffic/pedestrian control measures when the device is situated in, or near areas with high vehicular/pedestrian activity.

Personnel health and safety

Whilst performing maintenance on the StormFilter®, precautions should be taken in order to minimise (or, if possible, prevent) contact with sediment and other captured pollutants by maintenance personnel. The following personal protective equipment (PPE) is subsequently recommended (but not limited to):

- Puncture resistant gloves
- Steel capped safety boots
- Long sleeve clothing, overalls or similar skin protection
- Eye protection
- High visibility clothing or vest

During maintenance activities, it may be necessary to implement traffic control measures. Ocean Protect recommend that a separate site-specific traffic control plan is implemented as required to meet the relevant governing authority guidelines.

Whilst some aspects of StormFilter® maintenance can be performed from surface level, there will be a need to enter the StormFilter® system (confined space) during a major service. It is recommended that all maintenance personnel evaluate their own needs for confined space entry and compliance with relevant industry regulations and guidelines. Ocean Protect maintenance personnel are fully trained and carry certification for confined space entry applications.

How does it work?

During a storm, runoff percolates through the filtration media and starts filling the cartridge central tube. The air inside the hood is purged through a one-way check valve as the water rises. When water reaches the top of the float, buoyant forces pull the float free and allow filtered water to exit the cartridge.

A siphon is established within each cartridge that draws water uniformly across the full height of the media profile ensuring even distribution of pollutants and prolonged media longevity.

As the storm subsides and the water level in the structure starts falling, a hanging water column remains under the cartridge hood until the water level reaches the scrubbing regulators at the bottom of the hood. Air then rushes through the regulators breaking the siphon and creating air bubbles that agitate the surface of the filter media causing accumulated sediment to settle on the treatment chamber floor. This unique surface-cleaning mechanism helps prevent surface blinding and further extends cartridge life.

