brazier motti

29 November 2025

Our Ref: 27594-062-01
Council Ref: AP2024/013
QA: es

Coordinator General
Department of State Development, Infrastructure,
Local Government and Planning
PO Box 15009
CITY EAST QLD 4002

Via email: rachel.ritchie@coordinatorgeneral.qld.gov.au

Dear Rachel,

RESPONSE TO INFORMATION REQUEST (REFERRAL ENTITIES) – AP2024/013
Development Permit for Reconfiguring a Lot – Boundary Realignment (8 Lots into 4 Lots) combined with Material Change of Use for Warehouses in the Townsville State Development Area (SDA)

Brazier Motti acts on behalf of the applicant, Toprise Australia Pty Ltd, with respect to the abovementioned development application and refer to the request for additional information required by referral entities, issued by the Office of the Coordinator-General on 19 August 2025.

The information herein with the following attachments represent the applicant's full response to the RFI:

Attachment A	Development Plans (Rev E) prepared by Inside Out Architects
Attachment B	Proposal Plan 27594/086 I prepared by Brazier Motti
Attachment C	Statement of advice (Traffic) prepared by SLR Consulting
Attachment D	Response to Item 3 prepared by Northern Consulting Engineers
Attachment E	Site Based Stormwater Management Plan prepared by Northern Consulting Engineers

Request Item 1 – Traffic Impact Assessment

A meeting was held with representatives from Townsville City Council on 17 September 2025 to discuss traffic impact, which concluded:

1. Council agrees that traffic generation from the proposed development is fairly similar to the one included in TIA from 2013; and
2. In order to ensure that base traffic data has not changed substantially from the one used in 2013 assessment, please provide a technical memo (as opposed to a new TIA) demonstrating this.

As such, a technical memo (Statement of Advice) has been prepared by SLR Consulting which considers that the traffic impacts of the proposed five (5) industrial lots would not be any greater, or worse, than the traffic impacts of the one (1) previously approved industrial lot. For further information, refer to the Statement of Advice included in ***Attachment C.***

Furthermore, the development plans have been updated to identify the location of bin pads within the warehouses to demonstrate waste management provision for each lot. Access to these bin locations by a service vehicle has been previously demonstrated on the swept path analysis prepared by Brazier Motti.

Request Item 2 – Easement for Sewer

An updated plan of the proposed reconfiguration (27594/086I) is provided in ***Attachment B*** and includes a 3-metre-wide easement over the existing 300mm trunk gravity main in accordance with section 4.2.5 of the CTM Code.

The easement documents will be submitted to the Office of the Coordinator General for approval at the time of lodgement of the Plan of Survey and registered in accordance with the *Land Title Act 1994.*

Request Item 3 – Stormwater Management

Refer to the response prepared by Northern Consulting Engineers included in ***Attachment D*** and the Site Based Stormwater Management Plan included in ***Attachment E.***

Any drainage easement(s) will be provided to convey stormwater across other lands legally and in an environmentally responsible manner, to a legal point of discharge.

The easement documents will be submitted to the Office of the Coordinator General for approval at the time of lodgement of the Plan of Survey and registered in accordance with the *Land Title Act 1994.*

>> End of Response to Information Request <<

We trust that the above response adequately provides the Office of the Coordinator General sufficient information to satisfactorily proceed with the assessment of the application. Brazier Motti would be please to expand on the information further with you, should you require.

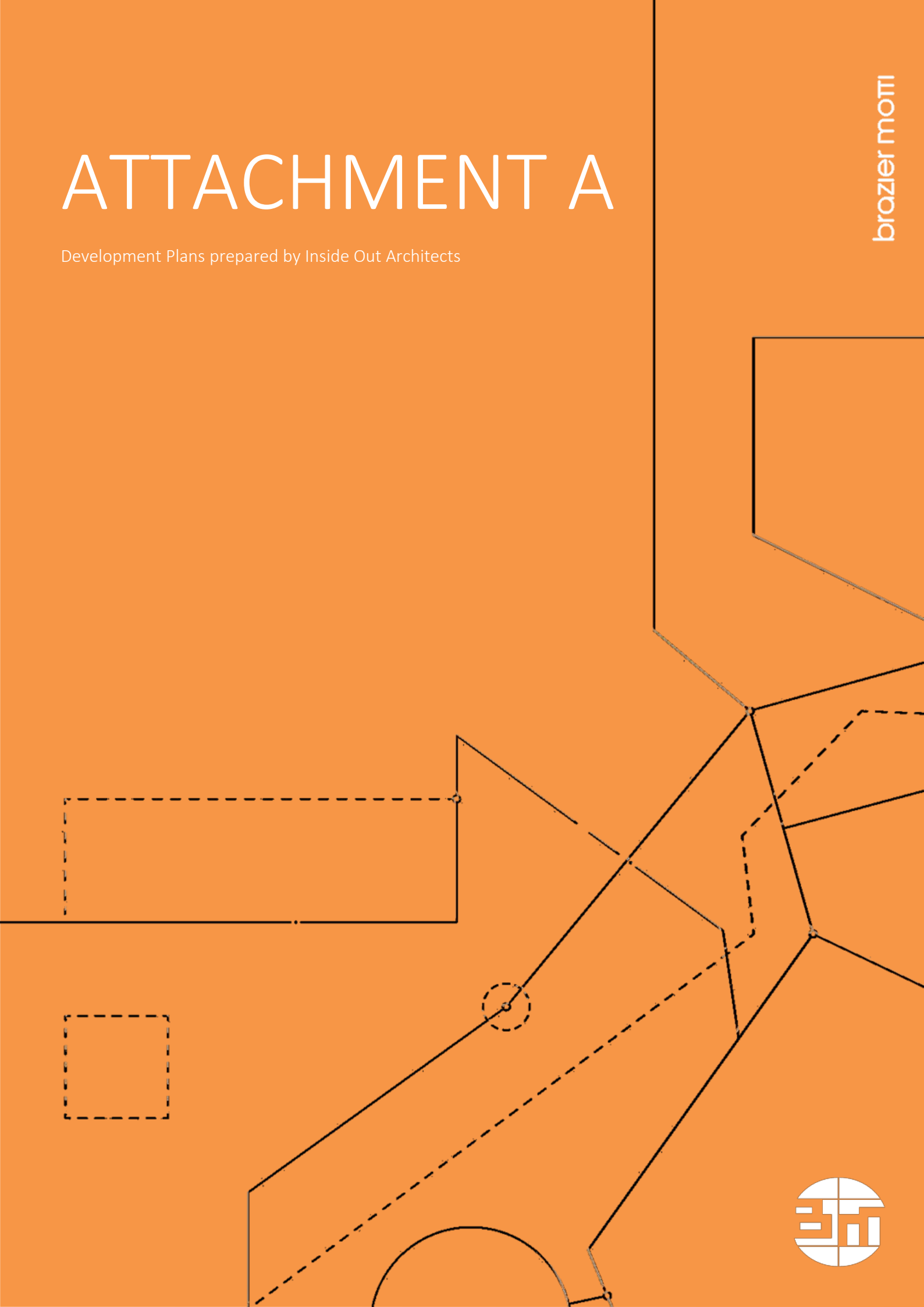
Yours faithfully,

Emma Staines
Town Planner
Brazier Motti Pty Ltd

ATTACHMENT A

Development Plans prepared by Inside Out Architects

brazier motti



WAREHOUSE DEVELOPMENT CONCEPT PROPOSAL - TOWNSVILLE, QLD

SHEET LIST

SHEET NUMBER	REVISION	SHEET NAME
A000	D	COVER PAGE
A001	A	3D RENDERINGS
A100	D	PROPOSED SITE PLAN - LOTS 01 - 04
A101	C	PROPOSED SITE PLAN - LOT 15
A200	D	PROPOSED FLOOR PLAN - LOT 01 & 02
A201	D	PROPOSED FLOOR PLAN - LOTS 03 & 04
A202	B	PROPOSED FLOOR PLAN - LOT 15
A300	D	LOT 01 & 02 ELEVATIONS
A301	D	LOT 03 & 04 ELEVATIONS
A302	A	LOT 15 ELEVATIONS

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NO.	DESCRIPTION	DATE
A	ISSUED FOR DA	28.10.2024
B	LOT SIZES UPDATED	26.02.2025
C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

SHEET NAME:
COVER PAGE

PROJECT NUMBER: T25

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE:

SHEET NUMBER: A000

LOT 15 3D
PERSPECTIVES

LOT 01 & 02 3D
PERSPECTIVES

LOT 03 & 04 3D
PERSPECTIVES

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CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

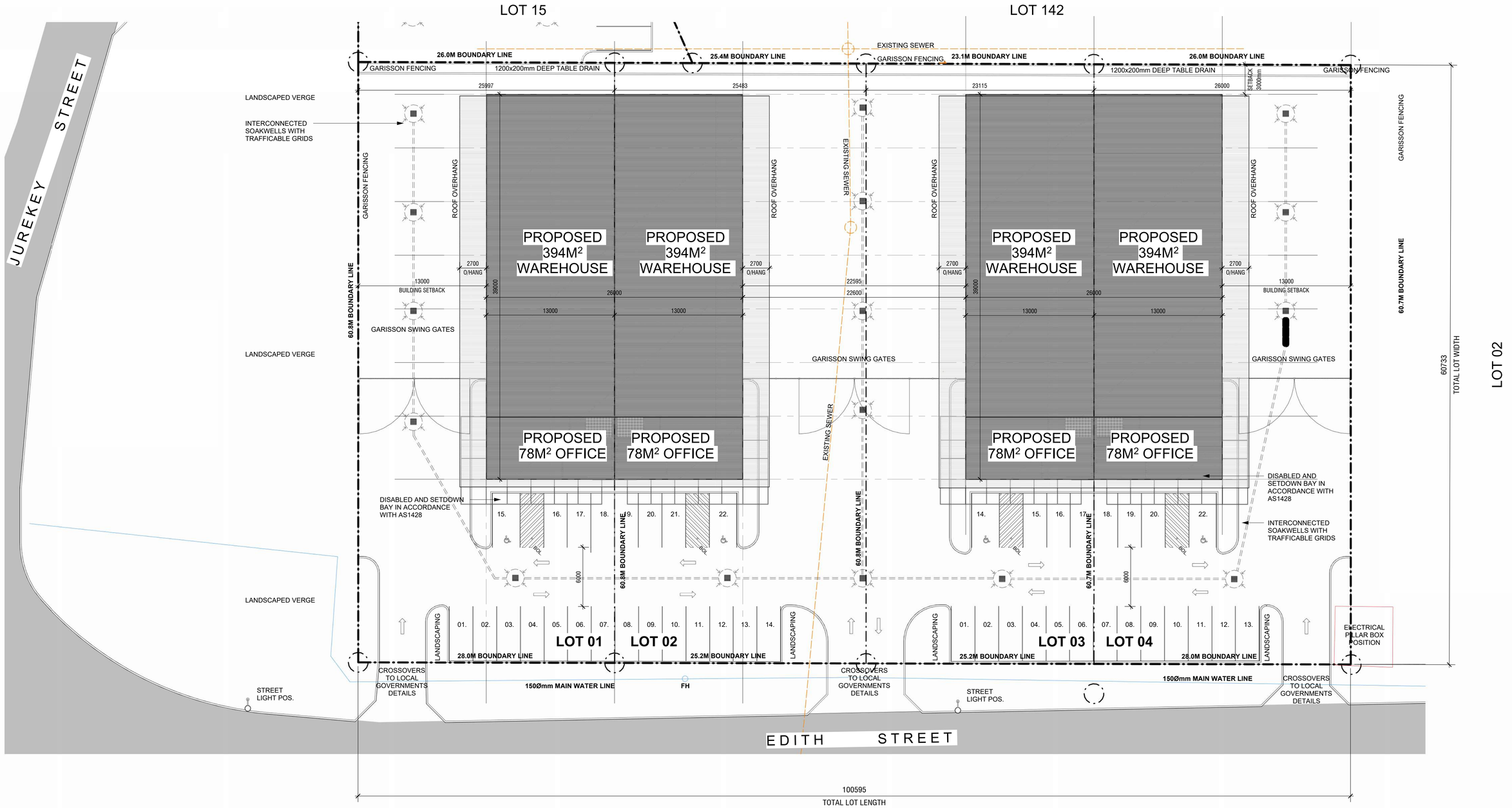
PROJECT STATUS
CONCEPT DESIGN

SHEET NAME:
3D RENDERINGS

PROJECT NUMBER: T25

CHECKED BY:	TD	DATE:	30/10/2024
DRAWN BY:	IOA	SCALE:	1 : 1

SHEET NUMBER: A001



PROPOSED SITE PLAN - LOTS 01 - 04

1 : 200

0 2.5 m 5.0 m 10.0 m
SCALE: 1:200

NORTH

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D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

PROJECT STATUS
CONCEPT DESIGN

SHEET NAME:
PROPOSED SITE PLAN - LOTS 01 - 04

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 200

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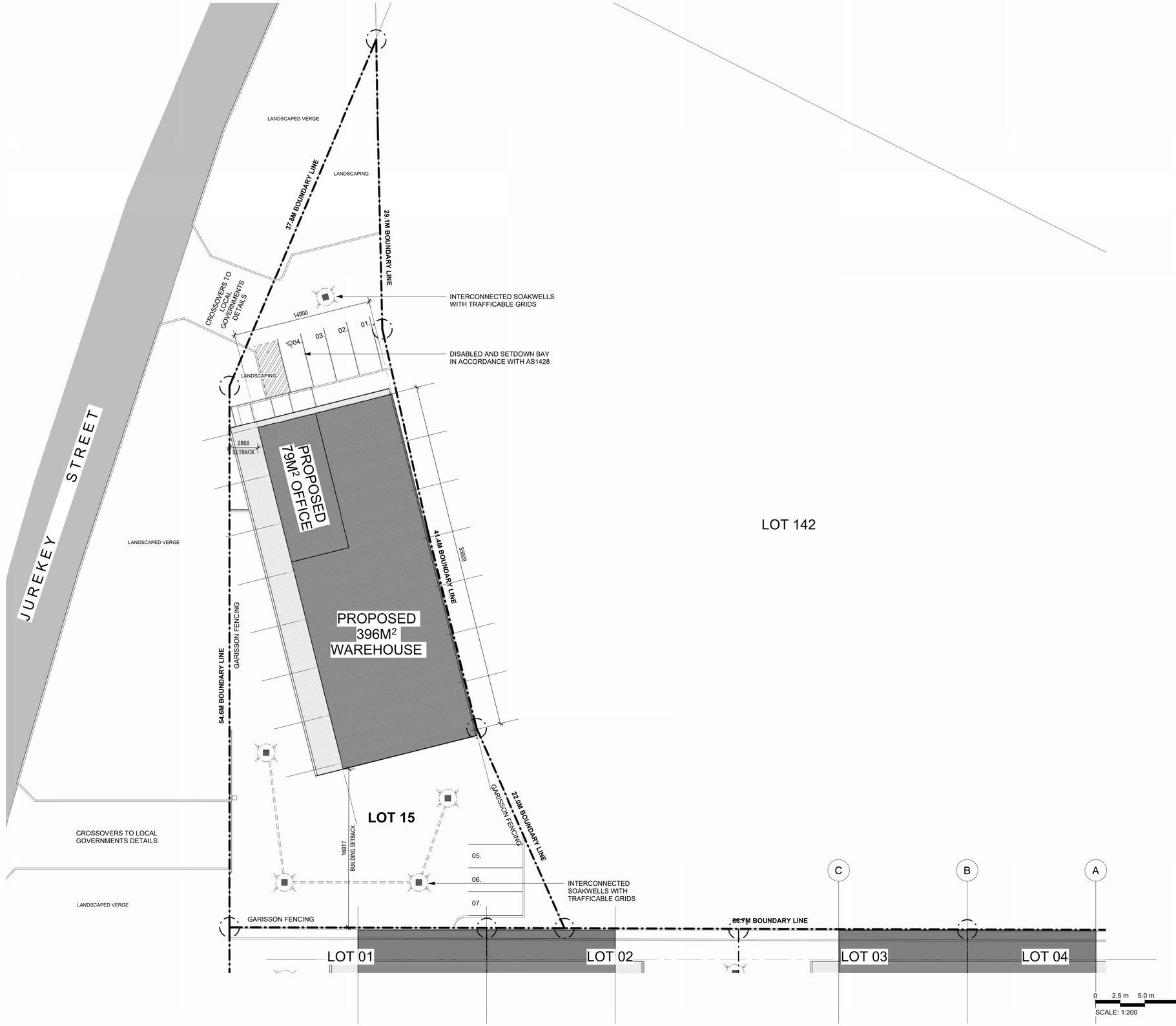

PROPOSED SITE PLAN - LOT 15

1 : 200

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PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
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SHEET NAME:
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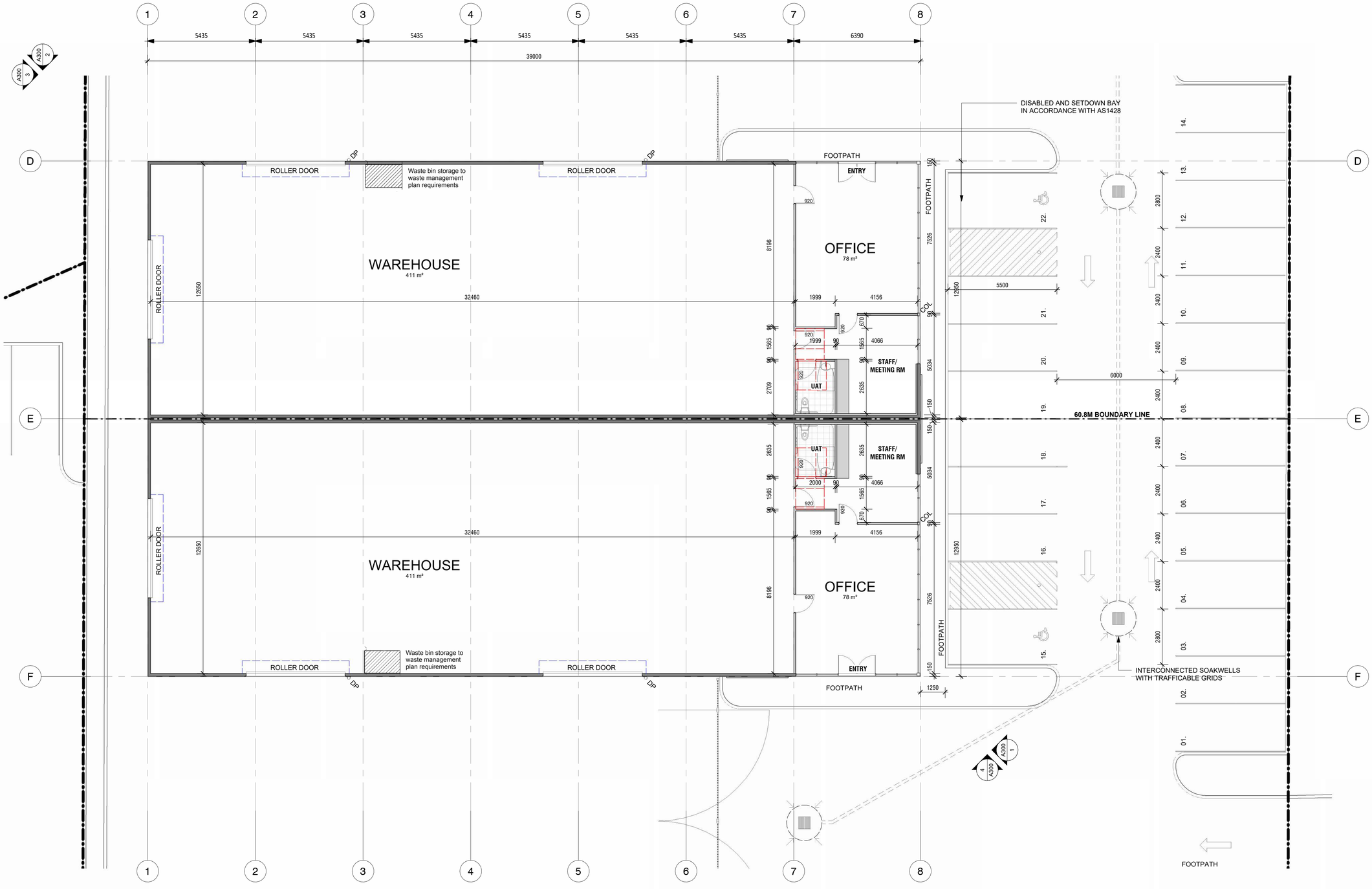
PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 200

SHEET NUMBER: A101



PROPOSED FLOOR PLAN - LOTS 01 & 02

1 : 100

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E	WASTE BIN STORAGE ADDED	29.08.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

PROJECT STATUS
CONCEPT DESIGN

SHEET NAME:
PROPOSED FLOOR PLAN - LOT 01 & 02

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 100

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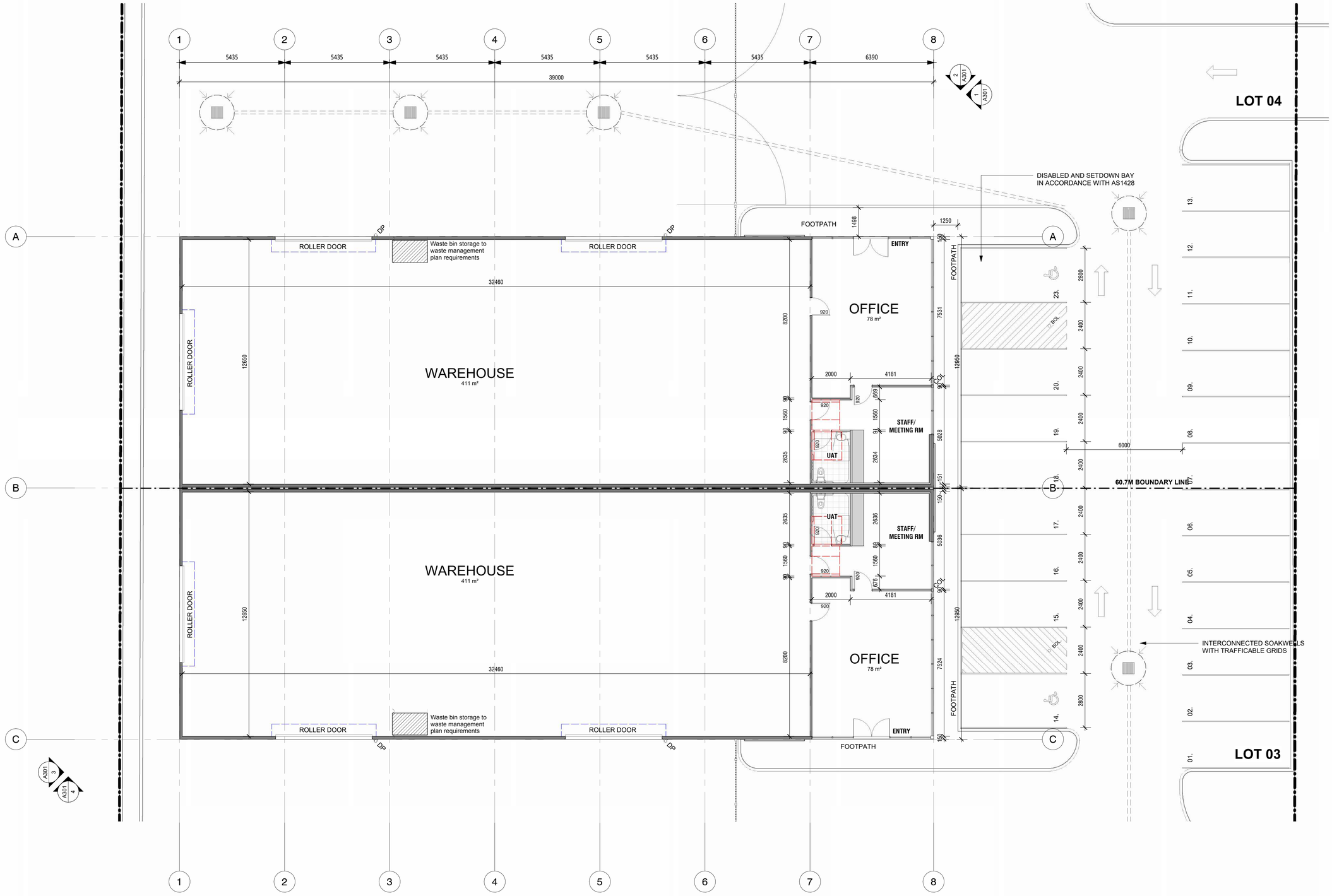

PROPOSED FLOOR PLAN - LOTS 03 & 04

1 : 100

0 1.3 m 2.5 m 5.0 m
SCALE: 1:100

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CLIENT NAME:
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PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

PROJECT STATUS
CONCEPT DESIGN

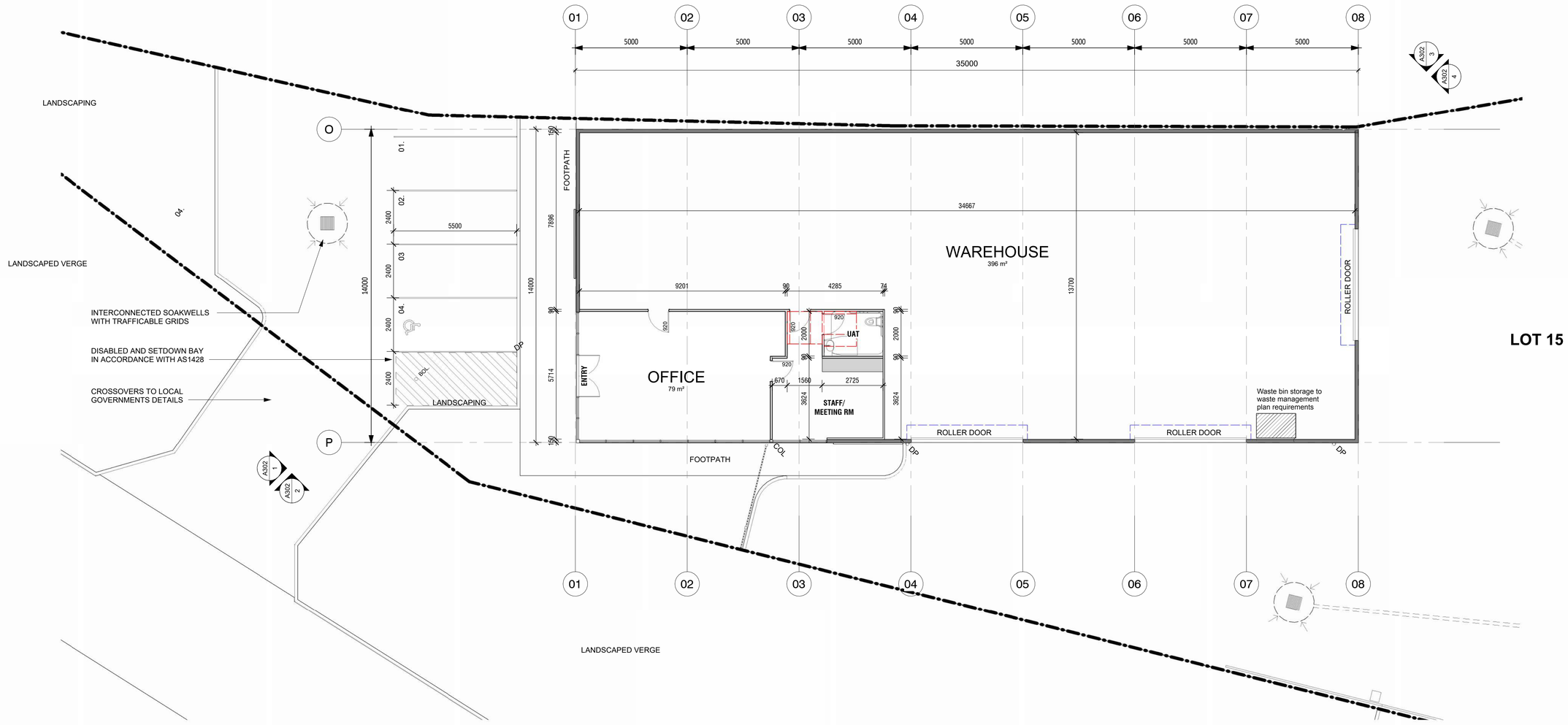
SHEET NAME:
PROPOSED FLOOR PLAN - LOTS 03 & 04

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 100

SHEET NUMBER: A201



PROPOSED FLOOR PLAN - LOT 15

1 : 100

0 1.3 m 2.5 m 5.0 m
SCALE: 1:100

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CLIENT NAME:
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PROJECT STATUS
CONCEPT DESIGN

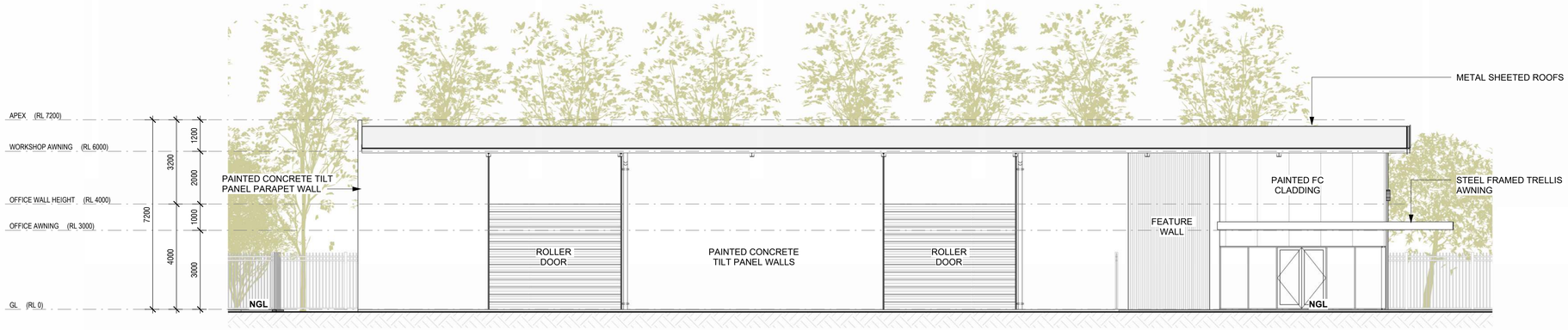
PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

SHEET NAME:
PROPOSED FLOOR PLAN - LOT 15

PROJECT NUMBER: T25

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE: 1 : 100

SHEET NUMBER: A202



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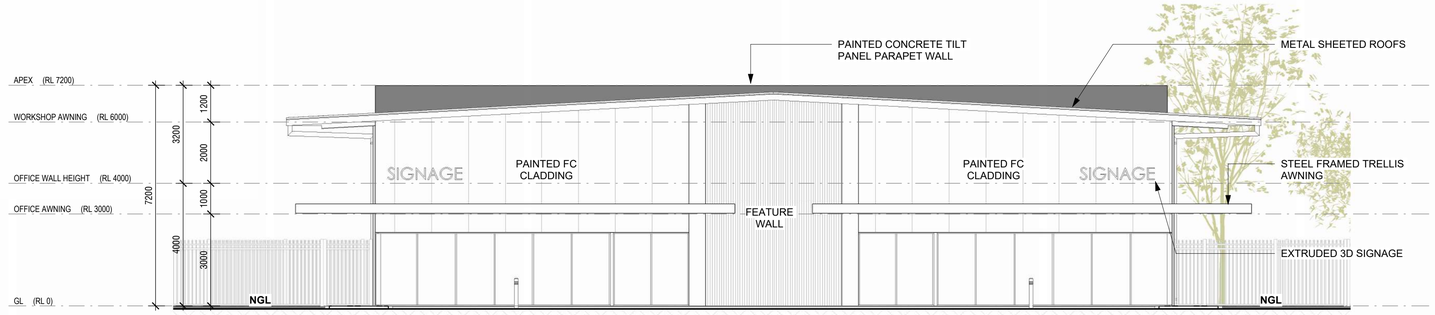
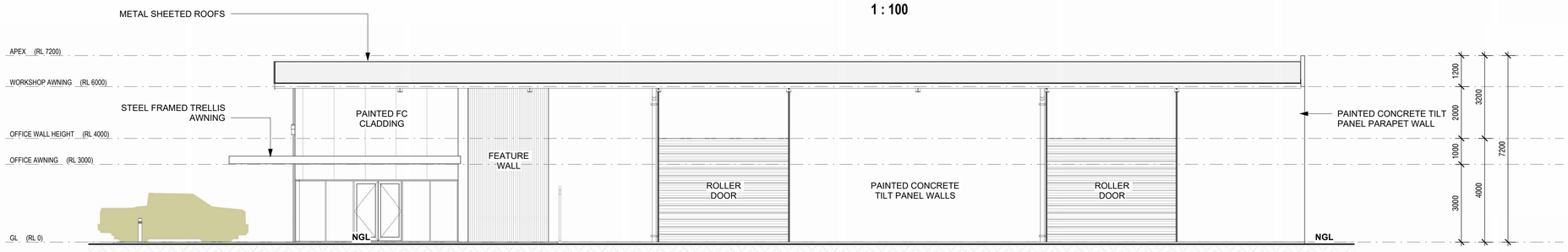
1 : 100



LOT 01 & 02 FRONT ELEVATION
1 : 100



LOT 02 SIDE ELEVATION
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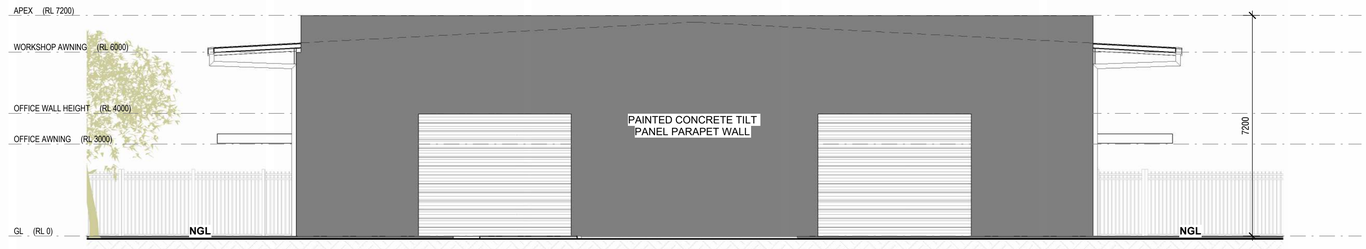

LOT 01 & 02 REAR ELEVATION
1 : 100

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D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

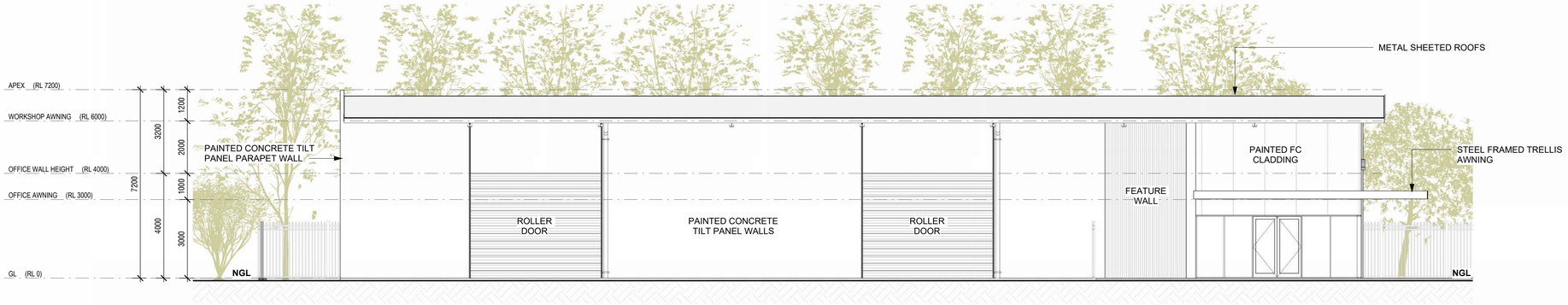
PROJECT STATUS
CONCEPT DESIGN

SHEET NAME:
LOT 01 & 02 ELEVATIONS

PROJECT NUMBER: T25

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE: 1 : 100
SHEET NUMBER: A300



LOT 03 SIDE ELEVATION

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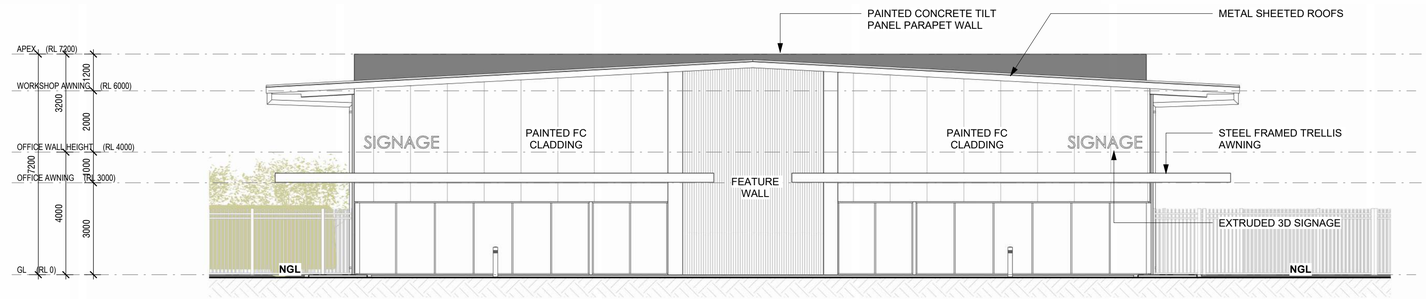

LOT 03 & 04 FRONT ELEVATION

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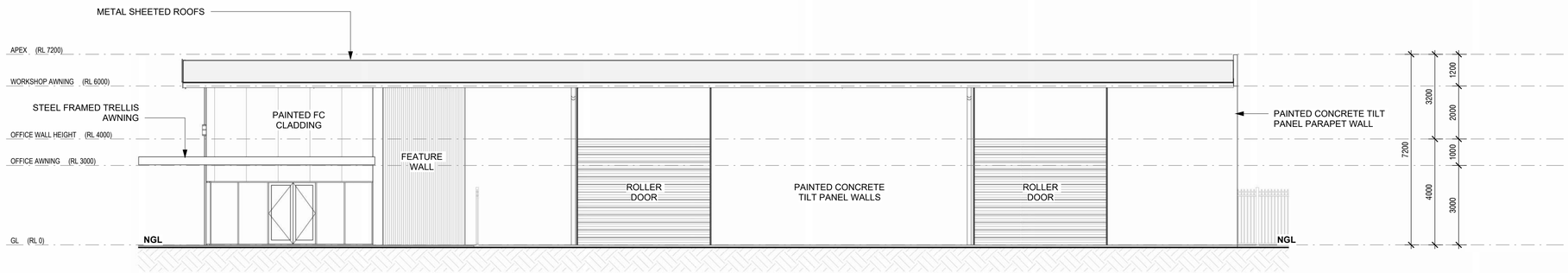

