PROPOSED NEW MEDICAL CENTRE

67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

RealSpace creative

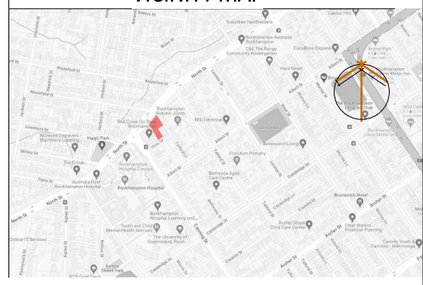
DRAWING INDEX

1 ARCHITECTURAL DRAWINGS

PROJECT DATA

DA APPROVAL:	
LOT:	12/7/4
RP DATA:	RP603082/R26335
SITE AREA:	
67 NORTH STREET:	771sqm
69 NORTH STREET:	683sqm
5 VOSS STREET:	607sqm
TOTAL GROSS SITE AREA:	2061sqm
GFA:	
SEMI BASEMENT:	-sqm
GROUND FLOOR:	1376qm
TOTAL:	1376sqm
SITE COVER:	74.48% (1535/2061)
CARPARKING:	41

VICINITY MAP



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Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO:	DATE:	SCALE:
RHH-23001	09/05/2025	@A1

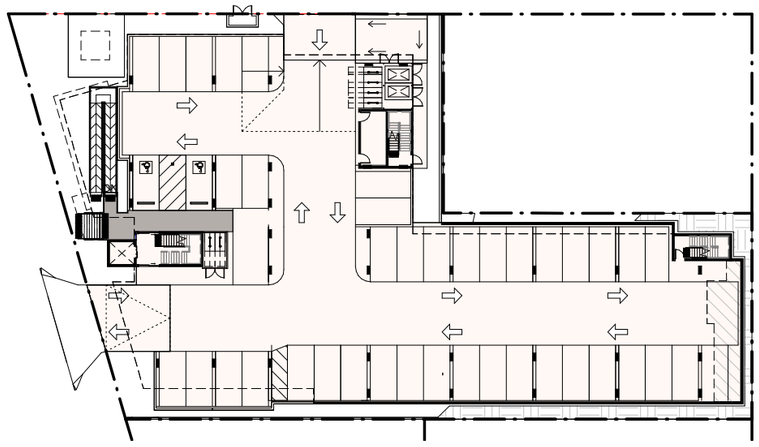
STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
COVER SHEET

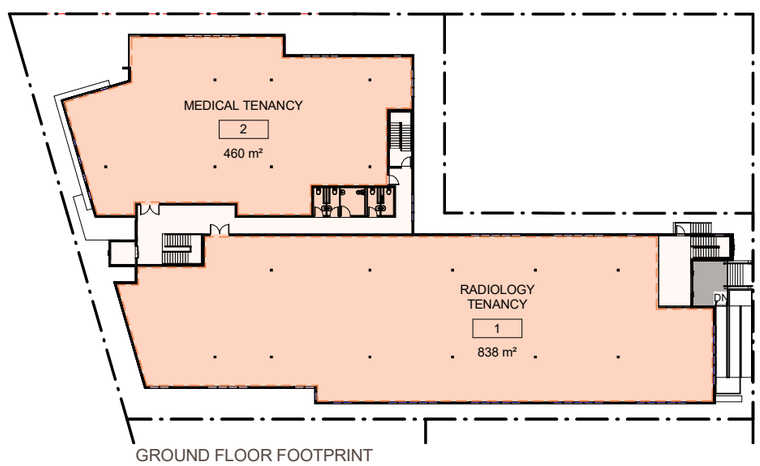
DRAWING NO:	ISSUE NO:	DRAWN:
DA001	A	TJ

DEVELOPMENT SUMMARY

GFA CALCUATION



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT

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	GFA	ENTRY PORCH	GBA	NLA
SEMI-BASEMENT FOOTPRINT	-sqm	32sqm	1652sqm	-sqm
GROUND FLOOR FOOTPRINT	1376sqm	15sqm	1522sqm	1298sqm
TOTAL	1376sqm	47sqm	3174sqm	1298sqm

*__Gross Floor Area (GFA)__, for a building, means the total floor area of all storeys of the building, measured from the outside of the external walls and the centre of any common walls of the building, other than areas used for— (a) building services, plant or equipment; or (b) access between levels; or (c) a ground floor public lobby; or (d) a mall; or (e) parking, loading or maneuvering vehicles; or (f) unenclosed private balconies, whether roofed or not.

*__Gross Building Area (GBA)__. The total enclosed and unenclosed area of the building at all building floor levels measured between the normal. OUTSIDE face of any enclosing walls, balustrades and supports. Excluding external staircases and ramps.

0

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PROJECT NO:	DATE:	SCALE:
RHH-23001	09/05/2025	As indicated @A1

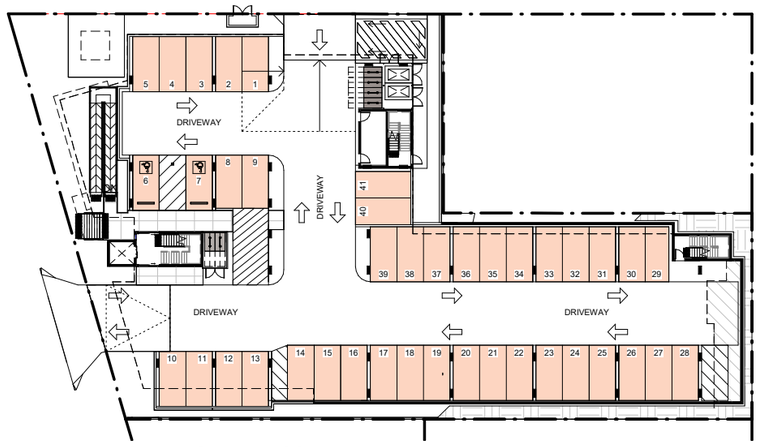
STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
GFA CALCULATION

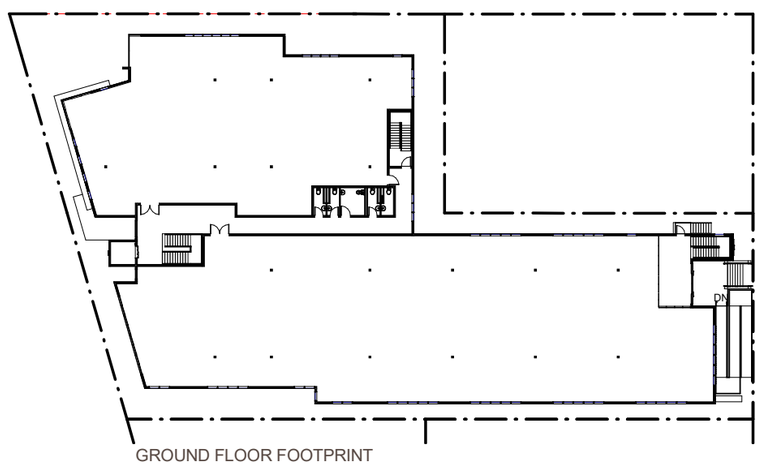
DRAWING NO:	ISSUE NO:	DRAWN:
DA001.2	A	TJ

DEVELOPMENT SUMMARY

CARPARK AND BICYCLE PARKING



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT

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	CARPARKING
	PROVIDED
SEMI BASEMENT	41
GROUND FLOOR	0
TOTAL	41

	BICYCLE PARKING
	PROVIDED
STAFF BIKE PARKING	4
VISITOR BIKE PARKING	8
TOTAL	12

0

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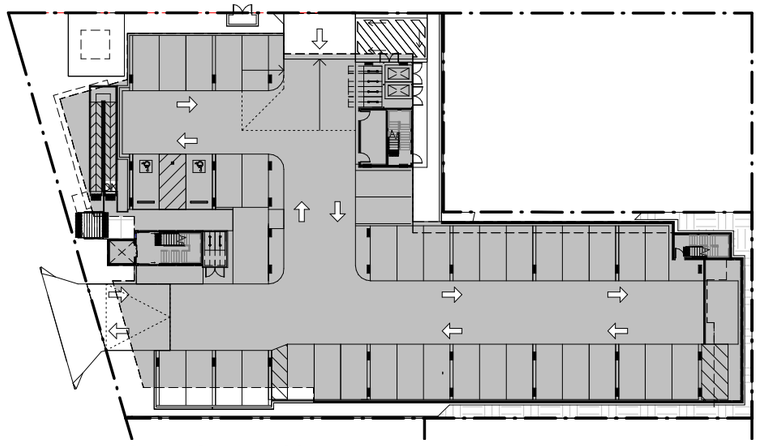
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: CARPARKING & BICYCLE PARKING

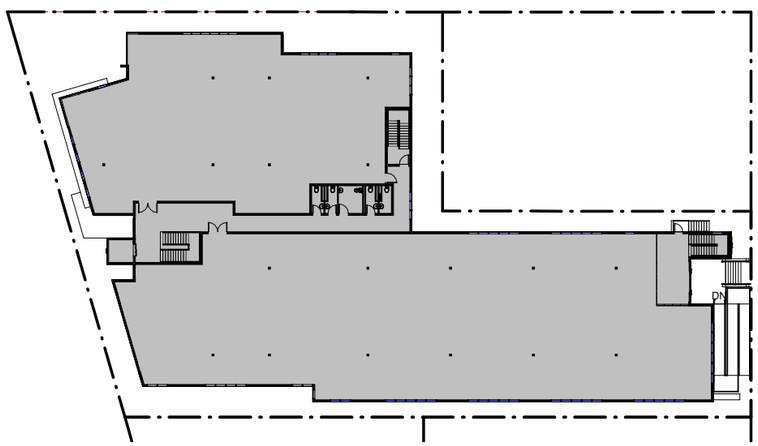
DRAWING NO: DA001.3 | ISSUE NO: B | DRAWN: TJ

DEVELOPMENT SUMMARY

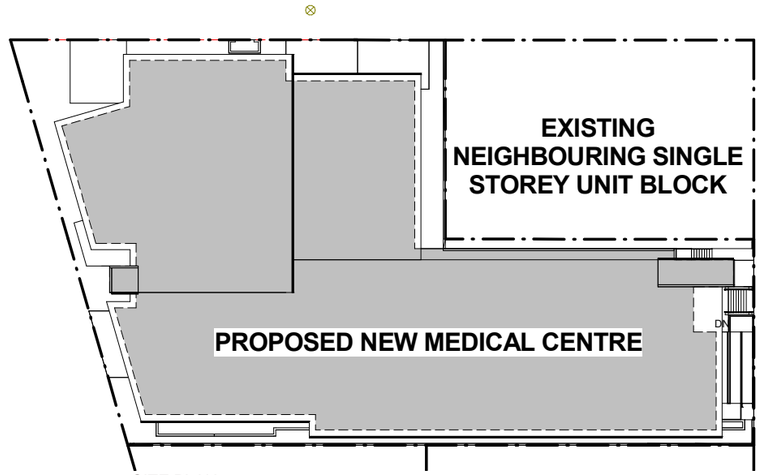
SITE COVER CALCUATION



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT



SITE PLAN

	SITE COVER	SITE AREA	%
SEMI-BASEMENT FOOTPRINT	1584sqm	2061sqm	76.86%
GROUND FLOOR FOOTPRINT	1507sqm		73.12%
TOTAL SITE COVER	1535sqm		74.48%

*__Site Cover__, Of a development, the portion of the site, expressed as a percentage, that will be covered by a building or structure, measured to its outermost projection, after the development is carried out, other than a building or structure, or part of a building or structure, that is: (a) in a landscaped or open space area, including, for example, a gazebo or shade structure; or (b) a basement that is completely below ground level and used for car parking; or (c) the eaves of a building; or (d) a sun shade.

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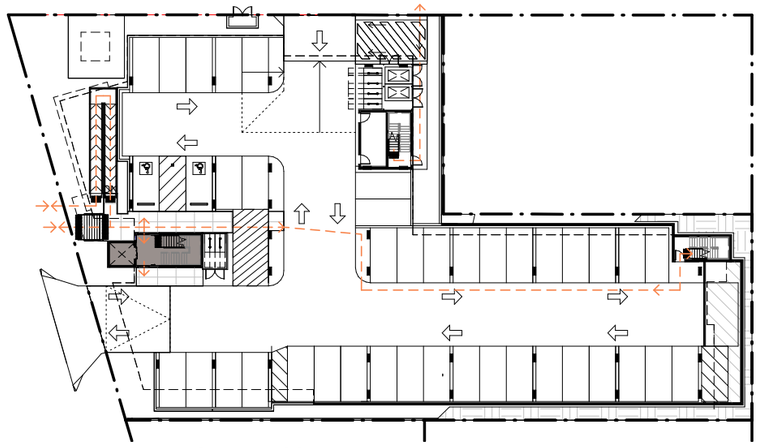
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: SITE COVER CALCUATION

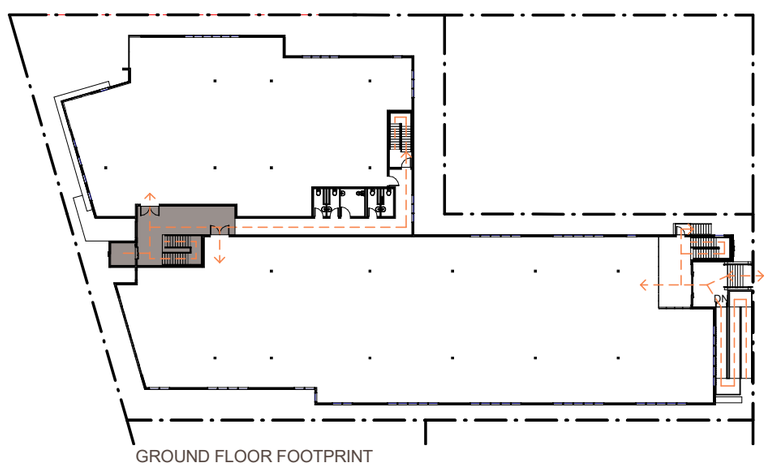
DRAWING NO: DA001.4 | ISSUE NO: A | DRAWN: TJ

DEVELOPMENT SUMMARY

PEDESTRIAN / VEHICULAR CIRCULATION



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT

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LEGEND

- LIFT / LOBBY
- PEDESTRIAN CIRCULATION
- VEHICULAR CIRCULATION

0

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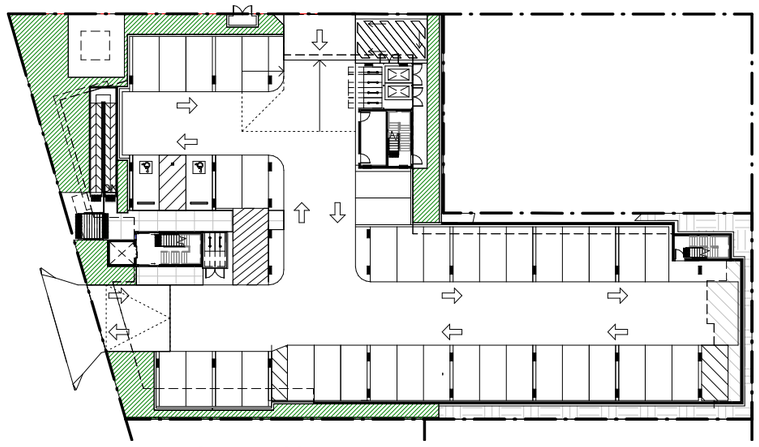
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: PEDESTRIAN / VEHICULAR CIRCULATION

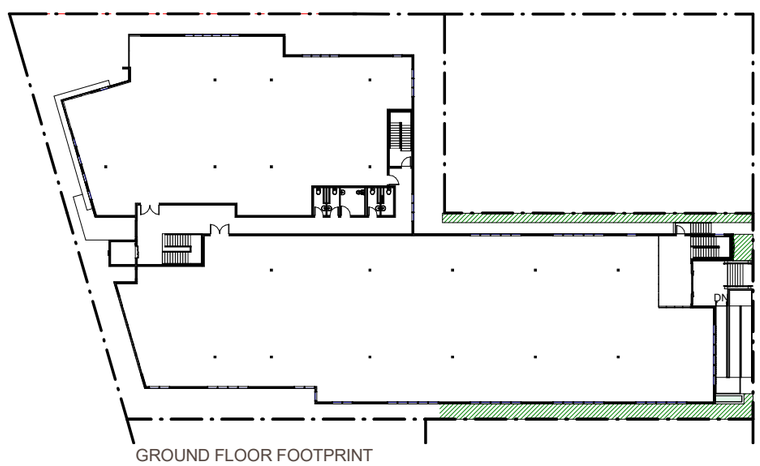
DRAWING NO:	ISSUE NO:	DRAWN:
DA001.5	A	TJ

DEVELOPMENT SUMMARY

GREEN SPACE



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT

GREEN SPACE				
	GREEN SPACE (AREA)	PLANTER BOX (AREA)	SITE AREA	% (PROVIDED)
SEMI BASEMENT	226sqm	-	2061sqm	10.96% (226/2061)
GROUND FLOOR	79sqm	2sqm		3.93% (81/2061)
TOTAL	305sqm	2sqm		14.89% (307/2061)