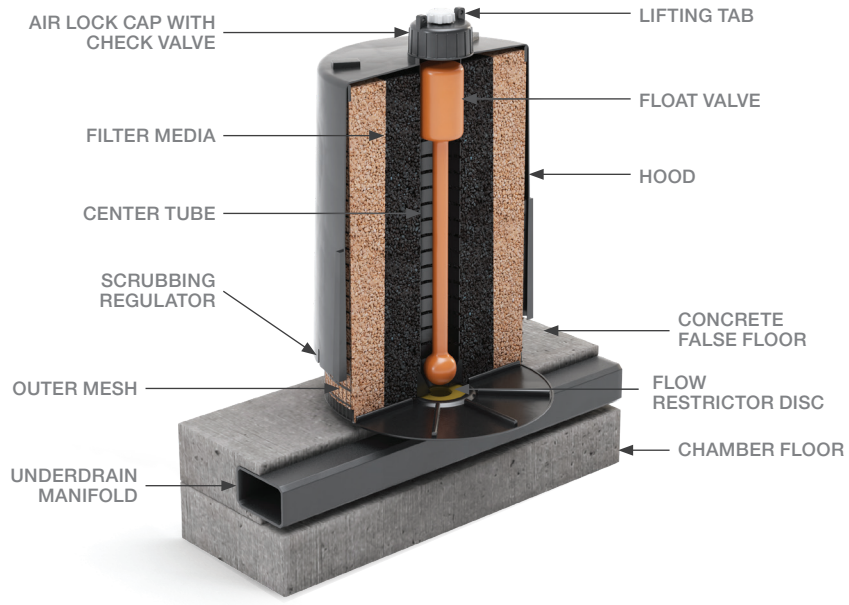


Figure 1: StormFilter® components

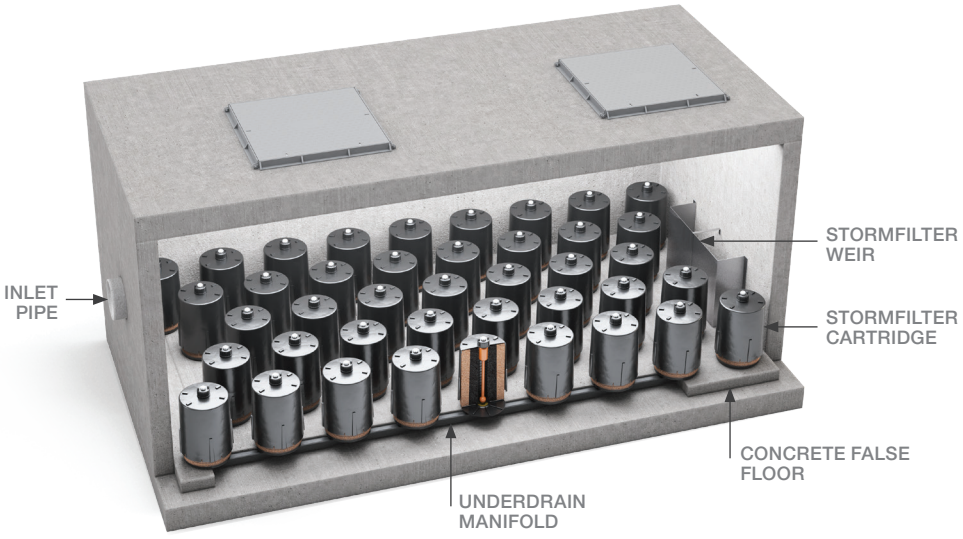


Figure 2: Example conceptual diagram of a StormFilter® system

Maintenance Procedures

To ensure optimal performance, it is advisable that regular maintenance is performed. Typically, the StormFilter® requires an inspection every 6 months with a minor service at 12 months. Additionally, as the StormFilter® cartridges capture pollutants the media will eventually become occluded and require replacement (expected media life is 1-3 years).

Primary types of maintenance

The table below outlines the primary types of maintenance activities that typically take place as part of an ongoing maintenance schedule for the StormFilter®.

Service Type	Description of Typical Activities	Frequency
Inspection	Visual Inspection of cartridges & chamber Remove larger gross pollutants Perform minimal rectification works (if required)	Every 6 Months
Minor Service	Evaluation of cartridges and media Removal of accumulated sediment (if required) Wash-down of StormFilter® chamber (if required)	Every 12 Months
Major Service	Replacement of StormFilter® cartridge media	As required

Maintenance requirements and frequencies are dependent on the pollutant load characteristics of each site. The frequencies provided in this document represent what the manufacturer considers to be best practice to ensure the continuing operation of the device is in line with the original design specification.

Inspection

The purpose of the inspecting the StormFilter® system is to assess the condition of the StormFilter® chamber and cartridges. When inspecting the chamber, particular attention should be taken to ensure all cartridges are firmly connected to the connectors. It is also an optimal opportunity to remove larger gross pollutants and inspect the outlet side of the StormFilter® weir.

Minor Service

This service is designed to ensure the ongoing operational effectiveness of the StormFilter® system, whilst assessing the condition of the cartridge media.

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. Evaluate StormFilter® cartridge media (if exhausted schedule major service within 6 months)
4. Measure and record the level of accumulated sediment in the chamber (if sediment depth is less than 100 mm skip to step 9)
5. Remove StormFilter® cartridges from the chamber
6. Use vacuum unit to removed accumulated sediment and pollutants in the chamber
7. Use high pressure water to clean StormFilter® chamber
8. Re-install StormFilter® cartridges
9. Replace access cover(s)

Major Service (Filter Cartridge Replacement)

For the StormFilter® system a major service is reactionary process based on the outcomes from the minor service, specifically the evaluation of the cartridge media.

Trigger Event	Maintenance Action
Cartridge media is exhausted[1]	Replace StormFilter® cartridge media[2]

[1] Multiple assessment methods are available, contact Ocean Protect for assistance

[2] Replacement filter media and components are available for purchase from Ocean Protect

This service is designed to return the StormFilter® device back to optimal operating performance.

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. By first removing the head cap, remove each individual cartridge hood to allow access to the exhausted media
4. Utilise a vacuum unit to remove exhausted media from each cartridge
5. Use vacuum unit to remove accumulated sediment and pollutants in the chamber
6. Use high pressure water to clean StormFilter® chamber
7. Inspect each empty StormFilter® cartridges for any damage, rectify damage as required
8. Re-fill each cartridge with media in line with project specifications
9. Re-install replenished StormFilter® cartridges
10. Replace access cover(s)

Additional Types of Maintenance

Occasionally, events on site can make it necessary to perform additional maintenance to ensure the continuing performance of the device.

Hazardous Material Spill

If there is a spill event on site, the StormFilter® unit should be inspected and cleaned. Specifically, all captured pollutants and liquids from within the unit should be removed and disposed in accordance with any additional requirements that may relate to the type of spill event. Additionally, it will be necessary to inspect the filter cartridges and assess them for contamination – and, depending on the type of spill event, it may be necessary to replace the filtration media.

Blockages

In the unlikely event that flooding occurs upstream of the StormFilter® system, the following steps should be undertaken to assist in diagnosing the issue and determining the appropriate response.