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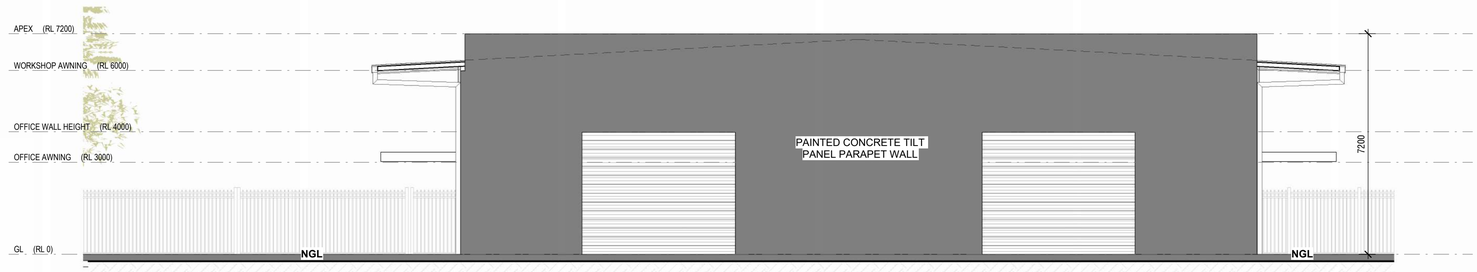

LOT 03 & 04 REAR ELEVATION

1 : 100

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TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

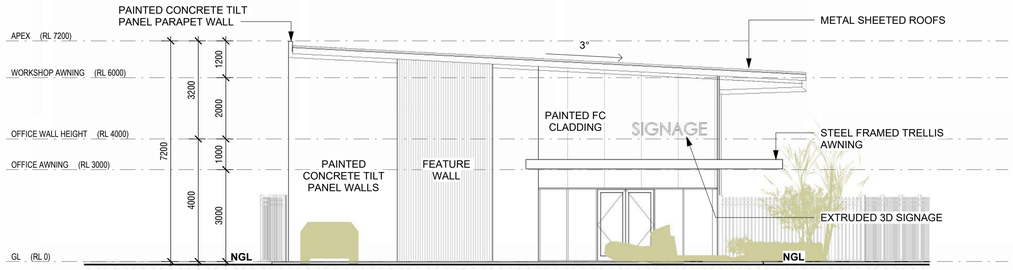
SHEET NAME:
LOT 03 & 04 ELEVATIONS

PROJECT NUMBER: T25

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

CHECKED BY:	TD	DATE:	30/10/2024
DRAWN BY:	IOA	SCALE:	1 : 100

SHEET NUMBER: A301



LOT 15 FRONT ELEVATION

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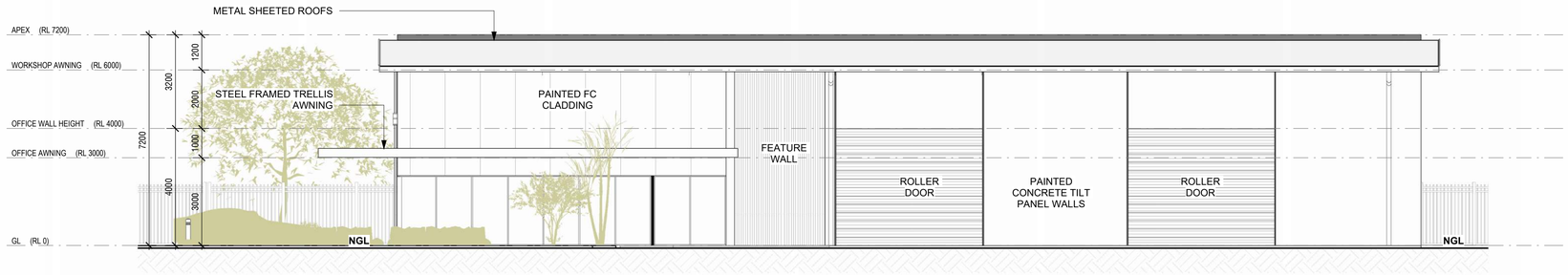

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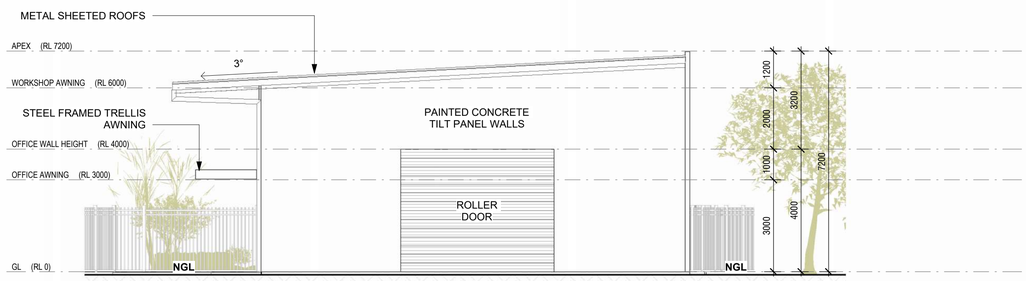

LOT 15 SIDE ELEVATION B

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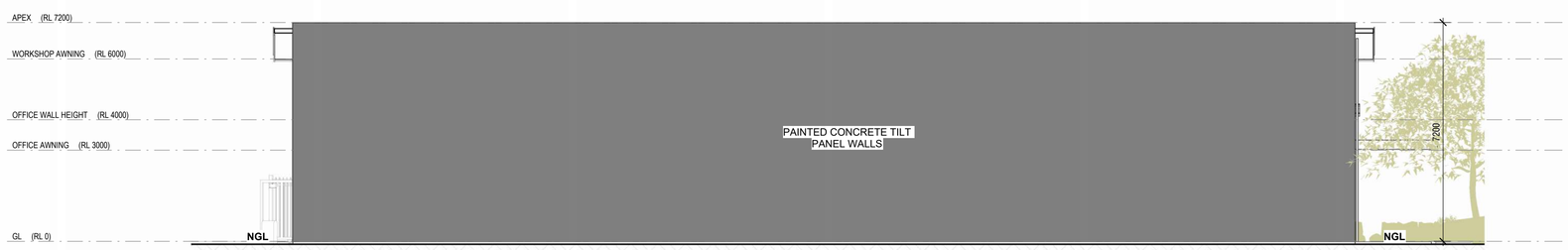

LOT 15 REAR ELEVATION

1 : 100

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SHEET NAME:
LOT 15 ELEVATIONS

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

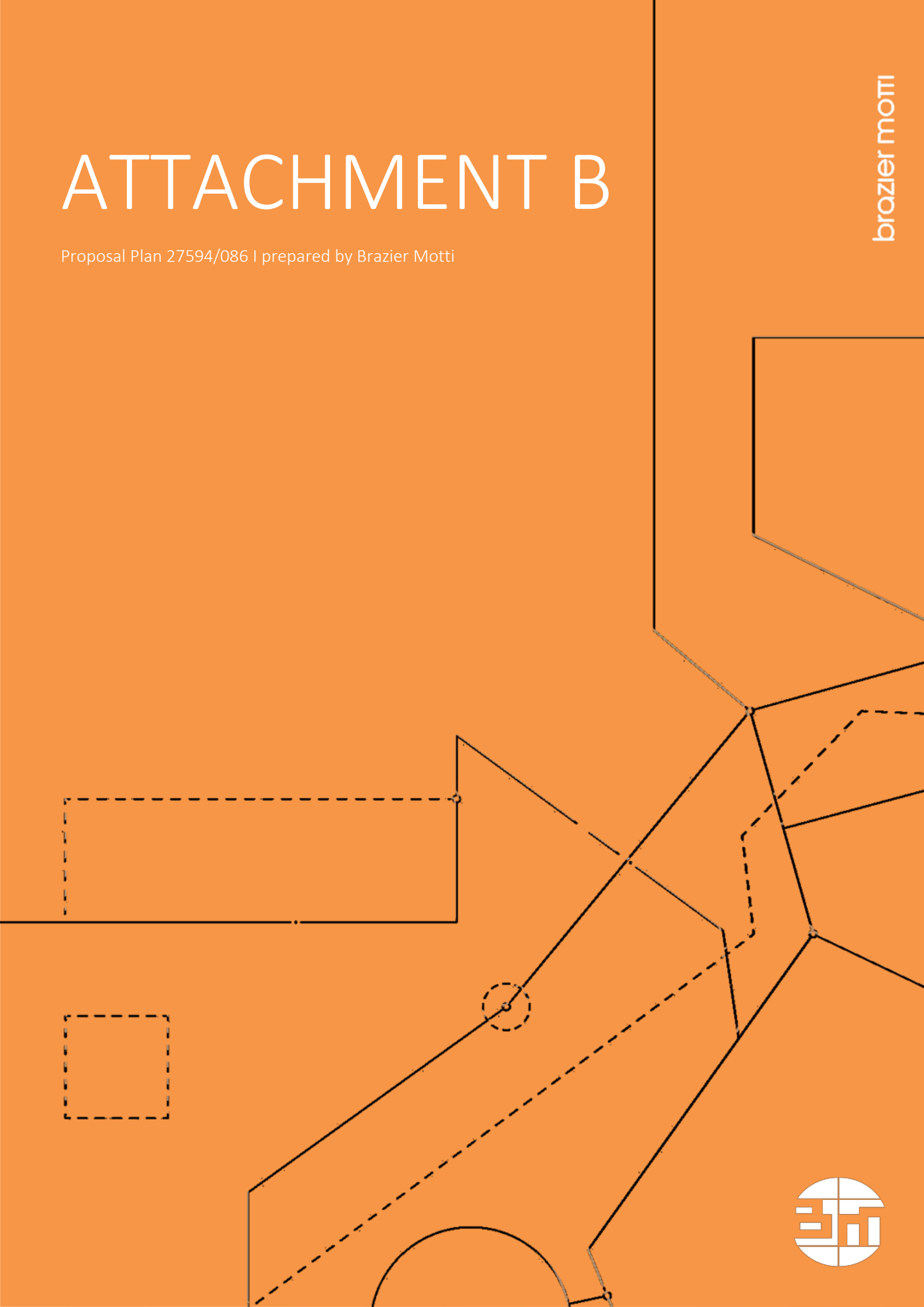
DRAWN BY: IOA SCALE: 1 : 100

SHEET NUMBER: A302

ATTACHMENT B

Proposal Plan 27594/086 I prepared by Brazier Motti

brazier motti



PROPOSED RECONFIGURATION

Lots 1 - 4 and Easements

Cancelling Lots 16 – 22 on SP105728 and Lot 23 on SP105729

0 10 20m

Legend

Proposed Easement

Proposed 3m Wide Sewer Easement

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering, and Local Authority and Agency approvals.

Date: 9th October, 2025	
Scale: 1:1000	A3
Drawn: MJM	
Job No: 27594/062-01	
Plan No: 27594/086 I	

braziermotti

braziermotti.com.au

SURVEYING
TOWNPLANNING
PROJECTMANAGEMENT
MAPPING&GIS

ATTACHMENT C

Statement of advice (Traffic) prepared by SLR Consulting

brazier motti

Statement of Advice

Cluden, Jurekey Street – Industrial Development

Response to Townsville City Council

CLIENT: Toprise Australia Pty Ltd	**DATE:** 9 October 2025
SLR PROJECT No: 620.V12408.00001	**REVISION:** v0.1
AUTHOR: Brett McClurg	**REVIEWER:** Brett McClurg

This memorandum has been prepared to address the traffic impacts anticipated by a proposed subdivision of one (1) previously approved industrial lot into five (5) industrial lots, for the purpose of developing warehouse buildings. The assessment and response herein have been prepared to address particular concerns from Townsville City Council (TCC) that the traffic impacts of the proposed five (5) industrial lots might be significantly greater, or worse, than the traffic impacts of the one (1) previously approved industrial lot.

The Subject Site is located on the north-east corner of Jurekey Street / Edit Street at Cluden (Townsville) and represents the approved Lot 6 (see Section 2.0).

1.0 Development Proposal

The current development proposal is to subdivide one (1) previously approved industrial lot into five (5) industrial lots, for the purpose of developing warehouse buildings. The Subject Site is on the north-east corner of Jurekey Street / Edit Street at Cluden (Townsville) and represents the approved Lot 6 (see Section 2.0) with a land area of 7,699sqm.

The proposed development is to create five (5) lots as follows, having a total land area of 7,699sqm:

- Lot 01, with an area of approximately 1,581sqm. The proposed development would have vehicle access on Edith Street.
- Lot 02, with an area of approximately 1,548sqm. The proposed development would have vehicle access on Edith Street (shared with Lot 03).
- Lot 03, with an area of approximately 1,404sqm. The proposed development would have vehicle access on Edith Street (shared with Lot 02).
- Lot 04, with an area of approximately 1,579sqm. The proposed development would have vehicle access on Edith Street.
- Lot 15, with an area of approximately 1,587sqm. The proposed development would have vehicle access on Jurekey Street.

Plans of the proposed development are as follows, included at **Appendix A**:

- Plan No: A100 (Rev D, 26 May 2025) and A101 (Rev C, 26 March 2025) prepared by Insideout Architects.
- Plan No: 27594/086 I (9 October 2025) prepared by Brazier Motti.

2.0 Approved Development

The previously approved development includes Reconfiguring a Lot over land at 38011 Bruce Highway, Cluden where a much larger land parcel was proposed which includes the Subject Site. A copy of that approval (dated 22 April 2015, TCC application number RC14/0158) is included at **Appendix B** (including the approved layout plans).

The Subject Site represents the Lot 6 (land area of 7,699 sqm) as shown on Plan No: 27594/054 D (19 Feb 2015) prepared by Brazier Mott (see the approved layout plans at the end of **Appendix B**).

It is recognised that no development (construction) has occurred on Lot 6, and the only development (construction) on the land is on Lots 1 and 2 (petrol station with truck parking).

3.0 Previous Traffic Assessment

As part of the previously approved development a traffic assessment was undertaken and documented in the Technical Memorandum "*Cluden Industrial Road and Access Strategy*" dated 15 August 2013, by Cardno. This is included at **Appendix C**. That assessment specifically addressed the intersection form at Jurekey Street / Edith Street.

3.1 Development Traffic

The Cardno traffic assessment adopts traffic generation estimates for the entire site (with the exception of the Service Station) as follows:

- Generation rate of 0.7vph per 100sqm GFA of Light/Medium/Road Industry.
- GFA is estimated as 50% of site area.

The current proposal / application is to simply convert:

- The approved Lot 6 = 7,699 sqm (ie. GFA = 50% x 7,699 = **3,849.5 sqm GFA**).
- to
- 5 lots, being 472 + 472 + 472 + 472 + 475 = **2,363 sqm GFA**.

The proposed new building GFA is approximately 39% less than the GFA assumed in the Cardno assessment. Therefore, the development traffic generation of the proposed development will be **less than** that used in the Cardno traffic report (15 August 2013) for the current approved development.

3.2 Background Traffic Counts

The Cardno traffic assessment used background traffic (excluding the subject development) on Jurekey Street as follows:

- Traffic counts on from 9 July 2013 (ie. approximately 800vpd two way daily traffic).
- Forecast traffic volumes at 2024 using a 5% growth rate per annum, excluding the subject development (ie. approximately 1,020vpd two way daily traffic).

Subsequent to the Cardno assessment, traffic counts were also undertaken in 2017, 2018 and 2022. A comparison of traffic counts (two way daily) on Jurekey Street (north and south of Edith Street) is as follows:

- 2013 (prior to the service station or industrial development):
  - 795vpd (north of Edith Street).
  - 795vpd (south of Edith Street).
- 2017 (after the service station opened):
  - 810vpd (north of Edith Street).
  - 840vpd (south of Edith Street).
- 2018 (after the service station opened, plus QR increased operations, plus RoadTek driveway added to Edith Street):
  - 965vpd (north of Edith Street).
  - 825vpd (south of Edith Street).
- 2022 (after the service station opened, plus QR increased operations, plus RoadTek driveway added to Edith Street):
  - 1,185vpd (north of Edith Street).
  - 910vpd (south of Edith Street).

For the above, all traffic counts and traffic forecasts are for the AM Peak Hour and the PM Peak hour, but for simplicity of comparison these are converted to a daily traffic volume using the equation DAILY = (AM + PM) / 2 x 10, which is based on the peak hour traffic being 10% of daily (this is a typical average statistic).

Based on the comparison of the above traffic counts, the following conclusions can be drawn:

- The opening of the service station (and the construction of Edith Street) has added about 15vpd to Jurekey Street (north of Edith Street) – ie. a very minimal increase (less than 2%).
- A year after opening the service station (and the construction of Edith Street), plus the QR increased operations, plus the RoadTek driveway, about 155vpd has been added to Jurekey Street (north of Edith Street) – ie. a small increase (less than 20%). This increase in traffic has resulted from increased patronage to the service station and/or the increased QR operations.
- The opening of the service station (and the construction of Edith Street) has added about 45vpd to Jurekey Street (south of Edith Street) – ie. a minimal increase (less than 6%).
- A year after opening the service station (and the construction of Edith Street), plus the QR increased operations, plus the RoadTek driveway, the volume on Jurekey Street (south of Edith Street) has decreased by about 15vpd. This volume is about the equivalent of what is being generated by RoadTek via the new driveway onto Edith Street.

From the above comparison of traffic counts, it is concluded that linear traffic growth on Jurekey Street between 2013 and 2022 (including some development traffic) has been approximately 5.5% per annum north of Edith Street, and 1.6% per annum south of Edith Street.

The Cardno traffic assessment adopted a linear traffic growth of 5.0% per annum (excluding development traffic) on Jurekey Steet and subsequently added development traffic. Therefore, the Cardno assessment was far more conservative (higher traffic volumes) than what has actually occurred.

3.3 Background Traffic with Development

Note that when the subject development and other adjacent development (RoadTek and Aurizon) was considered, the total traffic volumes on Jurekey Street used in the Cardno traffic assessment were as follows:

- Forecast traffic volumes at 2014 using a 5% growth rate per annum, plus development:
  - 3,780vpd (north of Edith Street).
  - 1,085vpd (south of Edith Street).
- Forecast traffic volumes at 2024 using a 5% growth rate per annum, plus development:
  - 4,665vpd (north of Edith Street).
  - 1,480vpd (south of Edith Street).

For the above, all traffic counts and traffic forecasts are for the AM Peak Hour and the PM Peak hour, but for simplicity of comparison these are converted to a daily traffic volume using the equation DAILY = (AM + PM) / 2 x 10, which is based on the peak hour traffic being 10% of daily (this is a typical average statistic).

From the above comparison of the Cardno traffic volume estimates (including development), it is concluded that linear traffic growth on Jurekey Street between 2013 counts and 2024 estimates (including development traffic estimates) reflects approximately 44% per annum north of Edith Street, and 8% per annum south of Edith Street.

Therefore, the above further confirms that the Cardno assessment was far more conservative (higher traffic volumes) than what has actually occurred.

4.0 TCC Traffic Model Volumes

Townsville City Council (TCC) has provided access to the traffic model forecasts from their traffic model, Townsville Aimsun Integrated Model (TAIM). This information reports traffic volumes (two way daily) on Jurekey Street (north and south of Edith Street) as follows:

- 2025 calibrated traffic on Jurekey Street:
  - 1,273vpd (north of Edith Street).
  - 1,305vpd (south of Edith Street).
- 2026 forecast traffic on Jurekey Street:
  - 1,270vpd (north of Edith Street).
  - 1,303vpd (south of Edith Street).
- 2031 forecast traffic on Jurekey Street:
  - 1,260vpd (north of Edith Street).
  - 1,294vpd (south of Edith Street).

- 2036 forecast traffic on Jurekey Street:
  - 1,407vpd (north of Edith Street).
  - 1,450vpd (south of Edith Street).
- 2041 forecast traffic on Jurekey Street:
  - 1,406vpd (north of Edith Street).
  - 1,452vpd (south of Edith Street).
- 2046 forecast traffic on Jurekey Street:
  - 1,534vpd (north of Edith Street).
  - 1,587vpd (south of Edith Street).

From the above comparison of the TCC traffic model forecasts (ignoring 2025 and 2026 volumes because they are higher than the following year of 2031), it is concluded that linear traffic growth on Jurekey Street between 2031 and 2046 reflects approximately 1.4% per annum north of Edith Street, and 1.5% per annum south of Edith Street.

The Cardno traffic assessment adopted a linear traffic growth of 5.0% per annum (excluding development traffic) on Jurekey Steet and subsequently added development traffic. Therefore, the Cardno assessment was far more conservative (higher 2024 traffic volumes on Jurekey Street of 4,665vpd (north of Edith Street) and 1,480vpd (south of Edith Street)) than what is projected by the TCC 2026 traffic model (1,270vpd (north of Edith Street) and 1,303vpd (south of Edith Street)).

5.0 Conclusion

Following the consideration herein, the following is concluded:

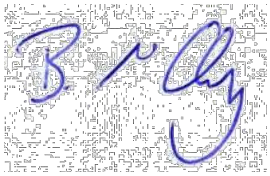
- The proposed new building GFA is approximately 39% less than the GFA assumed in the Cardno assessment.
- Therefore, the Cardno assessment was far more conservative (higher traffic volumes) than the currently proposed development.
- Linear traffic growth of traffic counts on Jurekey Street between 2013 and 2022 (including some development traffic) has been approximately 5.5% per annum north of Edith Street, and 1.6% per annum south of Edith Street.
- The Cardno traffic assessment adopted a linear traffic growth of 5.0% per annum (excluding development traffic) on Jurekey Steet and subsequently added development traffic.
- The background traffic conditions on the adjacent road network (Jurekey Street and Edith Street) have not changed to any degree of significance since the 2013 traffic assessment.
- The Cardno traffic volume estimates (including development) on Jurekey Street between 2013 counts and 2024 reflect approximately 44% per annum north of Edith Street, and 8% per annum south of Edith Street.
- Therefore, the Cardno assessment was far more conservative (higher traffic volumes) than what has actually occurred.
- The TCC traffic model forecasts on Jurekey Street between 2031 and 2046 reflect approximately 1.4% per annum north of Edith Street, and 1.5% per annum south of Edith Street.

- The TCC 2026 traffic model forecasts on Jurekey Street are 1,270vpd (north of Edith Street) and 1,303vpd (south of Edith Street).
- The Cardno assessment traffic forecasts on Jurekey Street were 4,665vpd (north of Edith Street) and 1,480vpd (south of Edith Street).
- The Cardno assessment was far more conservative (higher traffic volumes) than what is projected by the TCC traffic model.

Given the above, it is considered that the traffic impacts of the proposed five (5) industrial lots would not be any greater, or worse, than the traffic impacts of the one (1) previously approved industrial lot. Consequently, there is no need to undertake a further updated traffic impact assessment for the proposed subdivision.

6.0 Certification

This statement of advice has been prepared under the direction of a Registered Professional Engineer of Queensland (RPEQ) and Senior Road Safety Auditor (as accredited by DTMR) who is experienced in traffic engineering and road safety. This memorandum is endorsed by that RPEQ accordingly.



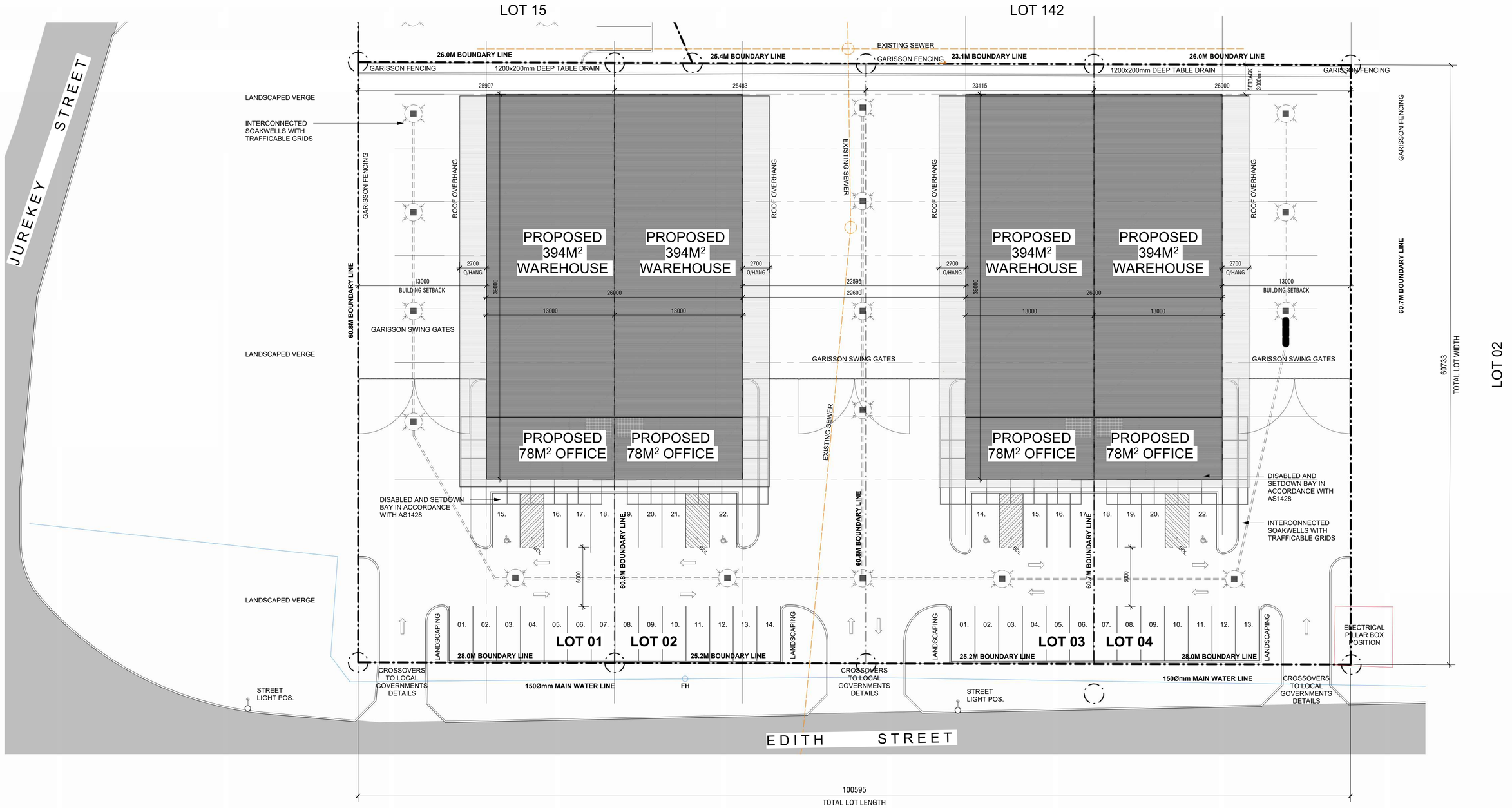
Brett McClurg - RPEQ No: 7628

Technical Director - Transport Advisory

Basis of Statement of Advice

This report has been prepared with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid. This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR. SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Appendix A Proposed Development Plans



PROPOSED SITE PLAN - LOTS 01 - 04

1 : 200

0 2.5 m 5.0 m 10.0 m
SCALE: 1:200

NORTH

insideout architects TM
PO Box 369 Belgian Gardens QLD 4810 Australia
tania@insideout-architects.com insideout-architects.com
M +61 407 189 160

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scale 0 1.0 2 3 5 m

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ALL AREAS DIMENSIONS & LAND USES ARE PRELIMINARY
SUBJECT TO INVESTIGATION, SURVEY, ENGINEERING.& LOCAL AUTHORITY & AGENCY APPROVALS

NO.	DESCRIPTION	DATE
A	ISSUED FOR DA	28.10.2024
B	LOT SIZES UPDATED	26.02.2025
C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

PROJECT STATUS
CONCEPT DESIGN

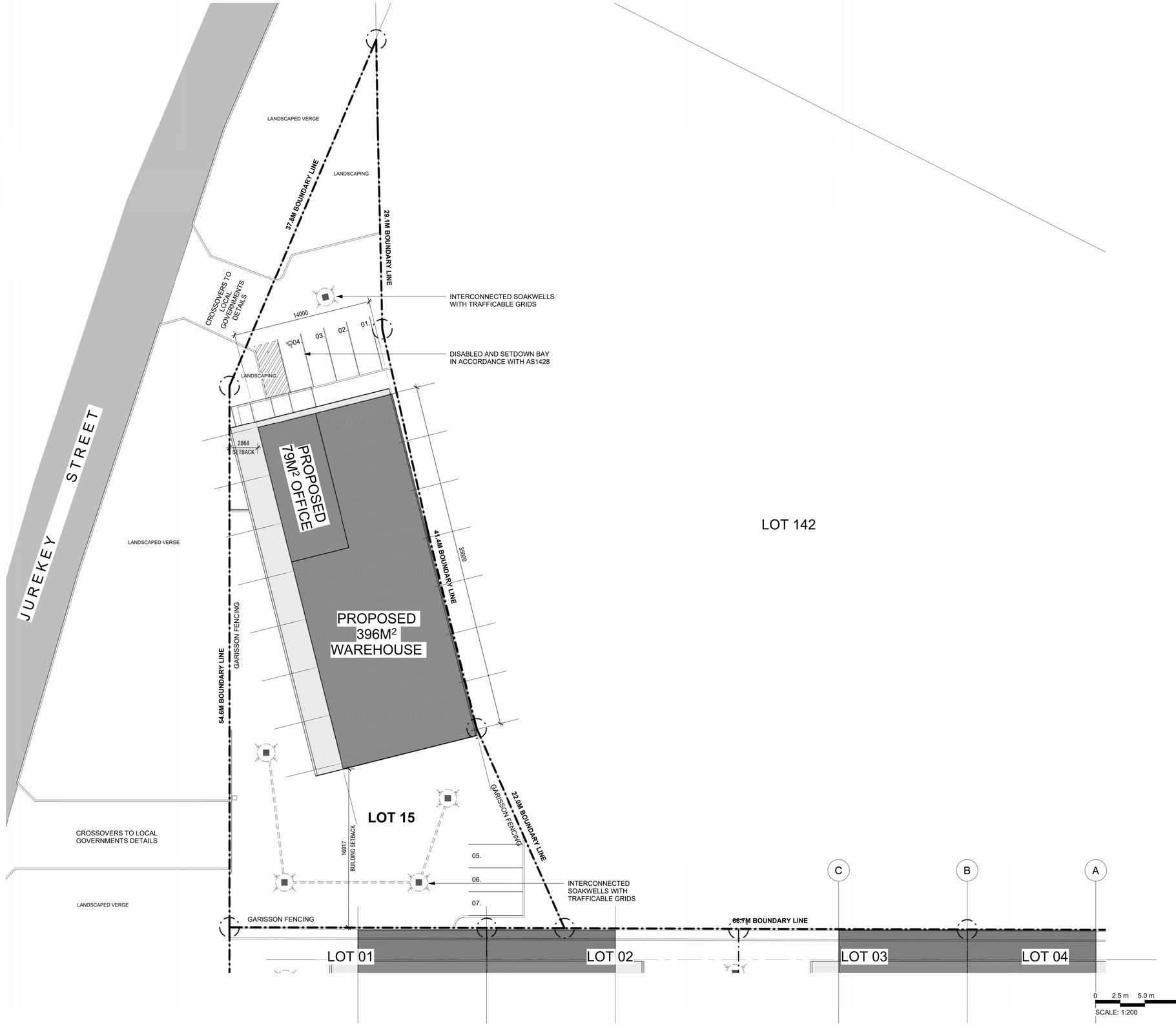
SHEET NAME:
PROPOSED SITE PLAN - LOTS 01 - 04

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 200

SHEET NUMBER: A100



PROPOSED SITE PLAN - LOT 15

1 : 200

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PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

SHEET NAME:
PROPOSED SITE PLAN - LOT 15

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 200

SHEET NUMBER: A101

PROPOSED RECONFIGURATION

Lots 1 - 4 and Easements

Cancelling Lots 16 – 22 on SP105728 and Lot 23 on SP105729

0 10 20m

Legend

Proposed Easement

Proposed 3m Wide Sewer Easement

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering, and Local Authority and Agency approvals.

Date: 9th October, 2025	
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Appendix B Previous Approval

PLANNING AND DEVELOPMENT
DEVELOPMENT ASSESSMENT

brazier motti

2 2 APR 2015

City of Townsville

Attention: NWB.
Job No: 27594-23-1

TOWNSVILLE CITY COUNCIL
ADMINISTRATION BUILDING
103 WALKER STREET

PO BOX 1268, TOWNSVILLE
QUEENSLAND 4810

TELEPHONE >> 07 4727 9001
FACSIMILE >> 07 4727 9052

enquiries@townsville.qld.gov.au
www.townsville.qld.gov.au

Date >> 22 April 2015

Toprise Australia Pty Ltd
C/- Brazier Motti
595 Flinders Street
TOWNSVILLE QLD 4810

DEVELOPMENT APPLICATION DECISION NOTICE

Sustainable Planning Act 2009 (SPA)

The Development Application for **Development Permit – Reconfiguring a Lot (RC14/0158) Boundary Realignment and Lot Amalgamation** was assessed and **APPROVED SUBJECT TO CONDITIONS**. The decision was made on **16 April 2015**.

The following schedule provides all the relevant details.

1. Applicant details

Name and address	Toprise Australia Pty Ltd C/- Brazier Motti 595 Flinders Street TOWNSVILLE QLD 4810

2. Property description

Assessment number	2920001
Property address	38011 Bruce Highway CLUDEN QLD 4811
Legal description	Lot 3 EP 1100, Lot 188 EP 1839, Lot 23 SP 105729, Lot 2 SP 257322, Lot 10 SP 261127 Lot 18 &19 RP 705929, Lot 15-22 SP 105728 and Lot 11-13 SP 262840

3. Application details

Application number	RC14/0158
Approval applied for	Development Permit
Development type	Reconfiguring a Lot
Description	Boundary Realignment and Lot Amalgamation
Assessed under	Townsville City Council City Plan, Transport and Support Services Precinct of the Townsville State Development Area (TSDA) Development Scheme

4. Deemed approval

The application has not been deemed to be approved under s.331 of the *Sustainable Planning Act 2009*.

5. Conditions
The conditions of this approval are set out in the Schedule of Conditions (attached). The conditions are identified to indicate whether the assessment manager or a concurrence agency imposed them.

6. Further development permits required for this development
Development Permit – Operational Works

7. Compliance assessment required under part 10 of the *Sustainable Planning Act 2009*.
No further Compliance Assessment is required for this Development

8. Code for self assessable development
All self assessable development related to the development approval must comply with the relevant codes identified in the Townsville City Council City Plan 2005, Transport and Support Services Precinct of the Townsville State Development Area (TSDA) Development Scheme affecting this site.

9. Referral agencies

Concurrence agency >>	North Queensland State Assessment and Referral Agency PO Box 1732 TOWNSVILLE QLD 4810
Advice agency >>	Not Applicable

10. Conflict with a relevant instrument
The assessment manager does not consider that this decision conflicts with a relevant instrument.

11. When approval lapses
Section.341 of the *Sustainable Planning Act 2009* establishes when an approval lapses.

12. Rights of appeal
Sections 461, 481, 482, 485, 488, 490 of the *Sustainable Planning Act 2009* indicate the Right of Appeal and these sections are attached for your information.

Yours faithfully

For Assessment Manager
Planning and Development

Appendices >>	Conditions; Rights of Appeal.
Enclosed >>	Approved Plans; Referral Agency's Responses.

SCHEDULE OF CONDITIONS

RECONFIGURING A LOT
BOUNDARY REALIGNMENT AND LOT AMALGAMATION

RECONFIGURING A LOT CONDITIONS

1. Approved Plans and Supporting Documentation

Condition

(a) The development must generally comply with the plan(s) and supporting documentation referenced in the table below and attached as stamped "Approved Subject to Conditions" which forms part of this approval, unless otherwise specified by any condition of this approval.

Plan Name	Plan No.	Revision No.	Plan Date
Proposed Reconfiguration	27594/054	D	19 February 2015
Roadworks Allotment Grading & Drainage Plan	9407/09-14	C	August 2013

(b) One full set of the most up to date approved plans and supporting documentation must be held on site and available for inspection for the duration of the construction phase.

Reason

The development must comply with all planning scheme requirements as approved by this development permit.

Timing

During the operation and life of the development.

2. Water Supply

Condition
The development must be serviced by the public water supply. In particular,

A reticulated water supply must be provided to the frontage of each lot within the proposed development and connected to council's infrastructure in accordance with Part 9.4.4 Reconfiguring a lot code and Part 9.4.7 Works code.

Note: SC6.4 Development manual planning scheme policy may require a network analysis of the proposed subdivision to be undertaken.

Reason
To ensure that the development is appropriately serviced by a reticulated water supply infrastructure in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development.

3. Sewerage Reticulation

Condition
The development must be serviced by the public sewerage network, in particular:

Each allotment must be provided with a single property service and must be connected directly and separately to council's sewer in accordance Part 9.4.4 Reconfiguring a lot code and Part 9.4.7 Works code.

Note: SC6.4 Development manual planning scheme policy may require a network analysis of the proposed subdivision to be undertaken.

Reason
To ensure that the development is appropriately serviced by reticulated a sewer infrastructure in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development.

4. Confirmation of Existing Services

Condition
The developer must ensure that the existing services for each lot are contained within the individual allotments.

Reason
To ensure development is appropriately serviced by public services and/or facilities in accordance with with relevant code/s and policy direction.

Timing
Prior to the release of the survey plan.

5. Relocation of Utilities

Condition
The developer must be responsible for any relocation and/or alteration to any public utility installation required as a result of any works carried out in connection with this development at no cost to council.

Reason
To ensure development is appropriately serviced by public services and/or facilities in accordance with with relevant code/s and policy direction.

Timing
Prior to the release of the survey plan.

6. Soil Erosion Minimisation, Sediment Control

Condition
Due to the potential for significant erosion and sediment discharge from this project soil erosion and sediment control must be provided. A detailed Soil Erosion and Sediment Control Plan in accordance with Part 9.4.2 Healthy waters code must be provided as part of the Operational Works for the development.

During the construction phase of this development the developer must be responsible for the installation and maintenance of adequate erosion and sediment control management in accordance with Part 9.4.2 Healthy Waters Code.

Note: The contingent design, implementation and maintenance of measures must be provided in accordance with SC6.4.3.8.6 Development manual planning scheme policy.

Reason
Development ensures that the receiving waters during construction are managed from the effects of increased sediment run-off in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works application and during the construction phase of this development.

7. Minimum Lot Levels

Condition
The finished level on all new allotments created within the development site must be above the 1%AEP event in accordance with Part 8.2.3 Coastal protection overlay code and Part 8.2.6 Flood hazard overlay code.

The developer must submit a hydraulic report that determines these levels and the works involved to achieve this level of immunity.

Reason
To ensure lots are developed to be appropriately flood immune in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development.

8. Acid Sulphate Soils Management

Condition
Soil and groundwater investigations in accordance with 9.4.2 Healthy waters code must be conducted to support the proposed earthworks should the soil and groundwater investigations reveal the presence of acid sulphate soils or potential acid sulphate soils. Such investigations must be certified by a suitably qualified person and must be submitted to council as part of an Operational Works application.

Reason
To ensure potential adverse impacts on the natural and built environment, including infrastructure and human health as a result of acid sulphate soils are avoided in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development.