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PROJECT NO: RHH-23001

DATE: 09/05/2025

SCALE: As indicated @A1

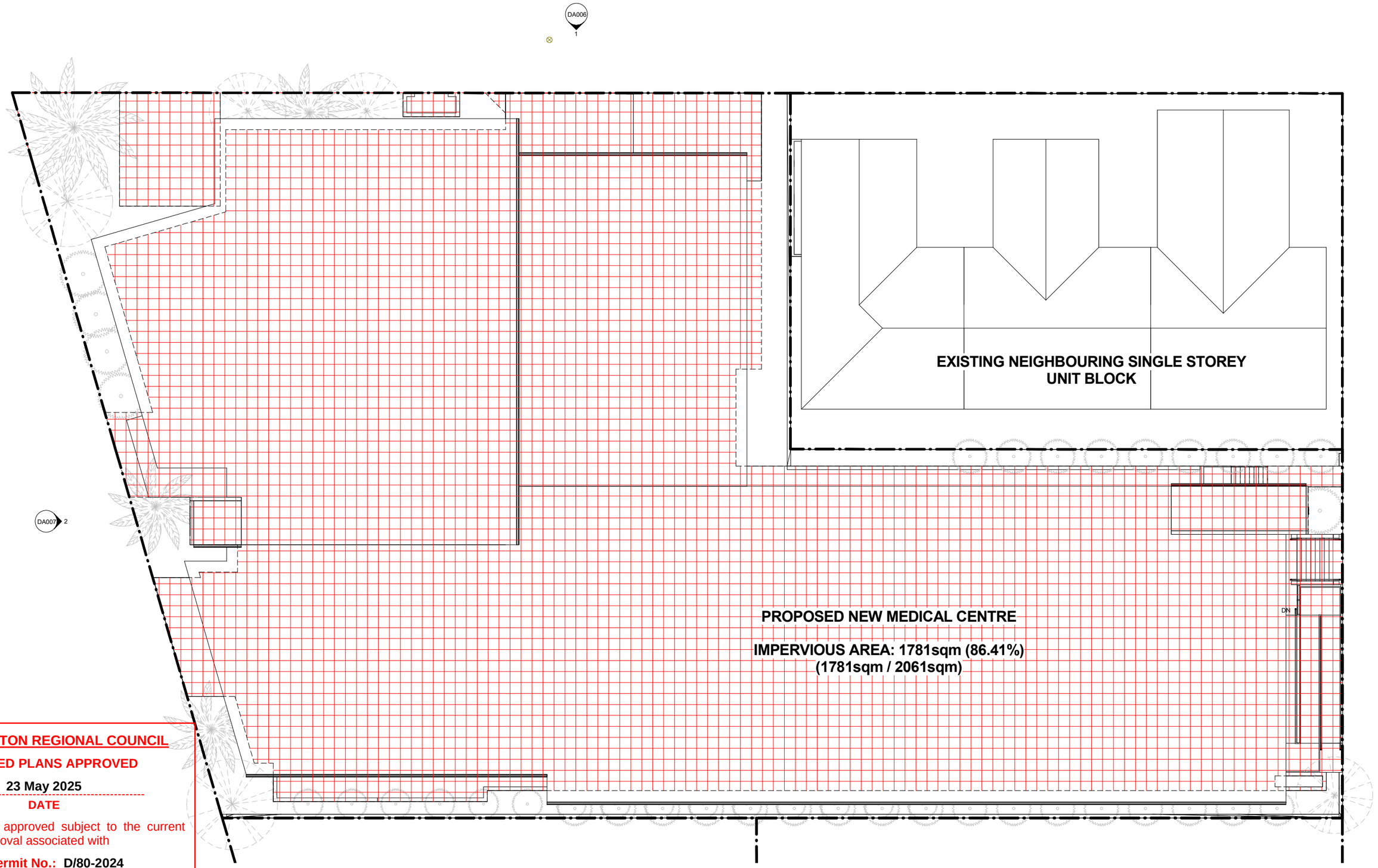
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GREEN SPACE

DRAWING NO: DA001.6

ISSUE NO: A

DRAWN: TJ



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1 IMPERVIOUS AREA
1 : 100

0

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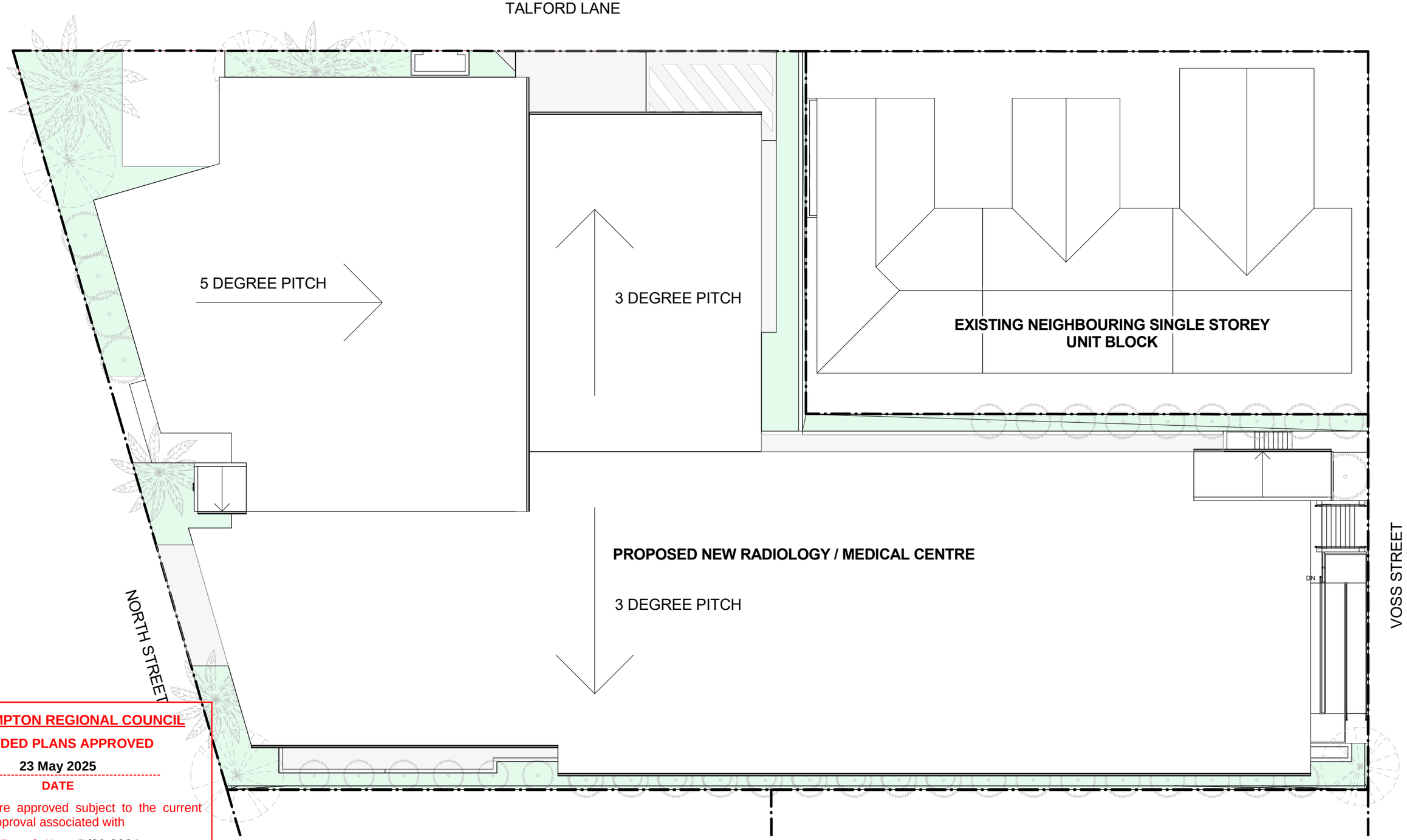
PROJECT NO:	DATE:	SCALE:
RHH-23001	09/05/2025	1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
IMPERVIOUS AREA

DRAWING NO:	ISSUE NO:	DRAWN:
DA002.6	A	TJ



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2 SITE PLAN.
1 : 100

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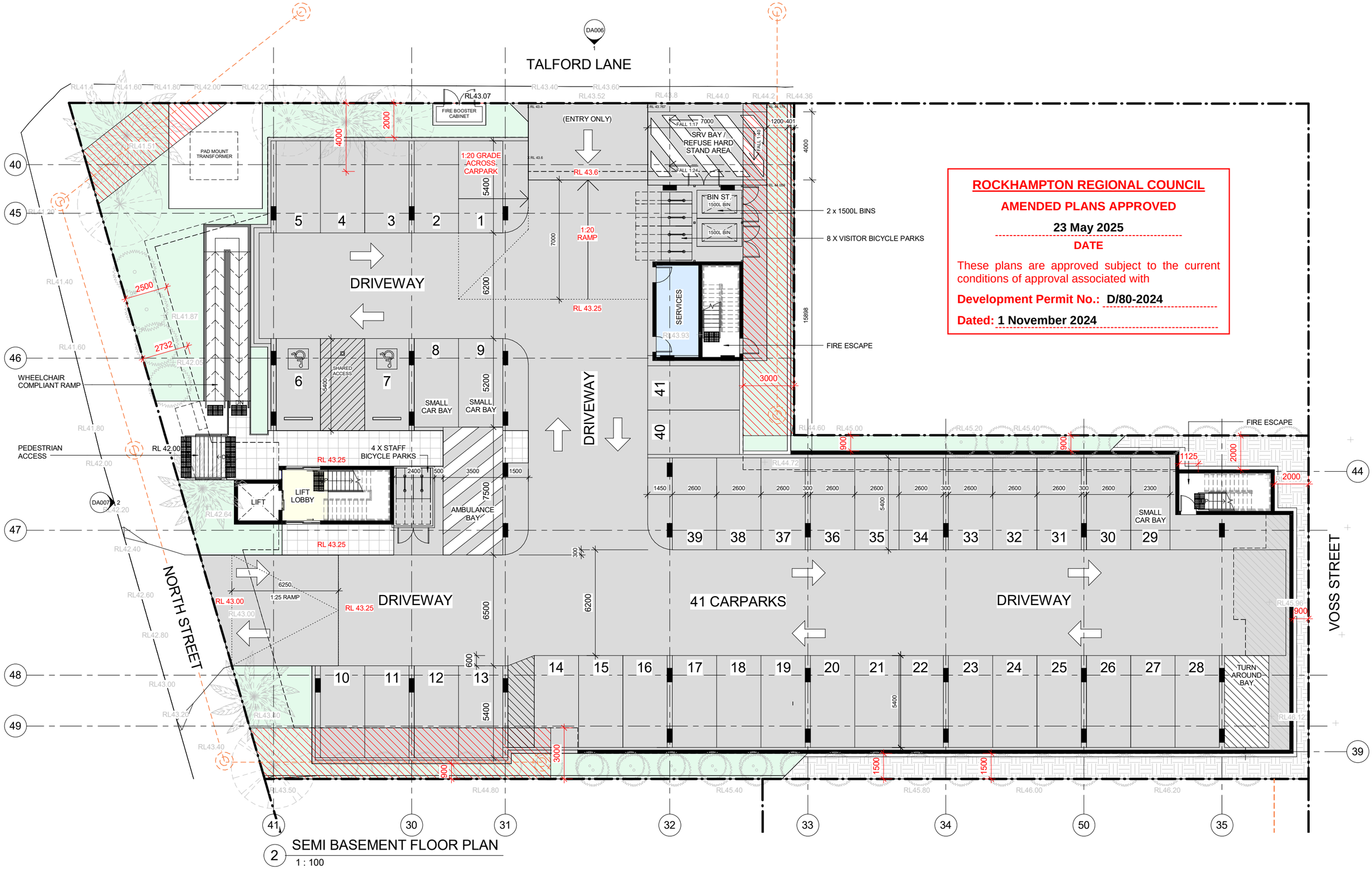
PROJECT NO: RHH-23001 | DATE: 09/05/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: SITE PLAN

DRAWING NO: DA003 | ISSUE NO: A | DRAWN: TJ



SEMI BASEMENT FLOOR PLAN

2 — 1 : 100

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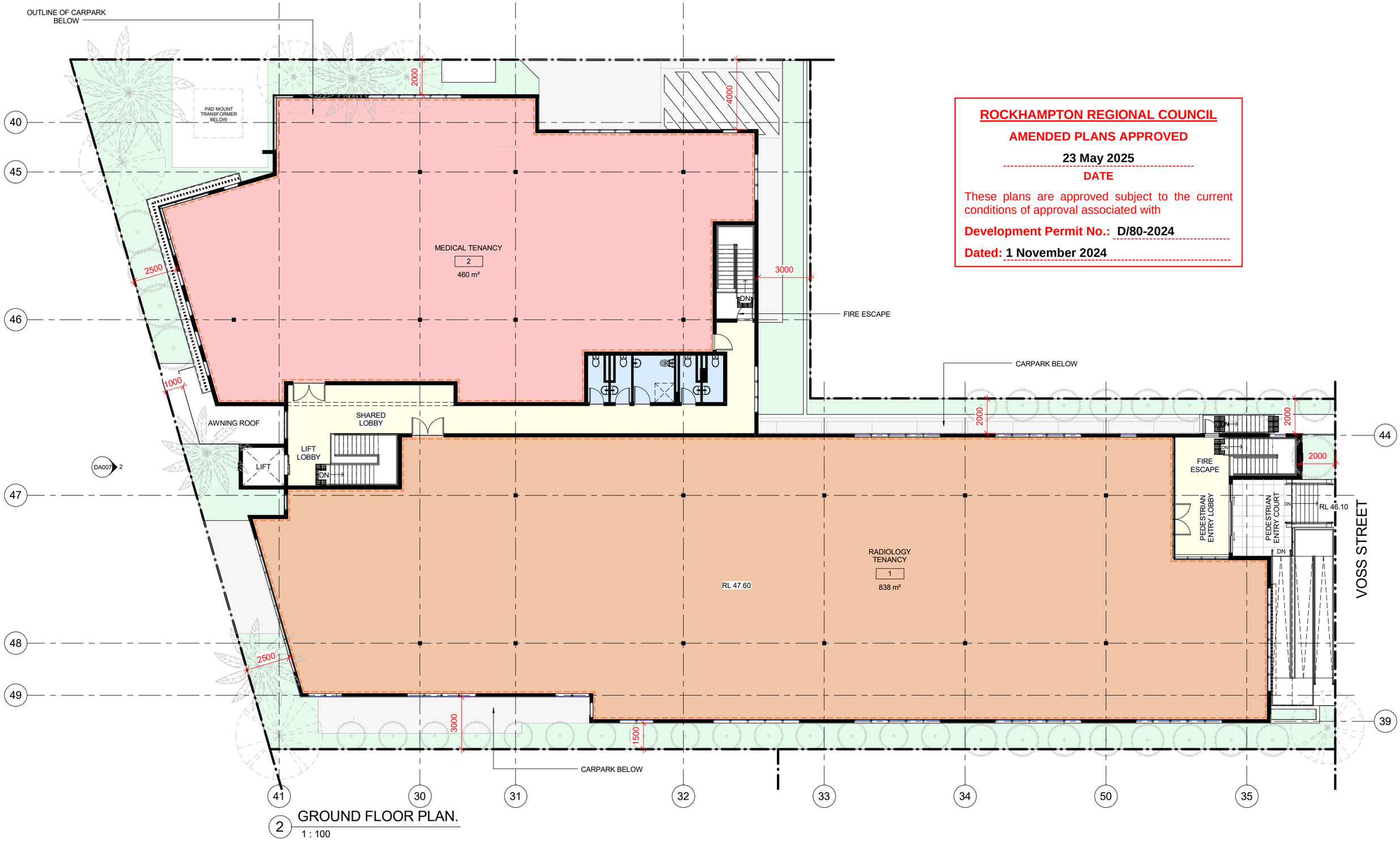
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: SEMI BASEMENT FLOOR PLAN

DRAWING NO: DA004.0 | ISSUE NO: A | DRAWN: TJ



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2 GROUND FLOOR PLAN.

1 : 100

0

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STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GROUND FLOOR PLAN

DRAWING NO: DA004.1 | ISSUE NO: A | DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"

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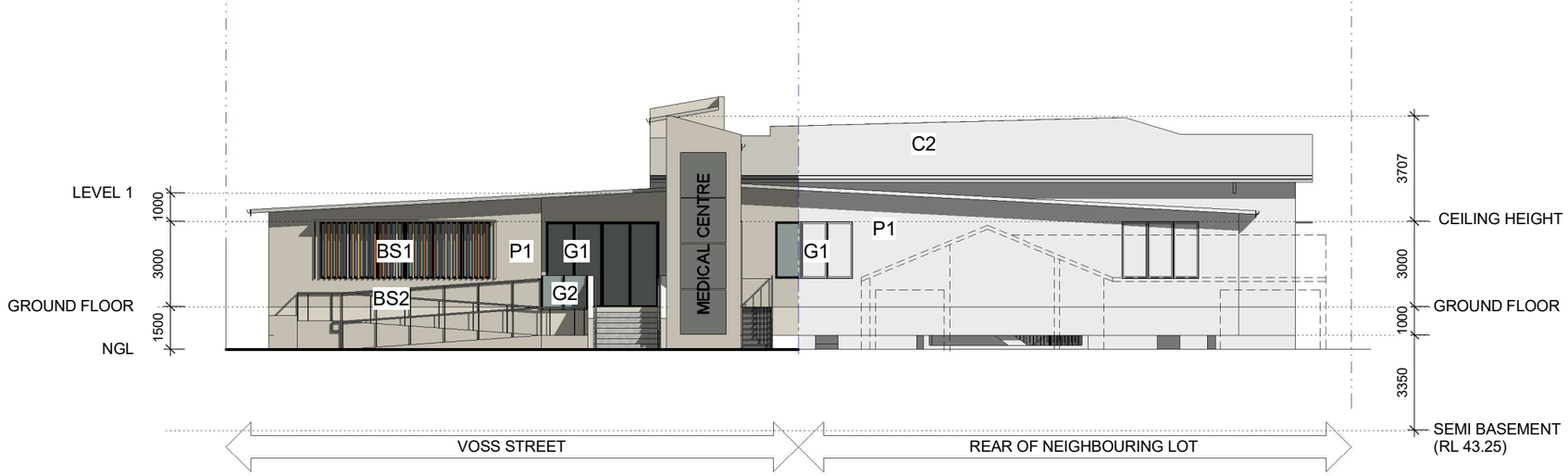

2 SOUTH EAST ELEVATION

1 : 100

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STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: ELEVATION

DRAWING NO: DA005

ISSUE NO: A

DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"

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1 NORTH EAST ELEVATION

1 : 100

0

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ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediatley to RealSpace Creative for instructions.