1. Inspect the upstream diversion structure (if applicable) ensuring that it is free of debris and pollutants
2. Inspect the StormFilter® unit checking the underdrain manifold as well as both the inlet and outlet pipes for obstructions (e.g. pollutant build-up, blockage), which if present, should be removed

Major Storms and Flooding

In addition to the scheduled activities, it is important to inspect the condition of the StormFilter® after a major storm event. The focus is to inspect for damage and abnormally high sediment accumulation that may result from localised erosion. Where necessary damaged components should be replaced and accumulated pollutants should be removed and disposed

.

Disposal of Waste Materials

The accumulated pollutants found in the StormFilter® must be handled and disposed of in a manner that is in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. If the filter media has been contaminated with any unusual substance, there may be additional special handling and disposal methods required to comply with relevant government/authority/industry regulations.

Maintenance Services

With over a decade and a half of maintenance experience, Ocean Protect has developed a systematic approach to inspecting, cleaning and maintaining a wide variety of stormwater treatment devices. Our fully trained and professional staff are familiar with the characteristics of each type of system, and the processes required to ensure its optimal performance.

Ocean Protect has several stormwater maintenance service options available to help ensure that your stormwater device functions properly throughout its design life. In the case of StormFilter®, we offer long term pay-as-you-go contracts, pre-paid once off servicing and replacement media for cartridges.

For more information please visit www.oceanprotect.com.au

Ocean Protect supplies and maintains a complete range of filtration, hydrodynamic separation, screening and oil/water separation technologies.

Call 1300 354 722

www.oceanprotect.com.au

63 Cairns Street, Loganholme

Stormwater Management Plan

Appendix F **Code Response Report**

Context Engineering



Proposed Industrial Development
63 Cairns Street
Loganholme

Code Compliance Report

Prepared For Howell Constructions

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This Document Has Been Approved by The Following Appropriately Qualified and Experienced Professional Civil Engineer:



Nicholas Rees
BEng (Hons), MIEAust, CPEng, NER, Registered Professional Engineer of Queensland (RPEQ) No. 18700

Report Number: C_25145 - R003

Issue	Date	Details	Author	Checked	Approved
1	05.01.26	Issue for Approval	DT	EG	NR
2	04.03.26	Issue for Approval (Updated BEL & FSL)	DT	NR	NR

1. Introduction

This Code Compliance Report has been commissioned by Howell Constructions and forms part of the part of a 'Minor Change' application to be lodged for the proposed development located at 63 Cairns Street in Loganholme.

The proposed development involves the creation of a new commercial development ('subject site'), comprising of two (2) new tenancies, circulation driveway and carparking areas.

A summary of the investigation and outcomes presented in this report are as follows:

- **8.2.1 Acid Sulfate Soils Overlay Code –** Development complies with acceptable outcomes or presents performance solutions;
- **8.2.5 Flood Hazard Overlay Code –** Development complies with acceptable outcomes or presents performance solutions;
- **8.2.12 Waterway corridors and wetlands overlay code –** Development complies with acceptable outcomes or presents performance solutions;
- **9.4.2 Filling and Excavation Code –** Development complies with acceptable outcomes or presents performance solutions;
- **9.4.3 Infrastructure Code –** Development complies with acceptable outcomes or presents performance solutions; and

Based on the outcomes of the above investigations, this report provides civil engineering recommendations suitable to address compliance with Logan City Council requirements.

2. Acid Sulfate Soils Overlay Code

This section of the report assesses the proposed development against the relevant civil engineering items within Clause 8.2.1 of the Logan City Council Planning Scheme.

2.2 Land in the Potential and actual acid sulfate soil area

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO1 Development in the Potential and actual acid sulfate soil area identified on Acid sulfate soils overlay map OM-01.01 that involves disturbing soil or sediment at or below 5 metres AHD: a. Avoids disturbing acid sulfate soils; or b. Is managed to avoid the: i) Release of acid and metal contaminants. ii) Release of nutrients that contribute to coastal algal blooms.	**AO1.1** Development in the Potential and actual acid sulfate soils area at or below 5 metres AHD identified on Acid sulfate soils overlay map OM-01.01 does not involve: a. excavating or otherwise removing 100m3 or more of soil or sediment; or b. filling of land involving 500m3 or more of material with an average depth of 0.5 of a metre or greater; or c. extracting ground water. **AO1.2** Development in the Potential and actual acid sulfate soils area above 5 metres AHD and at or below 20 metres AHD area identified on Acid sulfate soils overlay map OM-01.01 does not involve excavating or otherwise removing 100m3 or more of soil or sediment at or below 5 metres AHD.	☐ **Complies** ☒ **Performance Solution** ☐ **Not Applicable** The proposed development is located within both the "Potential and Actual Acid Sulfate Soils at or below 5 metres AHD" area and the "Potential and Actual Acid Sulfate Soils above 5 metres AHD and at or below 20 metres AHD" area as identified on Acid Sulfate Soils Overlay Map OM-01.01. The works will predominantly involve site excavation, with preliminary estimates indicating an excavation volume of approximately 292m³. Disturbance of acid sulfate soils will be managed to avoid the release of acid, metals and nutrients through the preparation and implementation of an Acid Sulfate Soil Management Plan, to be developed in consultation with and based on the advice of a suitably qualified geotechnical engineer during the detailed design phase.	