9. Street Lighting

Condition
Over head street lighting must be provided at the developer's cost and the following streets be in accordance with Part 9.4.6 Transport impact, access and parking code and the categories shown as per Australian Standards, AS/NZS 1158 - Road Lighting.

Road	Lighting
Edith Street	P4

Reason
To provide an appropriate level of safety and amenity for the development in accordance with relevant code/s and policy direction.

Timing
Prior to the development achieving on maintenance.

10. Electricity and Telecommunications

Condition
Electricity and telecommunications must be provided in accordance with Part 9.4.7 Works code.

Reason
To provide an appropriate level of electricity and telecommunication services for the development in accordance with relevant code/s and policy direction.

Timing
Prior to the development achieving on maintenance.

11. Stormwater Drainage Easements and Reserves

Condition

(a) The developer must at its cost grant and cause to be registered on the title documents all easements or reserves over all underground drains, constructed drainage works, improved drains and natural concentrated flow paths which are placed under the control of council.

(b) The developer must at its cost grant and cause to be registered on the title documents, all easements or reserves required by council or other public utility entity for access to or for the provision of essential services.

(c) The developer must at its cost cause to be registered surrenders of any existing easements and/or leases where necessary in connection with the subdivision.

(d) The extent and location of easements, reserves and surrenders required in (a) to (c) will, as far as possible, be determined prior to issue of the development permit for operational works or upon completion of works if subsequently found necessary.

Reason
To provide legal access for ongoing maintenance to stormwater drainage paths in accordance with relevant code/s and policy direction.

Timing
With the lodgement of the survey plan.

12. Stormwater Drainage

Condition
The development must manage stormwater drainage in accordance with Planning Scheme requirements. In particular the contingent design and implementation must be provided in accordance with Part 9.4.2 Healthy waters code.

Reason
To convey stormwater legally and in an environmentally responsible manner development in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development.

13. Roadworks

Condition
The developer must design and construct roads, along all road frontages to each lot and any modification to existing roads as shown on Drawing Number 27594/054 dated 19 February 2015. In particular:

(a) The developer must design and construct all the roads in the subdivision and all the intersections to existing streets in accordance with Part 9.4.6 Transport impact, access and parking code.

(b) A geotechnical survey/investigation must be submitted as part of the application for Operational Works and pavement designs must be submitted to and approved by council prior to the nominated subgrade inspection hold point being undertaken. The survey must identify ground water table levels, surface water paths, soil classification and stability (more likely on steep slope developments), unsuitable materials and existing nature of soil/rock and other relevant information that will facilitate proper design of all road elements such as subsurface drainage, pavement design and management of surface water run off and road geometric design.

(c) The road design for Edith Street must be in accordance with Cardno drawing 940/09-14C.

(d) Where the subdivision's roads, frontage treatments or services abut a state controlled road, a letter of approval from the Department of Transport and Main Roads must be submitted prior to an approval for Operational Works being issued.

(e) The developer shall upgrade Jurekey Street from the intersection with the Bruce Highway southwards to and including the intersection with Edith Street in accordance with Part 9.4.6 Transport impact, access and parking code to a road classification in accordance with Council's relevant Standard Drawing for an Industrial Road.

(f) The requirement identified in (e) above shall be completed within:
   (i) two (2) years of the date of signing the first Plan of Survey for any four (4) lots, excluding any lots which access to Jurekey Street; and/or
   (ii) prior to signing of the Plan of Survey for any additional lot over and above the four (4) identified in (i) above, whichever occurs first.

(g) The access to proposed Lot 5 must be approved by Council as part of the Operational Works application. If direct access to Jurekey Street is not approved by Council then an access easement from Jurekey Street to Lot 5 through Lot 10 (Balance Area) must be provided.

Note: Should the developer prefer to enter into an Infrastructure Agreement in order to formalise the arrangements around the timing and costs of the required upgrades to Jurekey Street identified in (e) above, the infrastructure agreement must be signed by both parties within two (2) years of the signing of the Plan of Survey by Council.

Reason
To ensure an appropriate transport networks is provided and maintained in accordance with relevant code/s and policy direction.

Timing
As part of the Operational Works for the development and/or prior to the release of the survey plan.

14. Street Trees

Condition
Street tree planting to beautify the neighbourhood is required in accordance with the Part 9.4.3 Landscape Policy.

Reason
Maintain/establish streetscape outcomes in accordance with relevant code/s and policy direction.

Timing
To be provided prior to the development being accepted "on Maintenance".

ADVICE

1. Further Approvals Required

(a) **Plumbing and Drainage Works**
The developer must obtain a Compliance Permit to carry out plumbing and drainage works prior to the commencement of sanitary drainage works.

(b) **Operational Works**
An Operational Works application must be submitted to council for approval prior to works commencing on site, unless otherwise approved by council.

All engineering, soil sediment and erosion control designs/documentation associated with such an application must be prepared and where necessary, certified by a suitably qualified/experienced person.

(c) **Roadworks Approval**
The developer is responsible for obtaining a Roadworks Approval in accordance with Local Laws 4 for the installation of any hoardings, gantries or temporary road closures of the footpath or road prior to the commencement of works. The application include the following:

(i) Completed Roadworks approval application form

(ii) Prescribed fee

(iii) Traffic Management Plan prepared by a suitably qualified traffic professional detailing the traffic management measures put in place to manage all roadworks including pedestrians, cyclists and vehicles in accordance with the Manual of Uniform Traffic Control Devices Part 3 - Works on Roads.

If the works require closure of part of the road reserve, a temporary Road Closure Permit will be required. This permit allows for a section of road reserve to be closed for the purpose of works. The Queensland Police Service is the issuing authority for these permits. An application will need to be made to Council for a letter of no objection prior to applying to the Queensland Police Service for the permit. The Traffic Management Plan will need to be included with the application to council.

2. Connection to Council Water Supply

A copy of this permit and the approved water reticulation design must be submitted to Council with the appropriate application form for connection to Council's water supply. Council will respond to the application with a quotation for the work and upon payment will schedule the works for connection.

3. Connection to Council Sewer

A copy of this permit and the approved sewer reticulation design must be submitted to Council with the appropriate application form for connection to Council's sewer supply. Council will respond to the application with a quotation for the work and upon payment will schedule the works for connection.

4. Portable Long Service Leave Notification

As per the Qleave – Building and Construction Industry Authority Guidelines, for works over $150,000, council must sight a copy of the receipted Portable Long Service Notification and Payment form prior to the issue of a Development Permit to carry out Operational Work.

5. Payment of Rates, Charges and Expenses

Prior to signing the survey plan, payment is required of any outstanding rates or charges levied by the Council or any expenses being a charge over the subject land

6. Satisfaction of Approval Conditions

(a) Unless explicitly stated elsewhere in this permit, all requirements of the conditions of this approval must be satisfied prior to council signing the survey plan.

(b) Council may, at its absolute discretion, agree to accept other forms of security to guarantee compliance with conditions to enable an early signing of a survey plan.

7. Limitation of Approval

The council and its officers make no representations and provide no warranties as to the accuracy of the information contained in the application including its supporting material provided to it by the applicant.

The council and its officers rely upon the applicant concerning the accuracy and completeness of the application and its supporting material and accepts the application and supporting material as constituting a representation by the applicant as to its accuracy and completeness. Insofar as the application and its supporting material may be incomplete and/or inaccurate giving rise to any claim by a third party the applicant agrees to indemnity and save the council harmless in respect of any claim so arising.

8. Specifications and Drawings

Details of Council's specifications and standard drawings can be viewed on Council's website.

REFERRAL AGENCY CONDITIONS

1. Concurrence Agency Conditions - State Development, Infrastructure and Planning

Pursuant to Section 285 and Section 287 of the *Sustainable Planning Act 2009*, the Department of State Development, Infrastructure and Planning advises that it has no objection to Townsville City Council issuing a Development Permit for Reconfiguring a Lot subject to the conditions, as attached.

RIGHTS OF APPEAL

Chapter 7, Part 1, Division 8 Appeals to court relating to development applications and approvals

461 Appeals by applicants

(1) An applicant for a development application may appeal to the court against any of the following—
- (a) the refusal, or the refusal in part, of the development application;
- (b) any condition of a development approval, another matter stated in a development approval and the identification or inclusion of a code under section 242;
- (c) the decision to give a preliminary approval when a development permit was applied for;
- (d) the length of a period mentioned in section 341;
- (e) a deemed refusal of the development application.

(2) An appeal under subsection (1)(a), (b), (c) or (d) must be started within 20 business days (the ***applicant's appeal period***) after—
- (a) if a decision notice or negotiated decision notice is given—the day the decision notice or negotiated decision notice is given to the applicant; or
- (b) otherwise—the day a decision notice was required to be given to the applicant.

(3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Chapter 7, Part 1, Division 11 making an appeal to court

481 How appeals to the court are started

(1) An appeal is started by lodging written notice of appeal with the registrar of the court.

(2) The notice of appeal must state the grounds of the appeal.

(3) The person starting the appeal must also comply with the rules of the court applying to the appeal.

(4) However, the court may hear and decide an appeal even if the person has not complied with subsection (3).

482 Notice of appeal to other parties—development applications and approvals

(1) An appellant under division 8 must give written notice of the appeal to—
- (a) if the appellant is an applicant—
  - (i) the chief executive; and
  - (ii) the assessment manager; and
  - (iii) any concurrence agency; and
  - (iv) any principal submitter whose submission has not been withdrawn; and
  - (v) any advice agency treated as a submitter whose submission has

not been withdrawn; or

(b) if the appellant is a submitter or an advice agency whose response to the development application is treated as a submission for an appeal—
  (i) the chief executive; and
  (ii) the assessment manager; and
  (iii) any referral agency; and
  (iv) the applicant; or

(c) if the appellant is a person to whom a notice mentioned in section 465(1) has been given—
  (i) the chief executive; and
  (ii) the assessment manager for the development application to which the notice relates; and
  (iii) any entity that was a concurrence agency for the development application to which the notice relates; and
  (iv) the person who made the request under section 383 to which the notice relates, if the person is not the appellant; or

(d) if the appellant is a person mentioned in section 466(1)—
  (i) the chief executive; and
  (ii) the responsible entity for making the change to which the appeal relates; and
  (iii) the person who made the request to which the appeal relates under section 369, if the person is not the appellant; and
  (iv) if the responsible entity is the assessment manager—any entity that was a concurrence agency for the development application to which the notice of the decision on the request relates; or

(e) if the appellant is a person to whom a notice mentioned in section 467 has been given—the entity that gave the notice.

(2) The notice must be given within—
  (a) if the appellant is a submitter or advice agency whose response to the development application is treated as a submission for an appeal—2 business days after the appeal is started; or
  (b) otherwise—10 business days after the appeal is started.

(3) The notice must state—
  (a) the grounds of the appeal; and
  (b) if the person given the notice is not the respondent or a co-respondent under section 485—that the person may, within 10 business days after the notice is given, elect to become a co-respondent to the appeal by filing in the court a notice of election in the approved form.

485 Respondent and co-respondents for appeals under division 8

(1) Subsections (2) to (8) apply for appeals under sections 461 to 464.
(2) The assessment manager is the respondent for the appeal.
(3) If the appeal is started by a submitter, the applicant is a co-respondent for the appeal.
(4) Any submitter may elect to become a co-respondent for the appeal.
(5) If the appeal is about a concurrence agency's response, the concurrence agency is a co-respondent for the appeal.

(6) If the appeal is only about a concurrence agency's response, the assessment manager may apply to the court to withdraw from the appeal.

(7) The respondent and any co-respondents for an appeal are entitled to be heard in the appeal as a party to the appeal.

(8) A person to whom a notice of appeal is required to be given under section 482 and who is not the respondent or a co-respondent for the appeal may elect to be a co-respondent.

(9) For an appeal under section 465—
- (a) the assessment manager is the respondent; and
- (b) if the appeal is started by a concurrence agency that gave the assessment manager a notice under section 385—the person asking for the extension the subject of the appeal is a co-respondent; and
- (c) any other person given notice of the appeal may elect to become a co-respondent.

(10) For an appeal under section 466—
- (a) the responsible entity for making the change to which the appeal relates is the respondent; and
- (b) if the responsible entity is the assessment manager—
  - (i) if the appeal is started by a person who gave a notice under section 373 or a pre-request response notice—the person who made the request for the change is a co-respondent; and
  - (ii) any other person given notice of the appeal may elect to become a co-respondent.

(11) For an appeal under section 467, the respondent is the entity given notice of the appeal.

488 How an entity may elect to be a co-respondent

An entity that is entitled to elect to be a co-respondent to an appeal may do so, within 10 business days after notice of the appeal is given to the entity, by following the rules of court for the election.

490 Lodging appeal stops particular actions

(1) If an appeal, other than an appeal under section 465, 466 or 467, is started under division 8, the development must not be started until the appeal is decided or withdrawn.

(2) If an appeal is about a condition imposed on a compliance permit, the development must not be started until the appeal is decided or withdrawn.

(3) Despite subsections (1) and (2), if the court is satisfied the outcome of the appeal would not be affected if the development or part of the development is started before the appeal is decided, the court may allow the development or part of the development to start before the appeal is decided.

Queensland Government

Department of
State Development, Infrastructure and Planning

Our reference: SDA-0115-017847
Your reference: RC14/0158 292001

19 March 2015

Townsville City Council
PO Box 1268
Townsville QLD 4810

Dear Mr Javier Samanes

Concurrence agency response—with conditions
38011 Bruce Highway - Cluden, Townsville City – QLD
(Given under section 285 of the *Sustainable Planning Act 2009*)

The referral agency material for the development application described below was received by the Department of State Development, Infrastructure and Planning under section 272 of the *Sustainable Planning Act 2009* on 28 January 2015.

Applicant details

Applicant name:	Toprise Australia
Applicant contact details:	595 Flinders Street Townsville QLD 4810 tsv.planning@braziermotti.com.au

Site details

Street address:	38011 Bruce Highway - Cluden, Townsville City – QLD
Lot on plan:	Lot 3 on EP1100 Lot 188 on EP1839 Lot 18 and 19 on RP705929 Lot 15 – 22 on SP105728

North Queensland Regional Office
Floor 4, Verde Building,
445 Flinders Street,
Po Box 1732 Townsville Qld 4810

	Lot 23 on SP105729
	Lot 2 on SP257322
	Lot 11 – 13 on SP262840
	Lot 10 on SP261127
Local government area:	Townsville City

Application details

Proposed development:	Development Permit for Reconfiguring a Lot (Boundary Realignment and Lot Amalgamation)

Aspects of development and type of approval being sought

Nature of Development	Approval Type	Brief Proposal of Description	Level of Assessment
Reconfiguring a Lot	Development Permit	Development Permit for Reconfiguring a Lot (Boundary Realignment and Lot Amalgamation)	Code Assessment

Referral triggers

The development application was referred to the department under the following provisions of the *Sustainable Planning Regulation 2009*:

Referral trigger	Schedule 7, Table 2, Item 2—State-controlled Road

Conditions

Under section 287(1)(a) of the *Sustainable Planning Act 2009*, the conditions set out in Attachment 1 must be attached to any development approval.

Reasons for decision to impose conditions

Under section 289(1) of the *Sustainable Planning Act 2009*, the department must set out the reasons for the decision to impose conditions. These reasons are set out in Attachment 2.

Relevant period

Under section 287(1)(d) of the *Sustainable Planning Act 2009*, the relevant period for any development approval is to in accordance with section 341(2) of the *Sustainable Planning Act 2009* for Development Permit for Reconfiguring a Lot (Boundary Realignment and Lot Amalgamation).

Further advice

Under section 287(6) of the *Sustainable Planning Act 2009*, the department offers advice about the application to the assessment manager—see Attachment 3.

Approved plans and specifications

The department requires that the following plans and specifications set out below and in Attachment 4 must be attached to any development approval.

Drawing/Report Title	Prepared by	Date	Reference no.	Version/Issue
Aspect of development: Development Permit for Reconfiguring a Lot (Boundary Realignment and Lot Amalgamation)				
Proposed Reconfiguration (Lots 1 – 10 Cancelling Lot 3 on EP1100 Lot 188 on EP1839, Lot 18 and 19 on RP705929, Lot 15 – 22 on SP105728, Lot 23 on SP105729, Lot 2 on SP257322, Lot 11 – 13 on SP262840, Lot 10 on SP261127	Brazier Motti	19th February 2015	27594/054	D

A copy of this response has been sent to the applicant for their information.

For further information, please contact Catherine Hobbs, Principal Planning Officer, SARA North QLD on 4758 3412, or email catherine.hobbs@dsdip.qld.gov.au who will be pleased to assist.

Yours sincerely

Graeme Kenna
Planning Manager

cc: Toprise Australia, tsv.planning@braziermotti.com.au
enc: Attachment 1—Conditions to be imposed
Attachment 2—Reasons for decision to impose conditions
Attachment 3—Further advice
Attachment 4—Approved Plans and Specifications

Our reference: SDA-0115-017847
Your reference: RC14/0158 292001

Attachment 1—Conditions to be imposed

No.	Conditions	Condition timing
Development Permit for Reconfiguring a Lot (Boundary Realignment and Lot Amalgamation)		
Schedule 7, Table 2, Item 2—State-Controlled Road—Pursuant to section 255D of the *Sustainable Planning Act 2009*, the chief executive administering the *Sustainable Planning Act 2009* nominates the Director-General of the Department of Transport and Main Roads to be the assessing authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	The development must be carried out generally in accordance with the following plans: • Proposed Reconfiguration (Lots 1 – 10 Cancelling Lot 3 on EP1100 Lot 188 on EP1839, Lot 18 and 19 on RP705929, Lot 15 – 22 on SP105728, Lot 23 on SP105729, Lot 2 on SP257322, Lot 11 – 13 on SP262840, Lot 10 on SP261127, prepared by Brazier Motti, dated 19th February 2015, Plan No. 27594/054 D	At all times
2.	Direct access is not permitted between the Bruce Highway and the subject site, specifically proposed lots 1, 2, 3, 5, 7, 9 and 10.	At all times.
3.	Provide to Team Leader, Project Planning and Corridor Management, Department of Transport and Main Roads (Northern District), registration confirmation statement/s and easement registration dealing number/s as evidence of the registration of the following reciprocal vehicle access easements as shown on approved plan titled 'Proposed Reconfiguration' prepared by Brazier Motti dated 19 February 2015. Ref: 27594/054 revision D. a) Easement B burdening lot 10 in favour of lot 5 b) Easement C burdening lot 9 in favour of lot 7.	Within 20 business days of registration with the Titles Office.

Our reference: SDA-0115-017847
Your reference: RC14/0158 292001

Attachment 2—Reasons for decision to impose conditions

The reasons for this decision are:

- Condition 1 – To ensure the development is carried out generally in accordance with the plans of development submitted with the application
- Condition 2 – To ensure access to the state-controlled road from the site does not compromise the safety and efficiency of the state-controlled road.
- Condition 3 – To ensure access to the state-controlled road from the site does not compromise the safety and efficiency of the state-controlled road.

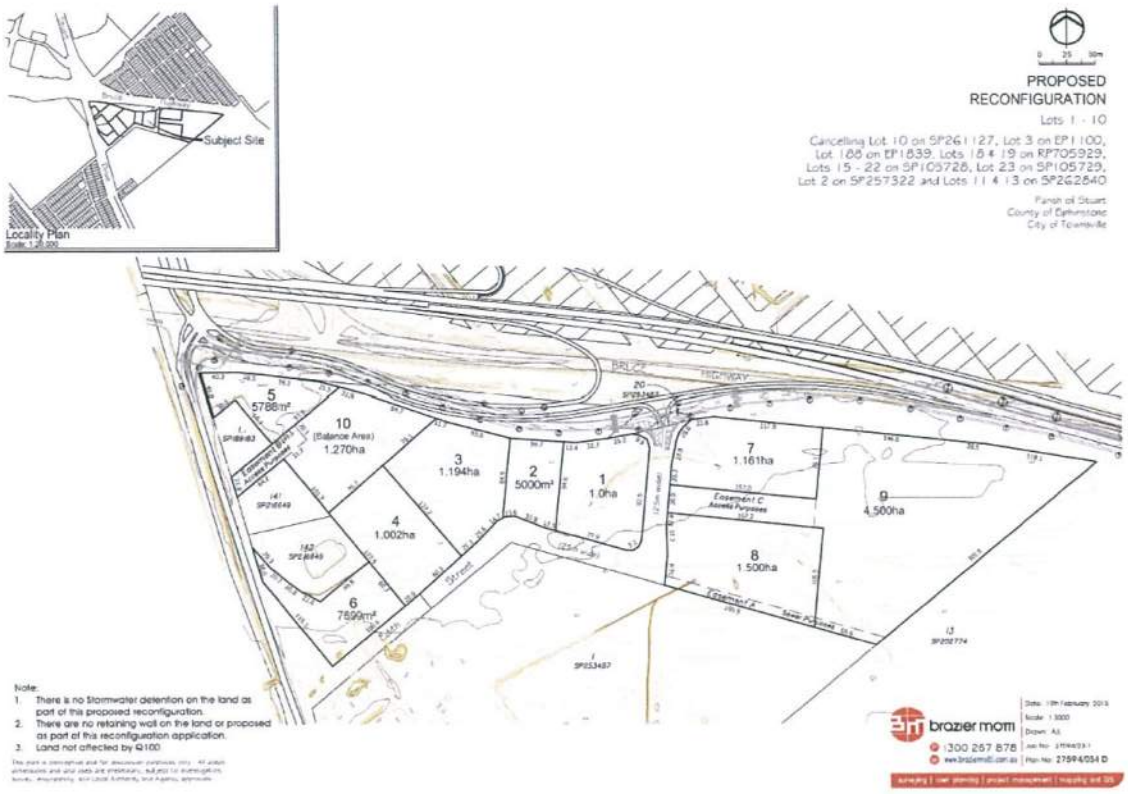
Our reference: SDA-0115-017847
Your reference: RC14/0158 292001

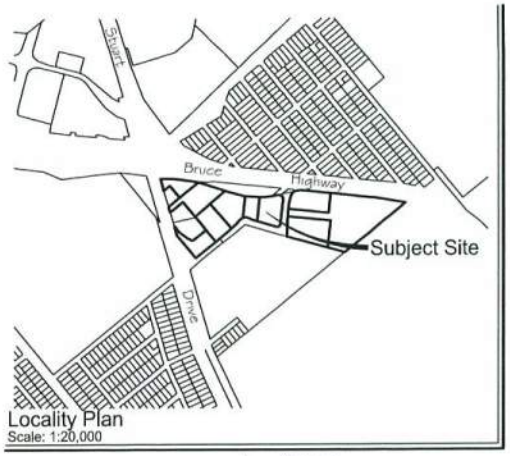
Attachment 3—Further advice

General advice	
1.	**Stormwater and Drainage impacts on the state-controlled road** Future developers/owners of the land must comply with the overarching stormwater management plan, approved by DTMR. Please refer to the Stormwater Management Plan entitled 'Toprise Transport Depot, Cluden, QLD Stormwater Management Strategy' prepared by Cardno dated 5 July 2013, and given reference/revision number 9407/09/002R1. In particular, any works on the subject land must not: i. create any new discharge points for stormwater runoff onto the state-controlled road; ii. interfere with and/or cause damage to the existing stormwater drainage on the state-controlled road; iii. surcharge any existing culvert or drain on the state-controlled road; iv. reduce the quality of stormwater discharge onto the state-controlled road.

Our reference: SDA-0115-017847
Your reference: RC14/0158 292001

Attachment 4—Approved plans and specifications





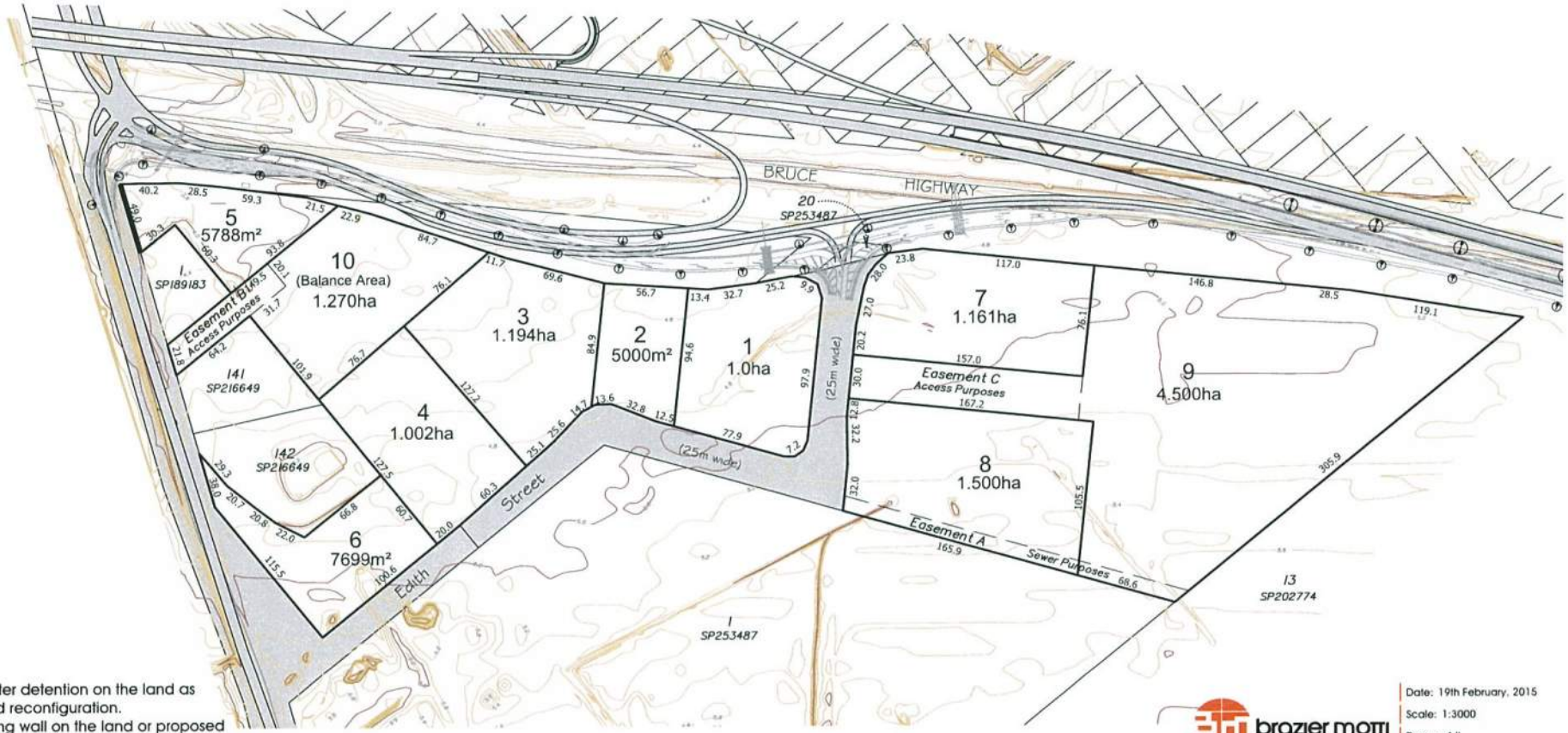
0 25 50m

PROPOSED RECONFIGURATION

Lots 1 - 10

Cancelling Lot 10 on SP261127, Lot 3 on EP1100, Lot 188 on EP1839, Lots 18 & 19 on RP705929, Lots 15 - 22 on SP105728, Lot 23 on SP105729, Lot 2 on SP257322 and Lots 11 & 13 on SP262840

Parish of Stuart
County of Elphinstone
City of Townsville



Note:

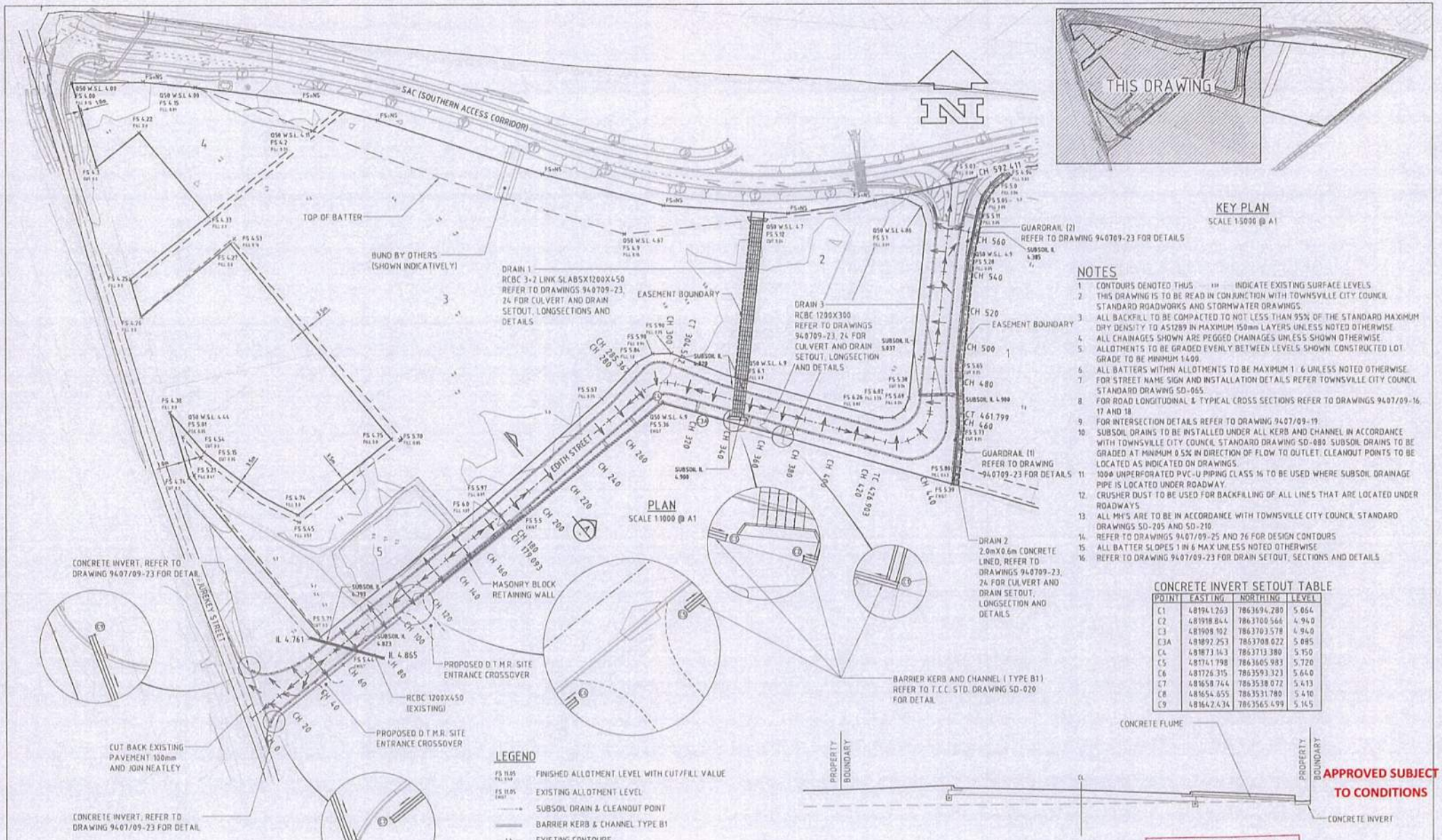
1. There is no Stormwater detention on the land as part of this proposed reconfiguration.
2. There are no retaining wall on the land or proposed as part of this reconfiguration application.
3. Land not affected by Q100.

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering, and Local Authority and Agency approvals.

APPROVED SUBJECT TO CONDITIONS

brazier motti
1300 267 878
www.braziermotti.com.au
surveying | town planning | project management | mapping and GIS

Date: 19th February, 2015
Scale: 1:3000
Drawn: AJL
Job No: 27594/23-1
Plan No: 27594/054 D



PLAN
SCALE 1:1000 @ A1

KEY PLAN
SCALE 1:5000 @ A1

NOTES

1. CONTOURS DENOTED THUS ---- 111 ---- INDICATE EXISTING SURFACE LEVELS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH TOWNSVILLE CITY COUNCIL STANDARD ROADWORKS AND STORMWATER DRAWINGS.
3. ALL BACKFILL TO BE COMPACTED TO NOT LESS THAN 95% OF THE STANDARD MAXIMUM DRY DENSITY TO AS1289 IN MAXIMUM 150mm LAYERS UNLESS NOTED OTHERWISE.
4. ALL CHAINAGES SHOWN ARE PEGGED CHAINAGES UNLESS SHOWN OTHERWISE.
5. ALLOTMENTS TO BE GRADED EVENLY BETWEEN LEVELS SHOWN. CONSTRUCTED LOT GRADE TO BE MINIMUM 1:400.
6. ALL BATTERS WITHIN ALLOTMENTS TO BE MAXIMUM 1 : 6 UNLESS NOTED OTHERWISE.
7. FOR STREET NAME SIGN AND INSTALLATION DETAILS REFER TOWNSVILLE CITY COUNCIL STANDARD DRAWING SD-065.
8. FOR ROAD LONGITUDINAL & TYPICAL CROSS SECTIONS REFER TO DRAWINGS 9407/09-16, 17 AND 18.
9. FOR INTERSECTION DETAILS REFER TO DRAWING 9407/09-19.
10. SUBSOIL DRAINS TO BE INSTALLED UNDER ALL KERB AND CHANNEL IN ACCORDANCE WITH TOWNSVILLE CITY COUNCIL STANDARD DRAWING SD-080. SUBSOIL DRAINS TO BE GRADED AT MINIMUM 0.5% IN DIRECTION OF FLOW TO OUTLET. CLEANOUT POINTS TO BE LOCATED AS INDICATED ON DRAWINGS.
11. 100Φ UNPERFORATED PVC-U PIPING CLASS 16 TO BE USED WHERE SUBSOIL DRAINAGE PIPE IS LOCATED UNDER ROADWAY.
12. CRUSHER DUST TO BE USED FOR BACKFILLING OF ALL LINES THAT ARE LOCATED UNDER ROADWAYS.
13. ALL MH'S ARE TO BE IN ACCORDANCE WITH TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS SD-205 AND SD-210.
14. REFER TO DRAWINGS 9407/09-25 AND 26 FOR DESIGN CONTOURS.
15. ALL BATTER SLOPES 1 IN 6 MAX UNLESS NOTED OTHERWISE.
16. REFER TO DRAWING 9407/09-23 FOR DRAIN SETOUT, SECTIONS AND DETAILS.

CONCRETE INVERT SETOUT TABLE

POINT	EASTING	NORTHING	LEVEL
C1	481941.263	7863694.280	5.064
C2	481918.844	7863700.566	4.940
C3	481908.102	7863703.578	4.940
C3A	481892.253	7863708.022	5.085
C4	481873.143	7863713.380	5.150
C5	481741.798	7863605.983	5.720
C6	481726.315	7863593.323	5.640
C7	481658.744	7863538.072	5.413
C8	481654.655	7863531.780	5.410
C9	481642.434	7863565.499	5.145

LEGEND

- FS 11.05 / FEL 9.94 — FINISHED ALLOTMENT LEVEL WITH CUT/FILL VALUE
- FS 11.05 / EXIST — EXISTING ALLOTMENT LEVEL
- SUBSOIL DRAIN & CLEANOUT POINT
- BARRIER KERB & CHANNEL TYPE B1
- 111 — EXISTING CONTOURS
- SURFACE FLOW ARROW
- TOP OF BATTER U.N.O.

SECTION A - DRAIN OUTLET
SCALE N.T.S.

SCALE 1:1000 @ A1
SCALE 1:2000 @ A3

APPROVED SUBJECT TO CONDITIONS

TOWNSVILLE CITY COUNCIL
REC'D 20 DEC 2013
TOWN PLANNING

REAL PROPERTY DESCRIPTION

LOTS 1 - 5
CANCELLING LOTS 1,2,3,18,19,20,23,188 ON RP725002, SP115200, EP110, RP 705929, SP105728, SP105729, EP1839

Rev	Date	Description	Des	Verif	Appr
C	19/12/2013	PLAN AMENDED	PK	MS	MB
B	25/10/2013	INVERTS AND BOUNDARY KERB DRAINAGE ADDED AND AMENDED	PK	MS	MB
A	15/08/2013	ISSUED FOR TENDER	PK	JM	MB

Verified: JM — Date
Approved: M. BANCROFT RPEQ No. 10801 — Date

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Cardno — Shaping the Future

Drawn: PK	Date: 15/08/2013	Client: TOPRISE AUSTRALIA PTY LTD	Status: FOR TENDER ONLY — NOT TO BE USED FOR CONSTRUCTION PURPOSES
Checked: JM	Date: 15/08/2013	TSDA PROPOSED DEVELOPMENT SITES CLUDEN, TOWNSVILLE	Datum: A.H.D. / Date: 08/2013 / Scale: AS SHOWN / Size: A1
Designed: PK	Date: 15/08/2013	ROADWORKS ALLOTMENT GRADING & DRAINAGE PLAN SHEET 1 OF 2	Drawing Number: 9407/09-14 / Revision: C
Verified	Date		
Approved	Date		

Appendix C Previous Traffic Assessment – Cardno, 15 Aug 2013

SLR

Technical Memorandum

Title	**Cluden Industrial Road and Access Strategy**		
Client	Toprise Australia Pty Ltd	**Project No**	940709
Date	15 August 2013	**Status**	Final
Author	Anette Morse	**Discipline**	Traffic and Transport
Reviewer	Justin Jahnke & Brett McClurg	**Office**	Brisbane

Executive Summary

Cardno has been commissioned by Toprise Australia Pty Ltd to assess the road and access arrangements for a proposed development site located to the south of the Bruce Highway and east of Jurekey Street in Cluden.

The assessment has been commissioned in response to requests from Townsville Regional Council regarding the recommended intersection form at the proposed Jurekey Street/Edith Street intersection (site access) and the general form required for Jurekey Street between Edith Street and the Bruce Highway.

The assessment has considered the likely traffic generation of the proposed development, which consists of a mix of Industrial and Transport related uses along with a proposed service station site. Access to the site is proposed via a left in/left out to the proposed Bruce Highway off ramp, as well as a new intersection on Jurekey Street (Edith Street).

The proposed development has the potential to generate around 733vpd and 633vph in the AM and PM peak hours respectively, at 2024. With the proposed access arrangements, it is likely that traffic volumes on Jurekey Street (between Edith Street and the Bruce Highway) will increase by 400vph and 300vph in the AM and PM peak hours respectively. Applying a 10% peak to daily ratio, this results in around 3,500vpd being added to the existing daily volume of around 800vpd.

The Jurekey Street road pavement is currently around 7.5m in width, within an approximate 29m reserve. Council's typical road cross sections identify a Commercial/Industrial Collector Street with a pavement width of 14m within a 25m reserve. Given there is no fronting development on the western side of Jurekey Street (due to the rail line) it could be reasonable for the proposed road pavement to be reduced to 12m as parking is unlikely to be required on that side. This is considered to be a suitable cross section for Jurekey Street in its ultimate form servicing existing development and this proposed development.