Authorisation

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RealSpace Creative Pty. Ltd.
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Q Super Centre QLD 4218

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ABN 20 601 291 141
www.real-space.com.au

Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001

DATE: 09/05/2025

SCALE: As indicated @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: ELEVATIONS

DRAWING NO: DA006

ISSUE NO: A

DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

2 NORTH WEST ELEVATION.

1 : 100

0

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

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RealSpace creative

CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/05/2025 | SCALE: As indicated @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: ELEVATION

DRAWING NO: DA007 | ISSUE NO: A | DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"

ROCKHAMPTON REGIONAL COUNCIL

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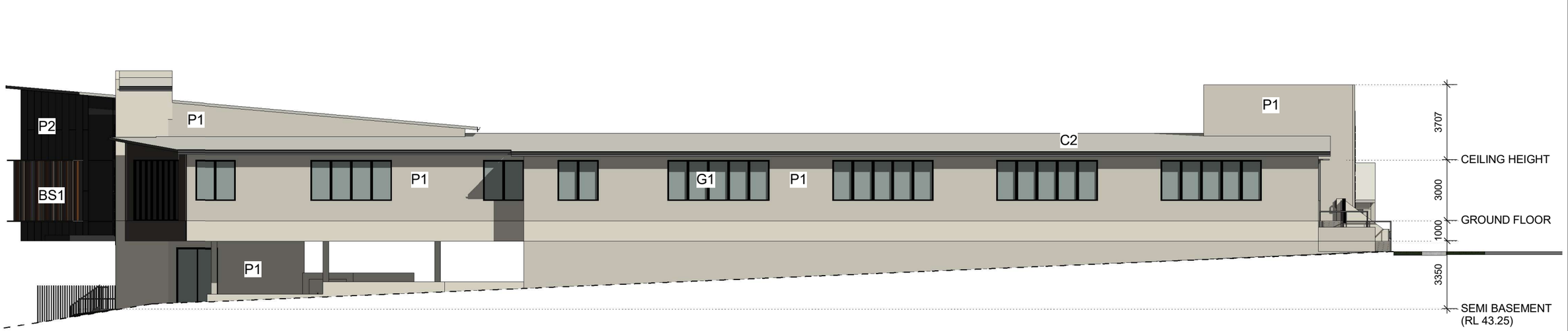

1 SOUTH WEST ELEVATION

1 : 100

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Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

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Hooman Jaffar

RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001

DATE: 09/05/2025

SCALE: As indicated @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
ELEVATIONS

DRAWING NO: DA008

ISSUE NO: A

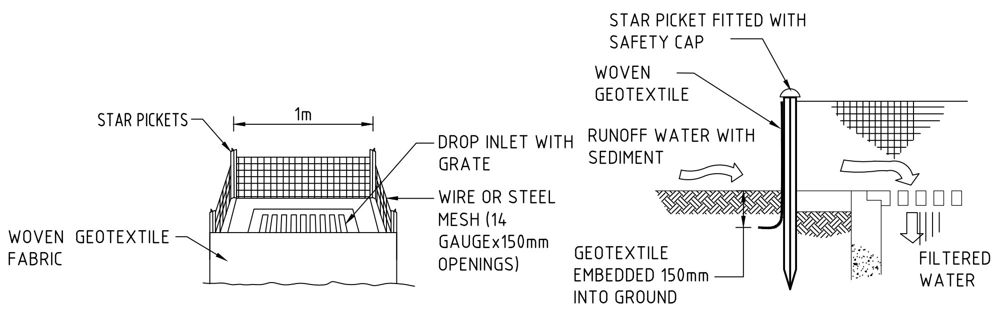
DRAWN: TJ

GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL REASONABLE EFFORT TO CONTROL EROSION AND SEDIMENT DISCHARGE FROM SITE DURING THE CONSTRUCTION, ESTABLISHMENT AND MAINTENANCE PERIODS TO THE SATISFACTION OF LOCAL AUTHORITY AND SUPERINTENDENT.
2. THE CONTRACTOR IS DEEMED TO INCLUDE UNDER THE CONTRACT MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES AS REQUIRED.
3. TURFING AND SEEDING IS REQUIRED WITHIN 7 DAYS OF FINAL EARTHWORKS. THE CONTRACTOR IS TO MAINTAIN ALL SEEDING AND TURFING FOR THE DURATION OF THE CONTRACT.
4. THE CONTRACTOR IS TO REMOVE ALL MUD AND SILT FROM ALL CONSTRUCTION VEHICLES PRIOR TO THEM LEAVING THE SITE. ANY DEBRIS THAT MAKES ITS WAY TO PUBLIC ROADS SHALL BE CLEANED OFF AS SOON AS POSSIBLE.
5. ALL STOCKPILES ARE TO HAVE SEDIMENT FENCE PLACED AROUND BASE. IF THE STOCKPILE IS ENVISAGED TO BE IN PLACE LONGER THAN 7 DAYS IT IS TO BE TOPSOILED AND SEEDED TO THE SATISFACTION OF THE SUPERINTENDENT.
6. IF THE CONTRACTOR IS PROPOSING TO STORE OIL, FUEL OR LIME ON SITE IT IS THE CONTRACTOR'S RESPONSIBILITY TO BUND OFF THESE AREAS AND MAKE SURE THERE IS ADEQUATE TREATMENT AREAS AVAILABLE TO TREAT ANY RUNOFF THAT MAY EVENTUATE.
7. THIS DRAWING IS CONCEPTUAL AND SHALL BE USED AS A GUIDE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTROL THE DISCHARGE FROM SITE FROM WIND OR RAIN AT ALL TIMES.

CONCEPTUAL ONLY

IT IS THE PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ERECT AND MAINTAIN SATISFACTORY EROSION AND SEDIMENT CONTROLS DURING THE ENTIRE CONSTRUCTION PHASE OF THE PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY AND THE SUPERINTENDENT.

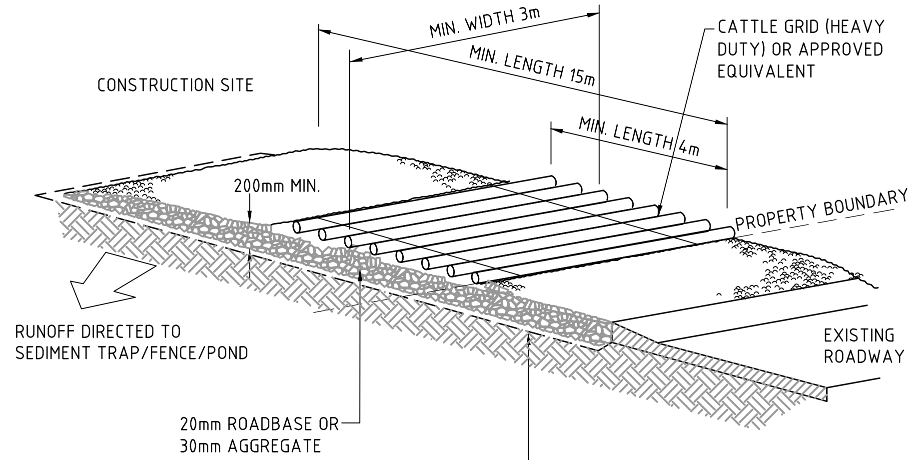


CONSTRUCTION NOTES

1. SUPPORT GEOTEXTILE WITH MESH TIED TO POSTS AT 1m CENTERS.
2. DO NOT COVER INLET WITH GEOTEXTILE.

GEOTEXTILE INLET FILTER

SCALE N.T.S.

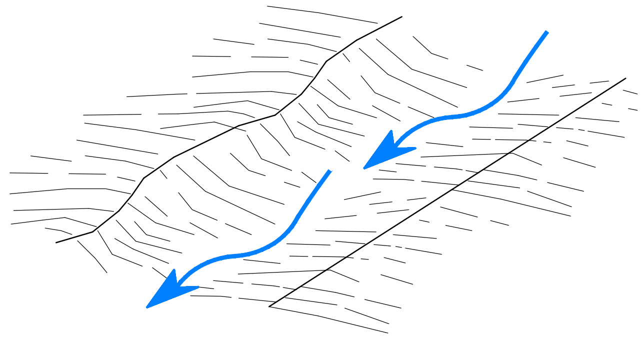


CONSTRUCTION NOTES

1. STRIP TOPSOIL AND LEVEL WORK AREA.
2. COMPACT IN-SITU SUB-GRADE MATERIAL.
3. COVER WORK AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROAD BASE MATERIAL OR 30mm AGGREGATE. MINIMUM LENGTH 15m OR TO BUILDING ALIGNMENT AND MINIMUM WIDTH 3m.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN INDICATIVE WORKS AREA TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP (i.e. SEDIMENT POND).

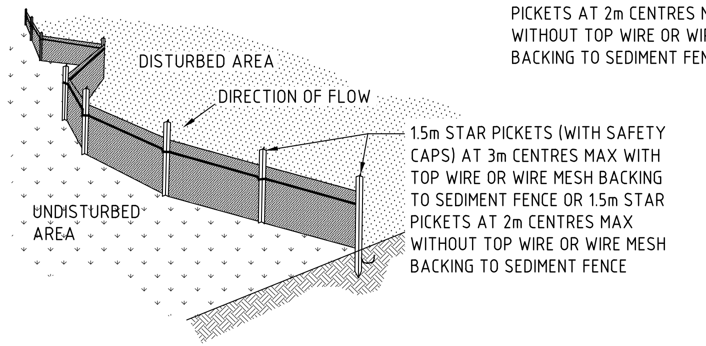
SHAKE- DOWN AREA / STABILIZED SITE ACCESS

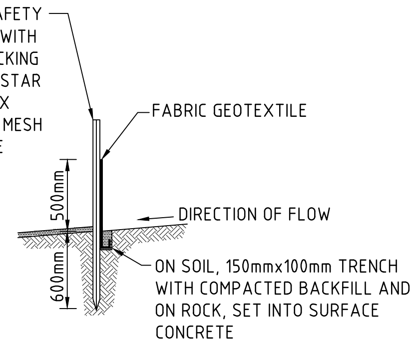
SCALE N.T.S.



CLEAN WATER DIVERSION DRAIN

SCALE N.T.S.

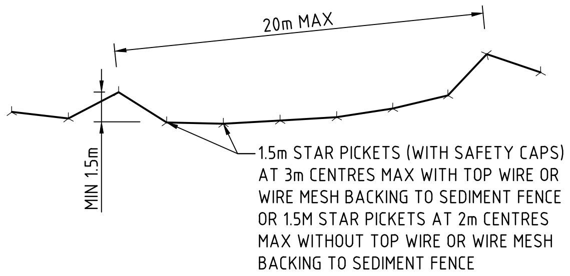




SECTION DETAIL

CONSTRUCTION NOTES

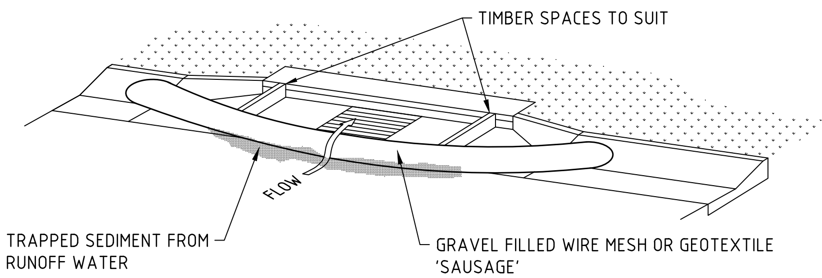
1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE OR AS DIRECTED ON SITE BY SUPERINTENDENT.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3m APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UP-SLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF SUPPORTING GEOTEXTILE TO UP-SLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.



PLAN

GEOTEXTILE SEDIMENT FENCE

SCALE N.T.S.

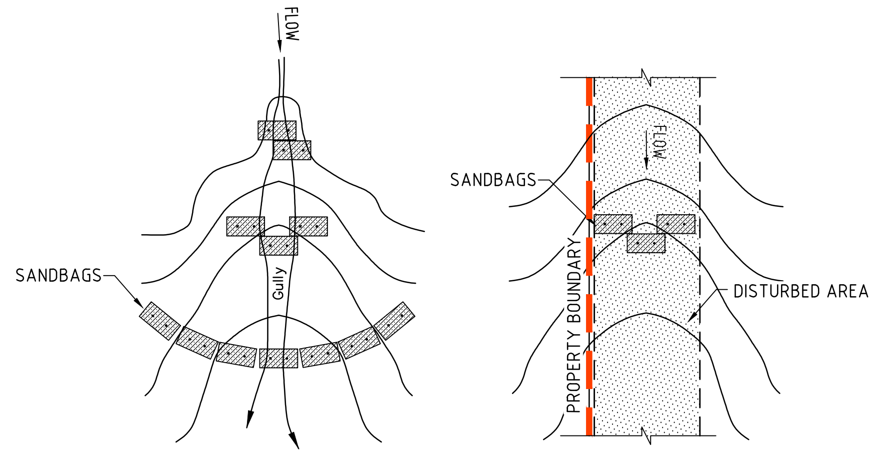


CONSTRUCTION NOTES:

1. FILTER TO BE INSTALLED ONLY WHERE SPECIFIED ON AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
2. INSTALL FILTERS TO KERB INLETS AT SAG POINTS ONLY.
3. 'SAUSAGE' TO BE FILLED WITH 25mm TO 50mm GRAVEL, SHAPED INTO AN ELLIPTICAL CROSS SECTION APPROX. 150mm HIGH AND 400mm WIDE AND BE NO LONGER THAN LENGTH OF INLET PIT.
4. TIMBER SPACERS TO PROVIDE MIN. 100mm GAP BETWEEN FILTER AND KERB INLET AND FORM SEAL WITH KERB TO PREVENT SEDIMENT BYPASSING FILTER.
5. GRAVEL FILLED SANDBAGS CAN BE USED AS A SUBSTITUTE FOR 'SAUSAGE'. SANDBAGS MUST BE FIRMLY PLACED AND INTERLOCKED TO PREVENT SEDIMENT PASSING BETWEEN THEM.

GEOTEXTILE GULLY INLET FILTER

SCALE N.T.S.



NOTE

PROVIDE SAND BAGS ACROSS FLOW PATH. PROVIDE TURF AROUND SAND BAGS. EXTENT TO BE DETERMINED ON SITE BY SUPERINTENDENT.

SAND BAG CHECK DAM

SCALE N.T.S.

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
WWW.PINNACLEENG.COM.AU

REV	DESCRIPTION	DRAWN	DATE
A	ORIGINAL ISSUE	J.W.	16.09.2024

TASK	BY	INITIAL	DATE
REVIEW	A. CRESSWELL		16.09.2024
DESIGN	J. WATERS		16.09.2024
DRAWN	J. WATERS		16.09.2024

SCALE: 1:200 (SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT
67 & 69 NORTH STREET AND 5 VOSS STREET
THE RANGE, QLD 4700
(LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

STATUS: PRELIMINARY (NOT TO BE USED FOR CONSTRUCTION)

APPROVED | RPEQ No

DRAWING NUMBER: PEG1168-DA-SK08 | REVISION: A

PINNACLE ENGINEERING GROUP

SITE BASED STORMWATER MANAGEMENT PLAN

PROPOSED COMMERCIAL DEVELOPMENT

67-69 North Street and 5 Voss Street, The Range QLD

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: **D/80-2024**

Dated: **1 November 2024**

RADIOLOGY PARTNERS PTY LTD

APRIL 2025

REVISION 04

Pinnacle Engineering Group
ABN: 80 608 431 625
P.O. Box 517 Paradise Point QLD 4216

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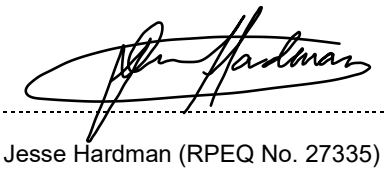
In accordance with the requirements of the *Queensland Professional Engineers Act 2002*, this document was prepared under the supervision of, reviewed and approved by the following experienced Registered Professional Engineer of Queensland (RPEQ).



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Document Control

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01	12-June-2024	A. Cresswell	J. Hardman	12-June-2024	Issued for comment
02	24-June-2024	A. Cresswell	J. Hardman	24-June-2024	Issued for approval
03	16-September-2024	A. Cresswell	J. Hardman	16-September-2024	Issued for approval
04	04-April-2025	A. Cresswell	J. Hardman	04-April-2025	Revised layout - Issued for approval

Distribution of Copies

Revision	Quantity	Distribution
01	1.pdf	Radiology Partners Pty Ltd
02	1.pdf	Radiology Partners Pty Ltd
03	1.pdf	Radiology Partners Pty Ltd
04	1.pdf	Radiology Partners Pty Ltd

Printed:	4 April 2025
Last saved:	04/04/2025 11:11
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Author:	Jai Waters
Project manager:	Andrew Cresswell
Name of organisation:	Pinnacle Engineering Group
Name of project:	67-69 North Street and 5 Voss Street, The Range
Name of document:	250404_PEG1168_67-69 North Street and 5 Voss Street, The Range_SMP_R004.docx
Document version:	REV 04
Project number:	PEG1168

Table of Contents

Appendices

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List of Figures

1 Introduction

Pinnacle Engineering Group (Pinnacle) was engaged by Radiology Partners Pty Ltd to prepare a site based stormwater management plan (SBSMP) and undertake the associated investigations to provide supporting documentation for the proposed development application for a medical centre development located at 67-69 North Street and 5 Voss Street, The Range QLD within the local authority of the Rockhampton Regional Council (RRC).

The current revision of this report (revision 04) has been amended in support of a revised development layout, to support a 'minor change' application to the existing development approval D/80-2024 dated 1st November 2024. Generally speaking, the proposed change is a reduction in overall size of the medial centre, reducing from approximately 1,988m^2 GFA over four levels, to 1,383m^2 over 2 levels.

1.1 Scope of Investigation

This report addresses the proposed stormwater management strategy for the aforementioned development, including but not limited to the following elements:

- Pre and post development flows for various Annual Exceedance Probability (AEP) / Average Recurrence Interval (ARI) design storm events;
- Nomination of the Lawful Point of Discharge for the subject site;
- Details of the stormwater quantity management strategy;
- Details of the stormwater quality treatment measures to be implemented for the site;
- Maintenance and monitoring strategy; and
- Sediment and erosion control plan.

1.2 Site Description

1.2.1 Site Location and Location

Street Address	-	67-69 North Street and 5 Voss Street, The Range QLD 4700
RP Description	-	Lot 7 and Lot 12 on RP603082 and Lot 4 on R26335
Site Area	-	0.2068 Hectares
Current Zoning	-	Community Facilities
Proposed Use	-	Medical Centre
Local Authority	-	RRC

Refer to Figure 1.1 for the site location.

1.2.2 Existing Site Conditions and Topography

A review of the topographic survey has revealed that the subject site generally grades from the southern property boundary to the northern boundary. The subject site is currently occupied by three detached dwellings, which are supplemented by vegetation and landscaping typical of a residential site. Furthermore, there is a small concrete and hardstand area towards the eastern boundary of the site.

Currently, the highest elevation of approximately RL46.30m AHD is reached at the southwest corner of the subject site while the lowest elevation of approximately RL41.20m AHD is reached along the northeast corner of the subject site.

The topographic mapping of the subject site is included in Appendix B. Refer to Figure 1.2 for the existing aerial view of the subject site.

1.2.3 Proposed Development

The proposed development will deliver a medical centre over two storeys, with on-grade car parking on ground level. Access to the proposed medical centre and carparking will be facilitated via a new heavy-duty vehicle cross-over from Talford Lane and to the east of the site, as well as a new heavy-duty vehicle cross-over from North Street to the north of the subject site.

The proposed development layout is included within Appendix A.

1.2.4 Existing Drainage Network

There is no existing stormwater infrastructure immediately adjacent to the subject site. Runoff from the subject site is discharged to the North Street and Talford Lane kerb and channels to the north and east of the site respectively. The flows are conveyed in the North Street kerb and channel until reaching an existing on-grade gully inlet adjacent to the West Street intersection, approximately 365m away. Additionally, an existing on-grade gully pit is located within the median strip kerb of North Street, approximately 90m to the east. Flows from these networks are ultimately discharged to an existing overland flow path within the rear of the properties along North Street and Knutsford Street.

1.2.5 External Catchments

A review of the site topography and Council‘s interactive online mapping indicates that an existing external catchment discharges through the subject site from adjacent properties to the west.

It is proposed to convey the external catchment to the existing discharge location via swale drains and a stormwater pit and pipe system as required.

1.2.6 Flood Assessment

A review of Council’s online interactive mapping indicates that the subject site is located outside of the mapped floodplain investigation area.

Figure 1.1: Map View (Source: Google Maps)

Figure 1.2: Aerial View (Source: www.nearmap.com.au)

2 Stormwater Quantity Assessment

2.1 Hydrologic Objectives

The hydrologic objectives for the site were established in accordance with the RRC Planning Scheme and QUDM. These objectives include but are not limited to:

- The proposed development shall ensure that all stormwater drainage is directed to the Lawful Point of Discharge in accordance with QUDM;
- Minor Drainage System Design for 10% AEP (Q_{10}) storm event;
- Major Drainage System Design for 1% AEP (Q_{100}) storm event;
- No adverse impact on adjoining upstream or downstream properties; and
- No increase in post-development flows, up to and including the 1% AEP (Q_{100}) storm event.