2.3 Treatment and disposal of acid sulfate soils

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO2 Development manages the treatment and disposal of acid sulfate soils.	**AO2** Where acid sulfate soils are identified, the acid sulfate soils are managed in accordance with an acid sulfate soils management plan prepared in accordance with the current Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO2 applies. Disturbance of acid sulfate soils will be managed through the preparation and implementation of an Acid Sulfate Soil Management Plan, to be developed in consultation with and based on the advice of a suitably qualified geotechnical engineer during the detailed design phase.	

3. Flood Hazard Overlay Code

This section of the report assesses the proposed development against the relevant civil engineering items within Clause 8.2.5 of the Logan City Council Planning Scheme.

3.1 Part B – Resilient building location, design and operations (other than a Home-based business)

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO8 Buildings and structures are located outside of a High flow area.	**AO8.1** New buildings and structures, other than fences, are located outside of a High flow area identified on Flood hazard overlay map OM-05.02 **AO8.2** Enclosure of existing structures or areas underneath an existing building, such as an undercroft, does not occur in a High flow area identified on Flood hazard overlay map OM-5.02	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO8.1 applies. The area of works of the proposed development is located outside of the High flow area traversing the Eastern portion of the subject site identified on Flood hazard overlay map OM-05.02.	
PO9 A Hospital in the Meadowbrook flood assessment area identified on Flood hazard overlay map OM-05.03 ensures that the location, design and operation of development: a. mitigates the risk of flooding to buildings and structures; b. minimises risk of injury to life and damage to property and infrastructure; c. maintains functionality during and after all flood events,	**AO9** No acceptable outcome provided.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO9 does not apply. The proposed development involves the creation of an industrial complex in Loganholme.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
including the probable maximum flood.			
PO10 Buildings are designed to account for the potential risk of inundation during flood events by complying with the Minimum flood planning levels identified in Table 8.2.5.3.3 – Minimum flood planning levels.	**AO10** No acceptable outcome provided.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO10 applies to the proposed development, which involves the construction of Class 7(b) industrial and warehouse buildings. In accordance with Table 8.2.5.3.3 – Minimum Flood Planning Levels, the lowest proposed finished floor level has been set to align with the defined 1% AEP flood level of 6.7m AHD for the subject site. Essential building services will be located above this level with an additional freeboard of 500 mm.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO11 Vehicle manoeuvring areas and car parking (other than a Parking station) are only located below the defined flood event where there is no increase in risk to: a. pedestrian and vehicular safety; b. a building or other structure.	**AO11** Vehicle manoeuvring areas and car parking (other than a Parking station) are located above the defined flood event.	☐ **Complies** ☒ **Performance Solution** ☐ **Not Applicable**	
PO12 Basement access and openings are designed and located to: a. ensure safety during a flood event; b. improve resilience to flood events; c. reduce recovery time after flooding; d. minimise economic loss to individual and public assets stored in the basement	**AO12** All entry points and openings to a basement are located at or bove the Minimum flood planning levels identified in Table 8.2.5.3.3 – Minimum flood planning levels.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO12 does not apply. The proposed development does not include a basement.	
PO13 Essential building services and infrastructure is located or designed to ensure their continued function during and immediately after flood events that are up to and including the: a. defined flood event for uses other than Essential community	**AO13** The function of essential building services and infrastructure is maintained during a flood event by: a. locating the services and infrastructure outside of a High flood risk area identified on Flood hazard overlay map OM-05.04;	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO13 applies. Essential building services will be located above the defined flood level of 6.7m AHD for the site with an additional freeboard of 500 mm in accordance with	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
infrastructure activities or Vulnerable use activities; or b. probable maximum flood for Essential community infrastructure activities or Vulnerable use activities.	b. locating the services and infrastructure above the flood planning level in accordance with Table 8.2.5.3.3 - Minimum flood planning levels; or c. designing and constructing essential services and infrastructure to exclude water infiltration for flood events up to and including: i. the defined flood event where not involving Essential community infrastructure activities or Vulnerable use activities; ii. the probable maximum flood where for Essential community infrastructure activities or Vulnerable use activities.	Table 8.2.5.3.3 - Minimum flood planning levels.	
PO14 Screening the understorey of a building: a. does not impede the passage of floodwater or overland flow in a High flood risk area identified on Flood hazard overlay map OM-05.04; b. maintains an attractive streetscape interaction and interface as intended by the zone, precinct or local plan	**AO14** No acceptable outcome provided.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO14 does not apply. The understory of the suspended building pads within the development is not intended to be screened.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO15 Development protects public safety and the environment from release of hazardous materials into floodwaters by: a. locating hazardous materials and chemicals outside of a High flood risk area identified on Flood hazard overlay map OM-05.04 and OM-05.02; b. ensuring hazardous materials are stored to prevent the release or hazardous reaction of hazardous materials during flood events, including events rarer than the defined flood event.	**AO15.1** Development involving the manufacturing or storage of hazardous materials, or involving hazardous chemicals at a hazardous chemical facility is located outside of a: a. High flood risk area identified on Flood hazard overlay map OM-05.04; b. High flow area identified on Flood hazard overlay map OM-05.02. **AO15.2** Development in a Moderate flood risk area identified on Flood hazard overlay map OM-05.04: a. does not involve the manufacturing or storage of hazard materials or hazardous chemicals at a hazardous chemical facility; or b. ensures the storage of hazardous materials is located above the 0.2% AEP at 2100 flood event.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO15 does not apply. Hazardous materials are not intended to be stored on site.	