An unsignalised T intersection is recommended for the control of the Jurekey Street/Edith Street intersection, as shown schematically on Figure 1 herein.

Introduction

Cardno has been commissioned by Toprise Australia Pty Ltd to assess the road and access arrangements for a proposed development site located to the south of Bruce Highway and east of Jurekey Street in Cluden.

The site is located in the Transport and Support Services Precinct within the Townsville State Development Area (TSDA).

The site layout used as a basis for this assessment is shown on Drawing Number 9407/09-SK20 included at Appendix A.

This Traffic Assessment considers the access intersection form required at the proposed Jurekey Street/Edith Street intersection and the general form required for Jurekey Street between Edith Street and the Bruce Highway.

Development Details

The development proposes subdivision of five lots for the purpose of land uses consistent with the TSDA guidelines. One of the lots is set aside for a service station and the remaining four will likely have light, medium or road industrial classifications. The site area and estimated yield (GFA) of the sites (for use in traffic generation calculations) are summarised in Table 1.

Table 1 Site Land Use and Yield

Area	Land Use	Size (ha)	Adopted Plot Ratio	Adopted GFA (sq.m)
Lot 1	Light/Medium/Road Industry	7.15	0.5	35,750
Lot 2	Service Station	1.00		-
Lot 3	Light/Medium/Road Industry	3.37	0.5	16,850
Lot 4	Light/Medium/Road Industry	0.52	0.5	2,600
Lot 5	Light/Medium/Road Industry	0.77	0.5	3,850
TOTAL		**12.81**		**59,050**

Lot 6 has been set aside for a potential future road reserve.

The Transport Assessment Guideline (Queensland Transport), Preconstruction Processes Manual (Department of Main Roads) and Guide to Traffic Generating Development (Roads and Traffic Authority) have been consulted to identify representative traffic generation rates associated with this type of development. The adopted traffic generation rates represents a mix of light, medium and road industry land uses and the resulting traffic volumes (vehicles per hour, vph) are outlined in Table 2.

Table 2 Traffic Generation

Area	Land Use	Adopted GFA (sq.m)	Generation Rate	Traffic Volume (vph)
Lot 1	Light/Medium/Road Industry	35,750	0.7vph/100sq.m GFA	250
Lot 2	Service Station	N/A	10% of Bruce Highway westbound traffic	
Lot 3	Light/Medium/Road Industry	16,850	0.7vph/100sq.m GFA	118
Lot 4	Light/Medium/Road Industry	2,600	0.7vph/100sq.m GFA	18
Lot 5	Light/Medium/Road Industry	3,850	0.7vph/100sq.m GFA	27
TOTAL		**59,050**		**413**

The service station traffic generation is based on the expected draw from passing westbound traffic on the Bruce Highway. Based on experience with similar developments it is anticipated that the service station would draw approximately 10% of traffic from passing westbound traffic on the Bruce Highway. Future year traffic volumes on the Bruce Highway have been extracted from traffic forecasts for the area obtained from the "*Report for the Bruce Highway Southern Access Corridor Vantassel Street to Cluden Traffic Analysis Report*" produced by GHD in October 2010. Table 3 summarises the estimated service station traffic generation at a 2014 and a 2024 future year.

Table 3 Service Station Traffic Generation

Year	Bruce Highway Volumes		Service Station	
	AM Peak (vph)	PM Peak (vph)	AM Peak (vph)	PM Peak (vph)
2014	781	591	156 (78in/78out)	118 (59in/59out)
2024	1,599	1,101	320 (160in/160out)	220 (110in/110out)

Surrounding Road Network

Bruce Highway

The Bruce Highway upgrade, Vantassel Street to Cluden section, forms part of the ultimate development of the Townsville Southern Access Corridor. The project includes duplication of the Bruce Highway to four lanes and improved connection to support the TSDA. As part of the upgrade, the Abbott Street and Jurekey Street intersections with the Bruce Highway are to be realigned with a grade separated connection between these two links.

A service road is proposed as part of the on and off ramp along the northern boundary of the site. Current planning allows left in/left out access to Edith Street from the Bruce Highway west bound off ramp.

Jurekey Street

Jurekey Street will connect to Abbott Street and the Bruce Highway via a T-intersection with the Bruce Highway service road. Jurekey Street would connect as the minor approach with priority on the Bruce Highway ramps/service road.

Jurekey Street has an existing sealed pavement of approximately 7.5m. The link has a rural configuration without kerb and channel. It is understood that the Department of Transport and Main Roads (TMR) will upgrade the Jurekey Street/Bruce Highway intersection as part of the Bruce Highway upgrade.

Site Access

It is proposed to gain access to the proposed development site from the planned Bruce Highway off ramp to Abbott Street which would connect through the site to Jurekey Street. The new road, herein referred to as Edith Street, would be located on the south western boundary of the site and provide direct access for the site and the adjacent RoadTek development. The following sections discuss key elements of the surrounding road network.

Access from the Bruce Highway east is provided via the left in/left out intersection with Edith Street. Access from all other areas will be provided from Jurekey Street. Access to all other areas can either be undertaken via the Bruce Highway/Edith Street intersection, the Jurekey Street/Edith Street intersection or the Jurekey Street/potential access intersection depending on the location of each site. For the purposes of the intersection analysis it is assumed that all access to Jurekey Street from the proposed development is via Edith Street.

It is understood that B Double access will be permissible at the Jurekey Street/Bruce Highway intersection but that restrictions will apply to road trains. Road train access will therefore be limited to the Edith Street/Bruce Highway intersection only. This reflects the existing heavy vehicle routes defined by TMR in the area.

Traffic Distribution

Traffic volumes associated with the industrial components of the development have been distributed to external destinations as follows:

> Bruce Highway East (in the direction of Ayr)	30%
> Bruce Highway West (in the direction of the University)	30%
> Jurekey Street South	5%
> Abbot Street North	35%.

Traffic is predominantly inbound in the morning (80%IN/20%OUT) and outbound in the afternoon (20%IN/80%OUT).

The service station is expected to have a more directional distribution with westbound traffic on the Bruce Highway generating the majority of inbound movements. A small proportion of inbound traffic is expected from Jurekey Street. Traffic associated with the service station has been distributed as follows:

> Bruce Highway East	95%IN/0%OUT
> Bruce Highway West	0%IN/85%OUT
> Jurekey Street South	5%IN/5%OUT
> Abbot Street North	0%IN/10%OUT.

Traffic associated with the service station is expected to have a shorter duration of stay and a 50%IN/50%OUT directional split in both the AM and PM peak.

Traffic Volumes

The Jurekey Street/Edith Street intersection has been assessed using SIDRA Intersection software to identify the required configuration with the development.

The assessment considers a 2014 year of opening and a 2024 ten year design horizon scenario. Background traffic volumes and heavy vehicle percentages have been identified from a recent traffic count undertaken by Austraffic on 9 July 2013 on Jurekey Street north of RoadTek. Traffic from RoadTek has been removed and assessed separately. A linear 5% growth has been applied to the existing traffic count volumes to identify the future year traffic volumes on Jurekey Street. The development is expected to generate a relatively high proportion of heavy vehicles. For the purpose of this Traffic Assessment development traffic is expected to have a heavy vehicle composition of 15%.

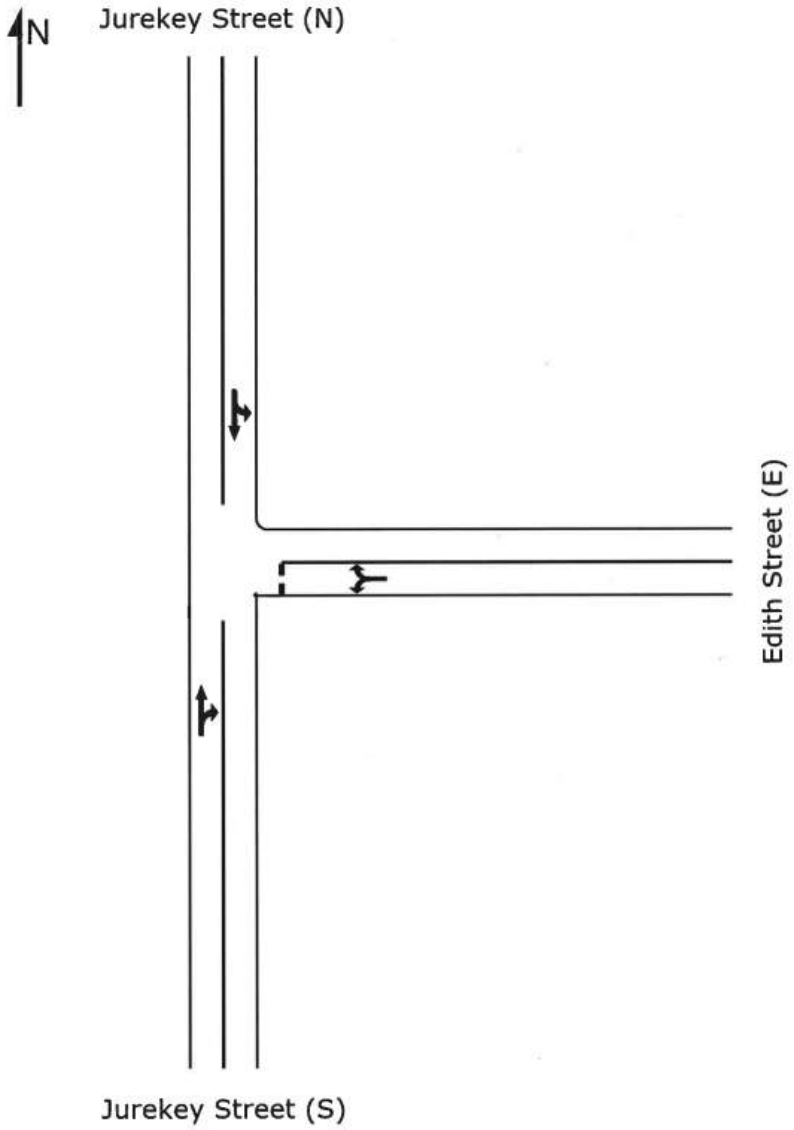
It is proposed to provide a new access to RoadTek from Edith Street. Traffic volumes from this site have been based on the traffic count volumes. It has been assumed that 40% of the existing traffic will continue to use the existing access and that the remaining traffic will access via Edith Street.

The resulting traffic volumes are plotted at Appendix B.

Intersection Assessment

SIDRA analysis has been undertaken for an unsignalised T intersection as shown on Figure 1.

Figure 1 SIDRA Layout



This intersection type has a maximum Degree of Saturation of 0.80. Given that the site has a higher than typical composition of large vehicles the heavy vehicle queue space has been increased from the default distance of 13m to 20m (see Appendix B for further detail). The SIDRA results are summarised in Table 4.

Table 4 SIDRA Results

Scenario	Weekday AM Peak			Weekday PM Peak		
	DOS	Delay (sec)	95th%le Queue (m)	DOS	Delay (sec)	95th%le Queue (m)
2014 Design Horizon	0.16	8	5	0.30	7	12
2024 Design Horizon	0.28	8	10	0.38	8	17

The SIDRA analysis in Table 4 shows that the proposed priority intersection can operate satisfactory for the proposed development at opening and at the ten year design horizon. This is based on an assumption of 5% traffic growth per annum on Jurekey Street.

Road Network Requirements

Jurekey Street

The development will generate some 300-400vph on Jurekey Street in the section between Edith Street and the Bruce Highway. Applying a 10% peak to daily ratio, this results in around 3,500vpd being added to the existing daily volume of around 800vpd.

The Jurekey Street road pavement is currently around 7.5m in width, within an approximate 29m reserve. Council's typical road cross sections identify a Commercial/Industrial Collector Street with a pavement width of 14m within a 25m reserve. This is considered to be a suitable cross section for Jurekey Street in its ultimate form servicing existing development, this proposed development, and Given there is no fronting development on the western side of Jurekey Street (due to the rail line) it could be reasonable for the proposed road pavement to be reduced to 12m as parking is unlikely to be required on that side.

The existing pavement width does not meet Council's recommended cross sections. This is an existing deficiency.

Edith Street

Based on the function of Edith Street, it is expected that the new link will need to be designed to an industrial cross section standard. The development will contribute a traffic volume of approximately 130-250vph at the northern end of the link. Approximately 300 - 400vph is anticipated to be carried at the western end of Edith Street.

Swept path analysis showing the turn path of a Type 2 Road Train from each potential access point has been included at Appendix D. This has been prepared to assist in discussions with Council regarding the form of the internal road cross sections.

Jurekey Street/Edith Street Intersection

The intersection analysis suggests that a unsignalised T intersection will be adequate at the Jurekey Street/Edith Street intersection. The intersection layout will need to accommodate the turn paths of B Double vehicles.

Cluden Industrial

APPENDIX A
SITE LAYOUT

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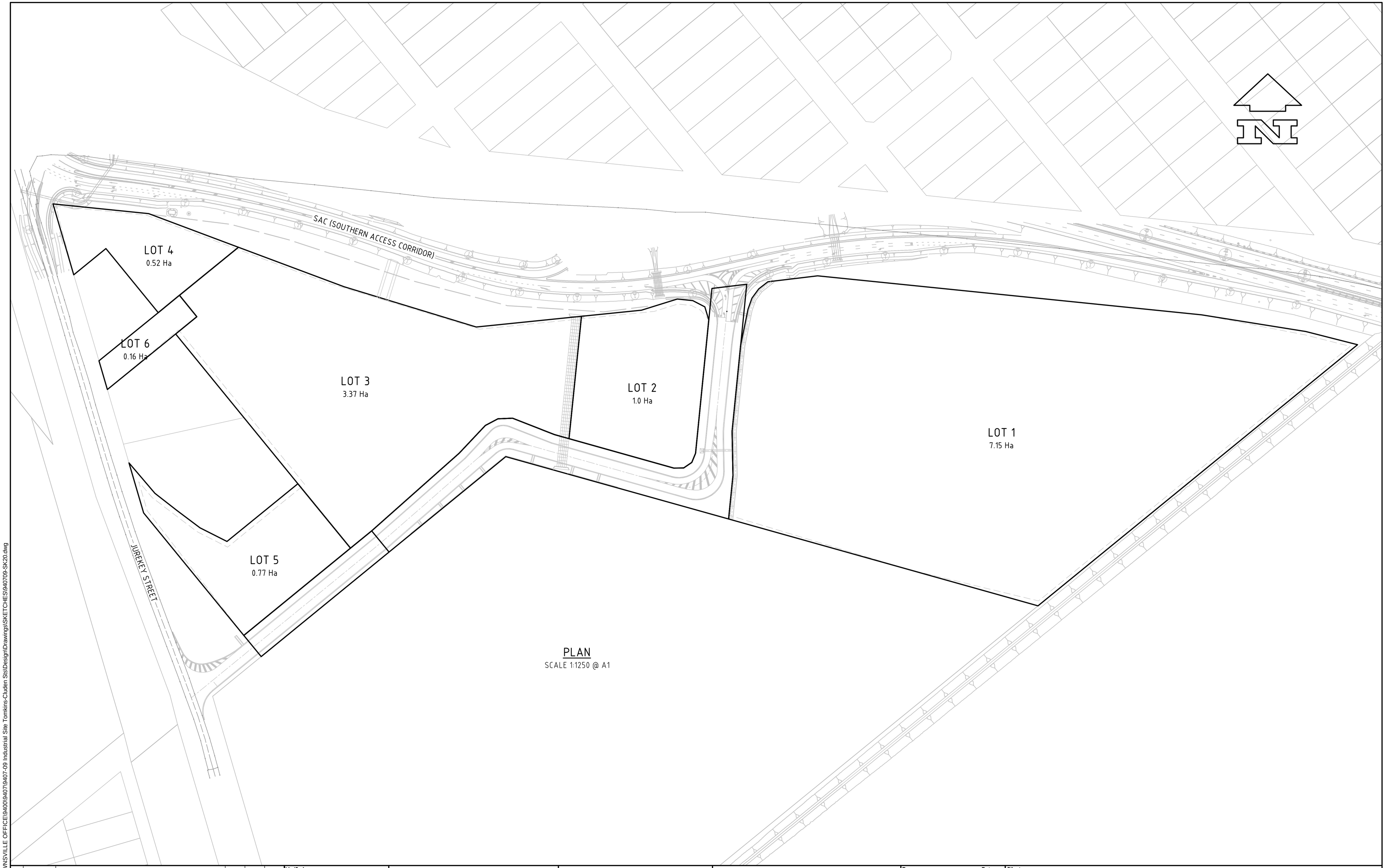

PLAN
SCALE 1:1250 @ A1

DATE PLOTTED: 9 July 2013 3:42 PM
CAD FILE: S:\PROJECTS\TOWNSVILLE OFFICE\9400\9407\9407-09 Industrial Site Tomkins-Cluden Sts\Design\Drawings\SKETCHES\9407\09-SK20.dwg

Rev	Date	Description	Des.	Verif.	Appr.
A	09/07/2013	ISSUED FOR INFORMATION	PK		

Verified
Date
Approved
Date
RPEQ No. 10801

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Drawn	PK	Date 22/01/2013
Checked		Date
Designed		Date
Verified		Date
Approved		Date

Client
TOPRISE AUSTRALIA PTY LTD

TSDA PROPOSED DEVELOPMENT SITES
CLUDEN, TOWNSVILLE

LOT AREAS

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D.	07/2013	AS SHOWN	A1

Drawing Number
9407/09-SK20

Revision
A

Cluden Industrial

APPENDIX B
TRAFFIC VOLUMES

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Development Details

Area	Land Use	Size (ha)	Plot Ratio	GFA (sq.m)
Lot 1	Light/Medium/Road Industry	7.15	0.5	35,750
Lot 2	Service Station	1.00		-
Lot 3	Light/Medium/Road Industry	3.37	0.5	16,850
Lot 4	Light/Medium/Road Industry	0.52	0.5	2,600
Lot 5	Light/Medium/Road Industry	0.77	0.5	3,850
TOTAL		**12.81**		**59,050**

*The GFA of the service station is estimated based on similar development

Traffic Generation

Area	Land Use	GFA (sq.m)	Generation Rate	Traffic Volume (vph)
Lot 1	Light/Medium/Road Industry	35,750	0.7vph/100sq.m GFA	250
Lot 2	Service Station	N/A	10% of Bruce Highway	
Lot 3	Light/Medium/Road Industry	16,850	0.7vph/100sq.m GFA	118
Lot 4	Light/Medium/Road Industry	2,600	0.7vph/100sq.m GFA	18
Lot 5	Light/Medium/Road Industry	3,850	0.7vph/100sq.m GFA	27
TOTAL		**59,050**		**413**

Service Station Traffic Generation at Assessment Years

Year	AM Peak	PM Peak
2014	156	118
2024	320	220

IN/OUT Distribution

	Light/Medium/Road Industry		Service Station	
Peak	**IN**	**OUT**	**IN**	**OUT**
AM Peak	80%	20%	50%	50%
PM Peak	20%	80%	50%	50%

Vehicle Composition

Vehicle Type	**Length (m)**	**%**
SMR	8.8	20%
HRV	12.5	20%
Semi Trailer	19.0	20%
Long Semi Trailer	25.0	20%
B Double	25.0	20%
Average HV	18.1	
Adopted HV Length	**18.0**	
Adopted HV Storage Length	**20.0**	

Traffic Generation - Lot 1

Period	IN	OUT	TOTAL
AM Peak	200	50	250
PM Peak	50	200	250

Traffic Generation - Lot 2 (2014)

Period	IN	OUT	TOTAL
AM Peak	78	78	156
PM Peak	59	59	118

Traffic Generation - Lot 2 (2024)

Period	IN	OUT	TOTAL
AM Peak	160	160	320
PM Peak	110	110	220

Traffic Generation - Lot 3

Period	IN	OUT	TOTAL
AM Peak	94	24	118
PM Peak	24	94	118

Traffic Generation - Lot 4

Period	IN	OUT	TOTAL
AM Peak	15	4	18
PM Peak	4	15	18

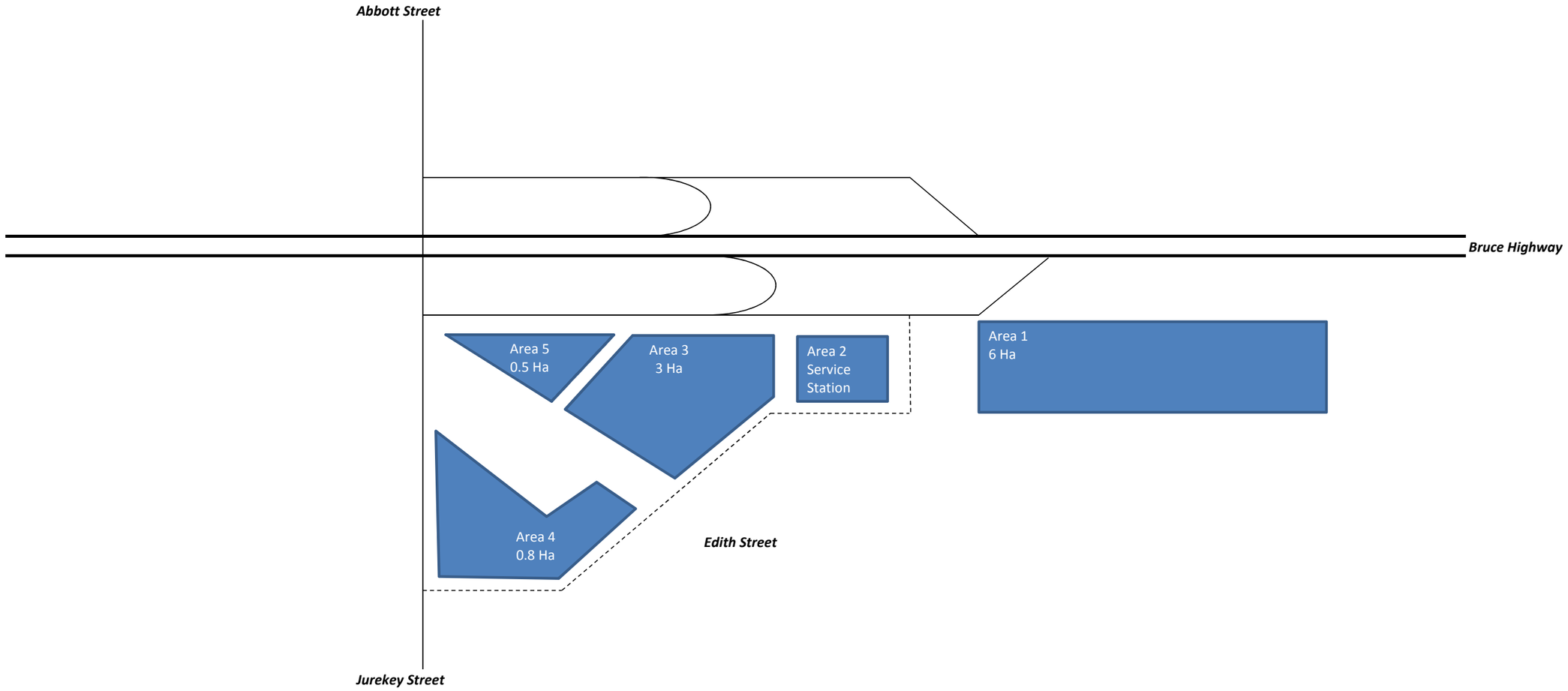
Traffic Generation - Lot 5

Period	IN	OUT	TOTAL
AM Peak	22	5	27
PM Peak	5	22	27

Traffic Generation - TOTAL

Period	IN	OUT	TOTAL
AM Peak	409	161	570
PM Peak	142	390	532

Development Layout



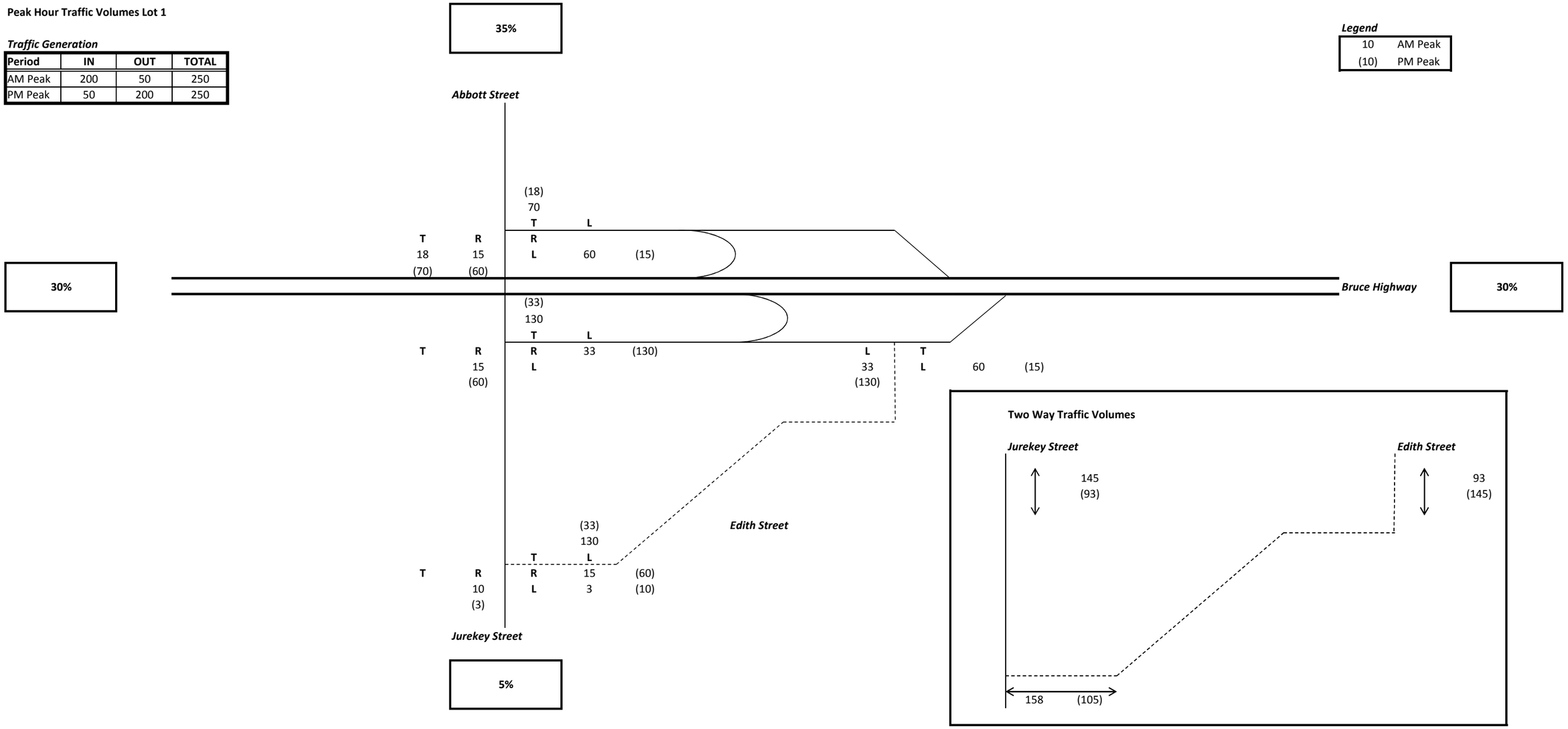
Peak Hour Traffic Volumes Lot 1

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	200	50	250
PM Peak	50	200	250

Legend

10	AM Peak
(10)	PM Peak



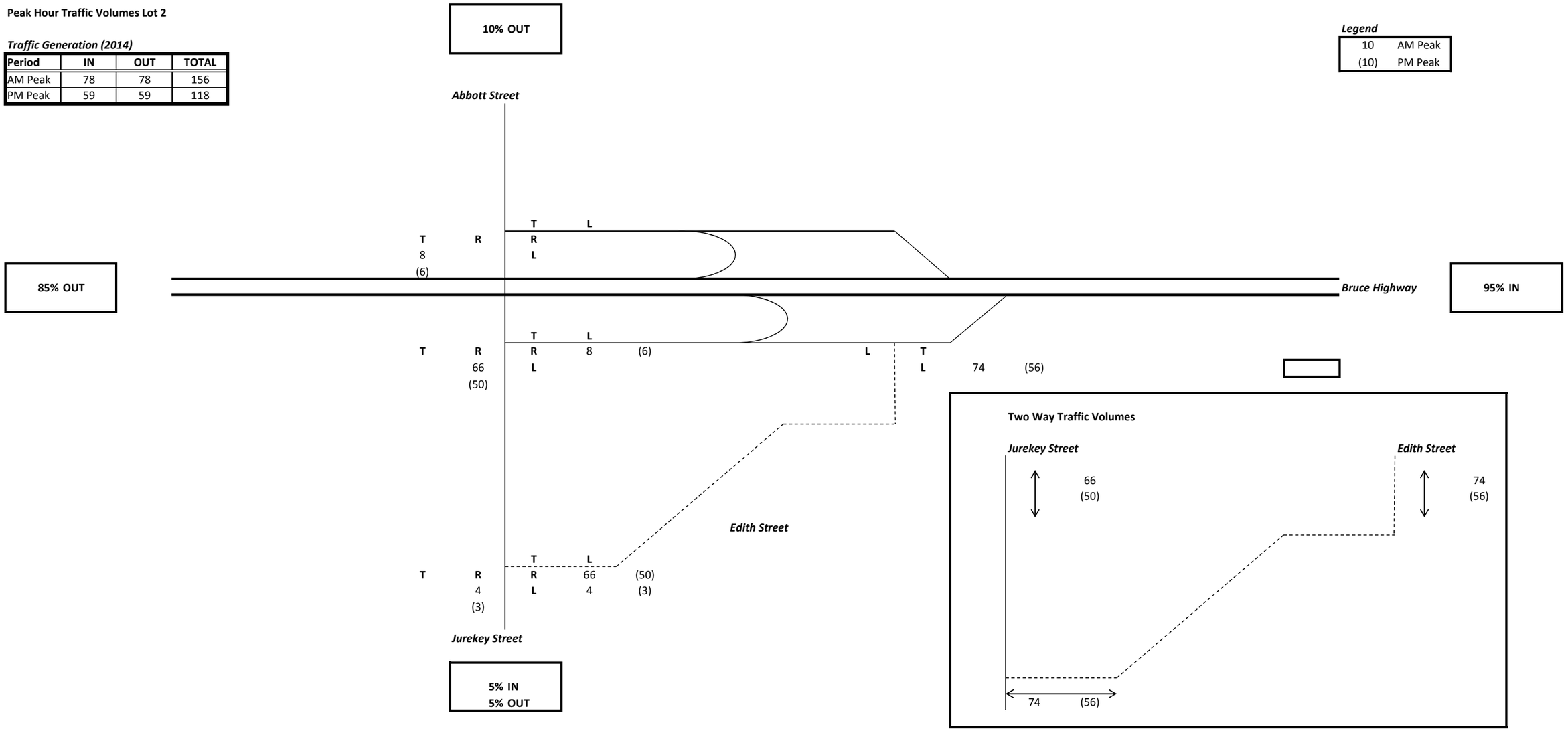
Peak Hour Traffic Volumes Lot 2

Traffic Generation (2014)

Period	IN	OUT	TOTAL
AM Peak	78	78	156
PM Peak	59	59	118

Legend

10	AM Peak
(10)	PM Peak



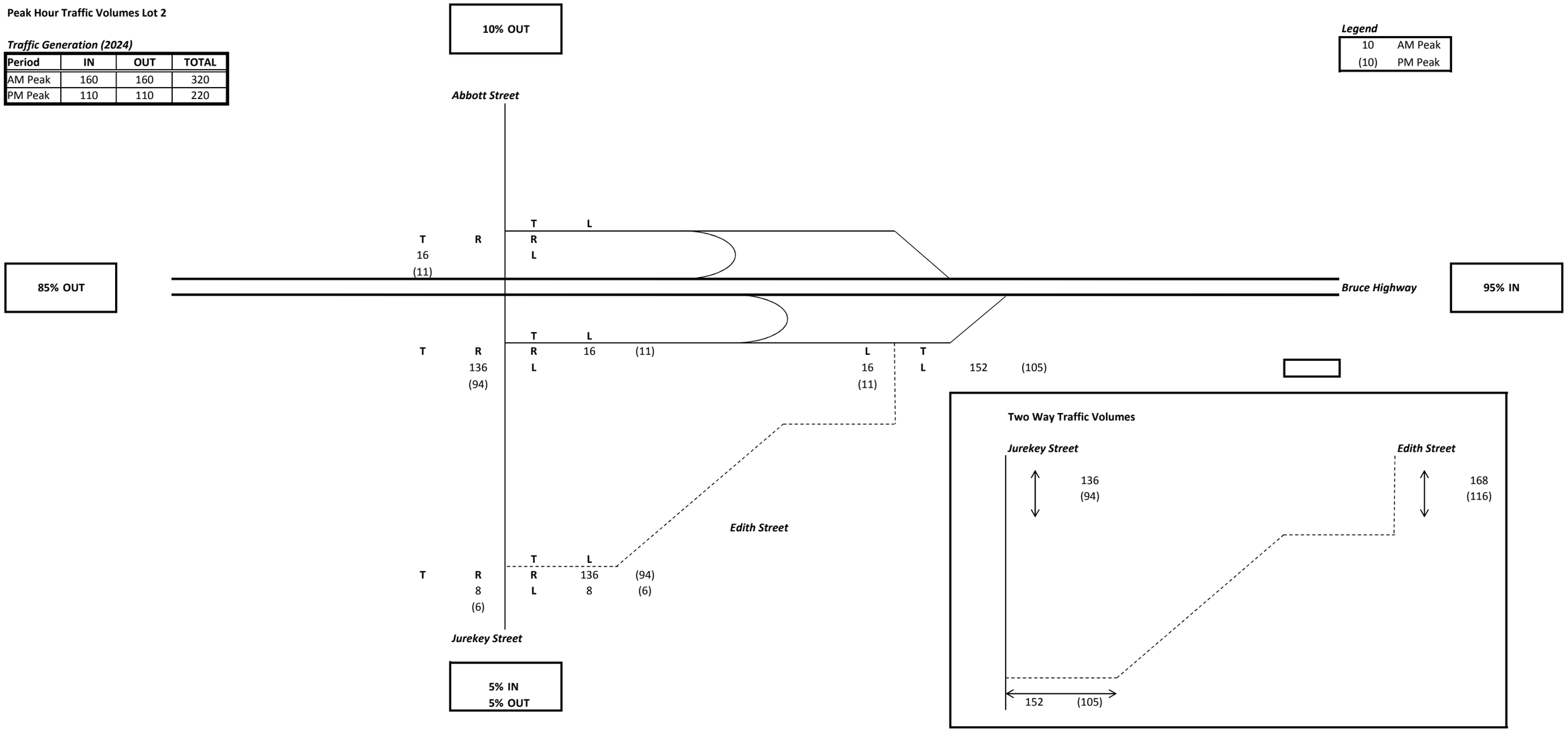
Peak Hour Traffic Volumes Lot 2

Traffic Generation (2024)

Period	IN	OUT	TOTAL
AM Peak	160	160	320
PM Peak	110	110	220

Legend

10	AM Peak
(10)	PM Peak



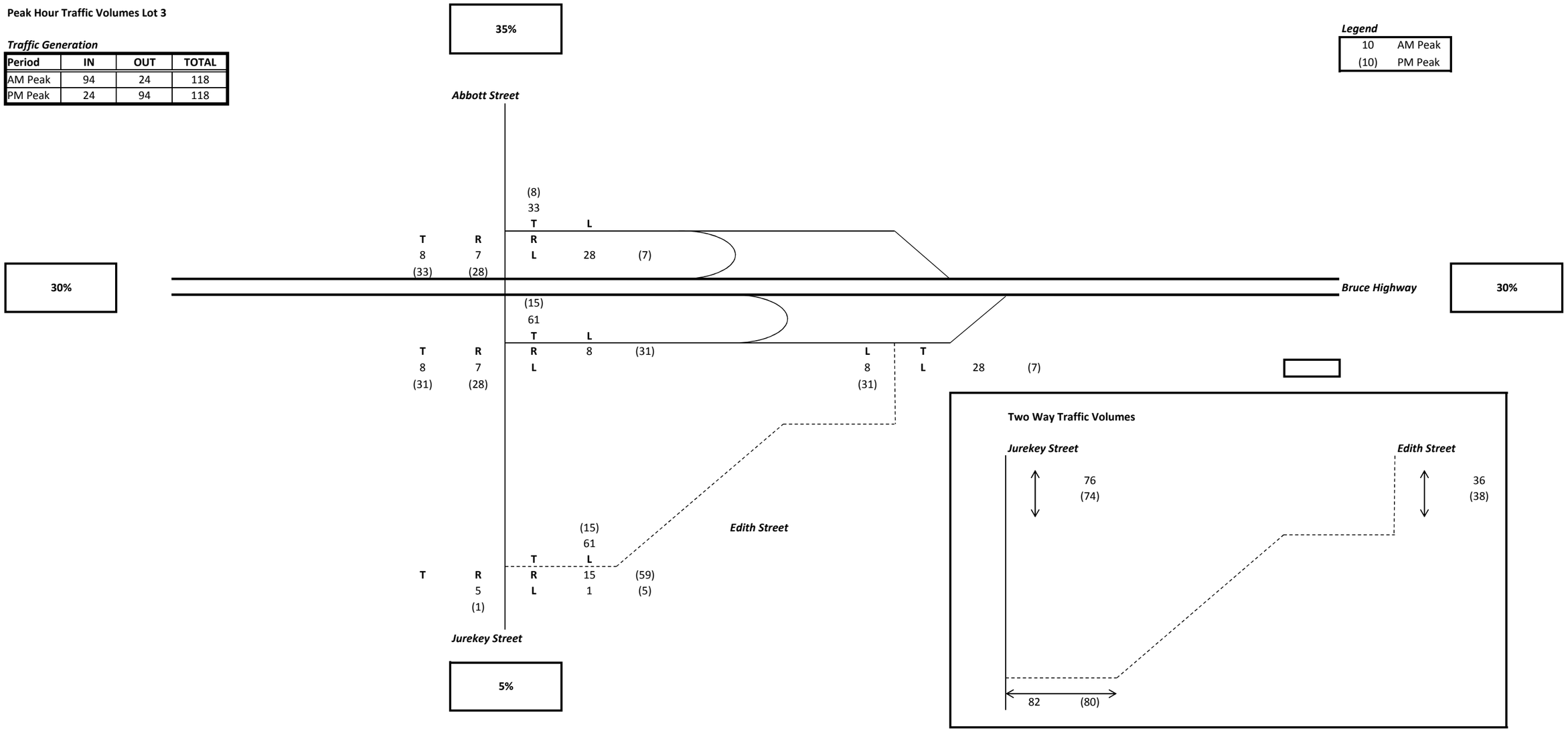
Peak Hour Traffic Volumes Lot 3

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	94	24	118
PM Peak	24	94	118