2.2 Lawful Point of Discharge

The Lawful Point of Discharge for the subject site is taken as the existing kerb and channel located within the North Street road reserve to the north of the subject site and Talford Lane to the east of the site.

2.3 Stormwater Quantity Analysis

The analysis of the surface water runoff from the site was performed using the non-linear program XP-Rafts.

2.3.1 Temporal Patterns

The design rainfall Intensity Frequency Duration (IFD) data for the storm events up to and including the 1% AEP storm event was derived based on the RRC Planning Scheme and the AR&R.

The rainfall temporal patterns utilised by the XP Rafts analysis were derived in accordance with Australian Rainfall and Runoff (AR&R), 2016 edition, and were accessed from www.data.arr-software.org in June 2024 (23.3776 S, 150.4955 E).

The design IFD data for the catchment is summarised Table 2.1 below.

Table 2.1: IFD Data for The Range, QLD (mm/hr) (23.3776 S, 150.4955 E) (Source: BOM)

Annual Exceedance Probability (AEP)							
Duration	**63.20%**	**39.35%**	**18.13%**	**10%**	**5%**	**2%**	**1%**
1 min	158	195	238	273	314	369	413
2 mins	132	163	199	229	262	305	340
3 mins	125	154	188	216	247	289	322
4 mins	120	148	180	207	237	277	309
5 mins	115	142	173	199	228	267	298
10 mins	95.9	118	144	166	190	224	250
15 mins	81.9	101	123	141	163	192	214
20 mins	71.6	88.4	108	124	142	168	188
25 mins	63.7	78.6	95.8	110	127	149	167
30 mins	57.5	71	86.5	99.6	115	135	151
45 mins	44.8	55.4	67.7	78.1	89.9	106	119
1 hour	37	45.8	56.2	64.9	74.8	88.4	99.2
1.5 hours	27.9	34.6	42.7	49.5	57.2	67.8	76.3
2 hours	22.7	28.2	35.1	40.8	47.2	56.2	63.3
3 hours	16.9	21.1	26.5	31	36.1	43.3	49
4.5 hours	12.6	15.8	20.2	23.8	27.9	33.7	38.4
6 hours	10.2	12.9	16.7	19.8	23.4	28.5	32.6
9 hours	7.66	9.77	12.9	15.5	18.5	22.8	26.3
12 hours	6.27	8.05	10.8	13.1	15.8	19.6	22.8
18 hours	4.75	6.14	8.44	10.4	12.8	16.1	18.8

2.3.2 **XP-Rafts Modelling Inputs**

Rainfall loss parameters for each sub-catchment were applied using an initial and continuing rainfall loss model. The design loss parameters input into the XP-Rafts model are based on the characteristic values recommended by AR&R and other reputable industry standards.

The loss parameters adopted for this XP-Rafts model are tabulated below.

Table 2.2: Adopted XP-Rafts Initial and Continuing Loss Parameters

Storm Event	Pervious Areas		Impervious Areas	
AEP (%)	Initial Loss (mm)	Continuing Loss (mm)	Initial Loss (mm)	Continuing Loss (mm)
39.35-18.13	15	2.5	1	0
10-5	10	2.5	1	0
2-1	2.5	2.5	0	0

2.3.3 XP-Rafts Model Validation

The validation of the XP-Rafts model was undertaken through a comparison of the XP-Rafts flow rates to the Rational Method calculations included in Appendix D.

The Rational Method adopted a C_{10} coefficient of runoff of 0.78 for the pre-development catchment, in accordance with Table 4.5.3 from QUDM. As detailed in Table 2.3 the flow calculated using the Rational Method is generally comparable to the results obtained from the XP-Rafts model. We can therefore reasonably adopt the flows generated from the XP-Rafts model.

2.3.4 Critical Duration Analysis

Storm durations ranging from 10-minutes to 18 hours were simulated within the XP-Rafts model to determine the design flows.

2.3.5 Existing Discharge Points

As outlined in the previous sections of this report the subject site currently discharges to the existing kerb and channel located within the North Street road reserve to the north of the subject site and Talford Lane to the east of the site. It is proposed to maintain these discharge locations during the post-development scenario.

2.4 Hydrologic Analysis

2.4.1 Pre-development Case

The results generated from the XP-Rafts model generally indicate that the critical storm duration for the catchment for all AEP flood events varies between the 20-minute storm event and 15-minute storm event.

A fraction impervious of 0.49 was calculated for the pre-development catchment internal to the site from the satellite imagery sourced from Nearmap. The pre-development catchment discharges for the 10% (Q_{10}), 5% (Q_{20}), 2% (Q_{50}) and 1% (Q_{100}) AEP events are detailed in Table 2.3 below.

Table 2.3: Pre-development Catchment Details and Discharges

Catchment	Area (ha)	Imp. Area (ha) (Slope)	Perv. Area (ha) (Slope)	XP-Rafts Results (m^3/s)				Rational Method (C_{10} = 0.78)
				10% AEP (Q_{10})	5% AEP (Q_{20})	2% AEP (Q_{50})	1% AEP (Q_{100})	1% AEP (Q_{100})
A	0.2068	0.1002 (2.0%)	0.1066 (7.5%)	0.117	0.137	0.160	0.180	0.160
A	**0.2068**	**0.1002**	**0.1066**	**0.117**	**0.137**	**0.160**	**0.180**	**0.160**
Critical Storm Duration				**30 mins**	**30 mins**	**10 mins**	**10 mins**	**-**

2.4.2 Post-development Case – Unmitigated

A fraction impervious of 0.88 was calculated for the post-development case from the proposed site layouts provided by Real Space Creative. For the purposes of this analysis the post-development catchment was further split into sub-catchments, being the respective roof and ground areas.

A copy of the proposed development layouts is included in Appendix A with a post-development catchment plan included in Appendix C.

The impervious areas were modelled using the second sub-catchment feature within XP-Rafts. The total impervious area for each catchment is tabulated below. The results of the XP-Rafts post-development analysis indicate that the critical storm duration throughout the catchment varies between the 10- minute and 30-minute storm events.

Table 2.4 summarises the post-developed peak flow rates for the post-development catchment.

Table 2.4: Post-development Catchment Details and Discharges (Unmitigated)

Catchment	Total Area (ha)	Impervious Area (ha), (Av. Slope)	Pervious. Area (ha), (Av. Slope)	XP-Rafts Results (Peak discharge, m^3/s)			
				10% AEP	5% AEP	2% AEP	1% AEP
A1 – Roof	0.1598	0.1598 (2.0%)	0.0000	0.098	0.130	0.132	0.148
A2 – Ground	0.0470	0.0234 (2.0%)	0.0236 (5.0%)	0.024	0.033	0.037	0.041
A Total	**0.2068**	**0.1832**	**0.0236**	**0.121**	**0.156**	**0.166**	**0.186**
Critical Storm Duration				**30 min**	**30 min**	**10 min**	**10 min**

A comparison of the XP-Rafts results in Tables 2.3 and 2.4 shows an increase in site peak discharge of 0.004, 0.019, 0.006 and 0.006m³/s for the 10%, 5%, 2% and 1% AEP storm events respectively. This increase in discharge observed is attributed to the higher fraction of impervious surfaces in the post-development scenario. Therefore, on-site mitigation will be implemented to ensure a non-worsening discharge arrangement.

2.5 Post Development Stormwater Mitigation Strategy

The following strategy is proposed to mitigate the post-development stormwater discharge to the site's pre-development discharge rates.

- Attenuation of the post-development stormwater discharge from Catchment A1 'Roof' through the use of a detention tank prior to discharging to the LPoD being the existing kerb and channel within the North Street and Talford Lane road reserves;
- Discharge the minor 10% AEP (Q_{10}) stormwater runoff to the Lawful Point of Discharge via a piped stormwater network;
- Discharge the major 1% AEP (up to Q_{100}) stormwater runoff to the Lawful Point of Discharge via a piped stormwater network and overland flow;
- Generally, maintain the existing drainage regimes and drainage discharge locations.

2.5.1 Detention Tank Design

Table 2.5 below outlines the specifications of the proposed detention tank, while Table 2.6 illustrates the adopted storage-to-height relationship.

Table 2.5: Detention Tank Details

Design Parameter	Details		
Tank Outlets	Low-flow Outlet = 2 x Ø180mm orifice at base of tank (internal tank orifice plates) High-flow Outlet = 2 x 1.2m wide high flow weirs at 1.00m above the base of tank.		
Tank Geometry	Base Area = 18.0m^2 (min.) Storage Height = 1.3m Storage Volume = 23.4m^3		
Tank Modelling Summary	AEP	Peak Outflow (m^3/s)	Peak Stage (m)
	10%	0.086	+ 0.58
	5%	0.096	+ 0.72
	2%	0.105	+ 0.87
	1%	0.118	+1.02

Table 2.6: Tank Height/Storage Relationship

Tank Height (m)	Tank Storage (m^3)	Tank Height (m)	Tank Storage (m^3)
0.0	0.00	0.7	12.60
0.1	1.80	0.8	14.40
0.2	3.60	0.9	16.20
0.3	5.40	1.0	18.00
0.4	7.20	1.1	19.80
0.5	9.00	1.2	21.60
0.6	10.80	1.3	23.40

2.5.2 Pre-development and Post-development Scenario Comparison

Table 2.7 details the comparison between the pre-development and post-development site total peak discharge.

Table 2.7: Pre-development and Post-development Scenario Comparison

Storm Event	Site Total (To North Street / Talford Lane Kerb and Channel)		Difference (m^3/s)	Difference (%)
	Pre (m^3/s)	Post (m^3/s)		
10% AEP (Q_{10}) Peak	0.117	0.112	- 0.005	- 4.3
5% AEP (Q_{20}) Peak	0.137	0.127	- 0.010	- 7.3
2% AEP (Q_{50}) Peak	0.160	0.141	- 0.019	- 11.9
1% AEP (Q_{100}) Peak	0.180	0.159	- 0.021	- 11.7

The results presented above demonstrate that the proposed detention tank successfully attenuates the post-development site peak discharge to pre-developed rates.

2.6 External Catchment Conveyance Strategy

As documented in Section 1.2.5, a minor external catchment upstream of the subject site has been identified. Based on the location of the existing kerb adaptors servicing the properties within the upstream catchment, roofwater runoff will discharge to the road reserve. It is proposed to convey the residual ground catchment of the external catchment to the Lawful Point of Discharge location by constructing swale drains and a private stormwater network as required.

Refer to the stormwater management layout plan within Appendix E for details.

3 Stormwater Quality Assessment

As detailed in the RRC Pre-Lodgement Meeting Minutes dated 16 November 2023, the subject development does not meet the thresholds to address stormwater quality. However, we propose to minimise the water quality impacts of the proposed development through the use of Stormwater Quality Best Management Practice (SQBMP) treatment measures by directing stormwater runoff towards grass buffers and soft landscaping wherever possible.

3.1 Proposed Treatment Measures

The following techniques will be adopted within the development to promote SQBMP. In accordance with SQBMP, stormwater runoff from the development's impervious areas will be directed to the soft landscaping surrounding the development, where possible, prior to being discharged from site. The soft landscaping will promote infiltration, thus reducing pollutant runoff and aid in reducing the flows from the development's impervious areas. Additionally, SQIDEP-approved gross pollutant traps will be installed in stormwater pits as mandated by RRC to trap solid waste such as litter and coarse sediment.

A Stormwater Management Layout detailing the above is included in Appendix C. Further to the above the following strategies will be implemented during the construction and operational phases of the project to improve water quality.

3.1.1 Education

Education of workers though site inductions during the Construction phase and tenants during the Operational phase of the development will be implemented to reduce the likelihood of pollutant generation.

3.1.1 Grass Buffers and Soft Landscaping

Landscape buffers or grass strips shall be utilised across the site where possible, providing at source buffer treatment to runoff from adjacent impervious surfaces (pathways, car parks, etc.). Grass and landscape buffer strips are commonly used as an at source control measure. They are effective in the removal of coarse to medium sized sediments and minor removal of nitrogen and phosphorous.

3.1.2 Erosion and Sediment Management

The Erosion and Sediment Management strategies for the site for the Construction and Operational phases are detailed in Section 4 below.

4 Erosion and Sediment Control Strategy

The objective of erosion and sediment management on construction sites is to minimise soil erosion and control silt and/or sediment discharge from the sites through the use of suitable control devices during the four primary phases of the project lifecycle being:

1. Pre-construction/Establishment Phase;
2. Change to Ground Level Phase;
3. Construction Phase; and
4. Post-development/Operational Phase.

Sections 4.2 and 4.3 below outline the typical and industry best practice erosion and sediment control measures that will be implemented throughout the life cycle of this project.

4.1 Development Lifecycle Erosion and Sediment Management

4.1.1 Pre-construction/Establishment Phase

Prior to the commencement of construction, during the site establishment phase of the works, the following sediment and erosion control measures will be implemented in order to minimise site disturbance and ensure that water quality is maintained.

- Silt/Sediment fences will be installed around the proposed bulk earthworks site (along the toe of the batter alignment) and any environmentally sensitive areas; and
- A construction vehicle entry/exit shakedown area will be installed and will comprise of a vibratory cattle grid or gravel/rock pad in accordance with the IEAust Guidelines.

4.1.2 Bulk Earthworks/Change to Ground Level Phase

Excavation during the bulk earthworks/change to ground level phase of the project will be staged in a manner that runoff will generally be directed towards sediment and erosion controls established during the pre-construction phase.

As applicable, sediment basins will be constructed within proposed park/open space areas generally in the location of the proposed bio-retention basins to ensure that all sediment runoff is intercepted and treated prior to discharging from site.

4.1.3 Construction Phase

During the construction phase of the project, the following erosion and sediment controls will be implemented to ensure water quality is maintained.

- Sediment fences will be erected at the base of all batters and stockpiles to prevent sediment transportation offsite;
- All sediment and erosion control structures will be maintained and inspected regularly as well as after each storm event to ensure the ongoing integrity is maintained. No structure is to accumulate sediment above 40% of its capacity; and
- Regular monitoring of water quality will be undertaken to determine the effectiveness of the sediment and erosion control measures. Testing may be required and shall be provided to the Local Authority on request.

4.1.4 Post-development/Operational Phase

Following the completion of the construction phase of the project and the development reaching ‘Practical Completion’ and/or ‘On-maintenance’, a monitoring program will be established for the stormwater treatment

devices outlined previously within this report, where applicable. The monitoring program will ensure the ongoing integrity and effectiveness of these stormwater treatment devices following the completion of the construction phase of the project.

4.2 Dust Suppression and Erosion Control Measures

The time of disturbance onsite will be kept to a minimum by ensuring that the civil works are undertaken directly following the earthworks phase. Consideration to staging of the works shall be given in order to minimise the area of exposed earthworks at any given time.

Erosion control and dust suppression measures shall be applied to the exposed areas of the site as deemed necessary by the site supervisor in order to prevent the emission of dust from the site.

A number of erosion control measures are available inclusive of but not limited to the following:

- Water spraying (by water truck);
- Dust suppressants;
- Surface stabilisation; and
- Covering of exposed areas.

4.3 Sediment Control Measures

With reference to the IEAust Guidelines and Current Industry Best Practice, there are three (3) fundamental sediment control principles that have been identified for use during construction:

- Construction Vehicle Shakedown and/or Entry/Exit;
- Sediment Fences; and
- Sediment Barriers.

4.3.1 Construction Vehicle Shakedown and/or Entry/Exit

A dedicated construction vehicle shakedown will be installed at the site's entry/exit point for road and construction vehicles. This construction vehicle shakedown area will be established to facilitate the removal of soil, mud, dust and debris from the tyres of vehicles prior to leaving the construction site. The construction shakedown will comprise of a gravel/rock pad designed or a vibratory grid system constructed and maintained in accordance with the IEAust Guidelines.

The advantages of the vibratory grid system include ease of movement and ability to reuse for several years at different construction sites.

4.3.2 Sediment Fences

Sediment fencing will be established at the bottom of slopes on any exposed earthworks batters where there is an established risk of contaminated water discharging from the site during construction. Sediment fencing may be required at regular spacing down the disturbed slope to limit scour and rutting caused by channelising of stormwater discharge. Sediment fences will be used to protect any temporary stockpile sites as required. Sediment collected from sediment barriers will be regularly removed and either taken offsite as part of the earthworks phase or stockpiled for use during revegetation works.

4.3.3 Sediment Barriers

Sediment barriers will be constructed around all stormwater drainage gully pits and field inlets where contaminated water may enter the existing and proposed stormwater network. The provision of these sediment barriers will facilitate the settlement of sediments prior to entering the downstream stormwater drainage network. Sediment barriers will generally comprise of gravel wrapped in geotextile 'sausage', sediment fences around field inlets or similar approved products.

4.4 Monitoring and Maintenance

The site supervisor will be responsible for the following regular monitoring and maintenance activities during the various phases of the development:

1. Inspection of downstream stormwater network as well as sediment and erosion controls will be conducted at the end of each construction day and after each rainfall event greater than 25mm.
2. If any established complaints by neighbouring property owners and/or local authority or evidence of water quality deterioration is reported downstream of the works site the following actions are to be taken immediately:

    a. locate source of stormwater quality deterioration.
    b. construct temporary erosion and sediment controls to prevent the continuing short term stormwater quality deterioration.
    c. repair existing erosion and sediment controls, modify construction procedures or construct additional controls to prevent further deterioration.

5 Conclusions and Recommendations

This report outlines the stormwater management strategy developed to manage potential impacts due to the proposed medical centre development located at 67-69 North Street and 5 Voss Street, The Range.

Following the investigation, the following stormwater design strategy has been adopted for the site:

- Attenuation of the post-development stormwater discharge from Catchment A1 'Roof' through the use of a detention tank prior to discharging to the LPoD being the existing kerb and channel within the North Street and Talford Lane road reserves;
- Discharge the minor 10% AEP (Q_{10}) stormwater runoff to the Lawful Point of Discharge via a piped stormwater network;
- Discharge the major 1% AEP (up to Q_{100}) stormwater runoff to the Lawful Point of Discharge via a piped stormwater network and overland flow;
- Generally, maintain the existing drainage regimes and drainage discharge locations.

Following the completion of this investigation we can conclude that the development site, with the implementation of the stormwater management strategy outlined in this report, will result in a 'no worsening' effect of the current stormwater discharge conditions upstream or downstream of the site.