3.2 Part C – Access and evacuation (other than a Home-based business)

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO16 Development involving Vulnerable use activities, other than a Hospital in the Meadowbrook flood assessment area identified on Flood hazard overlay map OM-05.03, has a low flood hazard vehicle evacuation route that leads outside the floodplain to a suitable area that supports the needs of evacuees.	**AO16** No acceptable outcome provided.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO16 does not apply. The proposed development is not intended to involve vulnerable use activities.	
PO17 Development involving an accommodation land use has a low flood hazard vehicle route to a suitable flood-free area that contains essential goods to serve the needs of people	**AO17** During the defined flood event, development for an accommodation land use has a: a. flood-free vehicle access to a road above the flood level; b. flood-free vehicle route that leads to a suitable flood-free area that contains local goods and services to serve the daily needs of people.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO17 does not apply. The proposed development is not intended to involve accommodation land use or residential activities.	
PO18 Development has a low flood hazard vehicle or pedestrian route from dwellings to a flood-free or low flood hazard road.	**AO18** Development has a flood-free vehicle or pedestrian route from onsite dwellings to the flood-free road.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO18 does not apply. The proposed development does not include residential dwellings.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO19 Reconfiguring of a lot intended for a future dual occupancy (auxiliary unit), dwelling house or accommodation land use ensures each lot has internal low flood hazard vehicle access to a road and a low flood hazard vehicle route to a suitable flood-free area that contains essential goods to serve the needs of people.	**AO19** Reconfiguring of a lot in a residential zone category or Emerging community zone, or intended for a future dual occupancy (auxiliary unit), dwelling house or accommodation land use, ensures each lot during the defined flood event has a: a. flood-free vehicle access to a road above the flood level; b. flood-free vehicle route that leads to a suitable flood-free area that contains essential goods.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO19 does not apply. The proposed development application is for a 'Minor Change'.	
PO20 Development, other than where PO16-PO19 is applicable: a. ensures safe self-evacuation by having, for a period of at least 10 hours, low flood hazard vehicle access to a low flood hazard road; or b. is only isolated for a period of less than 4 hours from a low flood hazard road and there is a suitable area on site that is: i. above the defined flood event; ii. not a Low flood island identified on Flood hazard overlay map OM-05.01 or an area impacted by flash	**AO20** Where AO16-AO19 is not applicable, development has flood-free vehicle access to a road that is above the flood level during the defined flood event.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO20 applies to the proposed development. Vehicle manoeuvring and car parking areas are designed to tie into the site crossover at the Cairns Street frontage at approximately 7.0m AHD, which is above the defined flood event level of 6.7m AHD.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
flooding during the defined flood event.			
PO21 Development identified in Table 8.2.5.3.5 – Development requiring a flood emergency management plan appropriately plans for its safe operation and evacuation during a flood event to ensure there is no burden on emergency services, including during a probable maximum flood where involving Vulnerable use activities.	**AO21** No acceptable outcome provided.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO21 applies. Refer *C_25145 R003_Flood Assessment Report* by Context Engineering for details regarding operation and evacuation procedures relevant to the site during a flood event.	