Legend

10	AM Peak
(10)	PM Peak



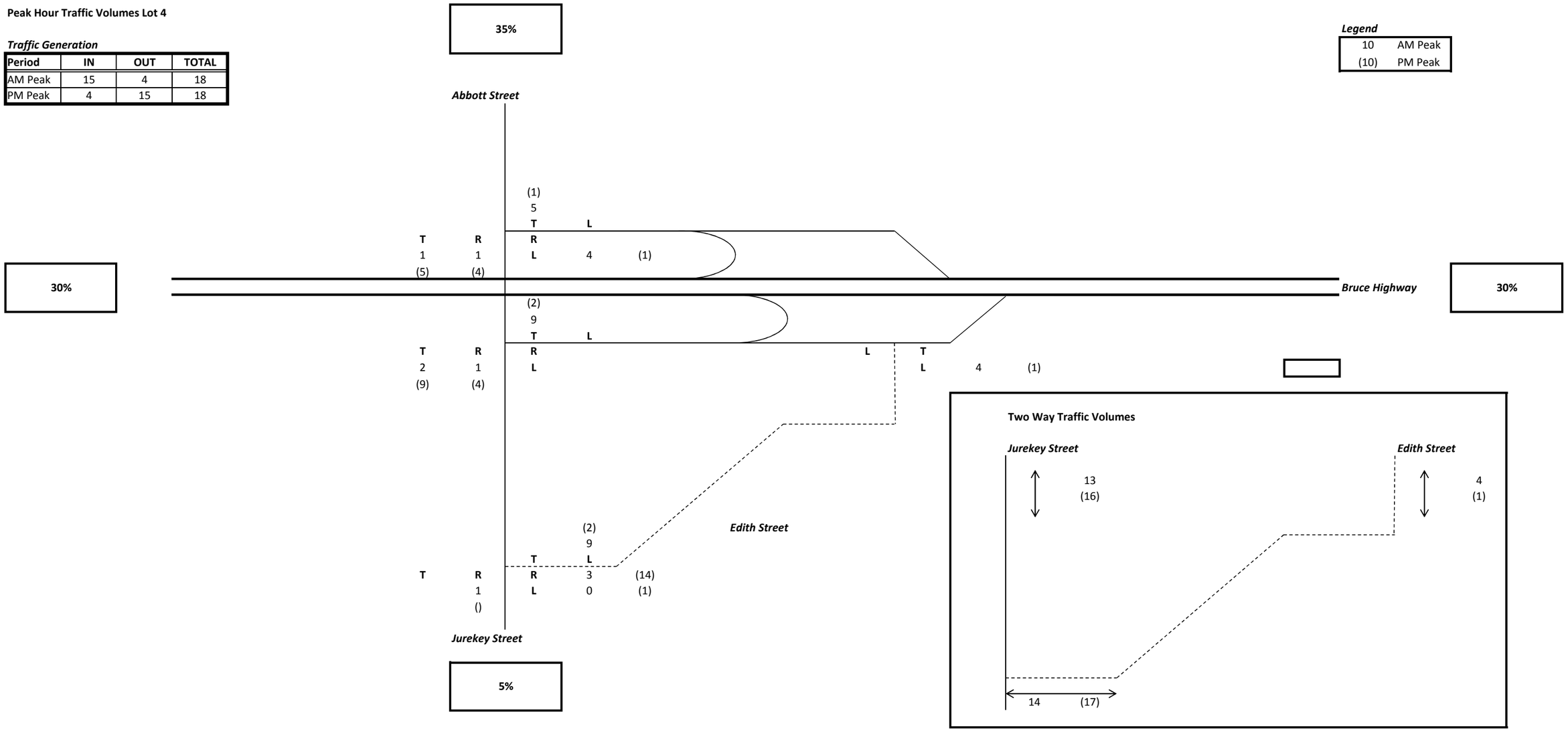
Peak Hour Traffic Volumes Lot 4

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	15	4	18
PM Peak	4	15	18

Legend

10	AM Peak
(10)	PM Peak



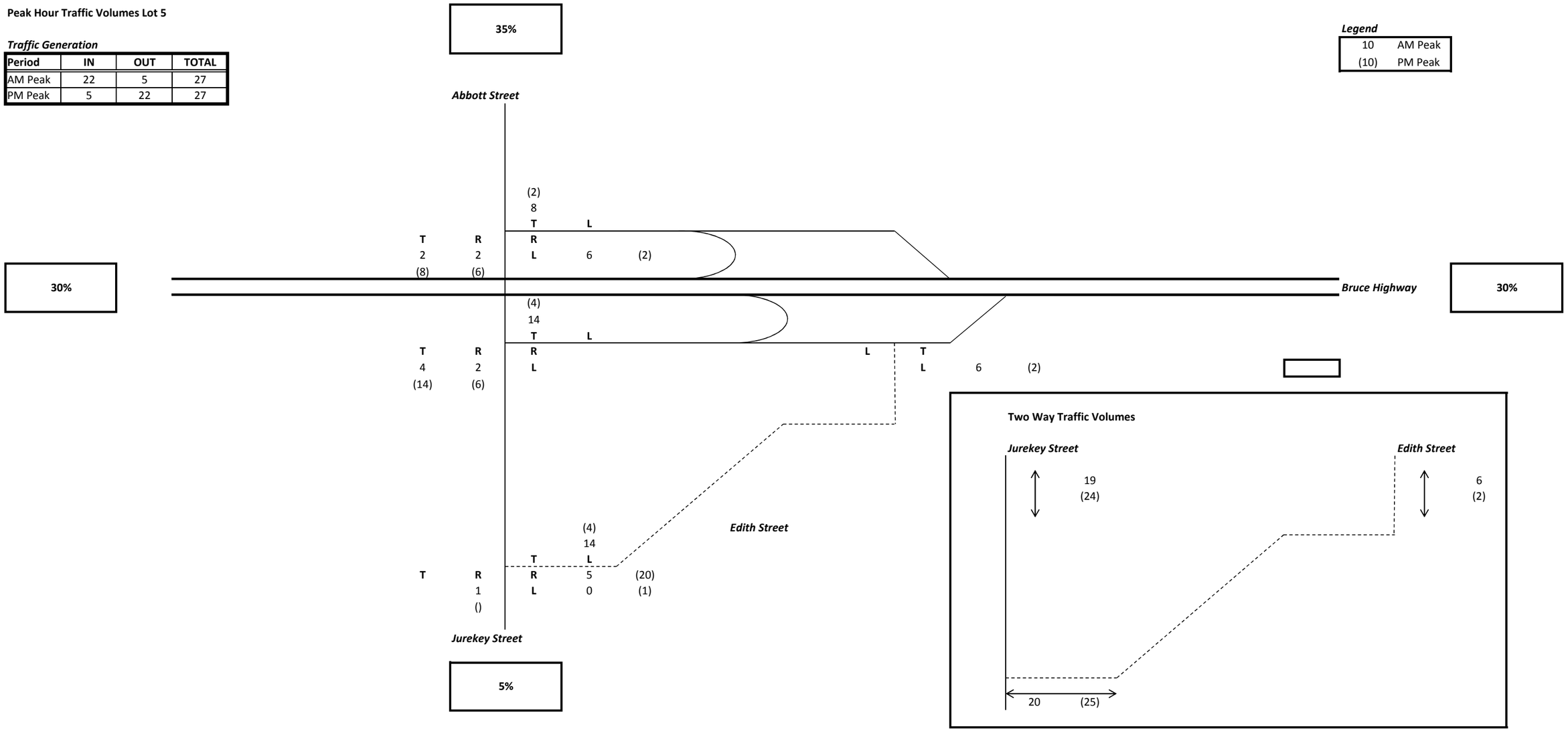
Peak Hour Traffic Volumes Lot 5

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	22	5	27
PM Peak	5	22	27

Legend

10	AM Peak
(10)	PM Peak



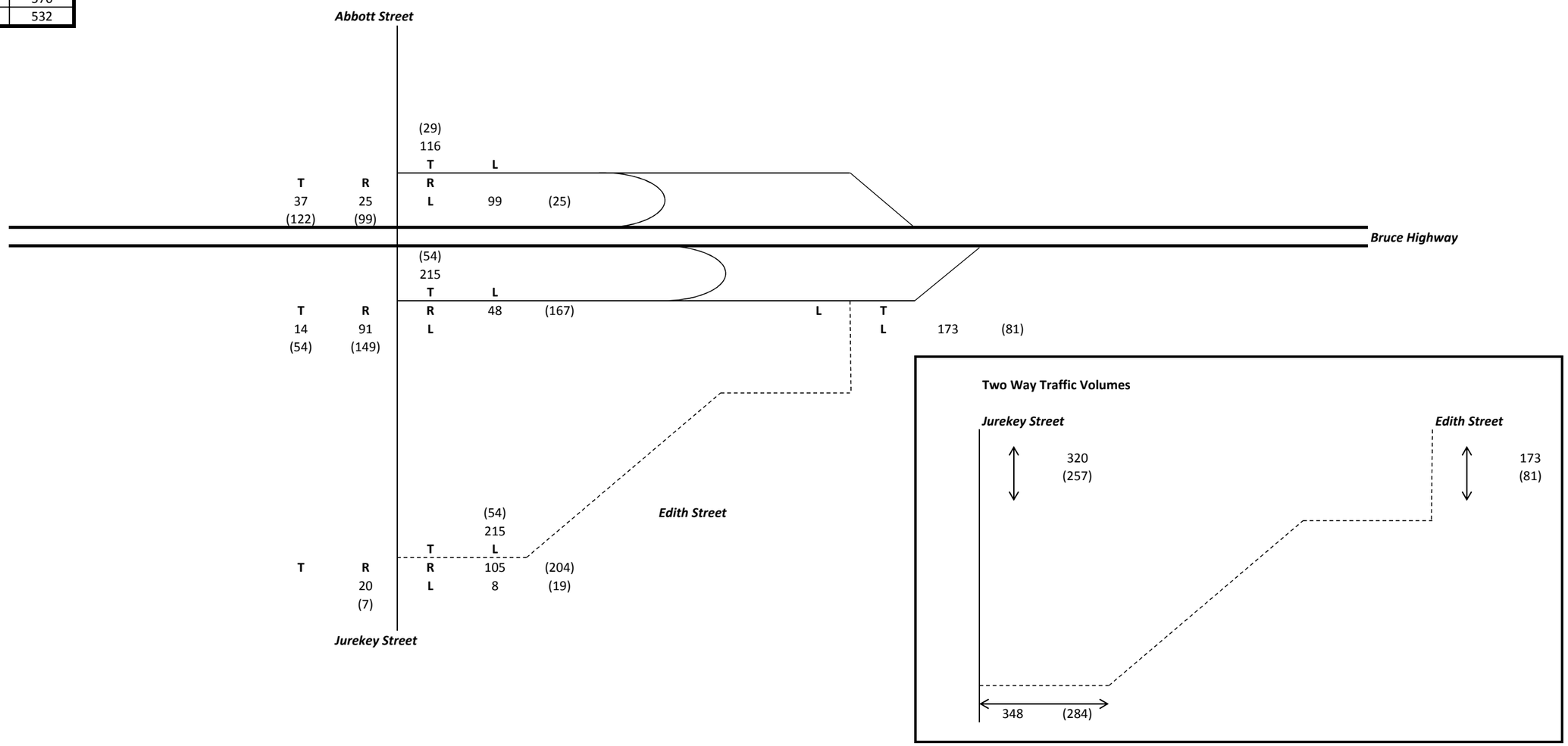
Development Total Peak Hour Traffic Volumes (2014)

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	409	161	570
PM Peak	142	390	532

Legend

10	AM Peak
(10)	PM Peak



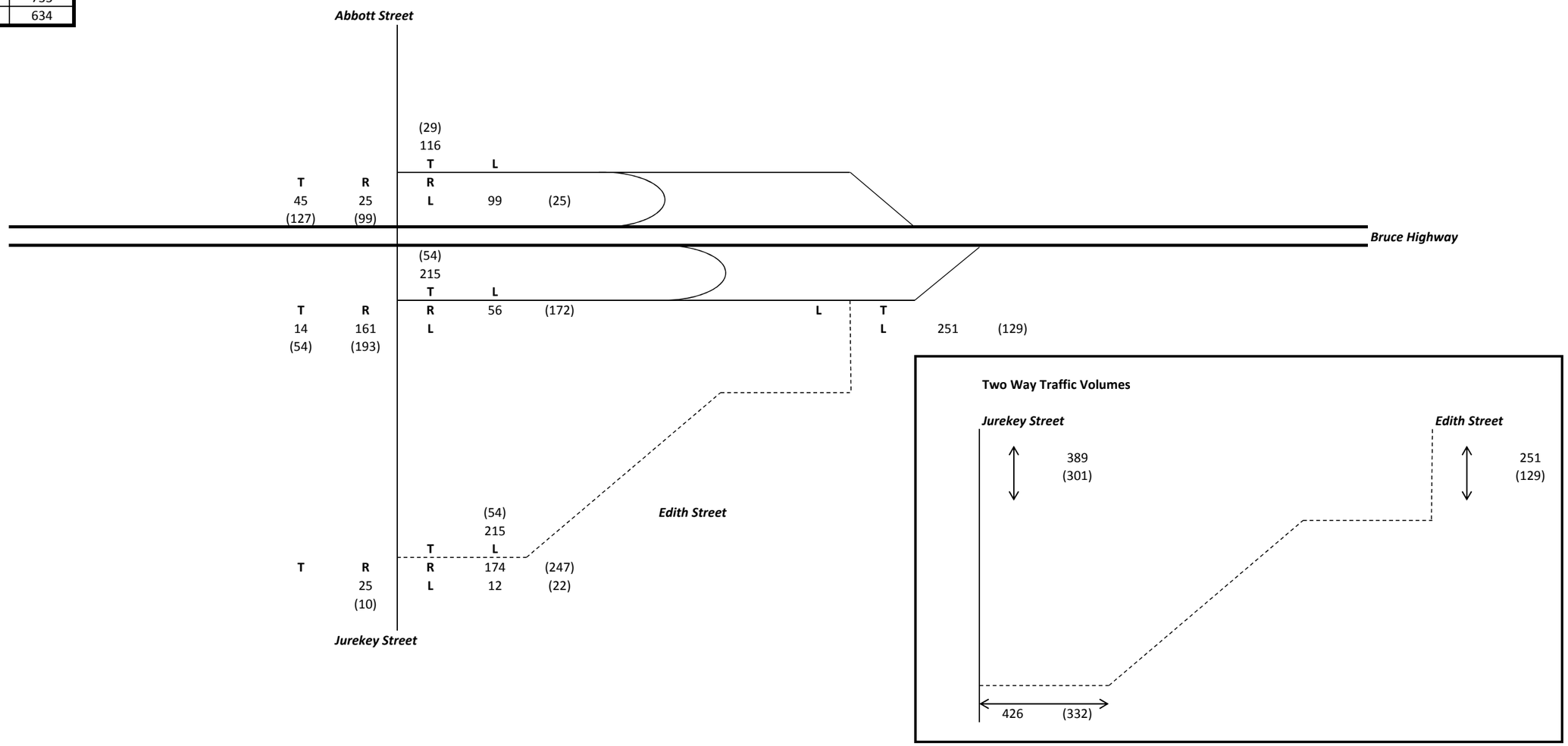
Development Total Peak Hour Traffic Volumes (2024)

Legend

10	AM Peak
(10)	PM Peak

Traffic Generation

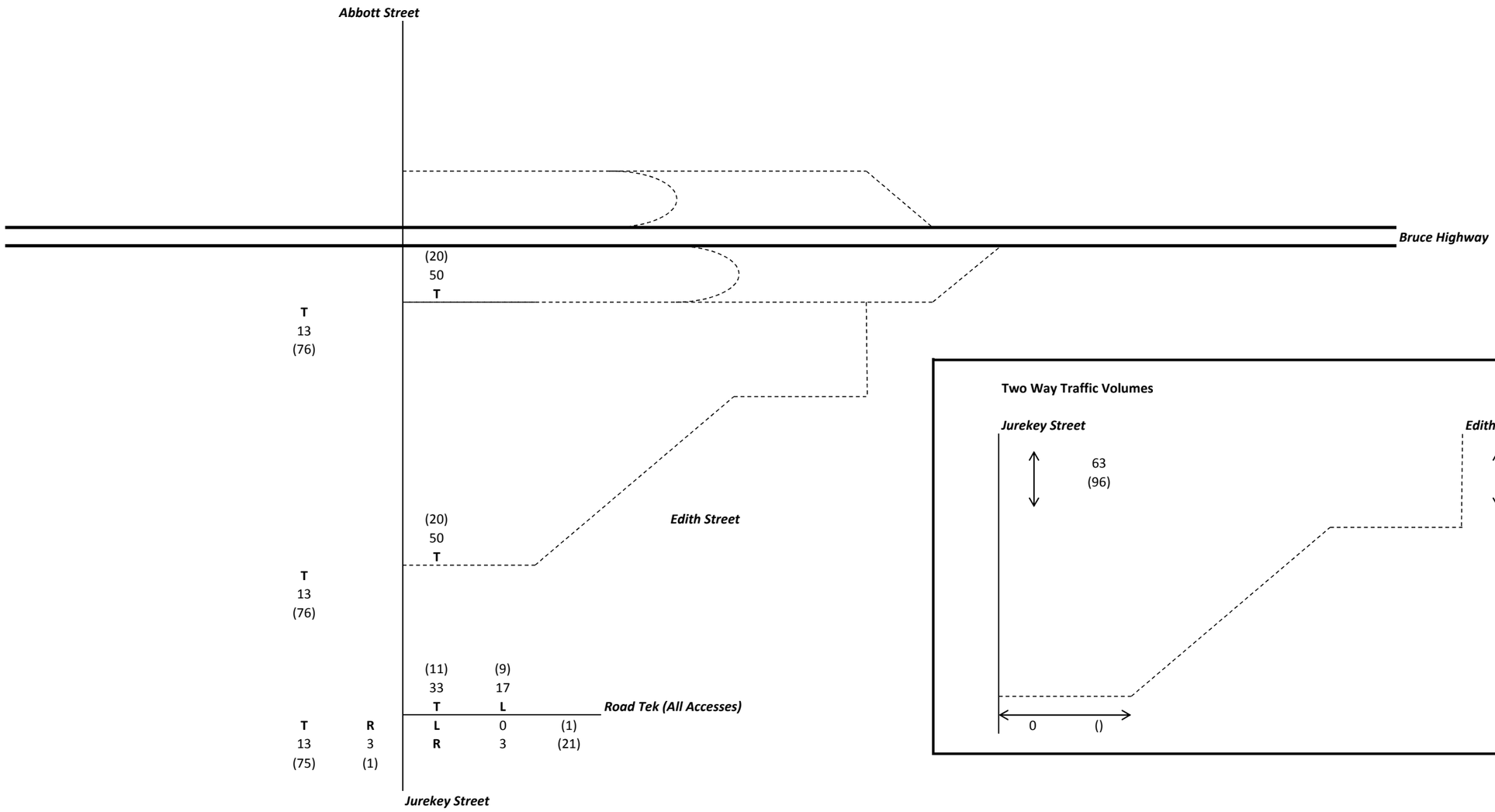
Period	IN	OUT	TOTAL
AM Peak	491	243	733
PM Peak	193	441	634



2013 **Traffic Count**

Legend

10	AM Peak
(10)	PM Peak

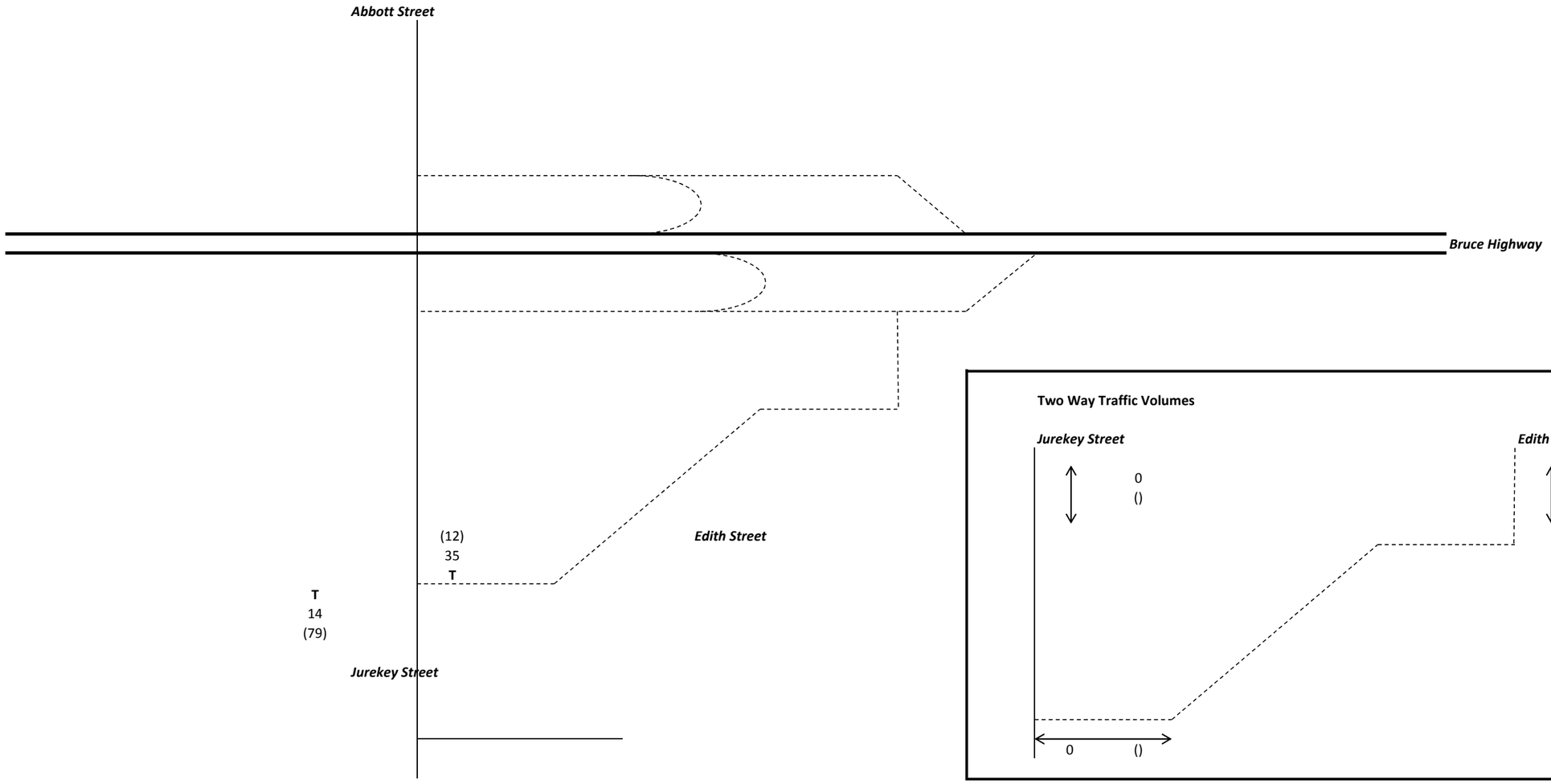


2014 Background Volume (wo RoadTek)

Linear Growth 5%

Legend

10	AM Peak
(10)	PM Peak

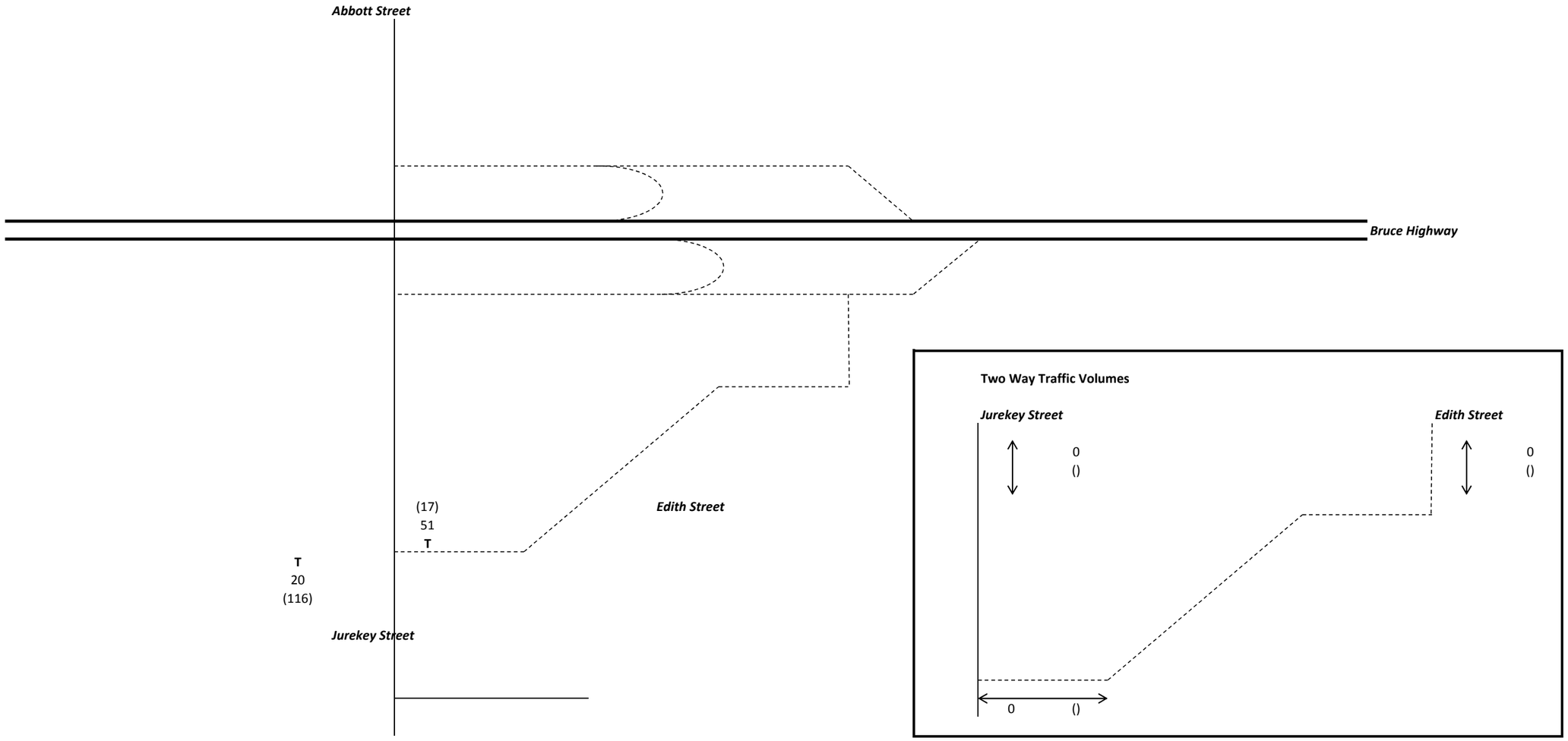


2024 ***Background Volume (wo RoadTek)***

Linear Growth 5%

Legend

10	AM Peak
(10)	PM Peak



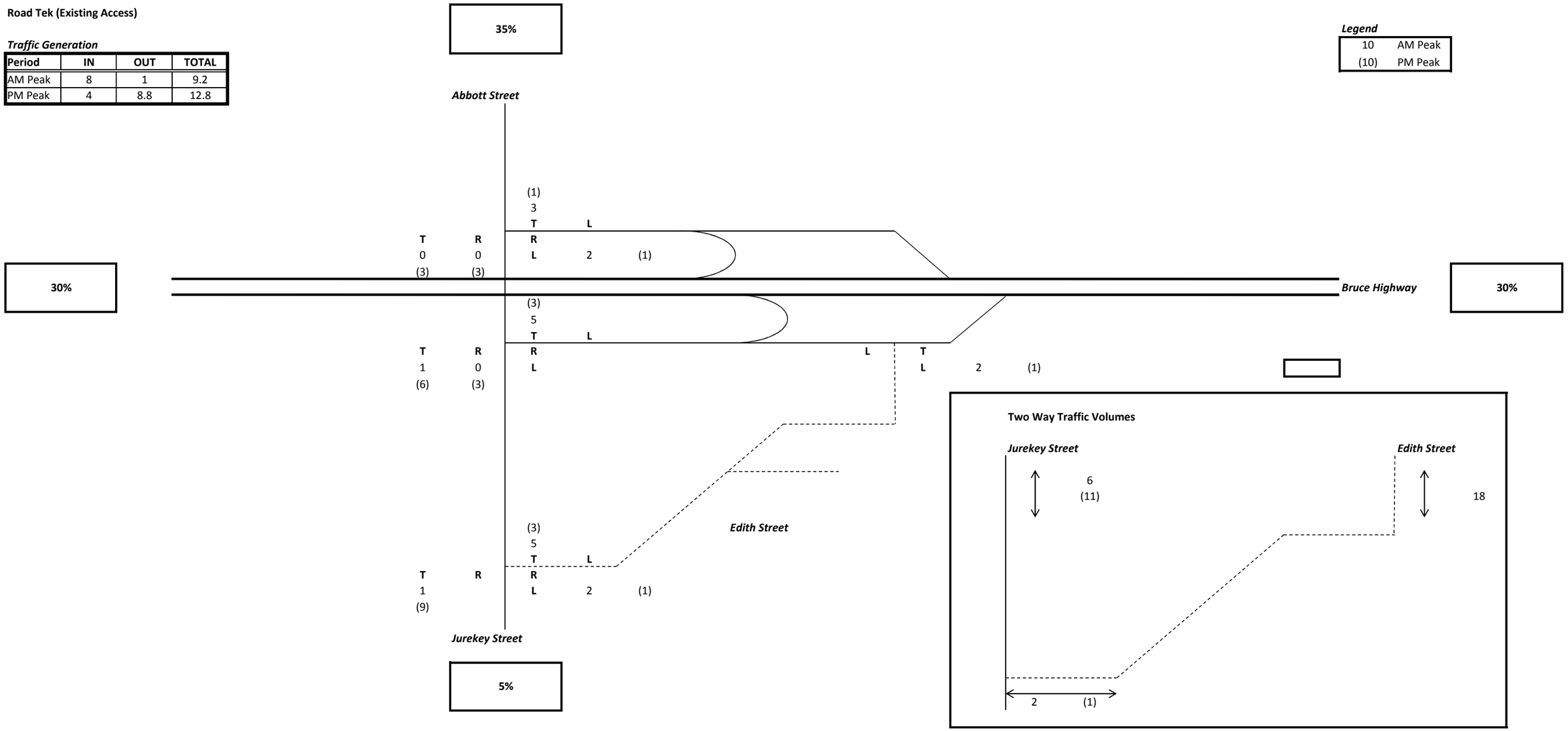
Road Tek (Existing Access)

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	8	1	9.2
PM Peak	4	8.8	12.8

Legend

10	AM Peak
(10)	PM Peak



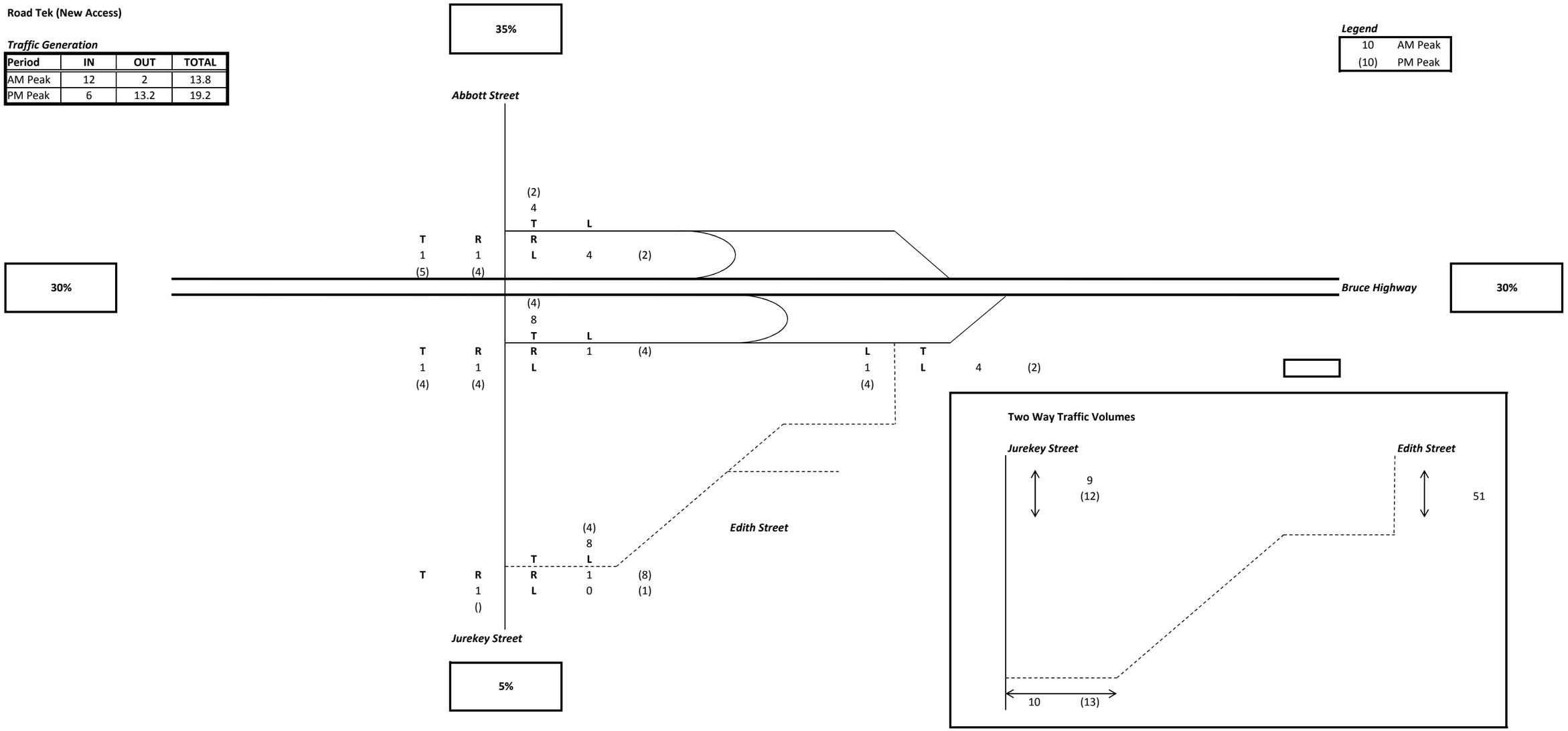
Road Tek (New Access)

Traffic Generation

Period	IN	OUT	TOTAL
AM Peak	12	2	13.8
PM Peak	6	13.2	19.2

Legend

10	AM Peak
(10)	PM Peak



Assessment Volumes

Legend

10	AM Peak
(10)	PM Peak

2014

		(14)	(58)		
		40	223		
		T	**L**		***Edith Street***
T	**R**	**R**	106	(212)	
15	21	**L**	11	(21)	
(88)	(7)				
	Jurekey Street				

2024

		(20)	(58)		
		56	223		
		T	**L**		***Edith Street***
T	**R**	**R**	175	(255)	
21	25	**L**	15	(24)	
(125)	(10)				
	Jurekey Street				

Cluden Industrial

APPENDIX C
SIDRA RESULTS

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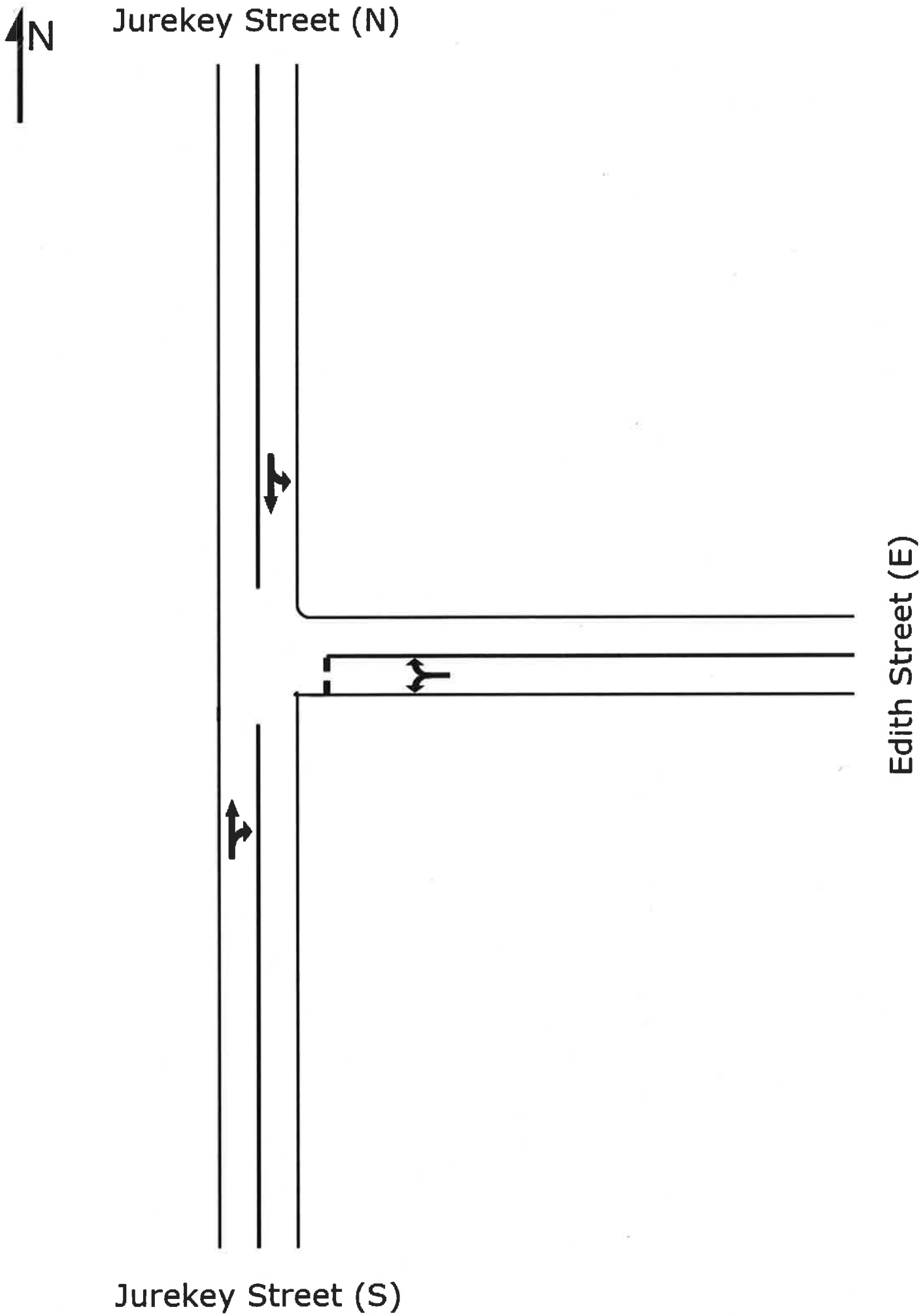
N
Jurekey Street (N)
Edith Street (E)
Jurekey Street (S)