6 Reference Documentation

Rockhampton Region Planning Scheme Version 4.4 (RRC, 2023)

Capricorn Municipal Development Guidelines (CMDG, 2022)

Institution of Engineers, Australia (2016) "Australian Rainfall and Runoff – A Guide to Flood Estimation"

Institute of Public Works Engineers Australia (Queensland Division) (2016) “Queensland Urban Drainage Design Manual (QUDM)”, Fourth Edition

The State of Queensland: Department of State Development, Infrastructure and Planning, July 2017. State Planning Policy

Water by Design (2018) “MUSIC Modelling Guidelines Version 3.0”- Consultation Draft, November 2018

PINNACLE ENGINEERING GROUP

Appendix A

Proposed Development Plans

PROPOSED NEW MEDICAL CENTRE

67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

RealSpace creative

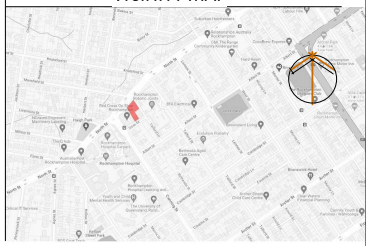
DRAWING INDEX

1 ARCHITECTURAL DRAWINGS

PROJECT DATA

DA APPROVAL:	
LOT:	12/7/4
RP DATA:	RP603082/R26335
SITE AREA:	
67 NORTH STREET:	771sqm
69 NORTH STREET:	683sqm
5 VOSS STREET:	607sqm
TOTAL GROSS SITE AREA:	2061sqm
GFA:	
SEMI BASEMENT:	-sqm
GROUND FLOOR:	1376qm
TOTAL:	1376sqm
SITE COVER:	74.48% (1535/2061)
CARPARKING:	41

VICINITY MAP



Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediately to RealSpace Creative for instructions.

Authorisation

Reg No.

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PO Box 5314
Q Super Centre QLD 4218

T 0418 728 962
ABN 20 601 291 141
www.real-space.com.au

Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

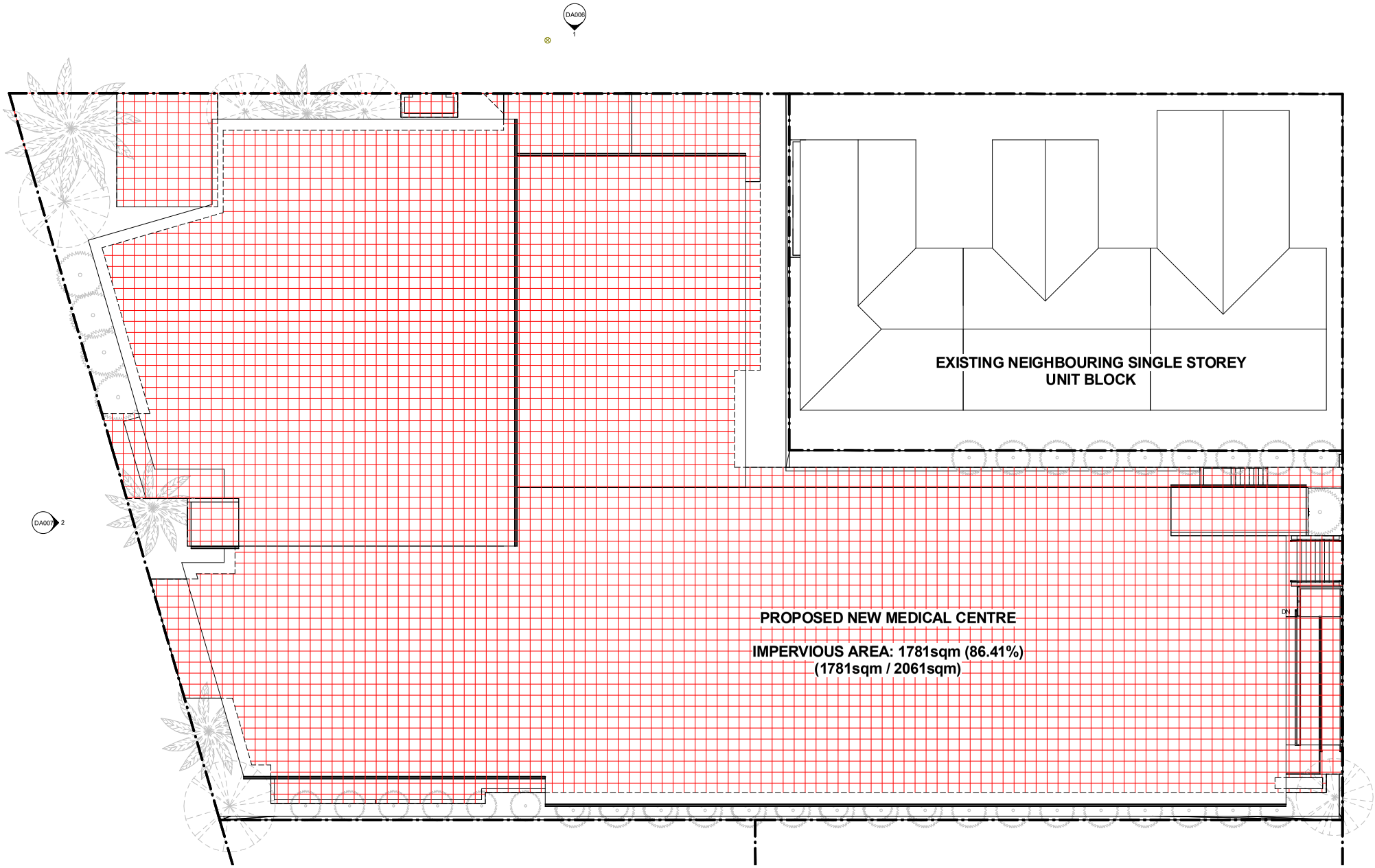
CLIENT:
THE RADIOLOGY PARTNERS COMPANY
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
COVER SHEET

DRAWING NO: DA001 | ISSUE NO: A | DRAWN: TJ



1 IMPERVIOUS AREA
1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification
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CLIENT:
THE RADIOLOGY PARTNERS COMPANY

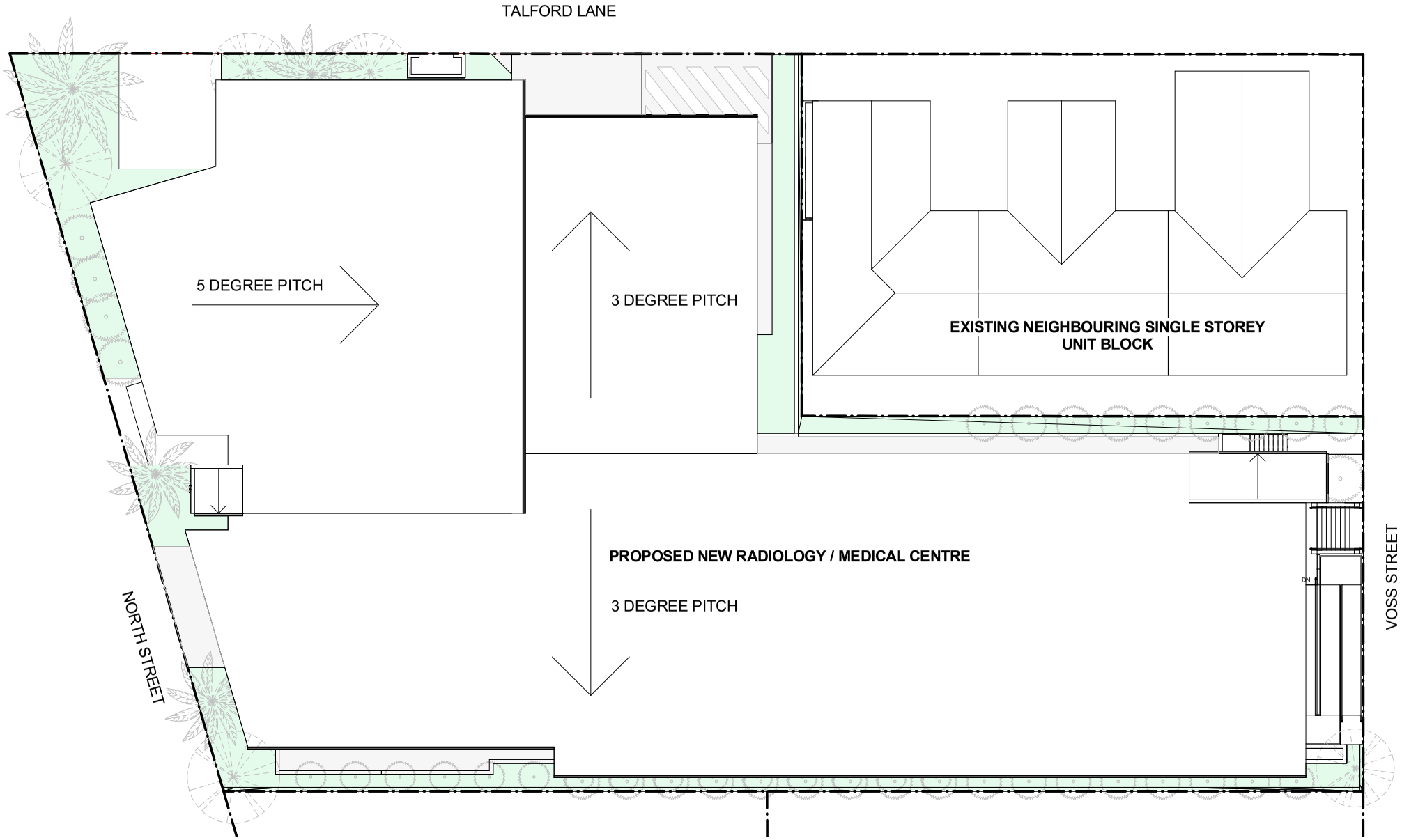
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
IMPERVIOUS AREA

DRAWING NO: DA002.6
ISSUE NO: A
DRAWN: TJ



2 SITE PLAN.
1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification
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Hooman Jaffar

RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY

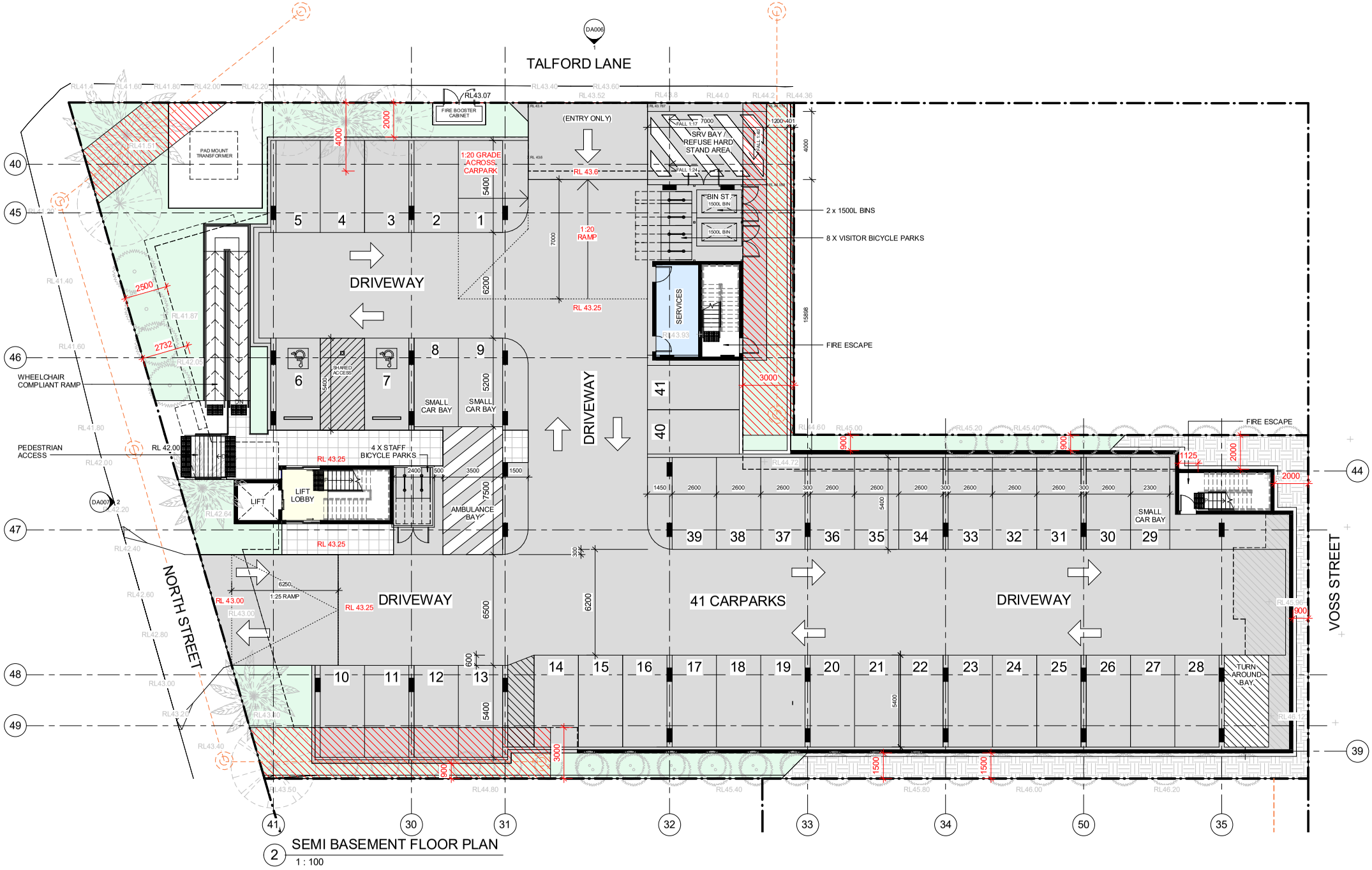
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
SITE PLAN

DRAWING NO: DA003
ISSUE NO: A
DRAWN: TJ



2 SEMI BASEMENT FLOOR PLAN

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

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CLIENT: THE RADIOLOGY PARTNERS COMPANY

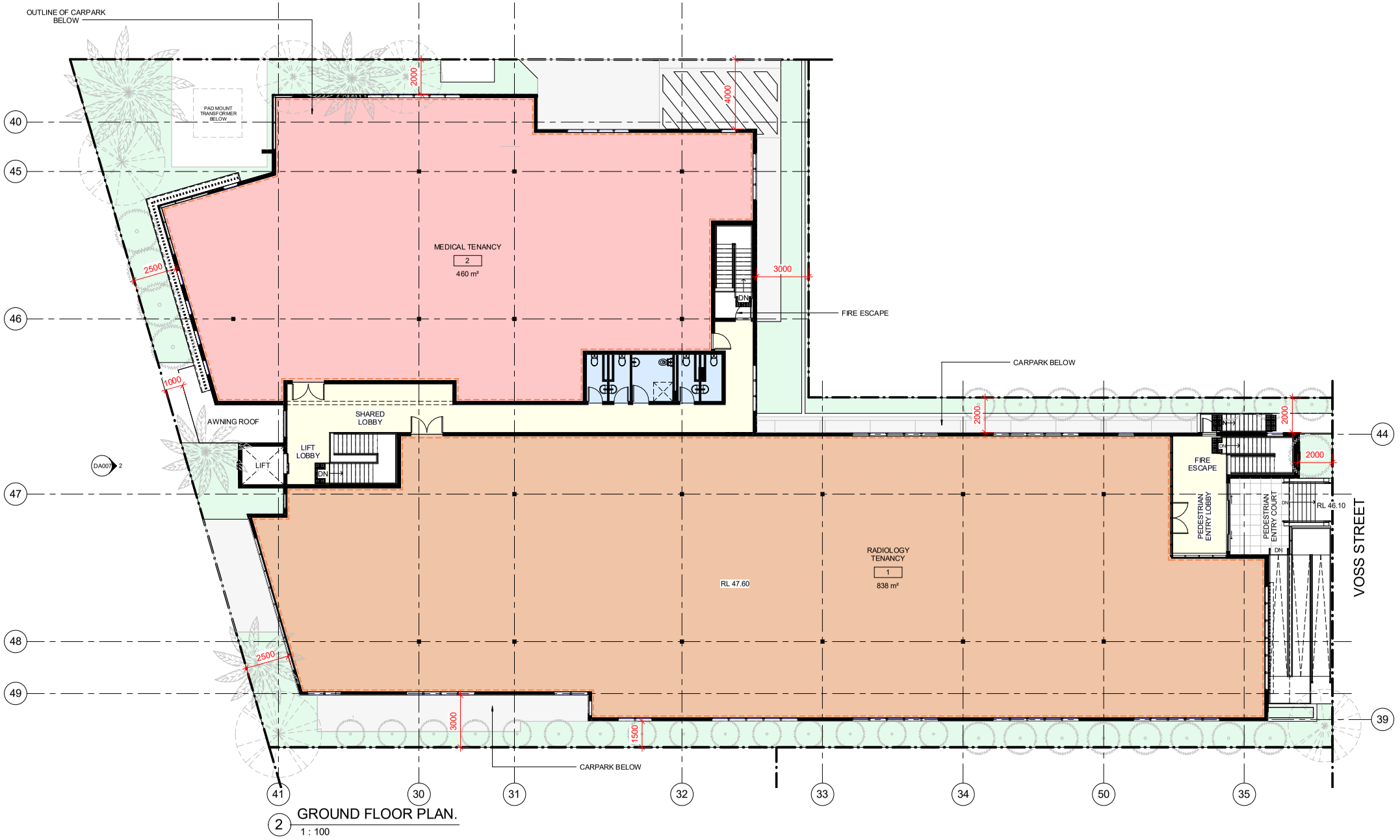
SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: SEMI BASEMENT FLOOR PLAN

DRAWING NO: DA004.0 | ISSUE NO: A | DRAWN: TJ



2 GROUND FLOOR PLAN.

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

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CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GROUND FLOOR PLAN

DRAWING NO: DA004.1 | ISSUE NO: A | DRAWN: TJ

Appendix B

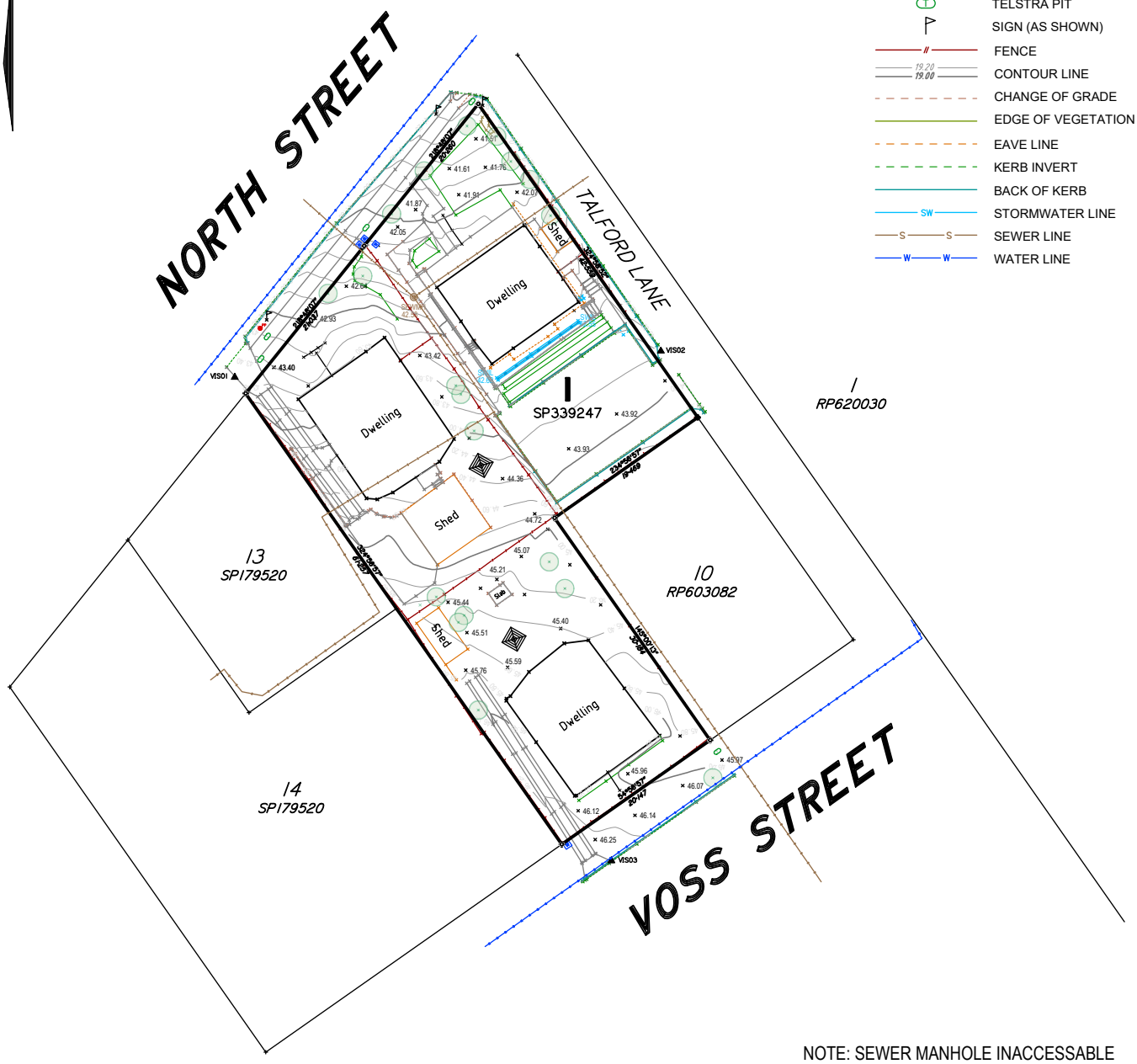
Topographic Data

Scale 1:500 – Lengths are in Metres.