3.3 Part D – Preservation of floodplain function and overland flow paths (other than a Home-based business)

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO22 Filling and excavation ensures the conveyance function of a High risk flood area and Flood investigation area	**AO22** Where located in a High flood risk area or Flood investigation area identified on Flood hazard overlay map OM-05.01, filling and excavation, other than for a stormwater	☐ **Complies** ☒ **Performance Solution** ☐ **Not Applicable**	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
identified on the Flood hazard overlay map OM-05.04 is maintained.	quantity and quality infrastructure, does not exceed: a. a total volume of 20m^3; b. a total area of 2,000m^2.	The area of works for the proposed development encroaches into a High flood risk area in the eastern portion of the site. A majority of this area of works is proposed to be suspended above approved earthworks levels detailed in *Earthworks Plan* and *Earthworks Cross Sections* by Wilkinson Shaw and Associates under application OW/176/2020. The suspension of building pads ensures that the waterway corridor traversing the site functions as intended during flood events.	
PO23 Development does not involve earthworks that would either directly, indirectly or cumulatively cause a loss of floodplain storage below the defined flood event.	**AO23** The total volume of fill is equal to or less than the total volume of cut where earthworks are below the level of the defined flood event in a Moderate flood risk area identified on Flood hazard overlay map OM-05.04.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO23 applies. The proposed development does not involve earthworks that would directly, indirectly, or cumulatively result in a loss of floodplain storage below the defined flood event. Earthworks within the area of works are confined to the building footprints and associated site grading and are undertaken solely to facilitate stormwater conveyance and surface drainage. The existing floodplain storage regime is defined by the Earthworks Plan and Earthworks Cross Sections approved under Operational Works application OW/176/2020, which are adopted as the baseline condition for this	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
		assessment. No earthworks are proposed within the approved floodplain storage cut areas, and the approved compensatory cut volumes remain unaffected. Refer Section 3.4 of *C_25145 R003_Flood Assessment Report* by Context Engineering for further information.	
PO24 Development does not involve works that would either directly, indirectly or cumulatively: a. concentrate, intensify or divert floodwater or overland flow paths onto upstream, downstream or adjacent properties; b. result in an increase in flood levels or flood hazard on upstream, downstream or adjacent properties; c. result in a loss of floodplain storage up to and including the defined flood event; d. adversely impact the role and function of waterways and areas of ecological significance; e. adversely affect adjoining premises, infrastructure and the environment.	**AO24** No acceptable outcome provided.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO24 applies. Since the area of works of the proposed development includes a suspended area of buildings over earthworks levels approved under application OW/176/2020 with no alteration to the compensatory cut detailed within *Earthworks Plan* and *Earthworks Cross Sections* by Wilkinson Shaw and Associates, the function of the waterway corridor remains unchanged. Floodplain storage remains consistent from the pre to post developed case, ensuring that floodwaters are not concentrated or intensified, and adjoining premises and environmental features of the waterway corridor are not adversely affected in a way that is not consistent with the current scenario.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO25 Development does not adversely change the following flood characteristics for all flood events up to and including the defined flood event: a. peak flow; b. flow of any part of the flood before the peak; c. flood flow velocity; d. level of flooding; e. flood time to peak.	**AO25** No acceptable outcome provided.	☐ **Complies** ☒ **Performance Solution** ☐ **Not Applicable** Section 3.6.1.3 Stormwater Quantity Infrastructure within Schedule 6.2.5 (Infrastructure) of the Logan City Council Planning Scheme states that increases in post-development runoff are to be mitigated on site unless it can be demonstrated that downstream systems have adequate capacity to accommodate additional flows without adverse impacts. It is also noted that, within the Loganholme local plan area, development may discharge directly to mapped waterways in certain circumstances where non-worsening outcomes are demonstrated. Although the subject site is located outside the Loganholme local plan stormwater management area, it contains an internal waterway corridor that forms part of the same downstream catchment ("Unnamed 43") and conveys flows to the Logan River. The corridor within the subject site exhibits established vegetation and natural floodplain storage characteristics, indicating capacity to convey and attenuate local flows as part of the broader floodplain system. Post-development minor and major flows will be directed to this internal corridor. Given the scale of the proposed development relative	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
		to the overall catchment area and the available floodplain storage within the on-site corridor, any increase in runoff from the development is expected to be negligible in consideration of the overall waterway system. On this basis, the development is not expected to adversely change peak flow, pre-peak flow conditions, flood velocity, flood levels, or time to peak for flood events up to and including the defined flood event and therefore satisfies the performance intent of PO25. Refer Section 4 of *C_25145 R001_Stormwater Management Plan* by Context Engineering for further information.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO26 Development does not cause a rapid or unexpected increase in safety risks or flood damage during a flood event larger than the defined flood event, including flood events up to and including the probable maximum flood.	**AO26** No acceptable outcome provided.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO26 applies. The approved *Earthworks Plans* and *Earthworks Cross Sections* prepared by Wilkinson Shaw & Associates under Operational Works approval OW/176/2020 identify compensatory cut areas surrounding the primary development footprint. The proposed buildings are largely suspended over these compensatory cut areas, thereby maintaining existing floodplain storage associated with the on-site waterway corridor. The development has been designed with regard to the baseline minimum flood planning level corresponding to the defined 1% AEP flood event of 6.7m AHD. By maintaining floodplain storage and avoiding encroachment into key conveyance areas, the proposed works are not expected to increase flood damage potential or flood risk. Logan Flood Portal mapping indicates that the Probable Maximum Flood (PMF) event results in inundation of the broader Cairns Street locality. On this basis and having regard to the scale and form of the proposed development relative to the extent of existing PMF influence, the development is not expected to result in any material increase in	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
		flood damage or risk within the surrounding floodplain.	
P027 A stormwater quality improvement device is located to retain existing floodplain storage capacity and ensure functionality of the stormwater quality improvement device.	**AO27** A stormwater quality improvement high flow outlet device is located: a. above the 5% AEP flood event caused by local flooding; b. above the 5% AEP flood event caused by regional flooding.	☐ **Complies** ☒ **Performance Solution** ☐ **Not Applicable** Floodplain storage capacity within the site is maintained through the retention of compensatory cut areas detailed in the Earthworks Plans approved under application OW/176/2020, which remain unaffected by the proposed works. The stormwater quality improvement devices are located outside these compensatory cut areas to ensure that existing floodplain storage capacity and hydraulic function are preserved. The top of the inlet pipe to the stormwater quality improvement device, as well as the associated high-flow junction pit, are positioned above the 5% AEP flood level of 5.6 m AHD. In addition, backflow prevention measures are incorporated within the stormwater quality outlet pipe to prevent reverse flows and to restrict the ingress of silt	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
		and debris during elevated water levels. Refer *C_25145 DA46_Stormwater Structure Details* for further details.	
PO28 A stormwater quantity management device is located to retain existing floodplain storage capacity and ensure functionality of the stormwater quantity management device.	**AO28** A stormwater quantity management outlet device is located above the 2% AEP flood event.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO28 does not apply. The proposed development does not include stormwater quantity devices.	
PO29 Stormwater infrastructure does not result in a loss of floodplain storage below the defined flood event.	**AO29** Filling and excavation associated with stormwater quantity and quality infrastructure has a total volume of fill equal to or less than the total volume of cut where below the defined flood event.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO29 applies. Earthworks relating to stormwater quality infrastructure does not involve filling in the established area of compensatory cut detailed in *Earthworks Plan* and *Earthworks Cross Sections* prepared by Wilkinson Shaw & Associates under Operational Works approval OW/176/2020.	