MOVEMENT SUMMARY

Site: 2014 AM Peak

Jurekey Street/Edith Street Intersection
Priority Layout
2014 AM peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jurekey Street (S)											
2	T	16	15.0	0.027	1.2	LOS A	0.1	1.2	0.39	0.00	51.7
3	R	22	15.0	0.027	10.2	LOS B	0.1	1.2	0.39	0.75	47.9
Approach		38	15.0	0.027	6.5	NA	0.1	1.2	0.39	0.44	49.5
East: Edith Street (E)											
4	L	12	15.0	0.165	10.4	LOS B	0.6	5.5	0.36	0.63	47.0
6	R	112	15.0	0.165	10.7	LOS B	0.6	5.5	0.36	0.72	46.9
Approach		123	15.0	0.165	10.7	LOS B	0.6	5.5	0.36	0.71	46.9
North: Jurekey Street (N)											
7	L	235	15.0	0.162	8.7	LOS A	0.0	0.0	0.00	0.71	49.0
8	T	42	0.0	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		277	12.7	0.162	7.4	NA	0.0	0.0	0.00	0.60	50.4
All Vehicles		438	13.6	0.165	8.2	NA	0.6	5.5	0.13	0.62	49.3

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2014 PM Peak

Jurekey Street/Edith Street Intersection
Priority Layout
2014 PM peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jurekey Street (S)											
2	T	93	1.0	0.053	0.3	LOS A	0.3	2.2	0.21	0.00	56.0
3	R	7	15.0	0.053	9.4	LOS A	0.3	2.2	0.21	1.02	48.8
Approach		100	2.0	0.053	1.0	NA	0.3	2.2	0.21	0.08	55.4
East: Edith Street (E)											
4	L	22	15.0	0.303	10.0	LOS B	1.3	11.6	0.30	0.57	47.4
6	R	223	15.0	0.303	10.3	LOS B	1.3	11.6	0.30	0.70	47.3
Approach		245	15.0	0.303	10.3	LOS B	1.3	11.6	0.30	0.69	47.3
North: Jurekey Street (N)											
7	L	61	15.0	0.045	8.7	LOS A	0.0	0.0	0.00	0.72	49.0
8	T	15	15.0	0.045	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		76	15.0	0.045	7.0	NA	0.0	0.0	0.00	0.58	50.8
All Vehicles		421	11.9	0.303	7.5	NA	1.3	11.6	0.22	0.52	49.6

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2024 AM Peak

Jurekey Street/Edith Street Intersection
Priority Layout
2024 AM peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jurekey Street (S)											
2	T	22	15.0	0.035	1.3	LOS A	0.2	1.6	0.40	0.00	51.6
3	R	26	15.0	0.035	10.3	LOS B	0.2	1.6	0.40	0.77	48.0
Approach		48	15.0	0.035	6.2	NA	0.2	1.6	0.40	0.42	49.6
East: Edith Street (E)											
4	L	16	15.0	0.279	10.9	LOS B	1.1	10.1	0.42	0.65	46.5
6	R	184	15.0	0.279	11.2	LOS B	1.1	10.1	0.42	0.75	46.4
Approach		200	15.0	0.279	11.2	LOS B	1.1	10.1	0.42	0.74	46.4
North: Jurekey Street (N)											
7	L	235	15.0	0.170	8.7	LOS A	0.0	0.0	0.00	0.73	49.0
8	T	59	0.0	0.170	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		294	12.0	0.170	7.0	NA	0.0	0.0	0.00	0.58	50.8
All Vehicles		542	13.4	0.279	8.5	NA	1.1	10.1	0.19	0.63	49.0

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2024 PM Peak

Jurekey Street/Edith Street Intersection
Priority Layout
2024 PM peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Jurekey Street (S)											
2	T	132	1.0	0.075	0.3	LOS A	0.4	3.2	0.22	0.00	55.8
3	R	11	15.0	0.075	9.4	LOS A	0.4	3.2	0.22	1.02	48.9
Approach		142	2.0	0.075	1.0	NA	0.4	3.2	0.22	0.08	55.2
East: Edith Street (E)											
4	L	25	15.0	0.385	10.8	LOS B	1.9	16.8	0.37	0.57	46.6
6	R	268	15.0	0.385	11.1	LOS B	1.9	16.8	0.37	0.74	46.5
Approach		294	15.0	0.385	11.1	LOS B	1.9	16.8	0.37	0.73	46.5
North: Jurekey Street (N)											
7	L	61	15.0	0.048	8.7	LOS A	0.0	0.0	0.00	0.74	49.0
8	T	21	15.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		82	15.0	0.048	6.5	NA	0.0	0.0	0.00	0.55	51.4
All Vehicles		518	11.4	0.385	7.6	NA	1.9	16.8	0.27	0.52	49.4

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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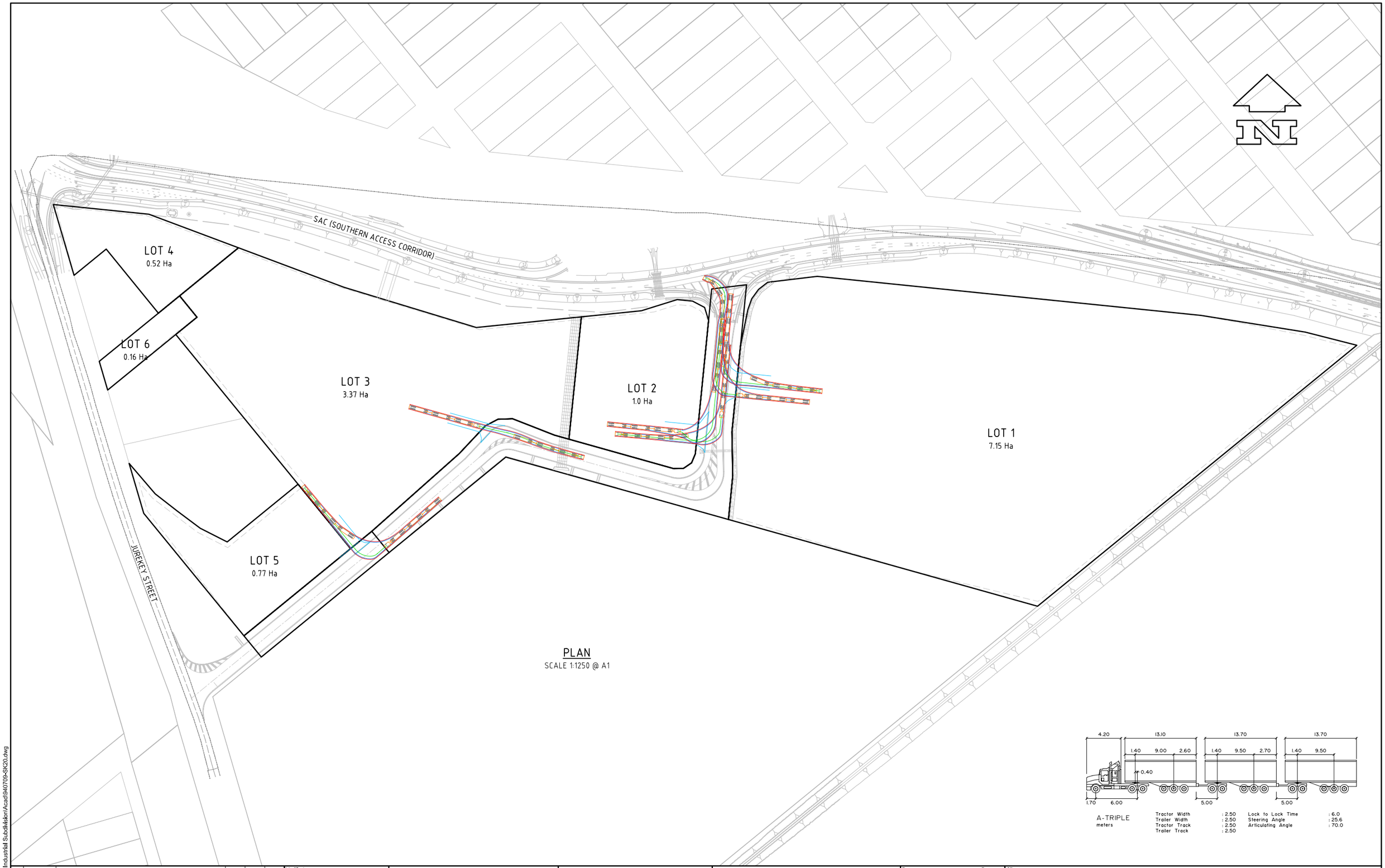
Cluden Industrial

APPENDIX D
SWEPT PATHS

Cardno
Shaping the Future



Rev	Date	Description	Des.	Verif.	Appr.
A	09/07/2013	ISSUED FOR INFORMATION	PK		

Verified
Date
Approved
Date
RPEQ No. 10801

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Drawn	PK	Date 22/01/2013
Checked		Date
Designed		Date
Verified		Date
Approved		Date

Client
TOPRISE AUSTRALIA PTY LTD

TSDA PROPOSED DEVELOPMENT SITES
CLUDEN, TOWNSVILLE

53.4m A-TRIPLE TRUCK SWEPT PATHS

LOT AREAS

Status
FOR INFORMATION ONLY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Date	Scale	Size
A.H.D.	07/2013	AS SHOWN	A1

Drawing Number
9407/09-SK20

Revision
A

DATE PLOTTED: 9 July 2013 4:58 PM
CAD FILE: G:\493968 - Cluden Industrial Subdivision\Acad\9407\09-SK20.dwg

ATTACHMENT D

Response to Item 3 prepared by Northern Consulting Engineers

brazier motti

NORTHERN CONSULTING engineers

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50 Punari Street Currajong Qld 4812

Our Ref: **MJ2674/01:BB**
SARA Ref: OUT25/4323

Friday, November 28, 2025

Office of the Coordinator General
1 William Street
PO Box 15517
BRISBANE QLD 4000

Attention: Delegate of the Coordinator General

To whom it may concern,

RE: MATERIAL CHANGE OF USE FOR WAREHOUSES IN TOWNSVILLE STAGE DEVELOPMENT AREA (SDA), EDITH STREET – RESPONSE TO INFORMATION REQUEST IN RELATION TO MATERIAL CHANGE OF USE

An Information Request (OUT25/4323) has been received in relation to the Material Change of Use for warehouses application for the above-mentioned project, dated 19 August 2025.

In accordance with the Development Assessment Rules under the Planning Act 2016 and on behalf of our client, we provide all information requested to Item 3 noted within the above-mentioned Information Request, as follows:

Request Item 3 – Impacts on Rail Infrastructure

Issue:
The proposed development will increase peak stormwater discharge from the site, however, the submitted Site-Based Stormwater Management Plan (SBSMP), prepared by Northern Consulting Engineers and dated 18/07/2025, Revision A has not included adequate information to demonstrate that sufficient mitigation measures can be installed to ensure the stormwater impacts of the proposed development will not adversely impact on the railway corridor. In particular:

- the drawings in Attachment C (Redline Concept Mark-ups prepared by NCE) do not show any levels (internal or external), so it is unclear whether a free draining detention system is achievable, particularly given the flat grades within and external to the site and the absence of any external piped drainage.
- it is not clear where water discharged from the site is conveyed. It appears that flows leaving the site from the proposed lawful point of discharge would overtop Jurekey Street before crossing the rail corridor at a culvert near the Racecourse Road Bridge.

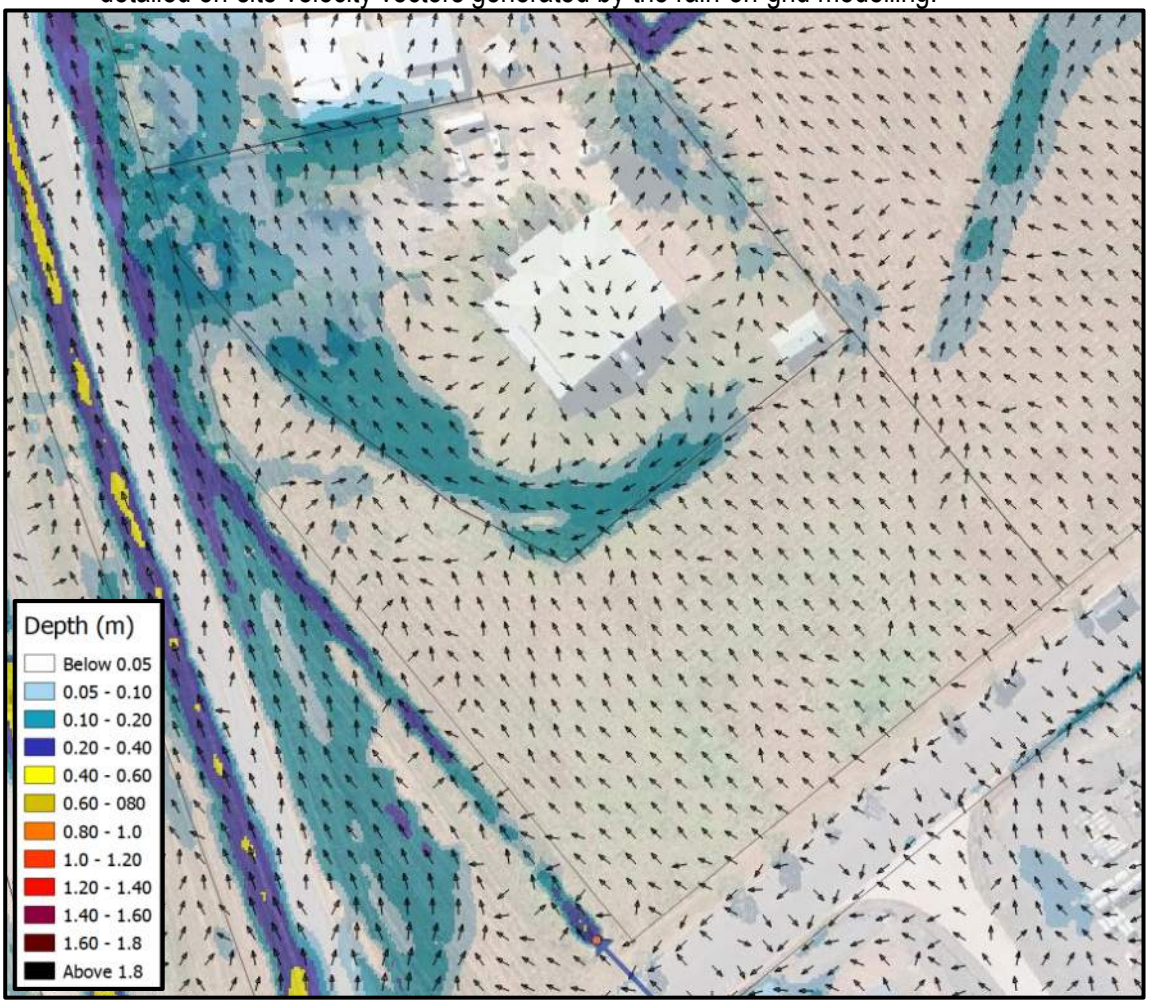
Action:
The proponent is requested to provide a revised Site Based Stormwater Management Plan that demonstrates compliance with PO12 – PO14 and PO16 of State Code 2: Development in a Railway, of the State Development Assessment Provisions. The updated report should address the above

issues and show that the development can accommodate the stormwater detention required to mitigate peak development flows to pre-development levels. The report should also include:

a) Site detail and contour survey - provide a site detail and contour survey, prepared by a registered surveyor, to verify the existing drainage characteristics of the site. All legal points of discharge for the development site should be identified.
b) Detention design – provide a conceptual design for the proposed stormwater detention solution and supporting hydraulic/hydrological analysis and calculations to demonstrate that it will be adequately sized/have sufficient capacity for all relevant design events. This should include a layout/design plan, sections, cross sections, longitudinal sections (where relevant), elevations and outlet design with clear levels and volumes shown.
c) Water quantity assessment - the peak discharge analysis should be updated to show the mitigated flows from the site for each legal point of discharge (including flow types). The design flood peak discharges should be shown for the mitigated case to demonstrate there is no worsening impact on the railway corridor.

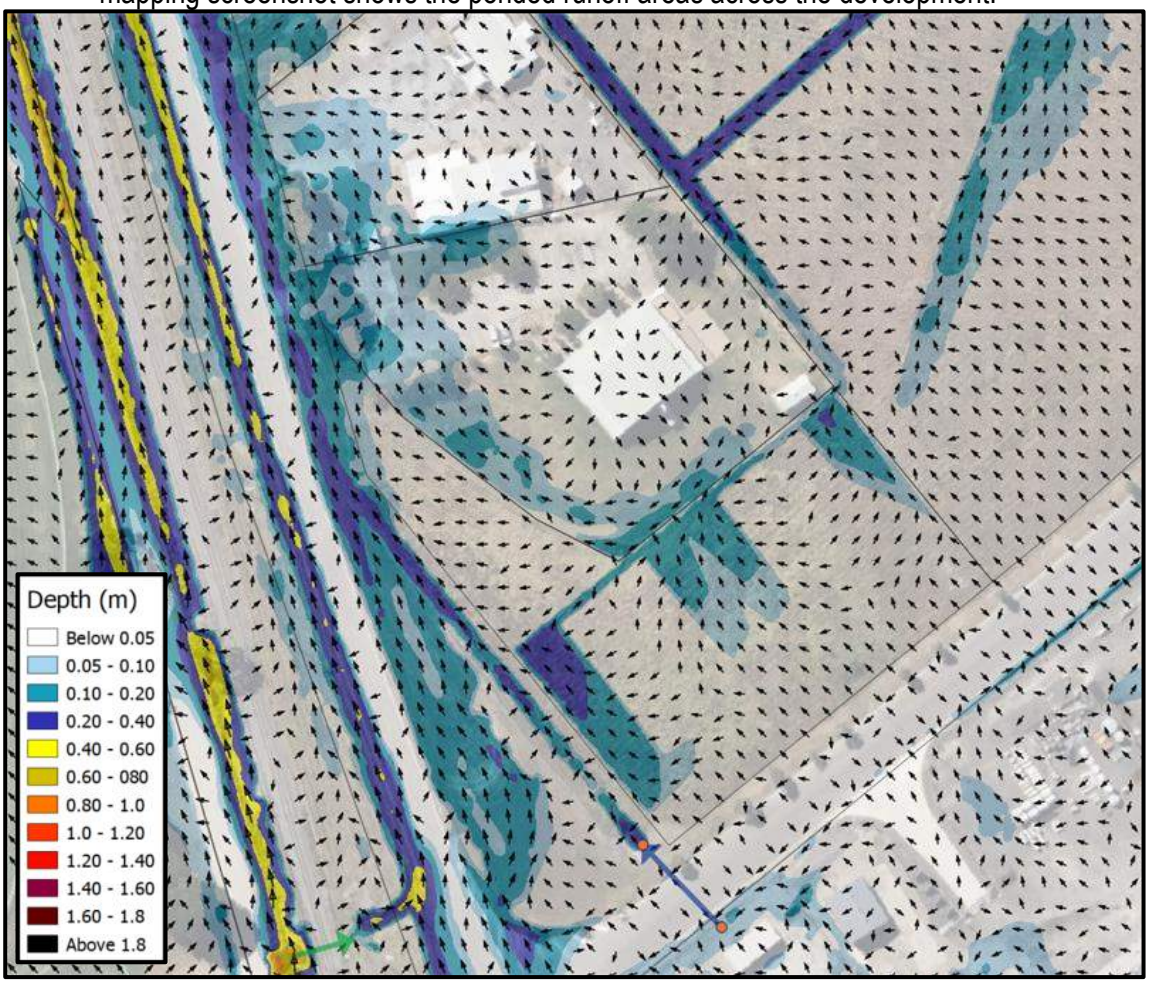
Applicant's Response

a) A site inspection was conducted to confirm the validity of the available LiDAR data and on-site / surrounding hydraulic features. This LiDAR data was utilised in the rain-on-grid modelling to determine legal points of discharge and catchment splits. The below screenshot shows the detailed on-site velocity vectors generated by the rain-on-grid modelling.



b) As outlined in the revised site based stormwater management plan, NCE have carried out a detailed 2D fine scale flood model to assess the flow from the site in relation to the existing site. This incorporated the detention storage in the drains (inclusive of the weirs), shallow storage in the carparks and across the site. The updated redline markup provided details the

design components incorporated as part of the 2D model and which is to be incorporated into the detailed design. 2D rain-on-grid hydraulic modelling has been completed to ensure that the provided updated redline markup strategy does not generate impacts and provide sufficient mitigation for the major (1% AEP) and minor (20% AEP) design events. Afflux mapping shows impacts generated by the development and are contained in the enclosed updated Site Based Stormwater Management Plan report. Additionally, the below depth mapping screenshot shows the ponded runoff areas across the development.



The redline concept markup provided within the Site Based Stormwater Management Plan report shows the mitigation measures which have been modelled to generated the above ponding indicated on site. The detailed design is to be implemented strictly in accordance with the redline concept design.

c) NCE consider that an updated flood peak discharge comparison will not accurately depict any impacts on the railway line. Therefore, NCE have completed a fine scale 2D rain-on-grid model to accurately depict the impacts of any runoff from the site on the railway corridor and surrounding roads / properties. The afflux mapping provided in the Site Based Stormwater Management Plan report demonstrates there are no impacts on flood water surface levels within the railway corridor across both the 1% AEP and 20% AEP events.

We have uploaded the following documentation in support of this response:

- MJ2674-SBSMP_RevB – Updated Site Based Stormwater Management Report

I trust the above changes meet with your approval, and I look forward to receiving your assessment.

Please do not hesitate to contact the undersigned on TEL: 07 4725 5550 if you have any questions regarding this response.

Yours sincerely,

BRENDAN BLAIR
Civil Engineer

Approved,

ANDREW WALLACE
Director (RPEQ 6743)

Encl.

NORTHERN CONSULTING engineers

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Web: www.nceng.com.au
50 Punari Street Currajong Qld 4812

ATTACHMENT E

Site Based Stormwater Management Plan prepared by Northern Consulting Engineers

brazier motti

NORTHERN CONSULTING engineers

CIVIL & STRUCTURAL ENGINEERS

SITE BASED STORMWATER MANAGEMENT PLAN

TOPRISE SUBDIVISION, WAREHOUSE DEVELOPMENT AT 96 EDITH STREET, CLUDEN

FOR
Toprise Australia Pty Ltd c\- Col Harkness

JOB No: **WPD0002**

Doc Ref: **WPD0002-SBSMP Rev B**

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Milton Messer & Associates Pty Ltd
ACN 100 817 356 ABN 34 100 817 356

DOCUMENT CONTROL

Rev	Author	Reviewed	Approved		Date	Issued To:	Purpose
A	Brendan Blair	Andrew Wallace	Andrew Wallace (RPEQ 6743)		18/07/2025	Col Harkness	Support Development Applications
B	Brendan Blair	Andrew Wallace	Andrew Wallace (RPEQ 6743)		28/11/2025	Col Harkness	Respond to RFI & Support Development Applications

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APPENDICIES

APPENDIX A

Proposed Reconfiguration Plan, Plan 27594/086 dated 19/11/2024, prepared by Brazier Motti

APPENDIX B

Warehouse Development Concept Plan, Project Number T25 drawings dated 30/10/2024, prepared by insideout architects

APPENDIX C

Redline Concept Mark-ups prepared by NCE

1.0 INTRODUCTION

1.1 Background

Northern Consulting Engineers (NCE) have been commissioned to prepare a Site Based Stormwater Management Plan (SBSMP) for a proposed development at 96 Edith Street, Cluden. The works proposed are on land described as Lots 15 to 23 on SP105729.

The following report has been produced to support a development application for Reconfiguring of Allotment (RAL) and Material Change of Use (MCU). The purpose of this report is to demonstrate how the proposed development can be achieved by addressing:

- Identification of the lawful point of discharge (LPOD);
- Existing and proposed overland flow paths;
- Identify a conceptual stormwater system to direct run-off to the LPOD;
- Assessment of post-development site discharge and demonstrate that the proposed development will not result in any adverse impact on Council's infrastructure; and
- Assessment of water quality treatment in accordance with the State Planning Policy (SPP), including preparation of a MUSIC model.

The information provided in this report is based on the following layout plan and documents which are provided as appendices to this report;

- Proposed Reconfiguration Plan, Plan 27594/086 dated 19/11/2024, prepared by Brazier Motti (**Appendix A**),
- Warehouse Development Concept Plan, Project Number T25 drawings dated 30/10/2024, prepared by insideout architects (**Appendix B**),
- Redline concept mark-ups prepared by NCE (**Appendix C**).

1.2 Existing Conditions

The proposed site is currently undeveloped with adjacent lots containing commercial and industrial land uses.

The site is generally vegetated with grass over the entire lot and a spare number of trees mainly at the Edith Street frontage of the lots. Grass on site is generally maintained with aerial imagery showing irregular mowing over time. The site generally falls in the north / north-west direction at an average slope of approximately 1.5%. The site drains eventually into the Jurekey Street table drain with a cut off drain along the western boundary of the site also draining to the north into Jurekey Street. The TCC Townsville Maps online Community Mapping indicates that no subsurface drainage is installed in the vicinity of the site. However, NCE note that the adjacent cut off drain has a box culvert upstream which appears to be draining runoff from the Road Tek site to the south-east of Edith Street to the north.

Figure 1-1 shows the location of the site in context to the surrounding properties, easement parcels and road reserves from the Queensland Globe online mapping tool.

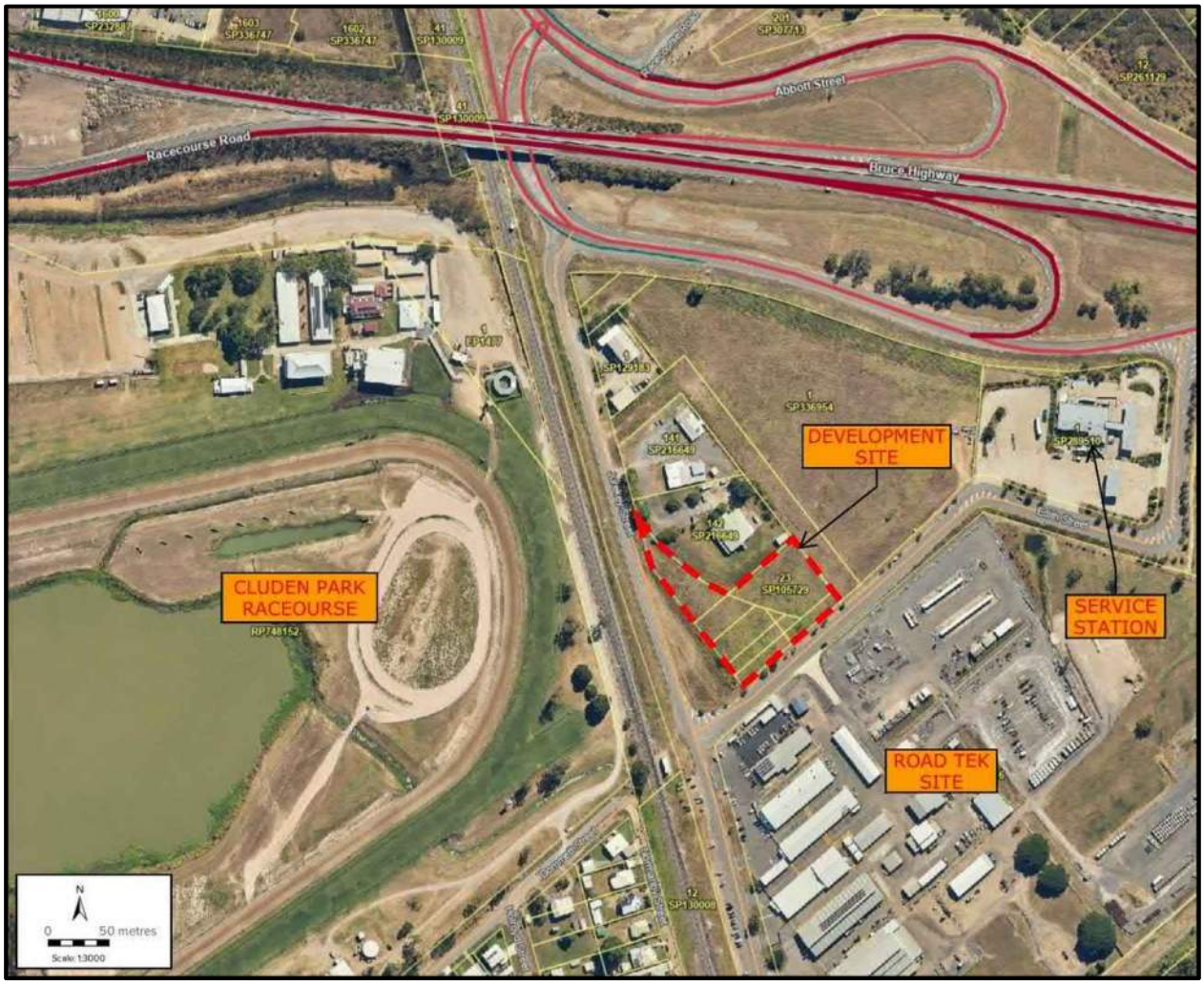

Figure 1-1 Locality (Queensland Globe)

1.3 Proposed Development

The proposed development consists of multiple warehouse lots which involves the development of the warehouse building, office, hardstand and carparking areas. The lots are expected to involve the cancelling of the eight (8) existing lots to generate four (4) new lots of approximately 1,500m^2. Additionally, the new lots and the existing lot 15 are expected to undergo a Material Change of Use to update the use to industrial warehouse uses, sealed internal roads and visitor carparking spaces. The new proposed allotments are expected to be accessed from Edith Street whilst lot 15 is expected to be accessed from Jurekey Street. Additional landscaping is expected to be completed along the frontage of each lot. The proposed reconfiguration is shown in **Figure 1-2**, with the full image provided in **Appendix A**. The concept development plan of the new lots and lot 15 are shown in **Figure 1-3** and **Figure 1-4** respectively, with the original drawing provided in **Appendix B**.

Whilst the site is located within the Townsville State Development area and subject to assessment by the Coordinator General, the development has been carried out in accordance with the provisions of the TCC planning scheme.

It is noted that the proposed RaL does not trigger the stormwater stormwater quality requirements of the SPP, however due to the development involving a combined MCU application, the SPP provisions are required to be addressed.

Figure 1-2 Proposed reconfiguration of allotments

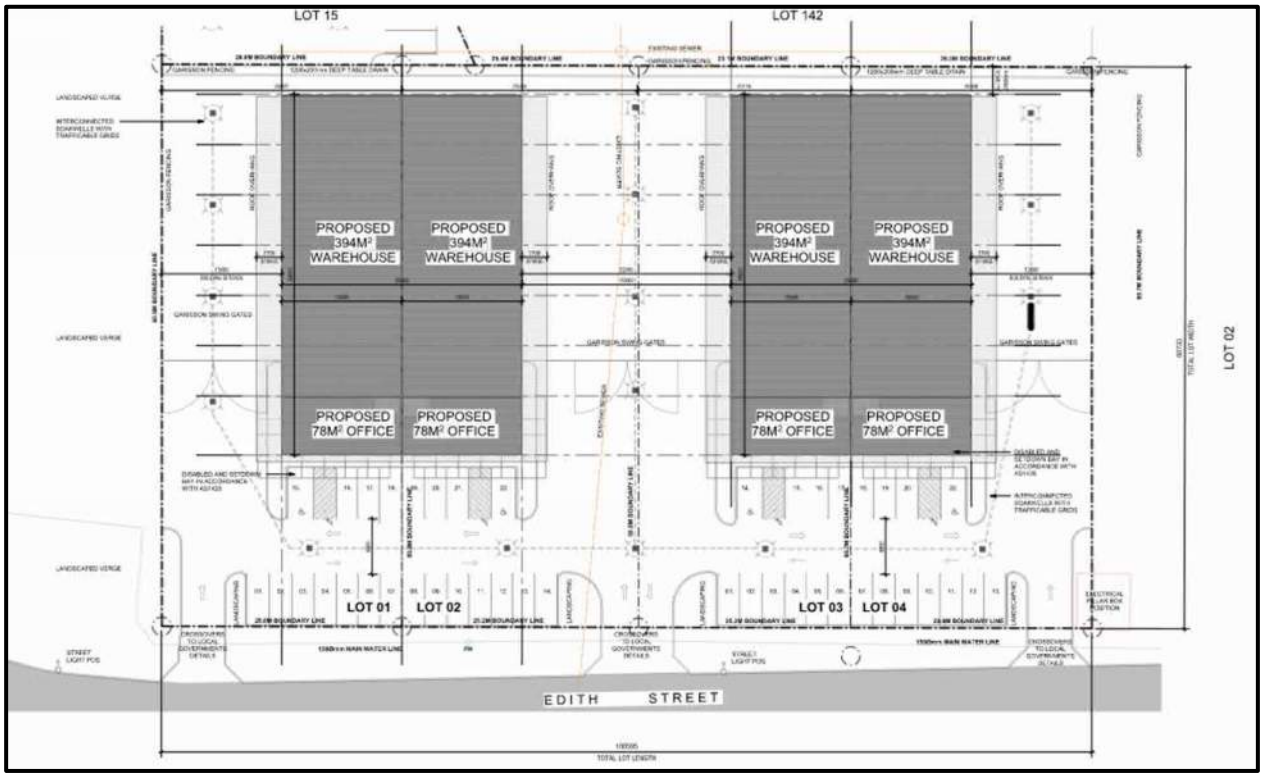

Figure 1-3 Proposed concept development RAL lots

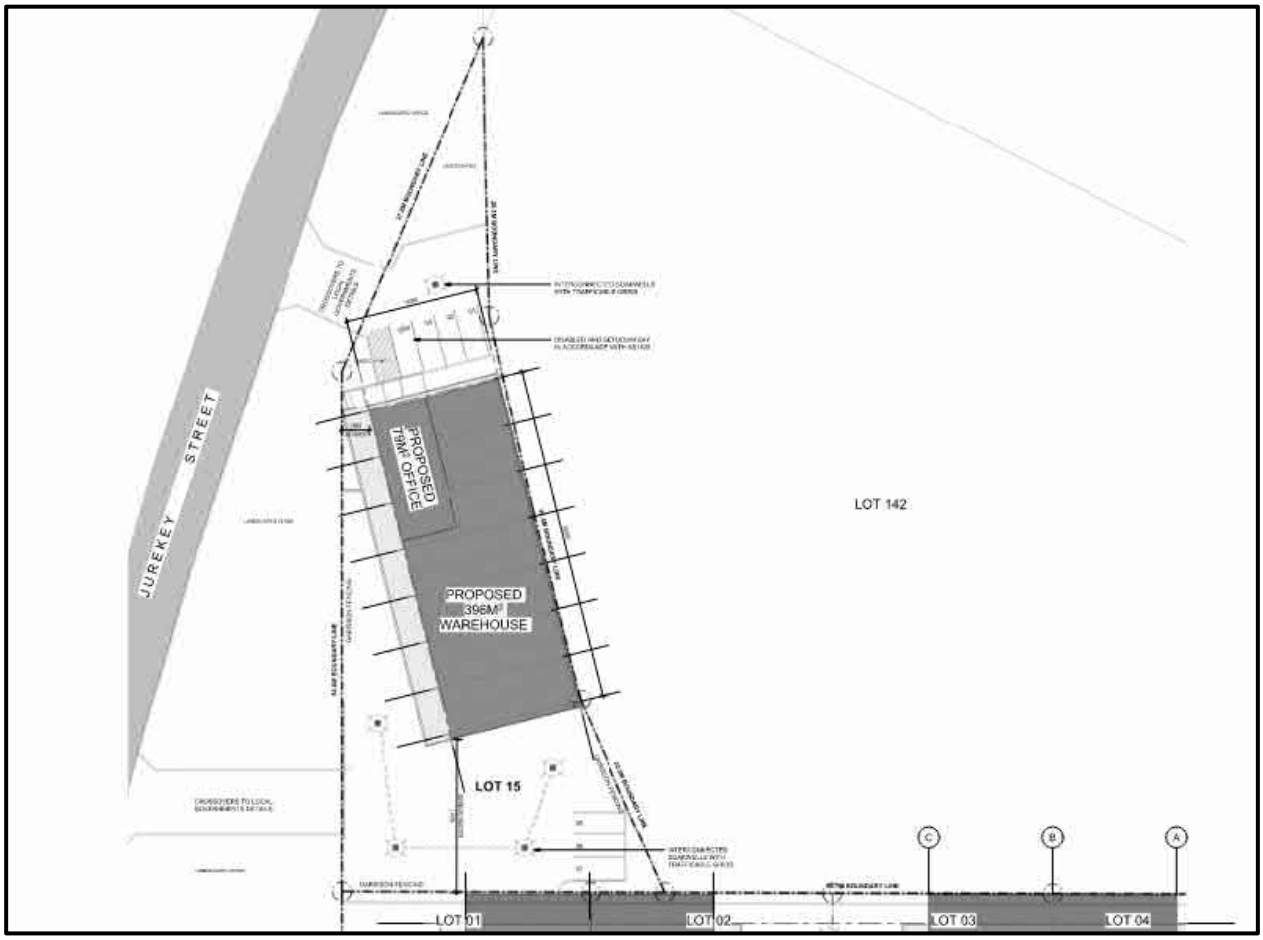

Figure 1-4 Proposed concept development lot 15

The proposed development is expected to change the impervious area where an increase in run-off is anticipated. Mitigation measures will be considered with peak developed flows to be no worse than the allowable pre-developed peak flow discharge.

Best practical solutions to run-off mitigation and treatment (stormwater quality) are to be implemented with further discussions on these elements provided in **Section 2.0**.

2.0 STORMWATER MANAGAMENT

In accordance with the Queensland Urban Drainage Manual (QUDM) test in determining the lawful point of discharge (LPOD), the LPOD for the development has been defined as:

- Road reserves of Jurekey Street (table drain and cutoff drain).

It is proposed that the site will generally mimic the existing site fall and stormwater characteristics such that run-off will overland sheet flow into channels or underground networks and discharge into the open drains in the Jurekey Street road reserve (LPOD). Roof water will be discharged onto the pavement or into rainwater tanks and flow overland or underground to the LPOD. A stormwater management concept sketch plan, which illustrates the potential mitigation measures for this system, is provided in **Appendix C.**

2.1 Quantity

The development site covering approximately 7,700m² (0.77ha), defines the contributing catchment area where the currently development has been assessed as undeveloped and 0% impervious. The proposed

development is expected to increase imperviousness to 90%. The 90% post-development value is based on the zoning as part of the Townsville SDA development scheme and the future zoning expected from the MCU.

Overall, the proposed development will increase the site coverage and therefore runoff and will require a stormwater mitigation assessment to demonstrate non-worsening. The Innovyze ICM 1d modelling software has been utilised for the run-off calculations of the pre-development and post-development scenarios for the minor (0.2EY) and the major (1% AEP) events.

2.1.1 ICM Modelling

An assessment of the increase in run-off due to the change in impervious area has been undertaken utilising the ICM software package. ICM incorporates RAFTS methodology in which the impervious and pervious areas of the catchment are defined separately. The site was assessed for both 1% AEP and 0.2EY events with BOM rainfall intensities applied to ARR 2016 rainfall ensembles for all storm durations up to the 4.5-hrs. Rainfall losses have been input as "DefConLoss" areas based on existing approved losses for the Townsville region, namely 1mm initial (IL) and 0mm/hr continuous (CL) and, 25mm IL and 2.5mm/hr CL for impervious and pervious areas respectively. ICM requires a single value to adopt for all events and these figures are based on past reports and former modelling carried out and validated by NCE. Manning's Value "n" is assumed as 0.04 for impervious or post developed areas (accounting for buildings, kerbs and footpaths and other obstructions to flow) and 0.06 for pervious or undeveloped areas (accounting for relatively well-kept grassed lots).