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

LEGEND

- OP — ORIGINAL PEG
- TEMPORARY BENCH MARK
- PP — POWER POLE
- SEWER MANHOLE
- W — WATER METER
- TELSTRA PIT
- SIGN (AS SHOWN)
- FENCE
- CONTOUR LINE
- CHANGE OF GRADE
- EDGE OF VEGETATION
- EAVE LINE
- KERB INVERT
- BACK OF KERB
- SW — STORMWATER LINE
- S — SEWER LINE
- W — WATER LINE



NOTE: SEWER MANHOLE INACCESSABLE

SURVEY CONTROL TABLE

STATION I.D.	EASTING	NORTHING	ELEVATION	TYPE
VIS01	243970.197	7412459.434	43.572	PLUG (IN CONC)
VIS02	244017.620	7412462.345	43.826	SCREW (IN KERB)
VIS03	244012.116	7412405.659	46.302	NAIL (IN KERB)

Rev	Description	Drawn	Checked	Date
A	Original Issue	LC	WE	21/08/2023

This plan is prepared from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose. Services shown hereon have been located where possible by field survey. If not able to be located, services may have been plotted from the records of relevant authorities where available. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services. This note is an integral part of this plan.

CONTOUR & DETAIL PLAN

PROJECT: Contour & Detail Plan

LOCATION: Voss Street, The Range

REAL PROPERTY DESCRIPTION: Lot 12 RP603082, Lot 7 RP603082 & Lot 4 R26335

CLIENT: Radiology

VISION

Airlie Beach | Mackay | Townsville | Rockhampton | Brisbane | Gold Coast

E : admin@visionsurveysqld.com.au P : 13000VISION

Horiz. Datum:	MGA (GDA 1994) ZONE 56 VIDE PSM 202934		Scale:	1 : 500 @ A3	Drawing No: 23644-CD001
Vert. Datum:	AHD VIDE PSM 202934 RL: 8.679		Drawn:	LC	Sheet: 1 of 1
Local Authority:	RRC	Contour Interval: 0.20m	Surveyor:	ME	Revision: A

PINNACLE ENGINEERING GROUP

Appendix C

Stormwater Catchment Plans

LEGEND

— — T — — —	EXISTING TELSTRA CABLE
— — S — — —	EXISTING SEWERAGE RETICULATION
— — W — — —	EXISTING WATER RETICULATION
— — SWD — — —	EXISTING STORMWATER PIPE
— — OE — — —	EXISTING OVERHEAD ELECTRICAL
— — UE — — —	EXISTING UNDER GROUND ELECTRICAL
→	SEWER RETICULATION FLOW DIRECTION
— — — — —	EXISTING BOUNDARY
——— - - ———	EXISTING NOMINAL KERB LINE
▬ ▬ ▬	INDICATIVE WORKS AREA
— — 30.0 — —	EXISTING SURFACE CONTOURS (0.5m)
———	EXISTING FEATURE TO BE DEMOLISHED
▨	ROOF / BUILDING HARDSTAND AREA
▭	CONCRETE DRIVEWAY / PAVED AREA
▭	PERVIOUS AREA
⇦	OVERLAND FLOW DIRECTION
- - - - -	CATCHMENT BOUNDARY
A	CATCHMENT LABEL
— S — — —	EXISTING SEWERAGE MAIN TO BE REMOVED

CATCHMENT TABLE (PRE)

CATCHMENT AREA - A	0.2068 ha

CATCHMENT DATA	A
BUILDING / ROOF AREA	0.0555 ha
HARDSTAND / DRIVEWAY	0.0447 ha
GARDEN / PERVIOUS AREA	0.1066 ha
TOTAL IMPERVIOUS AREA	0.1002 ha
TOTAL PERVIOUS AREA	0.1066 ha

NOTES

1. THE LOCATION OF THE EXISTING SERVICES HAS BEEN PLOTTED FROM SURVEY AND RECORDS AND IS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
2. HISTORICAL AERIAL PHOTOGRAPHY HAS BEEN USED TO VALIDATE SURVEY DATA AND ESTABLISH PRE-DEVELOPMENT CATCHMENTS.

BEFORE YOU DIG
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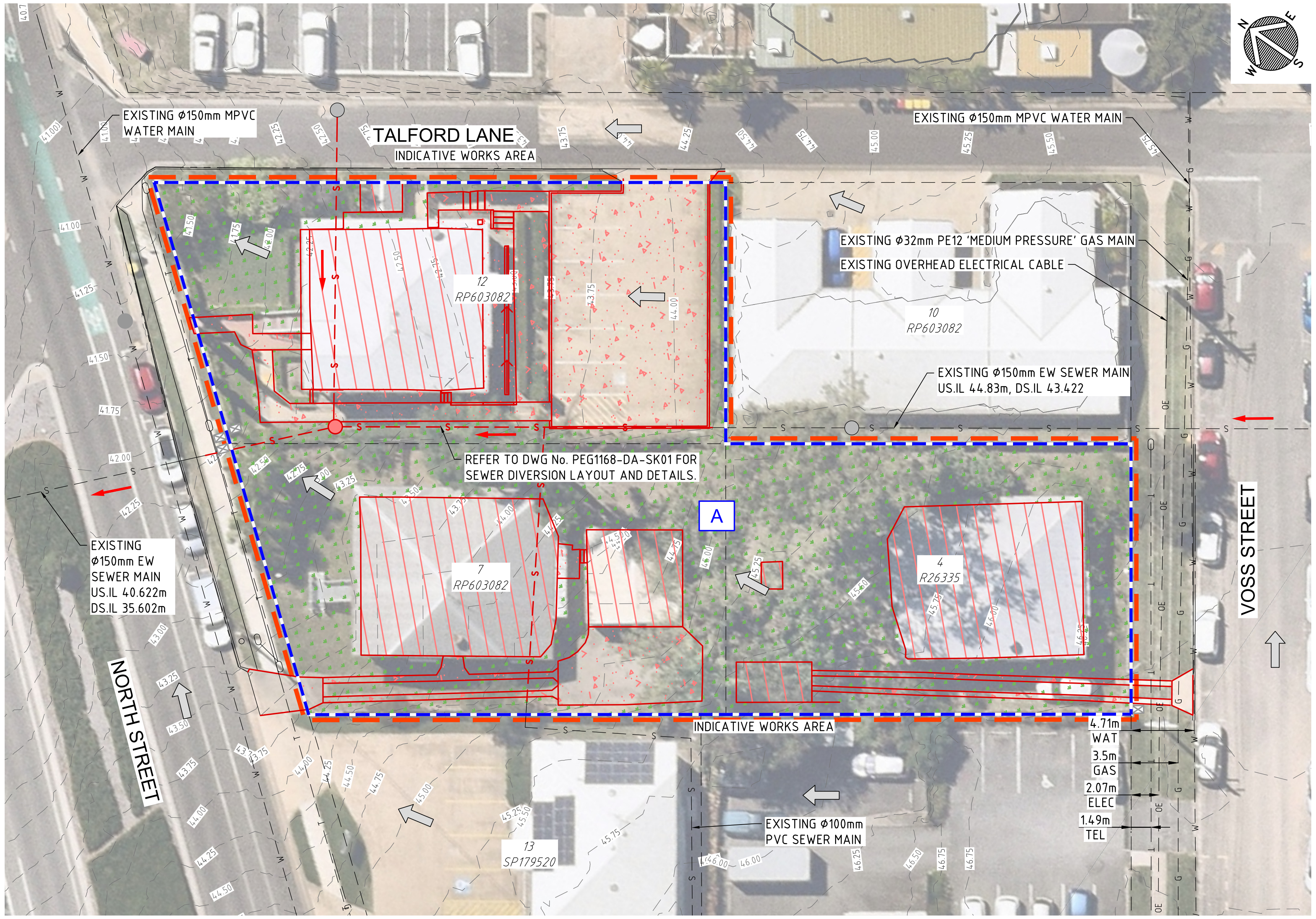
UNDERGROUND PUBLIC UTILITY PLANT EXISTS IN THIS VICINITY. THE CONTRACTOR IS ADVISED TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM THE EXACT LOCATION OF PUBLIC UTILITY PLANT ON SITE PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION OR CONSTRUCTION WORKS.



PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
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REV	DESCRIPTION	DRAWN	DATE
A	ORIGINAL ISSUE	J.W.	12.06.2024
C	REVISED DEVELOPMENT LAYOUT	J.L.	03.04.2025

TASK	BY	INITIAL	DATE
REVIEW	A. CRESSWELL		03.04.2025
DESIGN	J. WATERS		03.04.2025
DRAWN	M. GLASSON		03.04.2025

SCALE 1:200
(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT
67 & 69 NORTH STREET AND 5 VOSS STREET
THE RANGE, QLD 4700
(LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: PRE DEVELOPMENT CATCHMENT LAYOUT

STATUS: PRELIMINARY
(NOT TO BE USED FOR CONSTRUCTION)

APPROVED | RPEQ No

DRAWING NUMBER: PEG1168-DA-SK02
REVISION: B

LEGEND

- EXISTING TELSTRA CABLE
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING STORMWATER PIPE
- EXISTING OVERHEAD ELECTRICAL
- EXISTING UNDER GROUND ELECTRICAL
- EXISTING BOUNDARY
- EXISTING NOMINAL KERB LINE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED STORMWATER PIPE
- INDICATIVE WORKS AREA
- ROOF / BUILDING HARDSTAND AREA
- CONCRETE DRIVEWAY / PAVED AREA
- PERVIOUS AREA
- PROPOSED LAND RESUMPTION AREA
- OVERLAND FLOW DIRECTION
- CATCHMENT BOUNDARY
- A1 CATCHMENT LABEL
- SEWER RETICULATION FLOW DIRECTION
- ROOF WATER KERB ADAPTOR. REFER TO CMDG STD DWG CDMG-R-061 FOR FURTHER DETAILS.
- PROPOSED CUT OFF SWALE
- EXISTING SEWER FOR REMOVAL

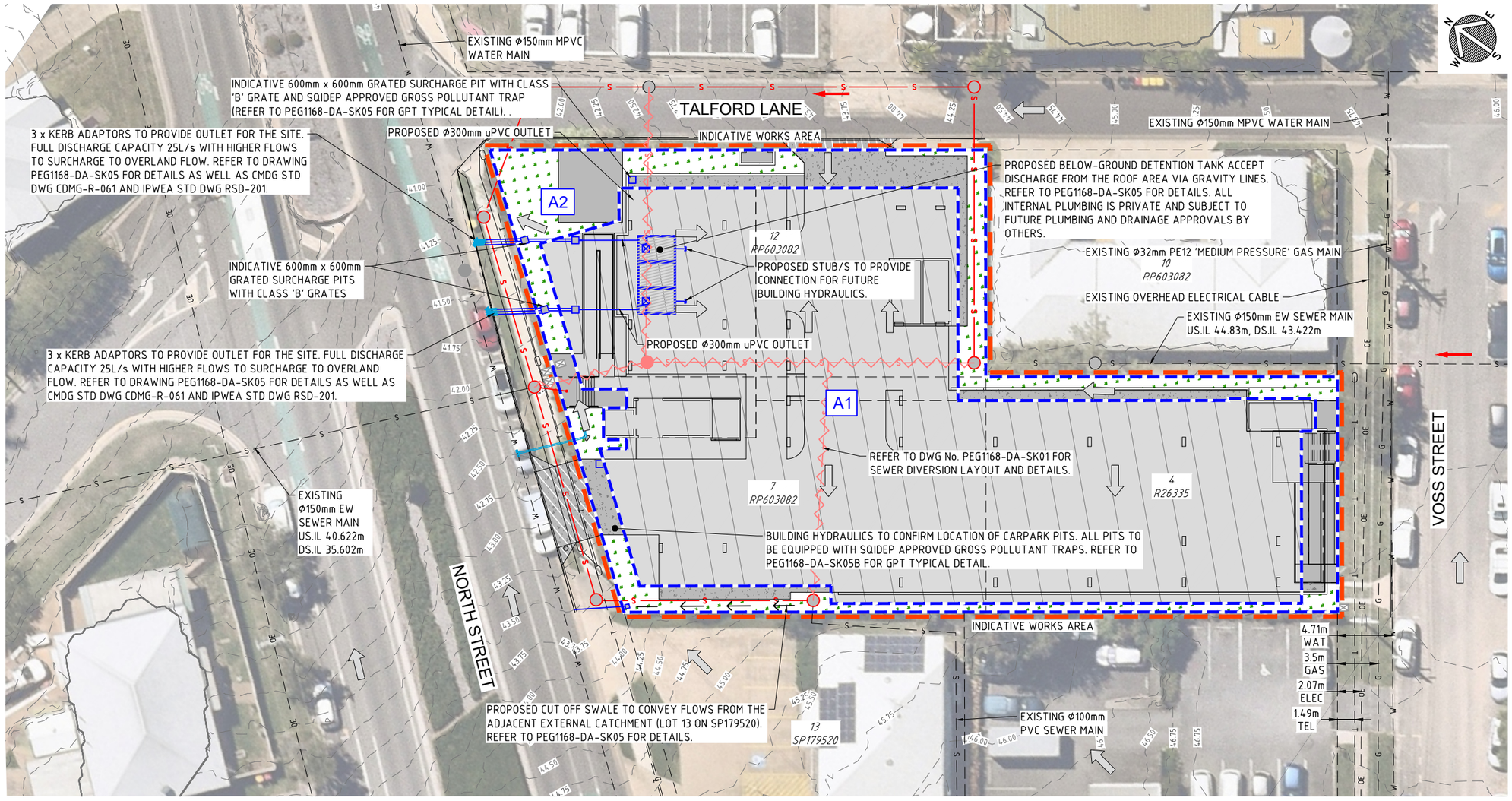
NOTES

1. THE LOCATION OF THE EXISTING SERVICES HAS BEEN PLOTTED FROM SURVEY AND RECORDS AND IS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
2. THE DETAILED DESIGN OF THE DISCHARGE PIPE WORK IS THE SUBJECT OF THE SEPARATE PLUMBING AND DRAINAGE APPLICATION.

CATCHMENT TABLE (POST - DEVELOPMENT)

CATCHMENT AREA - A1 (ROOF/BUILDING)	0.1598 ha
CATCHMENT AREA - A3 (GROUND/LANDSCAPING)	0.0470 ha

CATCHMENT DATA	A1	A2
ROOF / BUILDING AREA	0.1598 ha	N/A
DRIVEWAY / ROAD	N/A	0.0144 ha
GROUND / GARDEN	N/A	0.0470 ha
TOTAL IMPERVIOUS AREA	0.1598 ha	0.0234 ha
TOTAL PERVIOUS AREA	N/A	0.0236 ha



BEFORE YOU DIG www.byda.com.au

UNDERGROUND PUBLIC UTILITY PLANT EXISTS IN THIS VICINITY. THE CONTRACTOR IS ADVISED TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM THE EXACT LOCATION OF PUBLIC UTILITY PLANT ON SITE PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION OR CONSTRUCTION WORKS.

PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
WWW.PINNACLEENG.COM.AU

REV	DESCRIPTION	DRAWN	DATE
A	ORIGINAL ISSUE	J.W.	12.06.2024
B	RESPONSE TO COUNCIL RFI	J.W.	16.09.2024
C	REVISED DEVELOPMENT LAYOUT	J.L.	03.04.2025

TASK	BY	INITIAL	DATE
REVIEW	A. CRESSWELL		03.04.2025
DESIGN	J. WATERS		03.04.2025
DRAWN	M. GLASSON		03.04.2025

SCALE

SCALE 2 1 0 2 4 6 8 10 1:200

(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT

RADIOLOGY PARTNERS PTY LTD

PROJECT

PROPOSED HEALTH CARE SERVICES DEVELOPMENT
67 & 69 NORTH STREET
AND 5 VOSS STREET
THE RANGE, QLD 4700
(LOT 7 & 12 ON RP603082
AND LOT 4 ON R26335)

DRAWING TITLE

POST DEVELOPMENT CATCHMENT LAYOUT

STATUS

PRELIMINARY
(NOT TO BE USED FOR CONSTRUCTION)

APPROVED RPEQ No

DRAWING NUMBER PEG1168-DA-SK03

REVISION C

PINNACLE ENGINEERING GROUP

Appendix D

Rational Method Calculations

RATIONAL METHOD CALCULATIONS

Project:	PEG1168_67-69 North Steet and 7 Voss Street, The Range
Date:	11-Jun-24
Designed:	J. Waters
Comments:	Catchment A - Pre-development

PARAMETERS	VALUE	
Catchment Name	A	
Catchment Size	0.2068 ha	
C10 Coefficient of Runoff	0.78	(QUDM T4.5.3 (f_i = 0.49, $^1I_{10}$ =64.9))

Total Time of Concentration — QUDM Figure 4.4

Total time of Conentration **(tc)** — **5.0 mins**

Rational Method for Peak Catchment flow — Q = 0.00278 x C x I x A

ARI	Rainfall Intensity (mm/h)	Rainfall Depth (mm)	Fy	Coefficient of Runoff	Discharge (m^3/s)
3 month					0.021
1	115.00	9.58	0.80	0.62	0.041
2	142.00	11.83	0.85	0.66	0.054
5	173.00	14.42	0.95	0.74	0.074
10	199.00	16.58	1.00	0.78	0.089
20	228.00	19.00	1.05	0.82	0.107
50	267.00	22.25	1.15	0.90	0.138
100	298.00	24.83	1.20	0.94	0.160

RATIONAL METHOD CALCULATIONS

Project:	PEG1168_67-69 North Steet and 7 Voss Street, The Range
Date:	11-Jun-24
Designed:	J. Waters
Comments:	External Catchment Pre-development

PARAMETERS	VALUE		
Catchment Name	A		
Catchment Size	0.0361	ha	
C10 Coefficient of Runoff	0.88		(QUDM T4.5.3 (f_i = 0.86, $^1I_{10}$ =64.9))

Total Time of Concentration — QUDM Figure 4.4

Total time of Conentration **(tc)** — **5.0 mins**

Rational Method for Peak Catchment flow — Q = 0.00278 x C x I x A

ARI	Rainfall Intensity (mm/h)	Rainfall Depth (mm)	Fy	Coefficient of Runoff	Discharge (m^3/s)
3 month					0.004
1	115.00	9.58	0.80	0.70	0.008
2	142.00	11.83	0.85	0.75	0.011
5	173.00	14.42	0.95	0.84	0.015
10	199.00	16.58	1.00	0.88	0.018
20	228.00	19.00	1.05	0.92	0.021
50	267.00	22.25	1.15	1.01	0.027
100	298.00	24.83	1.20	1.06	0.032

PINNACLE ENGINEERING GROUP

Appendix E

Stormwater Management Layout

LEGEND

- EXISTING TELSTRA CABLE
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING STORMWATER PIPE
- EXISTING OVERHEAD ELECTRICAL
- EXISTING UNDER GROUND ELECTRICAL
- EXISTING BOUNDARY
- EXISTING NOMINAL KERB LINE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED STORMWATER PIPE
- INDICATIVE WORKS AREA
- ROOF / BUILDING HARDSTAND AREA
- CONCRETE DRIVEWAY / PAVED AREA
- PERVIOUS AREA
- PROPOSED LAND RESUMPTION AREA
- OVERLAND FLOW DIRECTION
- CATCHMENT BOUNDARY
- A1 — CATCHMENT LABEL
- ROOF WATER KERB ADAPTOR. REFER TO CMDG STD DWG CDMG-R-061 FOR DETAILS.
- PROPOSED CUT OFF SWALE
- EXISTING SEWER FOR REMOVAL

NOTES

1. THE LOCATION OF THE EXISTING SERVICES HAS BEEN PLOTTED FROM SURVEY AND RECORDS AND IS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
2. THE DETAILED DESIGN OF THE DISCHARGE PIPE WORK IS THE SUBJECT OF THE SEPARATE PLUMBING AND DRAINAGE APPLICATION.

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TOTAL IMPERVIOUS AREA	0.1598 ha	0.0234 ha
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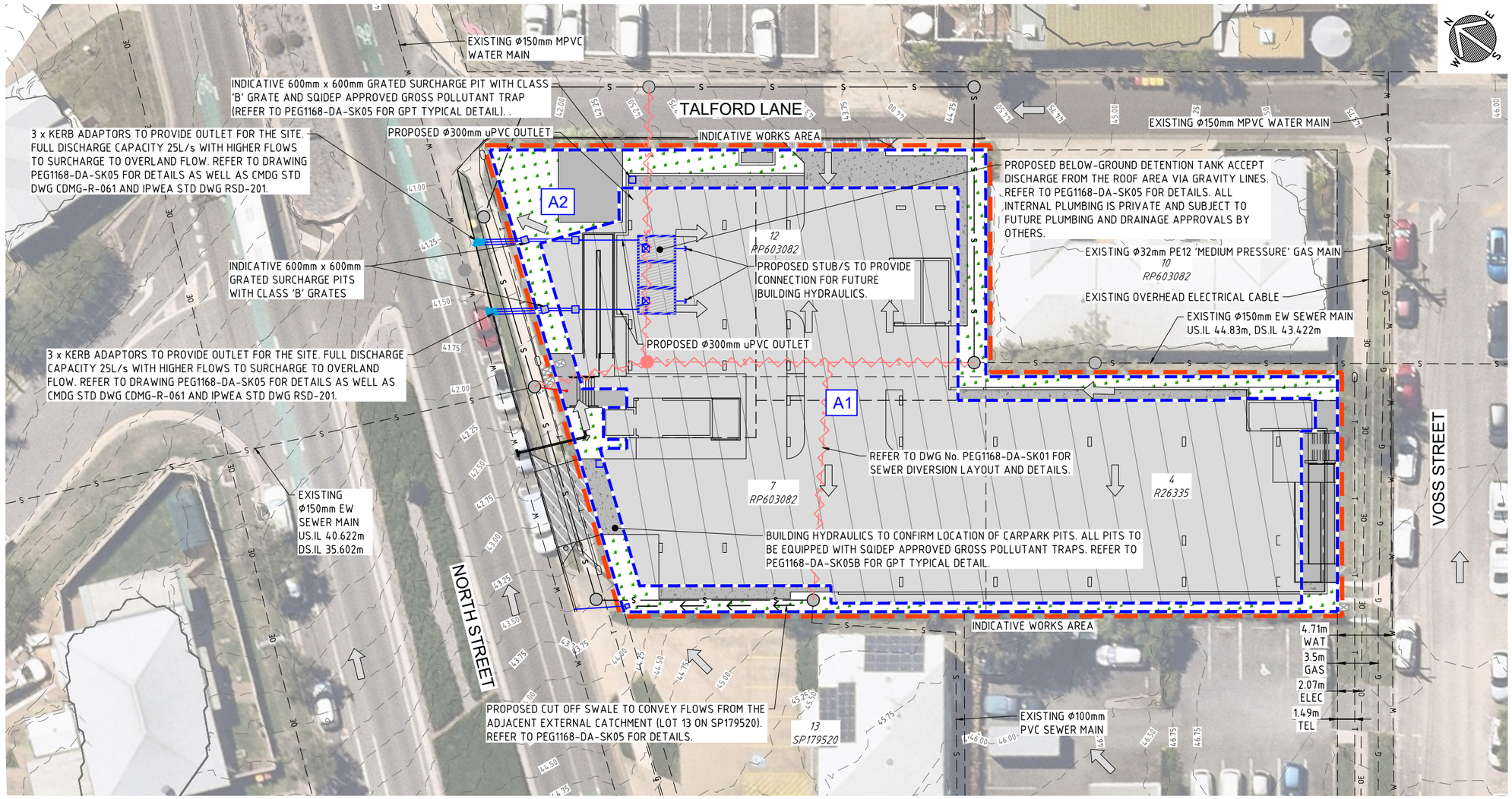

DETENTION DETAILS

PARAMETERS	TANK
TANK OUTLETS	
LOW FLOW OUTLET	= 2x Ø180mm ORIFICE
LOW FLOW OUTLET LEVEL	= AT BASE OF TANK
HIGH FLOW OUTLET	= 2x 1.2m WIDE WEIRS
HIGH FLOW OUTLET LEVEL	= 1.00m ABOVE BASE OF TANK
TANK GEOMETRY	
STORAGE AREA	= 18.0m^2 MIN.
STORAGE HEIGHT	= 1.3m
STORAGE VOLUME	= 23.4m^3
TANK MODELLING SUMMARY	
10% AEP PEAK OUTFLOW	= 0.086m^3/s
10% AEP PEAK STAGE	= 0.58m ABOVE BASE OF TANK
1% AEP PEAK OUTFLOW	= 0.118m^3/s
1% AEP PEAK STAGE	= 1.02m ABOVE BASE OF TANK

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DESIGN	J. WATERS		03.04.2025
DRAWN	M. GLASSON		03.04.2025

SCALE: 2 1 0 2 4 6 8 10 1:200

(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT 67 & 69 NORTH STREET AND 5 VOSS STREET THE RANGE, QLD 4700 (LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: STORMWATER MANAGEMENT LAYOUT

STATUS: PRELIMINARY (NOT TO BE USED FOR CONSTRUCTION)

APPROVED

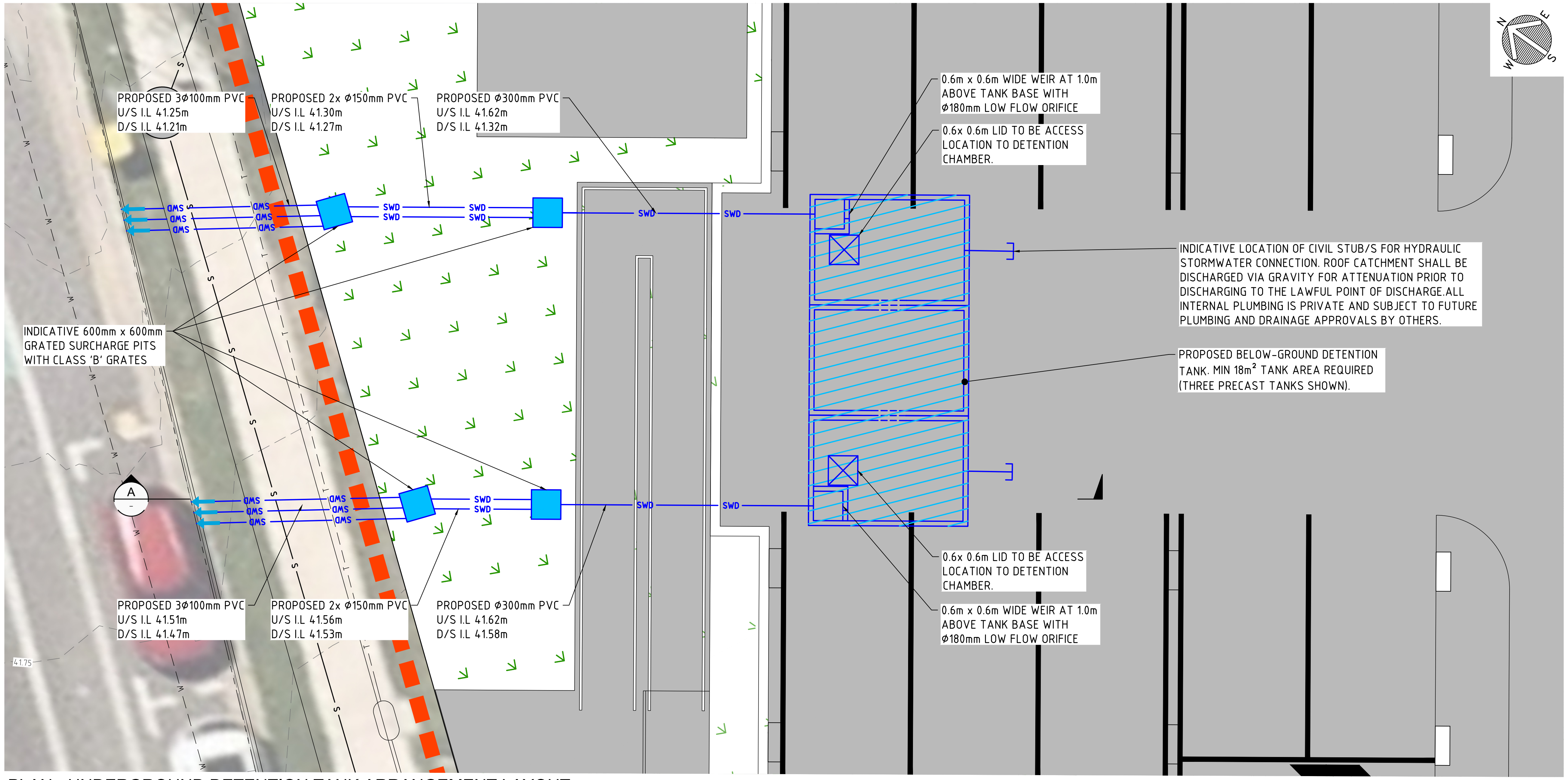
RPEQ No

DRAWING NUMBER: PEG1168-DA-SK04

REVISION: C

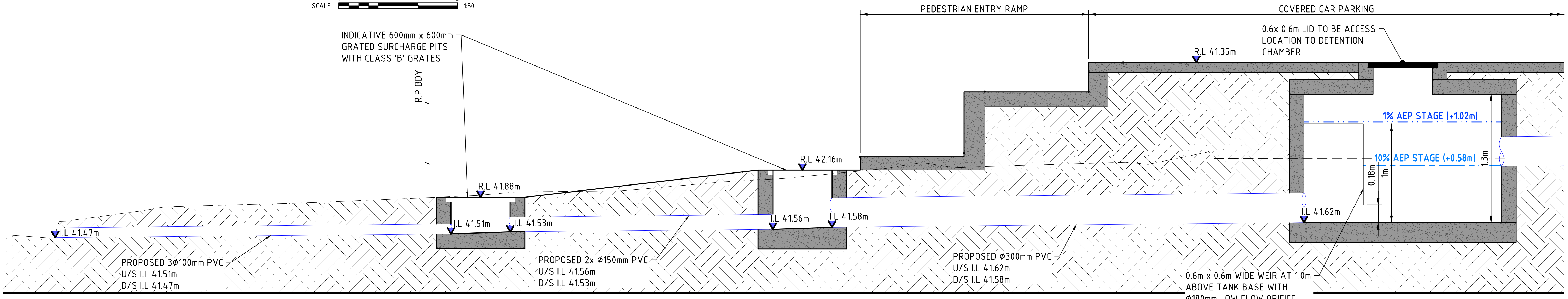
LEGEND

— T —	EXISTING TELSTRA CABLE
— S —	EXISTING SEWERAGE RETICULATION
— W —	EXISTING WATER RETICULATION
— SWD —	EXISTING STORMWATER PIPE
— SWD —	PROPOSED STORMWATER PIPE
— OE —	EXISTING OVERHEAD ELECTRICAL
— UE —	EXISTING UNDER GROUND ELECTRICAL
— G —	EXISTING GAS MAIN
— — —	EXISTING BOUNDARY
— — —	EXISTING NOMINAL KERB LINE
— — —	INDICATIVE WORKS AREA
	ROOF / BUILDING HARDSTAND AREA
	CONCRETE DRIVEWAY / PAVED AREA
	LANDSCAPE AREA / DEEP PLANTING
↑	ROOF WATER KERB ADAPTOR. REFER TO CMDG STD DWG CDMG-R-061 FOR DETAILS.



PLAN - UNDERGROUND DETENTION TANK ARRANGEMENT LAYOUT

SCALE 1:50



SECTION A - UNDERGROUND DETENTION TANK DISCHARGE ARRANGEMENT

SCALE 1:20

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DRAWN	J. WATERS		03.04.2025

SCALE: AS SHOWN
(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT
67 & 69 NORTH STREET AND 5 VOSS STREET
THE RANGE, QLD 4700
(LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: STORMWATER MANAGEMENT DETAILS

STATUS: PRELIMINARY
(NOT TO BE USED FOR CONSTRUCTION)

APPROVED

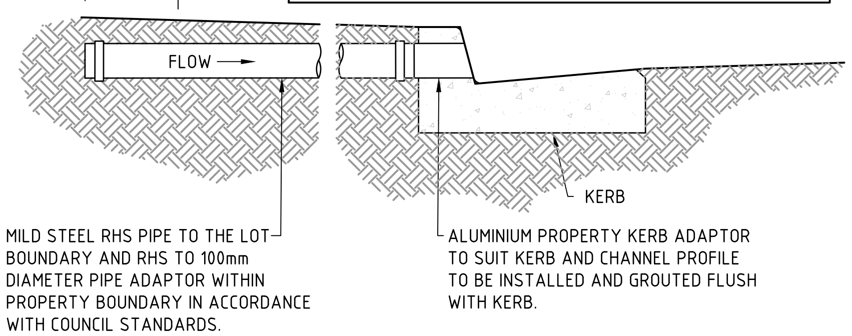
RPEQ No

DRAWING NUMBER: PEG1168-DA-SK05A

REVISION: C

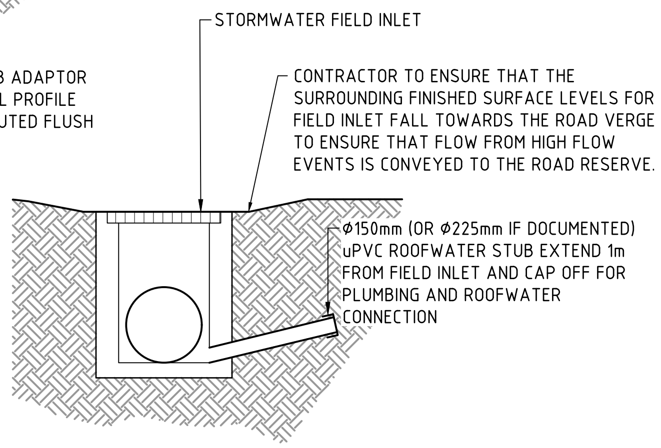
ROOFWATER NOTES

- POSITION 0.5m-1.5m OFFSET FROM PROPERTY BOUNDARY EACH SIDE OF ALLOTMENT UNLESS NOTED OTHERWISE ENSURE NO CONFLICTS WITH ANY OTHER SERVICE.
- ALL PIPES ARE TO BE LAID AT 1 IN 100 GRADE MINIMUM.



TYPICAL ROOF WATER KERB ADAPTER

SCALE N.T.S.

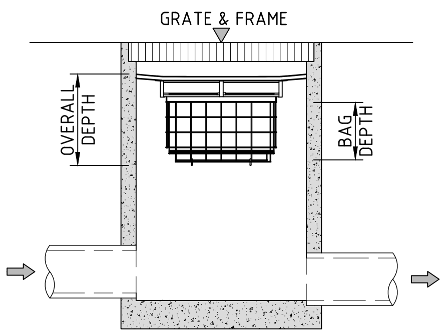


TYPICAL DETAIL

ROOFWATER DRAINAGE CONNECTION

SCALE 1:25

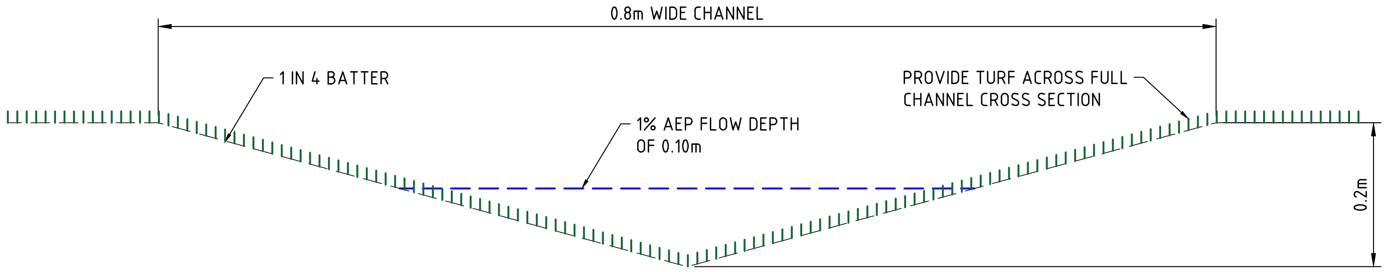
SCALE 0.5 0 0.5 1.0 1:25



TYPICAL DETAIL

SQIDEP APPROVED GROSS POLLUTANT TRAP TYPICAL DETAIL

SCALE N.T.S.