4. Waterway Corridors and Wetlands Overlay Code

This section of the report assesses the proposed development against the relevant civil engineering items within Clause 8.2.12 of the Logan City Council Planning Scheme.

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

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO5 Development is designed, constructed, and managed to protect water quality of a Waterway corridors and wetlands area identified on Waterway corridors and wetlands overlay map OM-14.00 by: a. Providing vegetated buffers; b. Incorporating water sensitive urban design principles having regard to: i. Protecting water quality of surface and ground waters; ii. Minimising sewage discharges to the natural environment; c. Limiting discharge of sediments and pollutants into a Waterway corridors and wetlands area.	**AO5** Development: a. provides a vegetated riparian buffer in accordance with section 3.3.1 - Riparian corridor revegetation and weed control of Planning scheme policy 3 - Environmental management; b. provides effective erosion and sediment control in accordance with section 3.3 - Filling and excavation standards of Planning scheme policy 5 - Infrastructure; c. implements water sensitive urban design principles in accordance with section 3.6 - Stormwater infrastructure standards and section 3.7 - Landscaping standards of Planning scheme policy 5 - Infrastructure; d. excludes stock from a Waterway corridors and wetlands area by providing a permanent fence and	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO5 applies. Stormwater quality treatment for the development has been designed in accordance with the requirements detailed within section 3.6 - Stormwater infrastructure standards and stormwater quality objectives defined by the QLD State Planning Policy.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
	gate and utilises off-stream stock watering points.		