The baseline catchment indicates a critical duration of 45-minutes and temporal pattern 8 for both the 1% AEP and 0.2EY events. Given the significant change in imperviousness a critical duration assessment has also been conducted on the post-development scenario to ensure no change in critical duration. This assessment found the critical duration to be 10-minutes and temporal pattern 2 for the 1% AEP event and 15-minutes and temporal pattern 9 for the 0.2EY event.

Simulations were run for existing (base), developed (unmitigated) and developed mitigated scenarios for both minor and major events. The peak flows are shown on **Table 2-1**. To determine the minimum storage requirements the flow hydrograph results have been extracted for the developed scenarios without mitigation. The area under the flow hydrograph but above the peak pre-development flow rate is the minimum volume required for mitigation. The results of the volume assessment are summarised in **Table 2-2**. **Figure 2-1** and **Figure 2-2** show the volume required for mitigation for the 1% AEP and 0.2EY events respectively.

Table 2-1 ICM Peak Flows

Event	Pre-Development Flow (m^3/s)	Post-Development Flow (m^3/s)	Difference (m^3/s)	Difference (%)
Minor (0.2 EY)	0.182	0.319	0.137	75%
Major (1% AEP)	0.327	0.534	0.207	63%

Table 2-2 Calculated Storage Volumes

Event	Storage Volume (m^3)
Minor (0.2 EY)	54
Major (1% AEP)	71

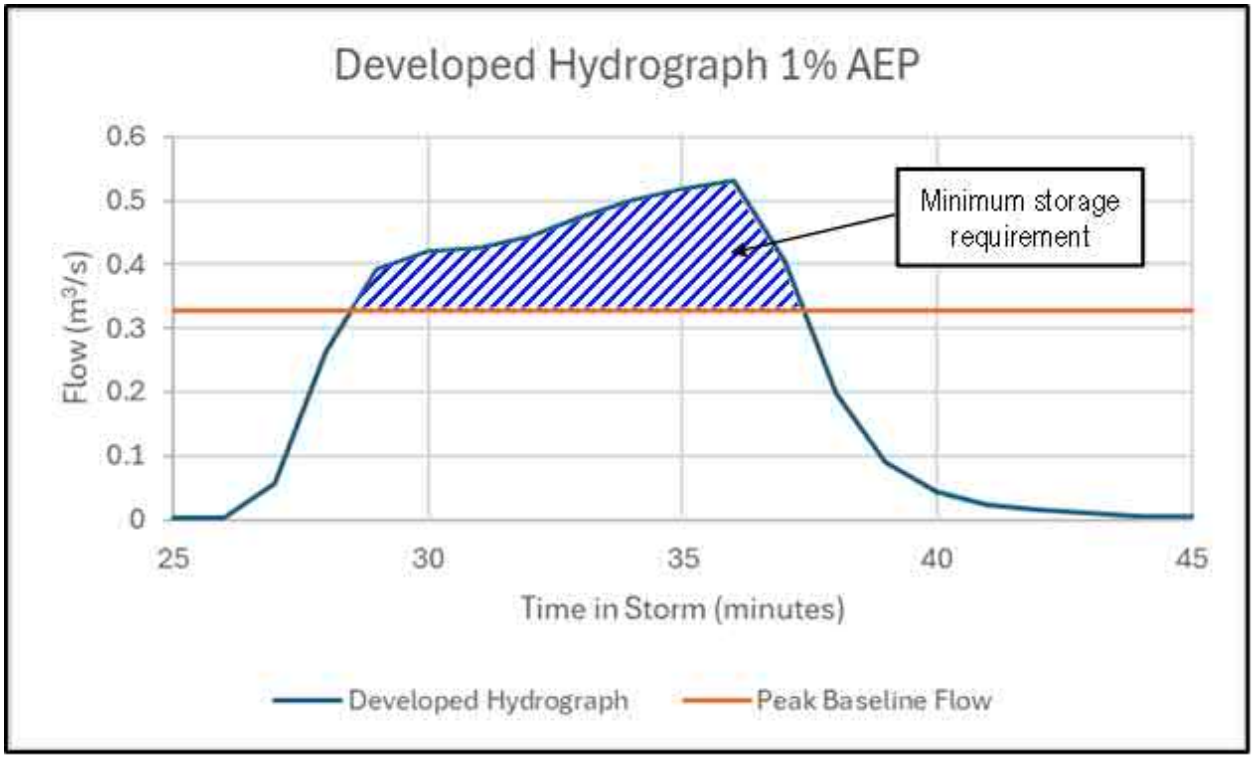

Figure 2-1 1% AEP flow hydrograph and required storage volume calculation

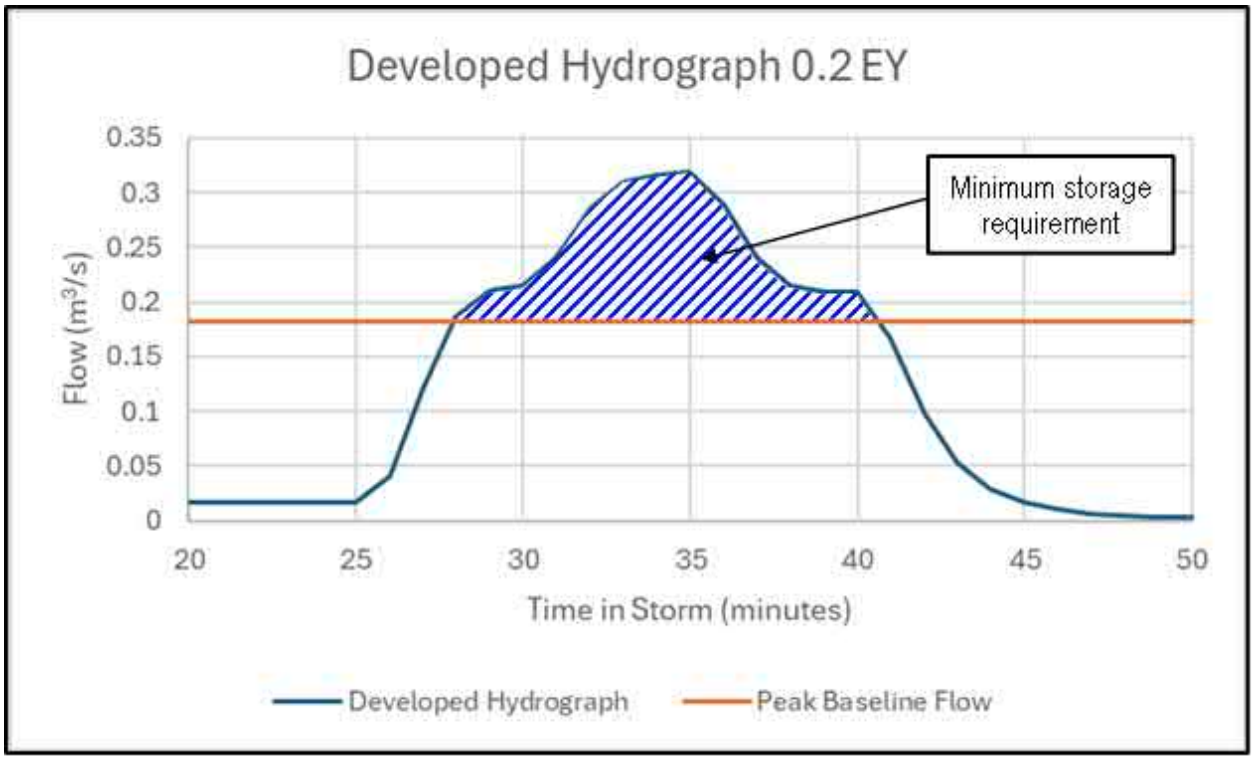

Figure 2-2 0.2EY flow hydrograph and required storage volume calculation

It is proposed that flows can be mitigated via overland storage within carparks and through drains with weirs or underground storage systems although cover is limited due to the lack of existing underground infrastructure. To model the potential mitigation measures and ensure there are no impacts on the adjacent railway corridor, NCE have developed a fine scale 2D mini-model of the local catchment noting that it is considered a high level of assessment for this application. The site is mostly outside of Townsville City Council's Flood Hazard overlay, medium hazard area which would not otherwise trigger a flood impact assessment, however this higher level of assessment has the benefit of demonstrating non-worsening to the

rail corridor as well as demonstrate non-worsening off site. The mini-model utilises the TUFLOW two-dimensional modelling software with rain-on-grid hydrology to directly determine the impacts of both regrading the site and increasing the imperviousness.

2.1.2 2D Hydraulic Modelling

The hydraulic model has been set up with the Townsville City Council 2016 LiDAR as the base DEM utilising a 1m grid and sub-grid-sampling. The model has been developed to align with the TCC Ross River (2021) model and utilises the adopted land use within this modelling. Alterations have been made to show the drainage and access driveway to the adjacent lot owned by the client. This easement may be used to help drain flows from the site. The adjacent development can be seen in **Figure 2-3**.

Intensity Frequency Durations (IFD's) in accordance for with ARR2019 were adopted to develop the rainfall timeseries for the ROG methodology. The ten (10) temporal patterns for each duration of the 1% and 20% AEP event were simulated through the hydraulic model from which an assessment on the water surface levels (WSL) was undertaken to determine the critical duration based on the median pattern.

The development has been modelled by altering the current land use (undeveloped land) to match the commercial/industrial land use. Additionally, the DEM has been altered to represent the development, the following DEM alterations have been applied:

- Grade lots 1 through 4 from front to back away from Edith Street to match existing grades and minimise fill,
- Provide 1.2m wide drain along the back of the lots to direct water east into the adjacent drain in Jurekey Street,
- Grade lot 15 from back to front towards Jurekey Street at a minimum grade,
- Provide internal kerbing with breakouts/minor pipe outlets to generate ponding through the development and provide runoff storage,
- Approximate shed locations have been stamped in to ensure no ponding is allowed through the buildings,
- NCE have been informed that the land to the east is also owned by the client and thus a drainage path will be provided on this land to connect to existing easements as shown in **Figure 2-3**. This drainage path will help to reduce the amount of flow to the Jurekey Street road reserve and towards the railway line as well as reduce fill on the eastern portion of the proposed lots. It is noted that a small existing catchment already grades in this direction and this drainage will help to maintain the existing point of discharge for this portion of the catchment.

Figure 2-3 Adjacent development owned by Toprise

The resulting development impacts are shown in **Figure 2-4** and **Figure 2-5** for the 1% AEP and 20% AEP respectively. Afflux is defined as the relative change in a flooding characteristic, namely water surface level (WSL) or velocity, between the baseline and developed scenario. This is determined by subtracting the baseline peak results from the developed peak results, where a positive value represents an increase in the flood characteristic and a negative value is a decrease.

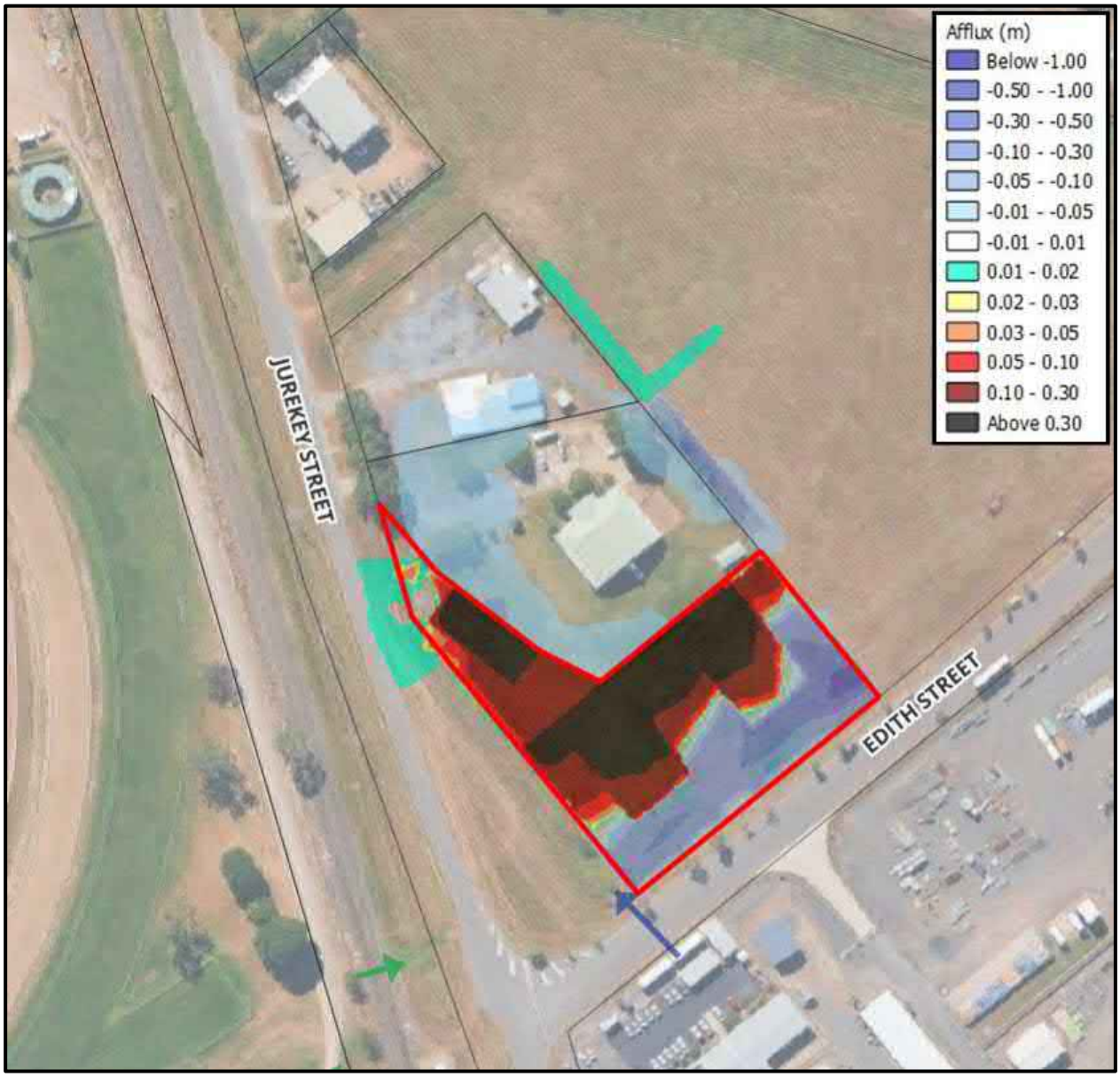

Figure 2-4 1% AEP WSL Afflux

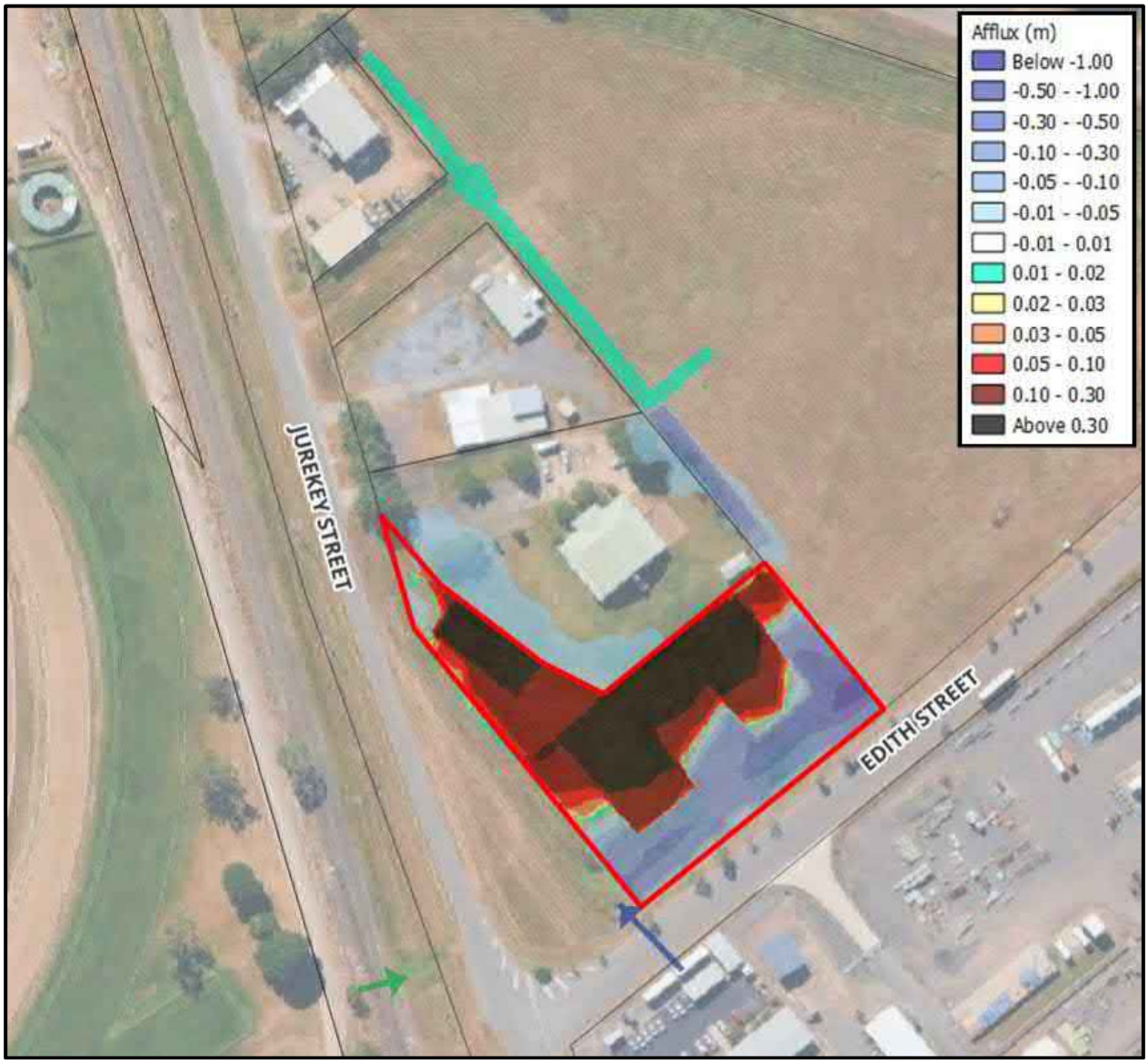

Figure 2-5 20% AEP WSL Afflux

The above afflux mapping shows no impacts on the adjacent railway line to the west, no afflux over the adjacent roadways and no afflux on adjacent lots. Some highly localised, minor afflux is noted in the 1% AEP event through the Jurekey Street road reserve however, this is extremely minor and does not impact on the roadway trafficability or change the hazard level. Some afflux is generated through the easements on the adjacent lots owned by Toprise to the north-east in both events.

Afflux mapping generally indicates no actionable or adverse impacts generated by the development runoff in particular with relation to the adjacent railway corridor.

2.1.3 Mitigation Measures

It is noted that the adjacent drain is at a depth of 1.2m to 0.4m at the southern and northern boundaries of the lot respectively which allows for some underground drainage with the potential for additional cover due to site filling and regrading. As seen on the given tables, a minimum storage requirement of approx. 71m³ across all lots was identified as being required to ensure the peak developed flow is not greater than the pre-developed flows. Storage can be undertaken within drains, underground basins, overland ponding and/or rainwater tanks. The redline markup attached shows a concept markup of the potential overland storage through drains with weirs. The 2D model demonstrates sufficient storage can be incorporated into the drains,

shallow ponding on carparks and other areas on site. NCE note that due to the existing flooding in Jurekey Street more impacts are generated by retaining structures on the northern lot 15 due to existing flow paths across the lot. Therefore, walls and flow barriers are not incorporated into this northern portion to avoid impacts off site. Underground drainage using grated drains may be used to capture flows and outlet to the LPOD without significant overland ponding which will result in minimal impacts generated by the development.

It is also intended that the built form end user, may be responsible for installing the storage and we recommend the above mitigation timing be nominated to be installed prior to the commencement of the use. In this instance, the storage volume is to be proportional to each lot area.

2.2 Quality

As noted above, the RaL application would not trigger a requirement to address the provisions of the SPP (and in fact is a reduction in the number of existing lots). However, it is understood that the development application also involves an MCU and therefore triggers the stormwater quality requirements. In the event that the application did not include an MCU, the following section would not apply.

All stormwater treatment trains have been modelled with the aid of MUSIC version 6.4.0. The catchments have been modelled in accordance with the following:

- "MUSIC Modelling Guidelines November 2018 – Consultation Draft", Water by Design (2018);
- Townsville City Council (TCC) Townsville City Plan Stormwater Quality Planning Scheme Policy SC6.4.10;
- Townsville Aero, 6 Minute Time Step From 03/03/1953 To 31/03/2010;
- Water by Design MUSIC Modelling Guidelines Source Nodes (Split) utilising modified percent impervious area & pollutant concentration;
- No drainage routing between nodes;

2.2.1 Stormwater Quality Objectives

The design intent for the system is to meet the current TCC Planning Scheme water quality targets, namely:

- 80% TSS Reduction
- 65% TP Reduction
- 40% TN Reduction
- 90% Gross Pollutants Reduction

2.2.2 MUSIC Modelling

Pollutant loads for the development have been modelled primarily using "split" land use and references the MUSIC Modelling Guidelines November 2018 for the pollutant parameters for "Industrial" surface types. **Table 2-3** depicts the source nodes adopted in the assessment including the impervious percentages. The pollutant generation parameters adopted are shown in **Figure 2-6** and **Figure 2-7** depicting the rainfall-run-off parameters.

Below is the modelling concept adopted:

- The modelling has been assessed for the post development treatment effectiveness to meet the TCC Planning Scheme water quality targets given the lots are currently undeveloped.

- The MUSIC nodes include runoff from Roof and Concrete Road/Driveway area which are 100% impervious and landscaped areas defined as 0% pervious. All roughly to the north / north-west and outlet into the LPOD in the Jurekey Street road reserve.

- Development areas have been split between two catchment areas. These include:

    - Catchment 1 including the full developed catchment area from the four (4) reconfigured allotments, and

    - Catchment 2 including the full developed catchment area from lot 15.

- Two treatment train options have been modelled to provide an option for limited cover and underground network and a best-case underground network option. Given the very high expected impervious percentage the ability to treat runoff through natural options is severely limited. Therefore, the two options proposed outline proprietary treatment devices.

    - Option 1 utilises Ocean Protect OceanGuards and Stormfilters in an underground detention tank these are pit insert filter bags and stormwater filter devices. 16 OceanGuards and 24 x 460mm height filters are required for catchment 1 with 5 OceanGuards and 6 x 460mm height filters are required for catchment 2.

    - Option 2 utilises Atlan Stormwater FlowGuard treatment devices – these devices are grated trench drain inserts that treat flow at 0.5L/S per lineal metre. The required length of drainage grate for treatment is 140m in catchment 1 and 40m in catchment 2.

TCC also permit in some instances the ability to provide a contribution in conjunction with addressing a proportion of the water quality requirements with that contribution allocated to regional water quality devices. Where a suitable regional option is available, this may be suitable in this instance by agreement with the CG / TCC.

NCE note that alternate proprietary treatment devices may be utilised such as Atlan Stormwater FlowFilters (minimum requirement of 250mm fall through each system) where cover is too limited for storage vaults and filters. However, these options are not exhaustive and alternative options that comply with the SPP would also be suitable.

It is also intended that the built form end user, may be responsible for installing the treatment devices and we recommend the water quality requirement timing be nominated to be installed prior to the commencement of the use. The number of the above devices is to be proportional to each lot area.

Table 2-3 Music Source Nodes

Node Name	Zoning/Surface Type	Surface Area (ha)	Impervious (%)	Buffer Area (%)
Roofs C1	Industrial Roof	0.250	100	0
Roads C1	Industrial Road	0.349	100	0
Ground Flow C1	Industrial Ground Flow	0.011	0	100
Roofs C1	Industrial Roof	0.061	100	0
Roads C1	Industrial Road	0.086	100	0
Ground Flow C1	Industrial Ground Flow	0.012	0	100

TABLE 3.9 POLLUTANT EXPORT PARAMETERS FOR SPLIT CATCHMENT LAND USE (LOG^{10} VALUES)

FLOW TYPE	SURFACE TYPE	TSS LOG^{10} VALUES		TP LOG^{10} VALUES		TN LOG^{10} VALUES	
		MEAN	ST. DEV	MEAN	ST. DEV	MEAN	ST. DEV
URBAN RESIDENTIAL							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	1.00	0.34	-0.97	0.31	0.20	0.20
	Ground level	1.00	0.34	-0.97	0.31	0.20	0.20
Stormflow parameters	Roof	1.30	0.39	-0.89	0.31	0.26	0.23
	Roads	2.43	0.39	-0.30	0.31	0.26	0.23
	Ground level	2.18	0.39	-0.47	0.31	0.26	0.23
INDUSTRIAL							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	0.78	0.45	-1.11	0.48	0.14	0.20
	Ground level	0.78	0.45	-1.11	0.48	0.14	0.20
Stormflow parameters	Roof	1.30	0.44	-0.89	0.36	0.25	0.32
	Roads	2.43	0.44	-0.30	0.36	0.25	0.32
	Ground level	1.92	0.44	-0.59	0.36	0.25	0.32

Figure 2-6 MUSIC recommended pollutant export parameters for split catchments for SEQ extracted from MUSIC Modelling Guidelines November 2018

TABLE A1.2 RECOMMENDED MUSIC RAINFALL-RUNOFF PARAMETERS SEQ

PARAMETER	LAND USE			
	URBAN RESIDENTIAL	COMMERCIAL AND INDUSTRIAL	RURAL RESIDENTIAL	FORESTED
RAINFALL THRESHOLD (MM)	1	1	1	1
SOIL STORAGE CAPACITY (MM)	500*	18	98	120
INITIAL STORAGE (% CAPACITY)	10	10	10	10
FIELD CAPACITY (MM)	200	80	80	80
INFILTRATION CAPACITY COEFFICIENT A	211	243	84	200
INFILTRATION CAPACITY COEFFICIENT B	5.0	0.6	3.3	1.0
INITIAL DEPTH (MM)	50	50	50	50
DAILY RECHARGE RATE (%)	28	0	100	25
DAILY BASEFLOW RATE (%)	27	31	22	3
DAILY DEEP SEEPAGE RATE (%)	0	0	0	0

Figure 2-7 MUSIC recommended rainfall run-off parameters SEQ extracted from MUSIC Modelling Guidelines November 2018

Table 2-4 summarises the results of the assessment. It is evident that the water quality leaving the site post development meets the quality objectives set by TCC. Therefore, compliance with stormwater quality requirements can be achieved through either of the proposed treatment trains.

Table 2-4 Music Treatment Train Effectiveness

Description	Sources	Residual Load	% Reduction	TCC Treatment %
Option 1				
Flow (ML/yr)	7	7		
Total Suspended Solids (kg/yr)	1970	186	90.60	80
Total Phosphorus (kg/yr)	4	1	65.30	65
Total Nitrogen (kg/yr)	17	9	46.70	40
Gross Pollutants (kg/yr)	138	0	100.00	90
Option 2				
Flow (ML/yr)	7	7		
Total Suspended Solids (kg/yr)	1980	334	83.20	80
Total Phosphorus (kg/yr)	4	1	64.80	65
Total Nitrogen (kg/yr)	17	6	62.60	40
Gross Pollutants (kg/yr)	138	2	98.90	90

3.0 CONCLUSION

NCE have undertaken a site-based stormwater management assessment associated with the proposed development 96 Edith Street, Cluden. The findings of this assessment are summarised below:

- Under the QUDM tests, the table drain and cutoff drain within the road reserves of Jurekey Street has been defined as a lawful point of discharge (LPOD) for the site. The proposed stormwater system is expected to outlet via a combination of overland flow and underground drainage systems while maintaining the existing LPOD locations.
    - An additional point of discharge is provided to the north-east via a proposed easement through Toprise land to split the flows with natural grades generally showing a portion of the catchment flowing in this direction.
- ICM modelling results indicated mitigation of runoff is required to align post development flows with the existing peak runoff. A storage calculation was completed to determine the minimum storage required to align with the pre-development peak.
- 2D rain-on-grid modelling was utilised to confirm that proposed mitigation measures will result in no impact, in particular to the railway corridor to the west.
- The stormwater quality assessment undertaken via MUSIC shows that the development is able to adequately treat stormwater runoff to the design objectives outlined in the TCC Townsville City Plan.
- A redline markup is provided outlining a concept stormwater management plan indicating how stormwater runoff may be treated, stored and directed to the LPOD. It is noted that detailed design will be required to confirm practicality of the options proposed with account for site constraints and confirm stormwater runoff is not intensified and pollutants adequately treated.

APPENDIX A

Proposed Reconfiguration Plan, Plan 27594/086 dated 19/11/2024, prepared by Brazier Motti

PROPOSED RECONFIGURATION

Lots 1 - 4 and Easement

Cancelling Lots 16 – 22 on SP105728 and Lot 23 on SP105729

Date: 19th November, 2024	
Scale: 1:1000	A3
Drawn: MJM	
Job No: 27594/062-01	
Plan No: 27594/086 E	

braziermotti.com.au

SURVEYING
TOWNPLANNING
PROJECTMANAGEMENT
MAPPING&GIS

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering, and Local Authority and Agency approvals.

APPENDIX B

Warehouse Development Concept Plan, Project Number T25 drawings dated 30/10/2024, prepared by insideout architects

WAREHOUSE DEVELOPMENT CONCEPT PROPOSAL - TOWNSVILLE, QLD

SHEET LIST

SHEET NUMBER	REVISION	SHEET NAME
A000	D	COVER PAGE
A001	A	3D RENDERINGS
A100	D	PROPOSED SITE PLAN - LOTS 01 - 04
A101	C	PROPOSED SITE PLAN - LOT 15
A200	D	PROPOSED FLOOR PLAN - LOT 01 & 02
A201	D	PROPOSED FLOOR PLAN - LOTS 03 & 04
A202	B	PROPOSED FLOOR PLAN - LOT 15
A300	D	LOT 01 & 02 ELEVATIONS
A301	D	LOT 03 & 04 ELEVATIONS
A302	A	LOT 15 ELEVATIONS

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NO.	DESCRIPTION	DATE
A	ISSUED FOR DA	28.10.2024
B	LOT SIZES UPDATED	26.02.2025
C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

SHEET NAME:
COVER PAGE

PROJECT NUMBER: T25

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE:

SHEET NUMBER: A000

LOT 15 3D
PERSPECTIVES

LOT 01 & 02 3D
PERSPECTIVES

LOT 03 & 04 3D
PERSPECTIVES

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A	ISSUED FOR DA	28.10.2024

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PROJECT STATUS
CONCEPT DESIGN

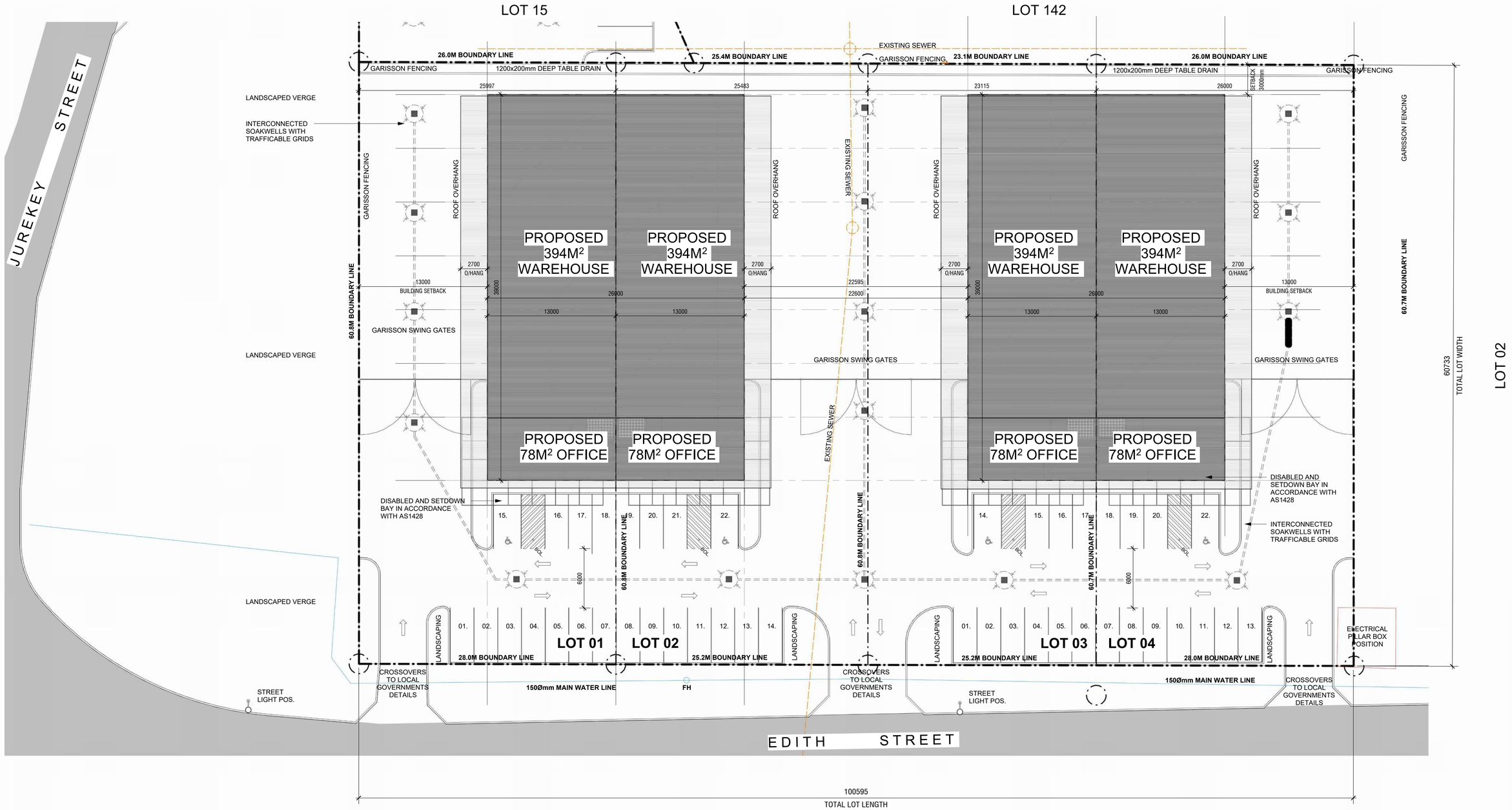
SHEET NAME:
3D RENDERINGS

PROJECT NUMBER: T25

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

CHECKED BY:	TD	DATE:	30/10/2024
DRAWN BY:	IOA	SCALE:	1 : 1

SHEET NUMBER: A001



PROPOSED SITE PLAN - LOTS 01 - 04

1 : 200

0 2.5 m 5.0 m 10.0 m
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NORTH

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C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

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PROJECT NAME:
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PROJECT STATUS
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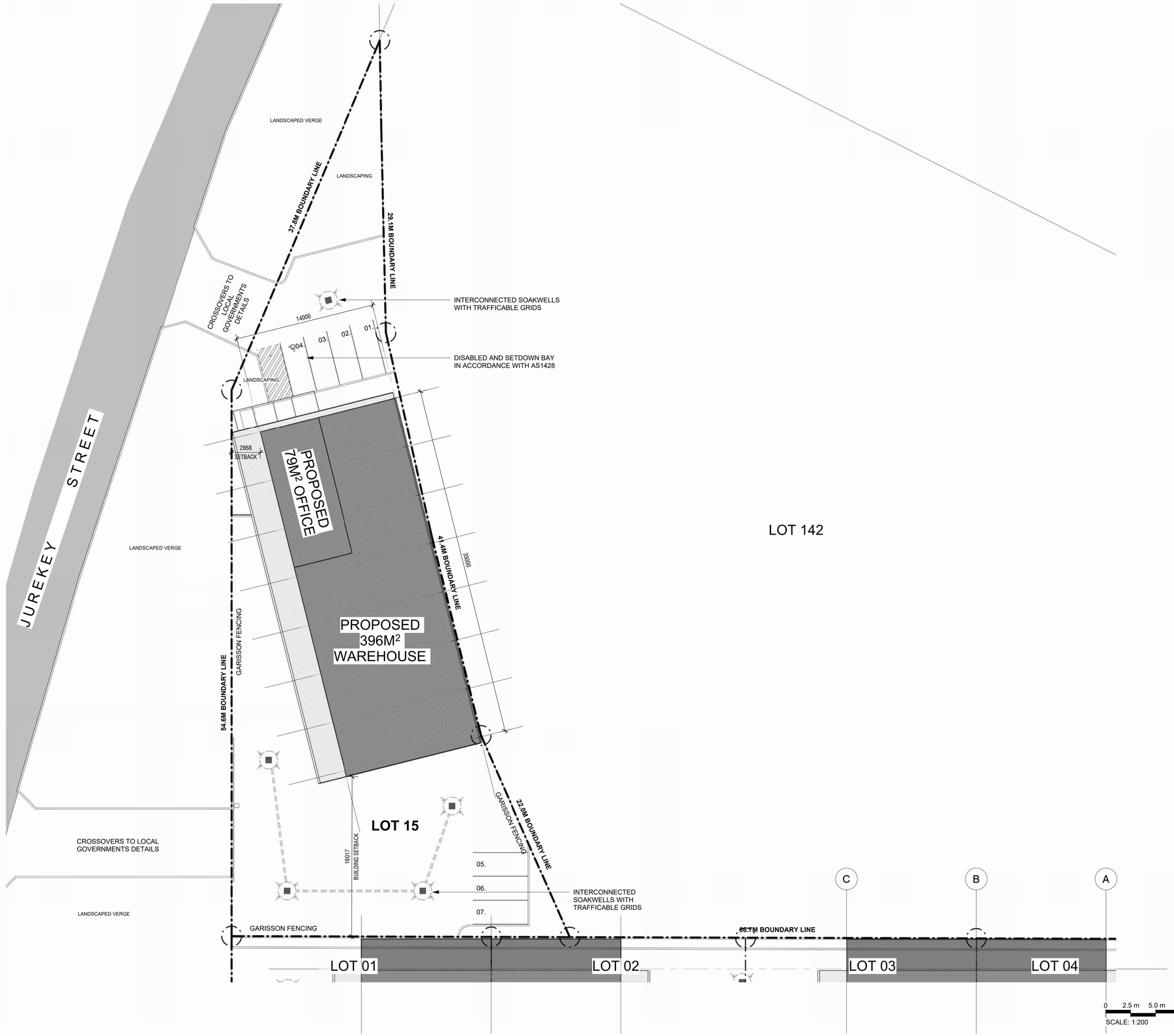
SHEET NAME:
PROPOSED SITE PLAN - LOTS 01 - 04

PROJECT NUMBER: T25

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE: 1 : 200

SHEET NUMBER: A100



PROPOSED SITE PLAN - LOT 15

1 : 200

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SHEET NAME:
PROPOSED SITE PLAN - LOT 15

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

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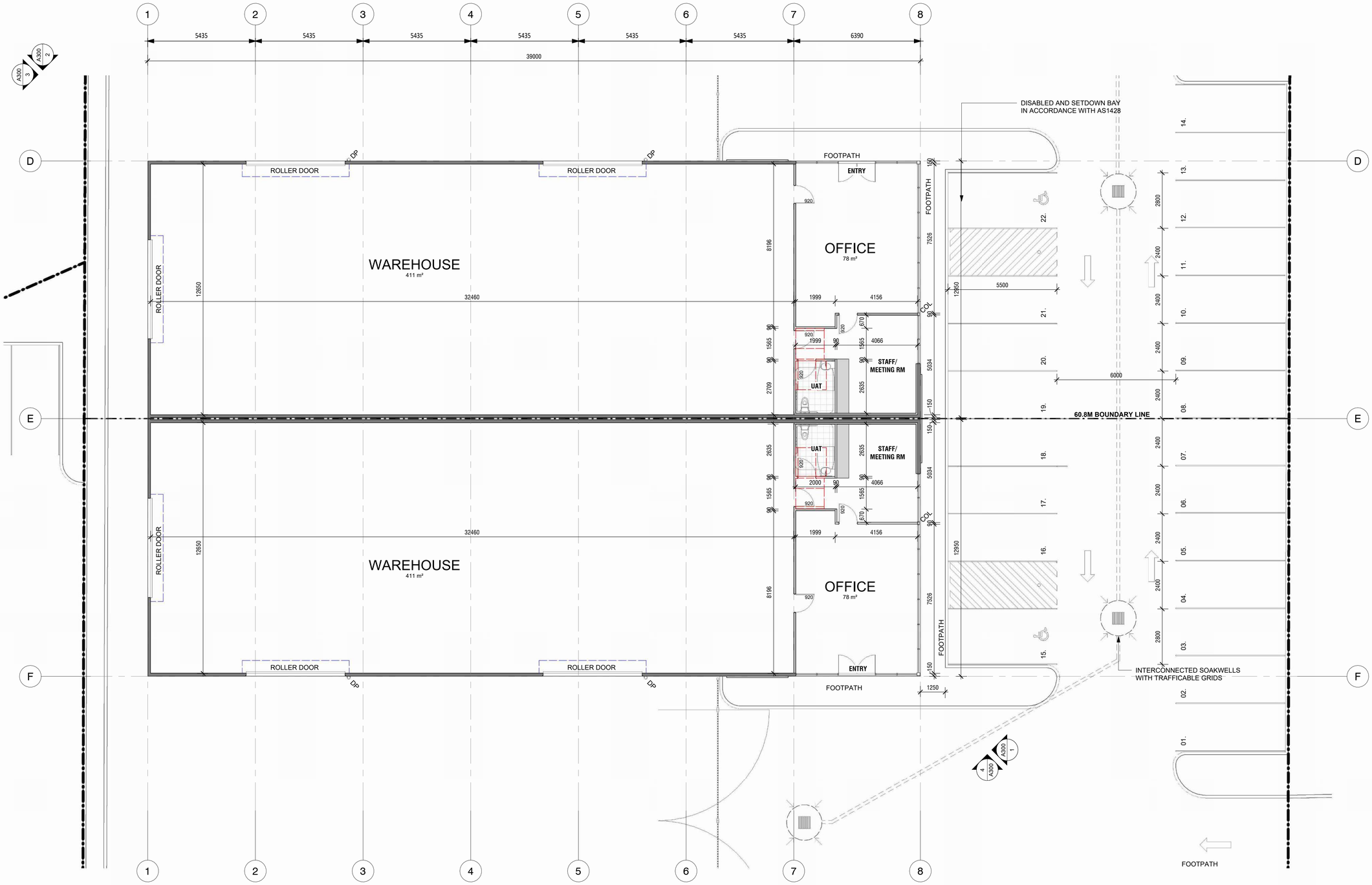
SHEET NUMBER: A101



PROPOSED FLOOR PLAN - LOTS 01 & 02

1 : 100

0 1.3 m 2.5 m 5.0 m
SCALE: 1:100

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PROJECT NAME:
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PROJECT STATUS
CONCEPT DESIGN

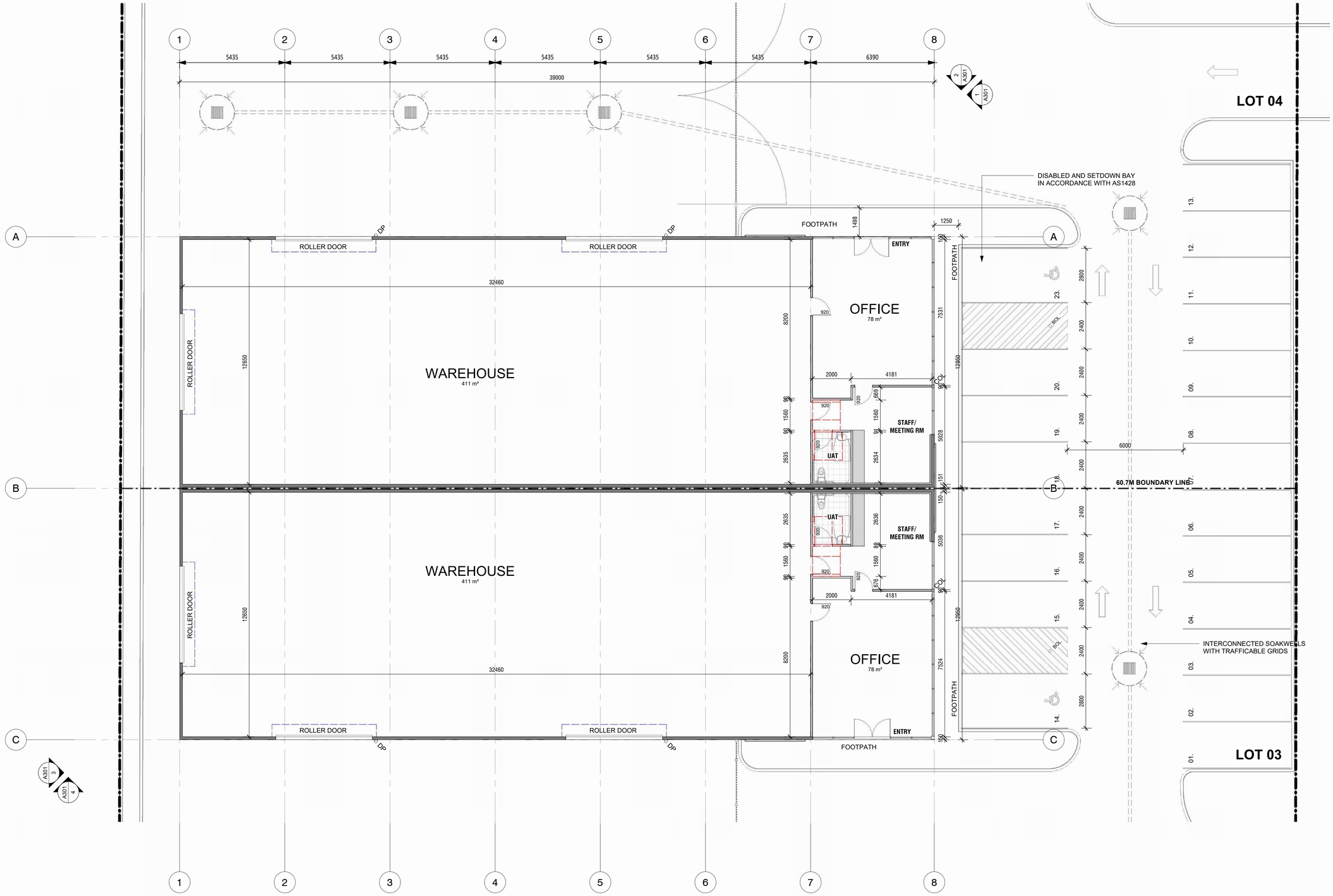
SHEET NAME:
PROPOSED FLOOR PLAN - LOT 01 & 02

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 100

SHEET NUMBER: A200



PROPOSED FLOOR PLAN - LOTS 03 & 04

1 : 100

0 1.3 m 2.5 m 5.0 m
SCALE: 1:100

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PROJECT STATUS
CONCEPT DESIGN

SHEET NAME:
PROPOSED FLOOR PLAN - LOTS 03 & 04

PROJECT NUMBER: T25

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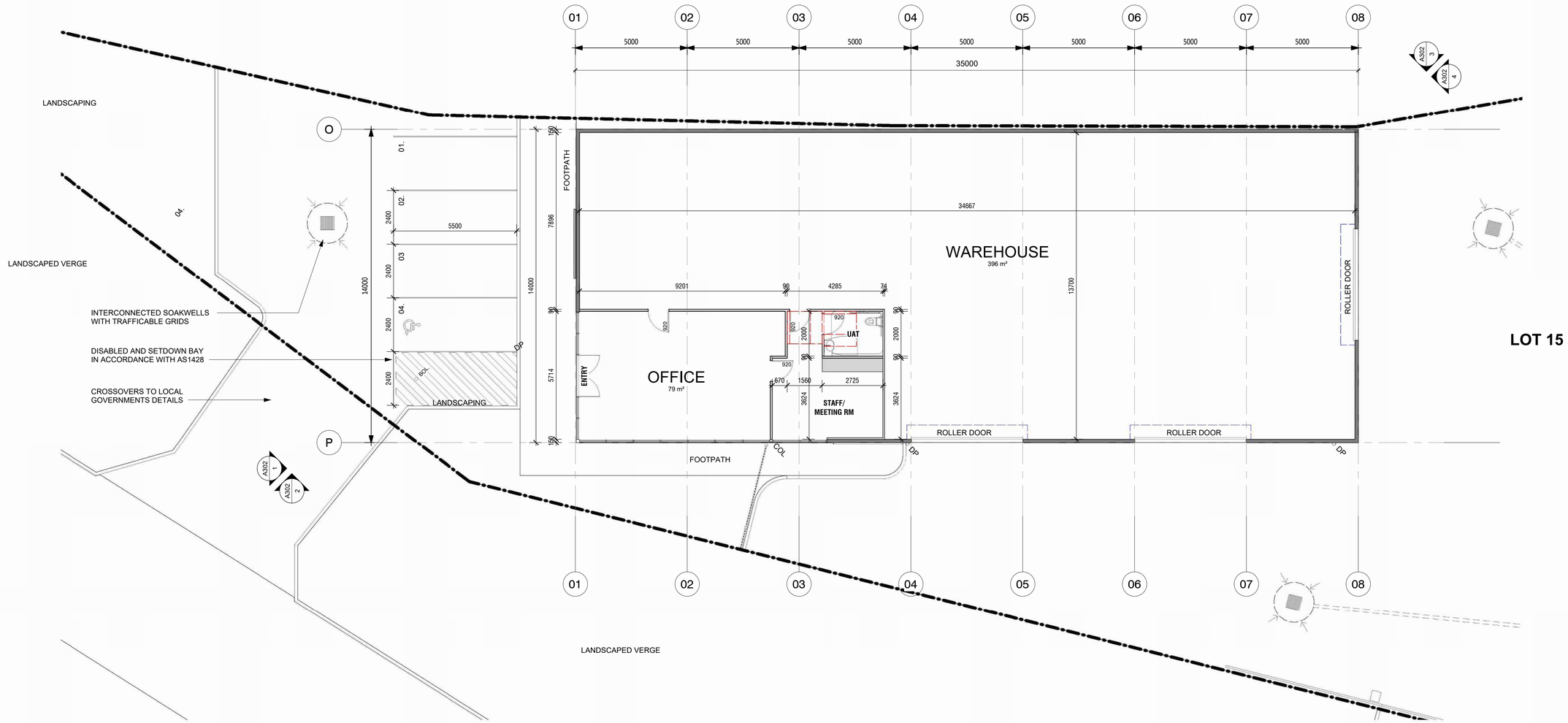
SHEET NUMBER: A201



PROPOSED FLOOR PLAN - LOT 15

1 : 100

0 1.3 m 2.5 m 5.0 m
SCALE: 1:100

North

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PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
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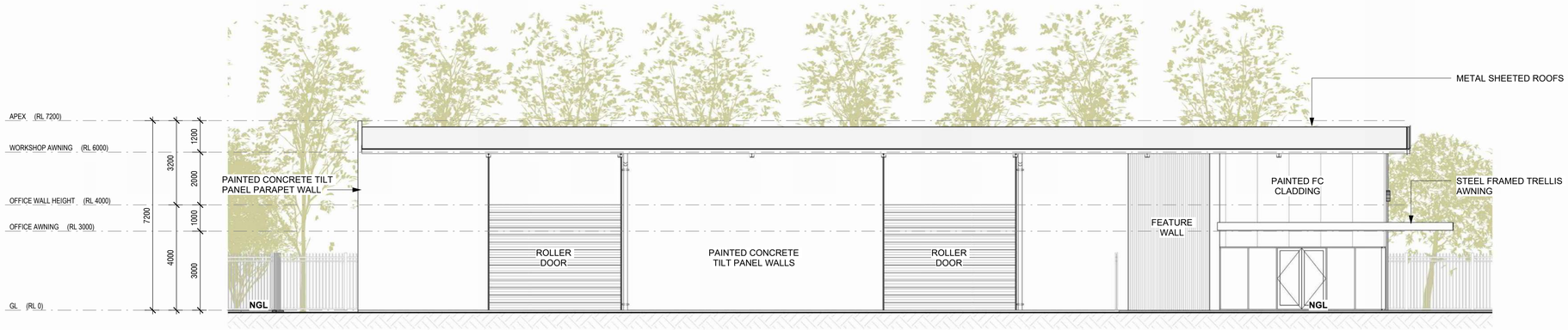
SHEET NAME:
PROPOSED FLOOR PLAN - LOT 15

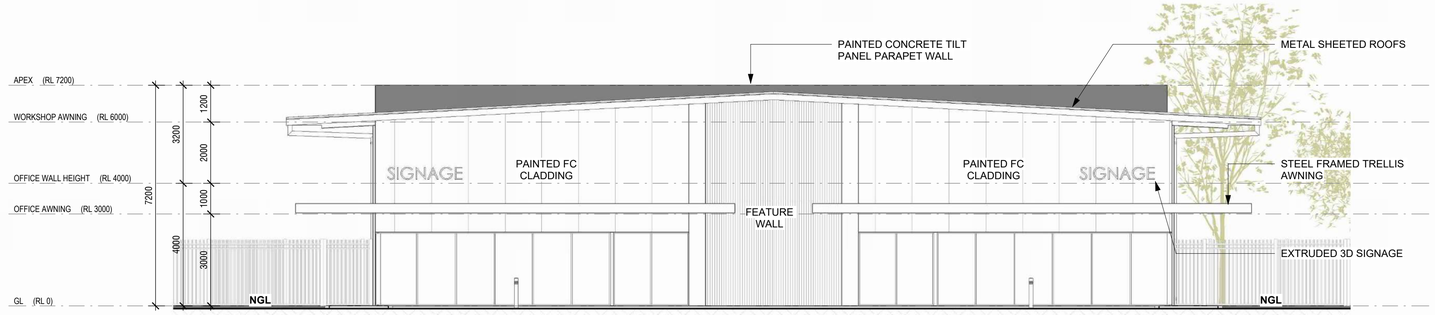
PROJECT NUMBER: T25

CHECKED BY: TD
DATE: 30/10/2024
DRAWN BY: IOA
SCALE: 1 : 100

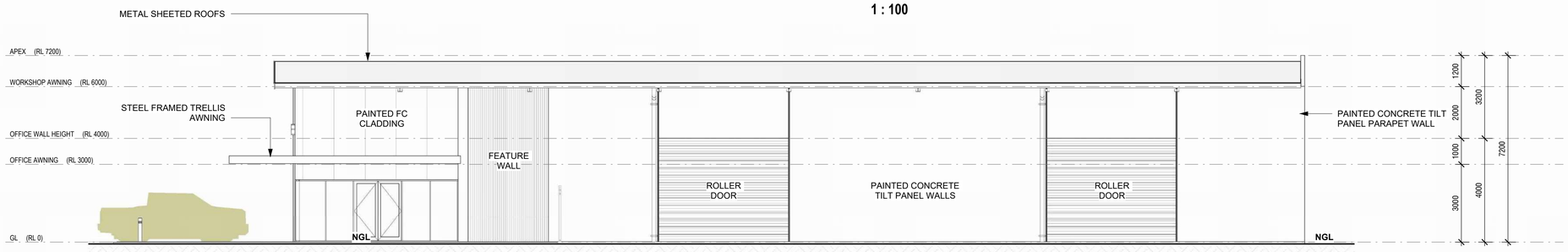
SHEET NUMBER: A202



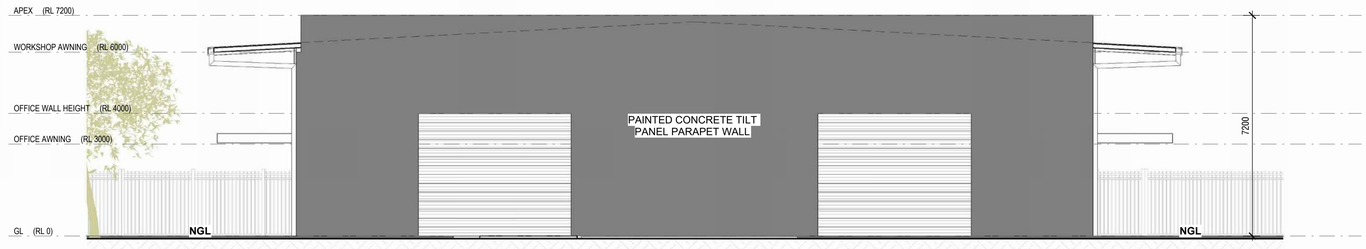
LOT 01 SIDE ELEVATION
1 : 100



LOT 01 & 02 FRONT ELEVATION
1 : 100



LOT 02 SIDE ELEVATION
1 : 100



LOT 01 & 02 REAR ELEVATION
1 : 100

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scale 0 1.0 2 3 5 m

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NO.	DESCRIPTION	DATE
A	ISSUED FOR DA	28.10.2024
C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

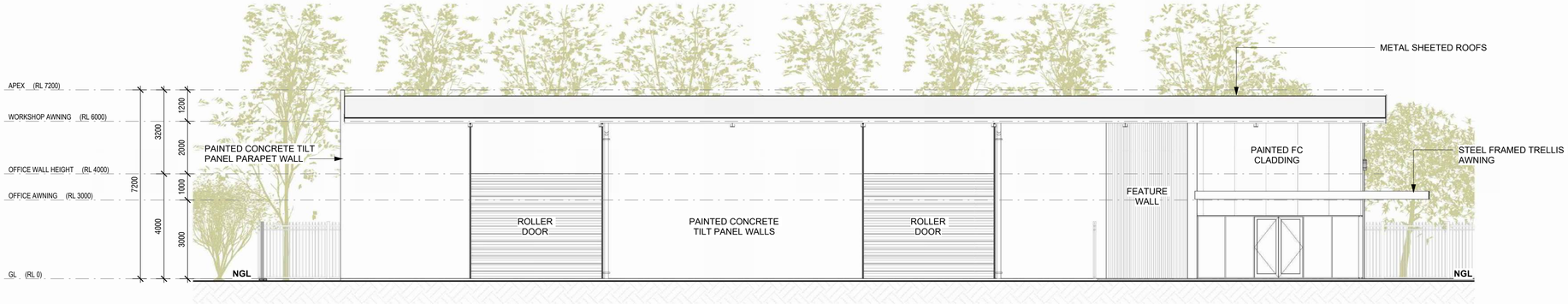
SHEET NAME:
LOT 01 & 02 ELEVATIONS

PROJECT NUMBER: T25

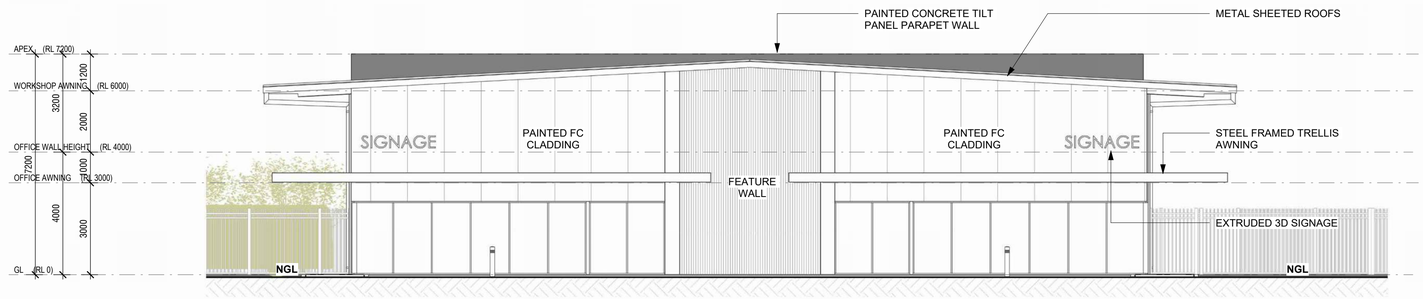
CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 100

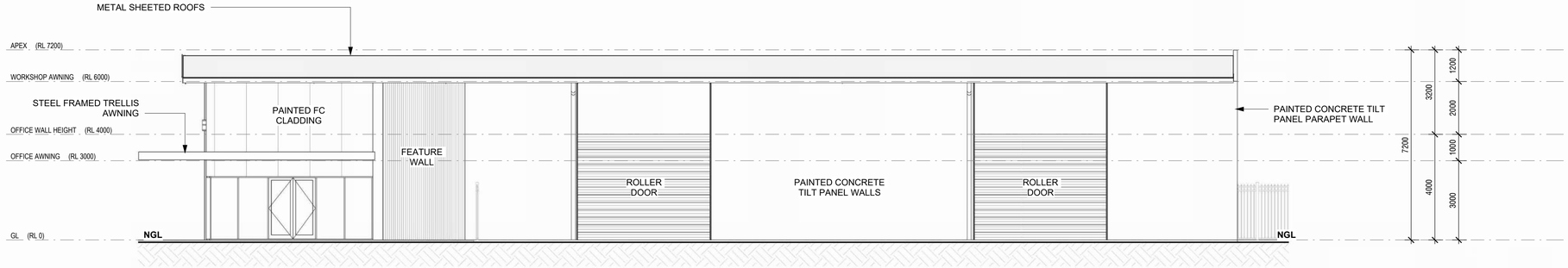
SHEET NUMBER: A300



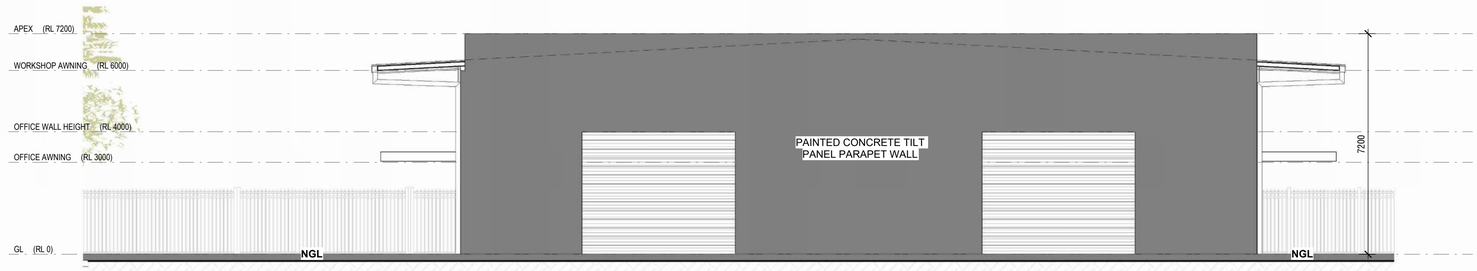
LOT 03 SIDE ELEVATION
1 : 100



LOT 03 & 04 FRONT ELEVATION
1 : 100



LOT 04 SIDE ELEVATION
1 : 100



LOT 03 & 04 REAR ELEVATION
1 : 100

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A	ISSUED FOR DA	28.10.2024
C	BUILDING SIZES AND PARKING LAYOUTS UPDATED	26.03.2025
D	3m SETBACK WITH TABLE DRAIN ADDED	26.05.2025

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

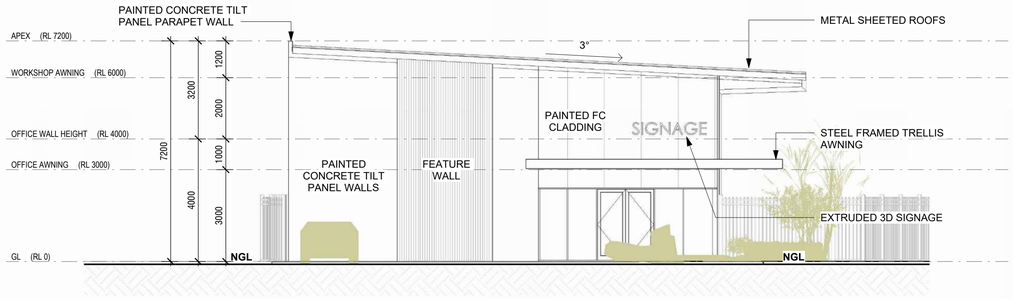
SHEET NAME:
LOT 03 & 04 ELEVATIONS

PROJECT NUMBER: T25

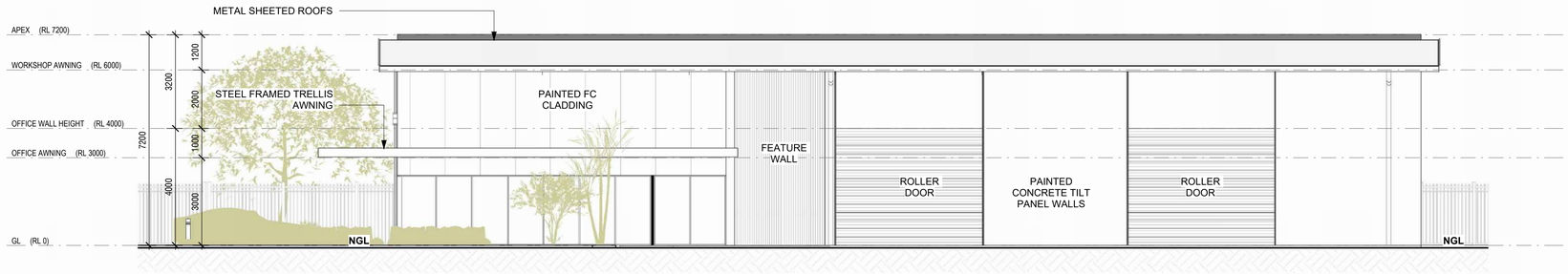
PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

CHECKED BY:	TD	DATE:	30/10/2024
DRAWN BY:	IOA	SCALE:	1 : 100

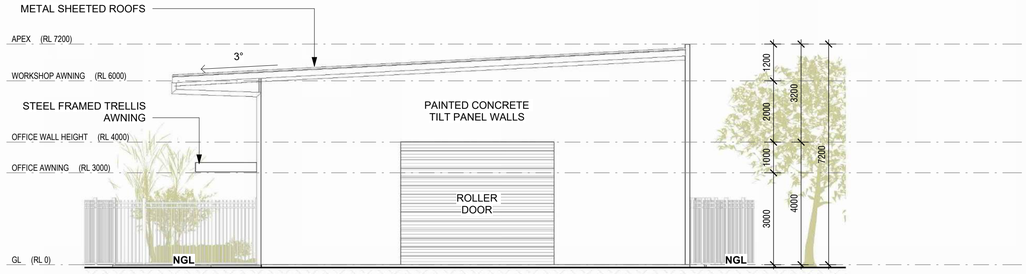
SHEET NUMBER: A301



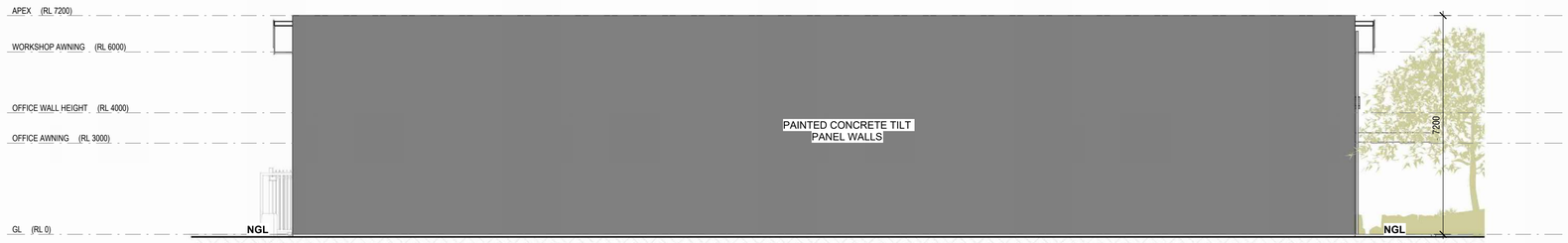
LOT 15 FRONT ELEVATION
1 : 100



LOT 15 SIDE ELEVATION A
1 : 100



LOT 15 SIDE ELEVATION B
1 : 100



LOT 15 REAR ELEVATION
1 : 100

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NO.	DESCRIPTION	DATE
A	ISSUED FOR DA	28.10.2024

CLIENT NAME:
TOPRISE AUSTRALIA PTY LTD

PROJECT STATUS
CONCEPT DESIGN

PROJECT NAME:
TOWNSVILLE NEW WAREHOUSE AND OFFICES

SHEET NAME:
LOT 15 ELEVATIONS

PROJECT NUMBER: T25

CHECKED BY: TD DATE: 30/10/2024

DRAWN BY: IOA SCALE: 1 : 100

SHEET NUMBER: A302

APPENDIX C

Redline Concept Mark-ups prepared by NCE

Falls and all drainage infrastructure is subject to detailed design during operational works

Indiciative of weir walls with low flow pipes or v-cut flow constrictions to generate storage through drain and carpark. Equivalent low flow opening = DN225 pipe for internal weirs and 2/DN225 for final weirs to drain outlets.

1.2m wide drain at 0.3m deep and 1 in 4 batters to back of lot for drainage and storage. Potential to be grassed to add to treatment

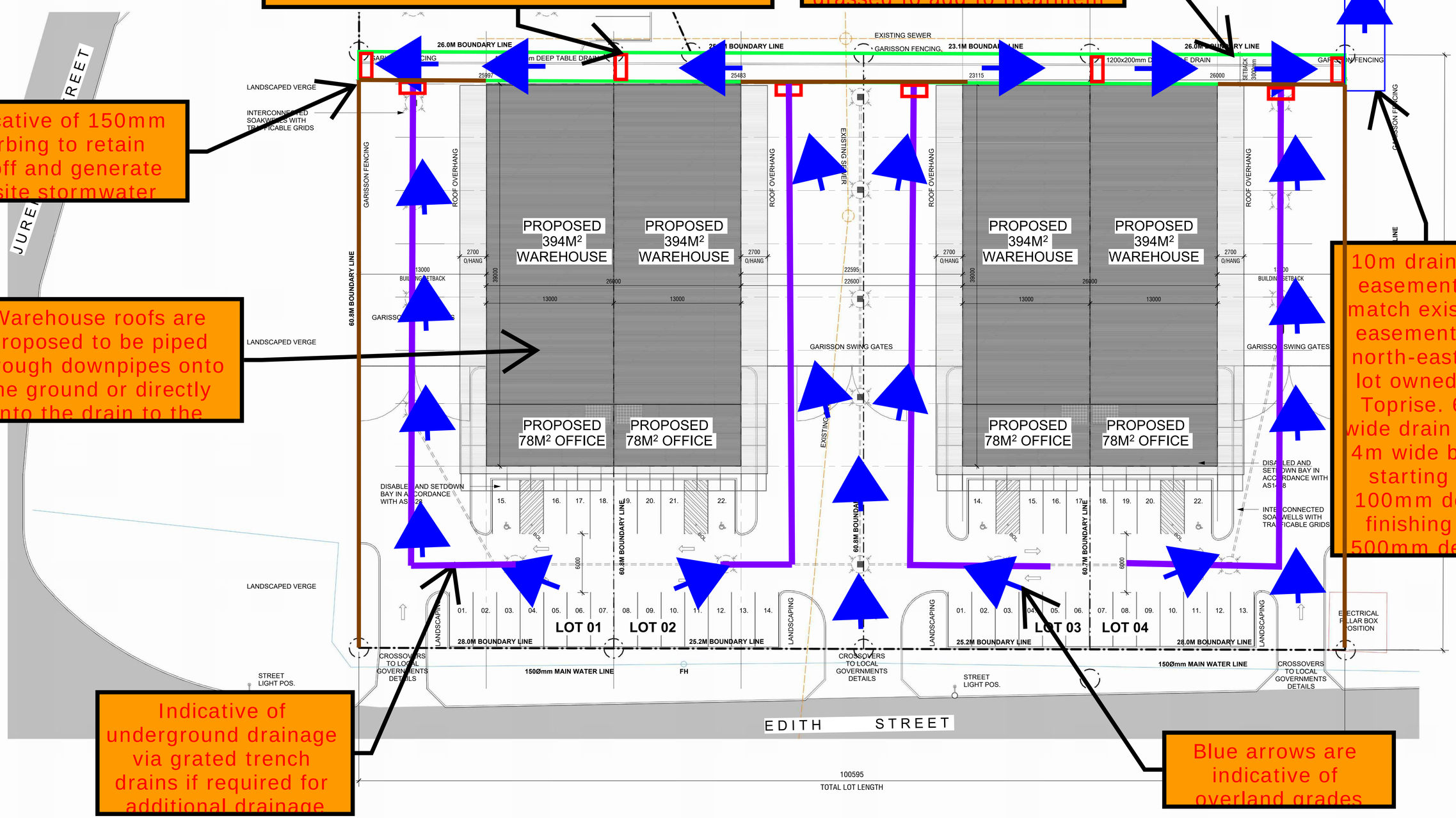
Indicative of 150mm kerbing to retain runoff and generate onsite stormwater

Warehouse roofs are proposed to be piped through downpipes onto the ground or directly into the drain to the

10m drainage easement to match existing easement on north-eastern lot owned by Toprise. 6m wide drain with 4m wide base starting at 100mm deep finishing at 500mm deep.

Indicative of underground drainage via grated trench drains if required for additional drainage

Blue arrows are indicative of overland grades



PROPOSED SITE PLAN - LOTS 01 - 04

1 : 200

0 2.5 m 5.0 m 10.0 m

SCALE: 1:200

Falls and all drainage infrastructure is subject to detailed design during operational works

Potential overland storage through landscaped area - can double as buffer treatment or be utilised as grassed swales

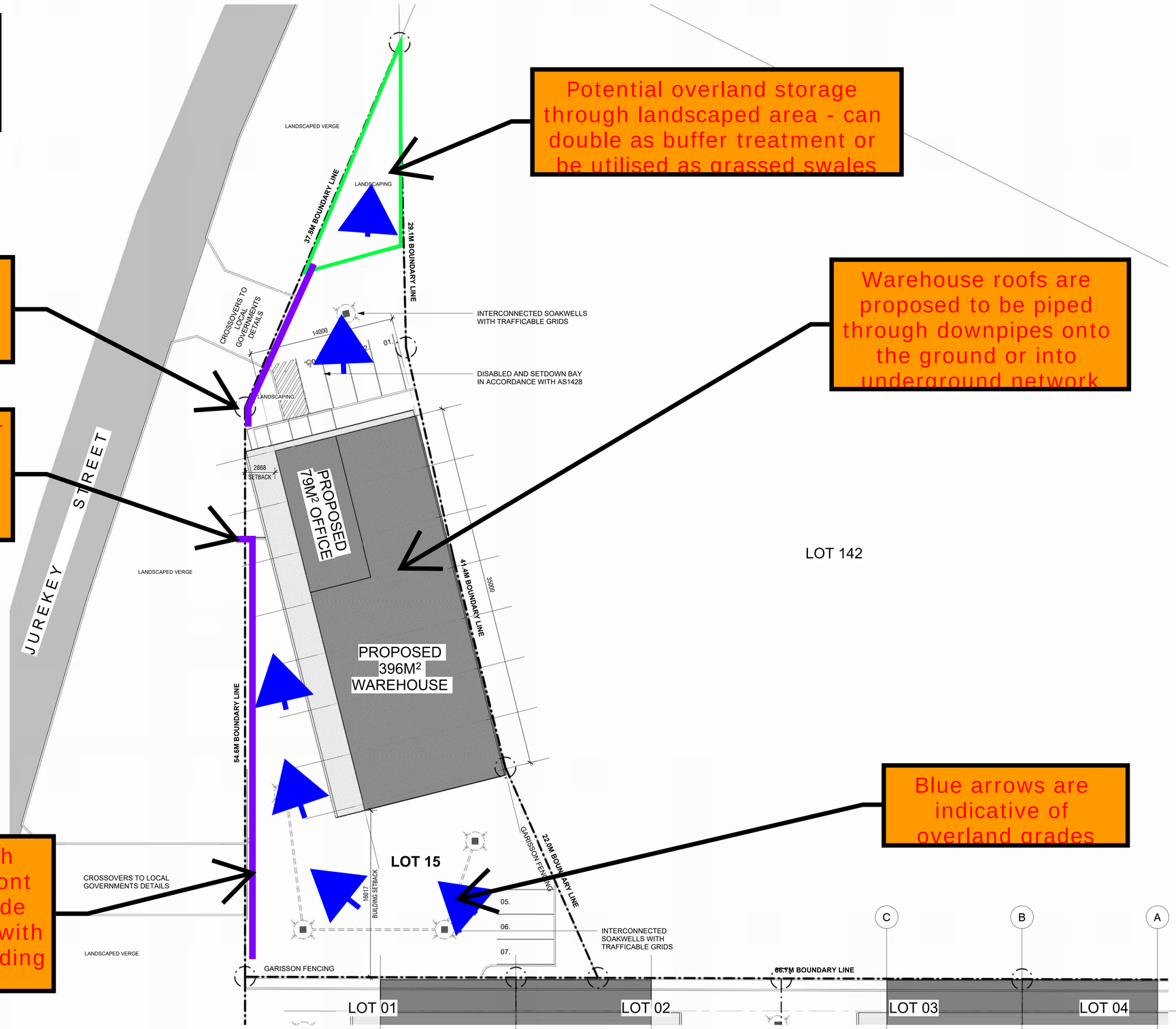
Indicative of grated trench drains to cut off flows at front of lot and potentially provide treatment.

Warehouse roofs are proposed to be piped through downpipes onto the ground or into underground network

Flows to Jurekey Street or connect to northern overland storage controlled by stormwater quality design.

Blue arrows are indicative of overland grades

Indicative of grated trench drains to cut off flows at front of lot and potentially provide treatment can be replaced with pit and pipe network depending on level of fill



PROPOSED SITE PLAN - LOT 15

1 : 200