5. Filling and Excavation Code

This section of the report assesses the proposed development against the relevant civil engineering items within Clause 9.4.2 of the Logan City Council Planning Scheme.

5.1 Protection of natural process and ecosystems

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. The development is in proximity to a waterway and will include sediment fences, wash down bays and gully inlet protection to prevent sediment and pollutants from entering the stormwater network. Refer *C_25145 DA80_Erosion and Sediment Control Layout Plan* for further details. Final design to be confirmed prior to construction works.	
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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. Contractor to ensure compliance as part of construction phase.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. Contractor to ensure compliance as part of construction phase.	

5.2 Protection of existing and planned infrastructure

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO4 Filling or excavation works do not adversely affect infrastructure, including any services.	**AO4** Filling or excavation works comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. The earthworks include cut and fill on each lot to establish building pads and the internal driveways. Works will also be required in the verge for the driveway connections. Contractor to ensure no infrastructure is affected as part of construction phase.	

5.3 Protection and enhancement of personal health and safety and premises

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. Contractor to ensure compliance as part of construction phase.	

5.4 Surface water flow

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	**AO5** Surface water drainage complies with part 3.3 - Filling or excavation standards in Planning scheme policy 5 - Infrastructure.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. The development proposes to direct flows from Lot A and B to the existing waterway corridor in the eastern portion of the site. Proposed stormwater infrastructure will capture and convey flows from each lot to the respective LPOD. Final design to be confirmed prior to construction works.	

5.5 Batters

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	☒ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO7 does not apply. A batter is not designed for the development.	

5.6 Retaining walls

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO8 A retaining wall: 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;	**AO8** A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2 - Retaining walls in Planning scheme policy 5 - Infrastructure.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. Conceptual retaining wall locations are shown on *C_25145 DA10_Bulk Earthworks Plan.* Final design to be confirmed prior to construction works.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.			

5.7 Filling of a dam

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO7 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	**AO7** The filling of a dam complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	☐ **Complies** ☐ **Performance Solution** ☒ **Not Applicable** PO7 is not applicable as there are no dams proposed as a part of the development.	

6. Infrastructure Code

This section of the report assesses the proposed development against the relevant civil engineering items within Clause 9.4.3 of the Logan City Council Planning Scheme.

6.1 Provision, design, construction and location of infrastructure

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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** ☐ **Performance Solution** ☐ **Not Applicable** AO1 applies. Reports, plans, and drawings are included in *R001_Stormwater Management Plan* and *R002_Engineering Services Report*.	
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;	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;	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** AO2 applies. Water supply will be provided via the existing water mains located within the Cairns Street verge in accordance with SEQ-WAT-1111-6. The development will also be serviced by the existing sewer main that extends from Cairns Street along the sewer easement on the south-western boundary of the site, designed in accordance with the SEQ Water Supply and Sewerage Design and Construction Code. Refer to drawing *C_25145 DA50_Water & Sewer Layout Plan* for further detail. Final servicing design will be confirmed	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	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 - 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.	at the detailed design and pre-construction phases.	

6.2 Location of development

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
PO3 Development is located to protect trunk infrastructure networks.	**AO7** 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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** PO3 applies – the development has considered the location of trunk infrastructure networks. Refer relevant consultant documentation.	

6.3 Roof water drainage and surface water drainage

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. The development proposes to direct flows from Lot A and B to the existing waterway corridor in the eastern portion of the site. Proposed stormwater infrastructure will capture and convey flows from each lot to the respective LPOD. Final design to be confirmed prior to construction works.	

6.4 Natural flow of surface water

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. The development proposes to direct flows from Lot A and B to the existing waterway corridor in the eastern portion of the site. Proposed stormwater infrastructure will capture and convey flows from each lot to the respective LPOD. Final design to be confirmed prior to construction works.	

6.5 Water sensitive urban design

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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;	**AO10** Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	☒ **Complies** ☐ **Performance Solution** ☐ **Not Applicable** It is anticipated that the development will readily comply. Each site will require quality treatment - this will be provided via the use of proprietary cartridges.	

Performance Outcomes	Acceptable Outcomes	Does the proposal meet the acceptable outcomes?	Council Use
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.			

7. Disclaimer

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