TYPICAL DETAIL - PROPOSED EXTERNAL CATCHMENT CUT-OFF SWALE DRAIN

SCALE: N.T.S

RATIONAL METHOD	
PARAMETERS	CATCHMENT EXT
AREA	0.0361 ha
TIME OF CONCENTRATION	5 mins
1% AEP RAINFALL INTENSITY	64.9 mm/hr
FRACTION IMPERVIOUS	0.86
C_{10} COEFFICIENT OF RUNOFF	0.86
1% AEP FREQUENCY FACTOR	1.20
C_{100} COEFFICIENT OF RUNOFF	1.00
1% AEP DISCHARGE RATE	0.032 m^3/s

CHANNEL CAPACITY CALCULATIONS	
1% AEP OVERLAND FLOW	= 0.032m^3/s
1% AEP VELOCITY	= 0.93m/s
1% AEP FLOW DEPTH	= 0.10m
CHANNEL DEPTH	= 0.20m
MANNING'S N (ASSUMED)	= 0.035 (GRASS)
D-V PRODUCT (1% AEP)	= 0.09m^2/s
CAPACITY AT 6% GRADE (0.20m flow depth)	= 0.236m^3/s

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CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT 67 & 69 NORTH STREET AND 5 VOSS STREET THE RANGE, QLD 4700 (LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: STORMWATER MANAGEMENT DETAILS

STATUS: PRELIMINARY (NOT TO BE USED FOR CONSTRUCTION)

APPROVED

RPEQ No

DRAWING NUMBER: PEG1168-DA-SK05B

REVISION: C

Appendix F

Council Mapping and Codes

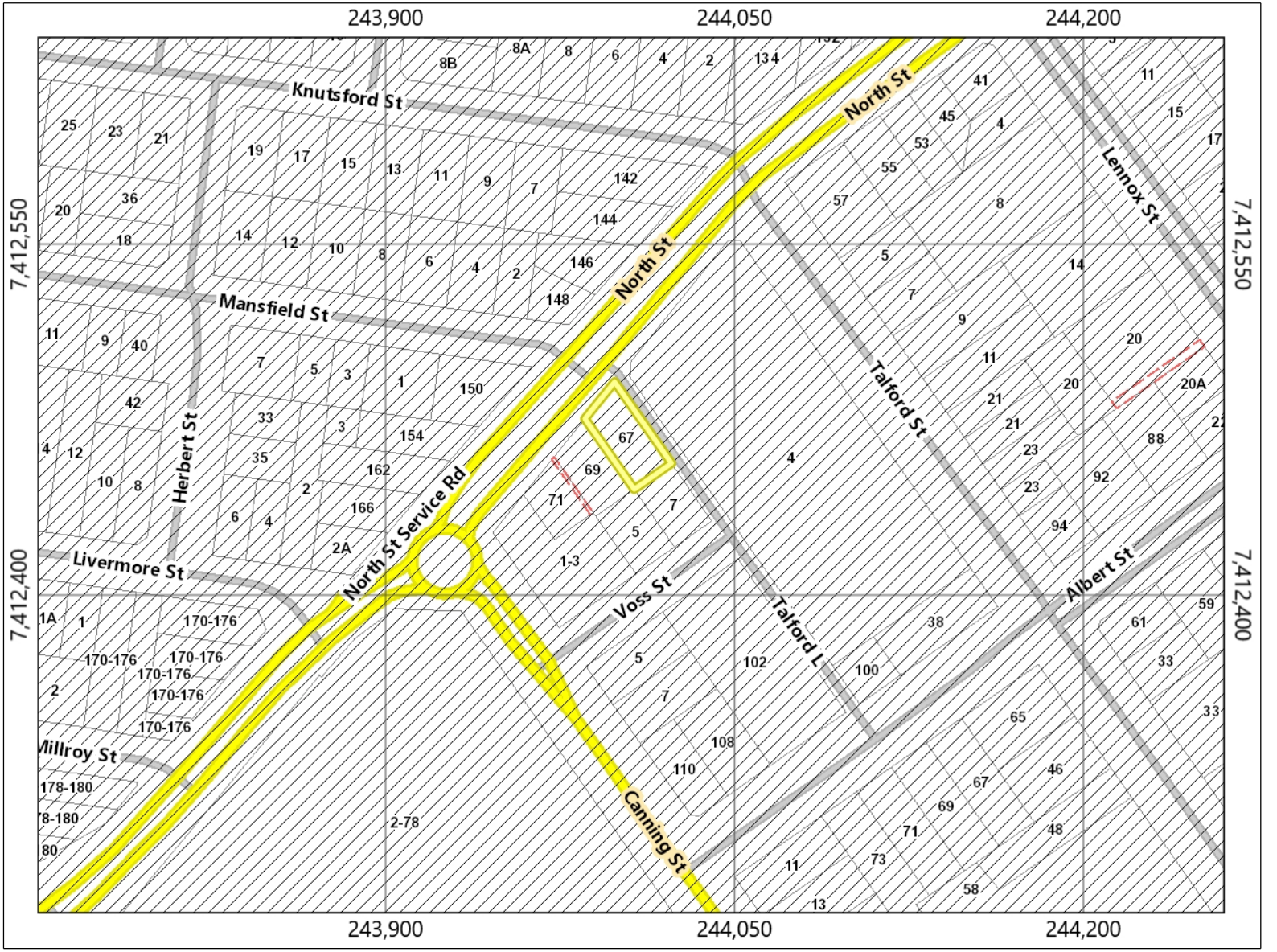
RichTextBox1

Spatial reference

GDA2020_MGA_Zone_56

A4 Page scale at 1: 2,534.30

Printed from RRPS on 11/06/24



Legend

- Limit of know or potential acid sulphate soils (Department of Resources)
- Land at or below 5m AHD
- Land above 5m and below 20m AHD
- Ocean
- Erosion Prone Area
- Hazard
  - Medium Hazard
  - High Hazard
- Development Information
- Fitzroy River Flood
  - H1 (Low)
  - H2 (Medium)
  - H3 (High)
  - H4 (High)
  - H5 (Extreme)
  - H6 (Extreme)
- Fitzroy River Flood Study Extent
- Floodplain Investigation Area
- North Rockhampton Flood Management Area
- Coastal Management District
- Roads1
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Easements
- Property Parcels
- Ocean
- DCDB Parks
- CQ LGA Boundaries

GDA 2020

Rockhampton Regional Council

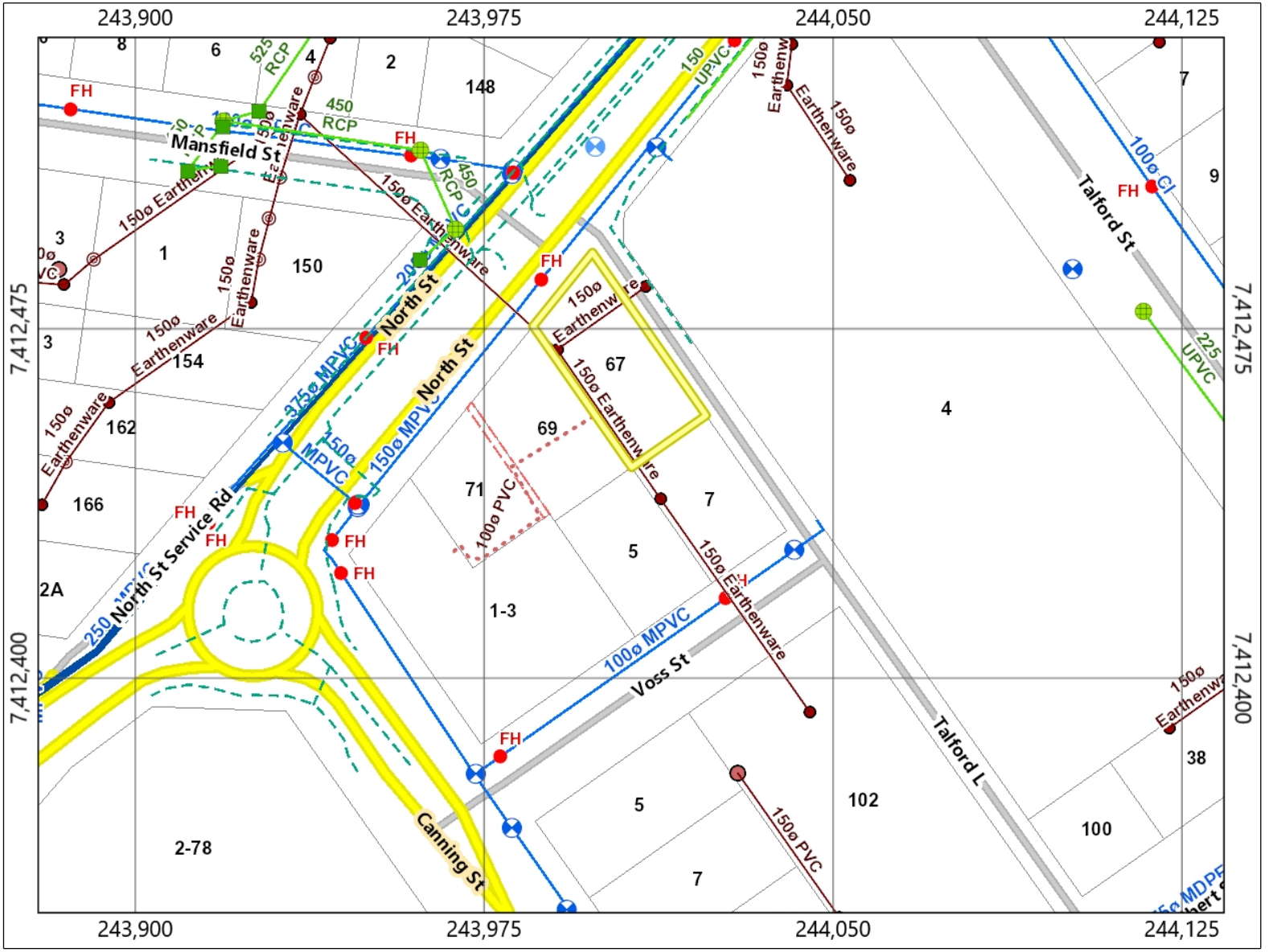
RichTextBox1

Spatial reference

GDA2020_MGA_Zone_56

A4 Page scale at 1: 1,267.15

Printed from RRPS on 11/06/24

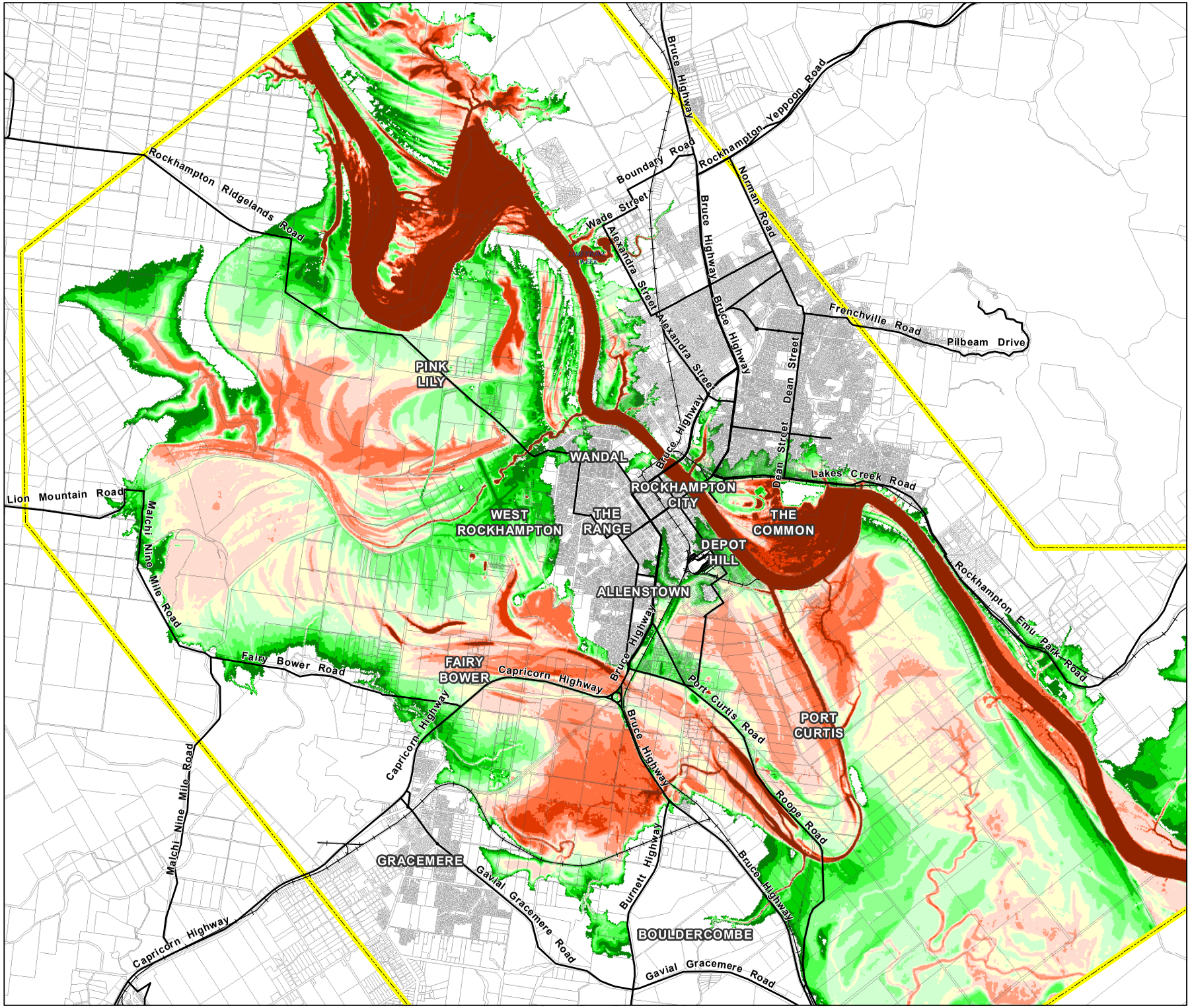


Legend

- Not Avaliable
- Stormwater Main Labels
- Junctions Labels
- Culverts
- Stormwater Junctions
  - Inlets
  - Access Chambers
- Stormwater Pipes
  - Open Channel
  - Mains
  - Culvert Pipes
  - Inter-allotment
  - Other
- Subsoil pipes
- Subsoil Clean Out pits
- Sewer Gravity Mains
  - Combined Main
  - Reticulation Main
  - Trunk Main
- Sewer Rising Mains
- Sewer Access Chambers
  - Access Chambers
  - Roll Over
  - Lamp Hole | Inspection Opening
  - Overflow Chambers
- Not Avaliable
- Hydrants
- Water Valves
  - Other Valve Type
  - Gate, Sluice, Butterfly
  - Air Valve
  - Ball Cock, Stop Cock
  - Ball Valve
  - Motor Sluice Valve
  - Non Return Valve
  - Pressure Reducing Valve
  - RPZ Valve
  - Reflux Valve
  - Scour Valve
  - Sluice Bypass Valve
  - Tap
- Water Mains
  - Other Main Type
  - Trunk Main
  - Reticulation Main
  - Raw Water Main
  - Scour Line
- Roads1
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Easements
- Property Parcels
- Ocean

GDA 2020

Rockhampton Regional Council



2014 TUFLOW MODEL

Peak Flood Depths and Extents (1% AEP) Basecase

Figure 9

Hydraulic Model Extent Boundary

Peak Deths (m)

- 0.0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 3.5
- 3.5 - 4.0
- 4.0 - 4.5
- 4.5 - 5.0
- > 5.0

N

Scale: 1:75,000 (when printed at A3)

0 0.5 1 2 3

Kilometers

PROJECT ID 60313918

LAST MODIFIED smithc5 20-Jun-2014

FILE NAME 60313918_WIS_0117

AECOM

9.3.6 Stormwater management code

9.3.6.1 Application

This code applies to development where the code is identified as applicable in the tables of assessment.

When using this code, reference should be made to section 5.3.2 and where applicable, section 5.3.3 located in Part 5.

9.3.6.2 Purpose

(1) The purpose of the stormwater management code is to provide for sustainable stormwater infrastructure which protects water quality, environmental values and maintains or enhances community health, safety and amenity.

(2) The purpose of the code will be achieved through the following overall outcomes:

- (a) acceptable levels of stormwater run-off quality and quantity are achieved by applying water sensitive urban design principles;
- (b) public health and safety are protected and development avoids damage or nuisance caused by stormwater flows;
- (c) development includes a stormwater management system which minimises impacts on natural catchment hydrological processes;
- (d) development ensures that the environmental values of waterways are protected or enhanced;
- (e) development maintains or enhances the efficiency and integrity of the stormwater infrastructure network;
- (f) the whole of life-cycle cost of stormwater infrastructure is minimised; and
- (g) new development infrastructure is designed to support and complement existing and planned stormwater infrastructure.

9.3.6.3 Specific benchmarks for assessment

Table 9.3.6.3.1 Development outcomes for assessable development

Stormwater management - General

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Stormwater management - General		
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: (a) ensure that flooding impacts do not increase, including upstream or downstream of the development site; (b) avoid net worsening of stormwater peak discharges and runoff volumes;	**AO1.1** Development provides a stormwater management system which is designed in compliance with SC6.18—Stormwater management planning scheme policy, SC6.10 — Flood hazard planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND**	**Complies.**

(c) utilises the use of water sensitive urban design principles; and (d) ensure the site maximizes opportunities for capture and reuse. Editor's note—A stormwater management plan may be required to demonstrate compliance with the performance outcome.	**AO1.2** Stormwater is conveyed to a lawful point of discharge in accordance with the Queensland Urban Drainage Manual.	
PO2 Development provides a stormwater management system which: (a) has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments; (b) maximises the use of natural waterway corridors and natural channel design principles; and (c) efficiently integrates with existing stormwater treatments upstream and downstream.	**AO2.1** Development provides a stormwater management system which is designed in compliance with SC6.18 — Stormwater management planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff.	**Complies.**
PO3 Development ensures that the location and design of stormwater detention and water quality treatment facilities: (a) minimise risk to people and property; (b) provide for safe access and maintenance; and (c) provide for the safe recreational use of stormwater management features.	**AO3.1** Development provides for stormwater detention and water quality treatment facilities which are located outside of a waterway. **AND** **AO3.2** Development provides for stormwater detention in accordance with SC6.18 — Stormwater management planning scheme policy, Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND**	**Complies. However, as detailed in the RRC Pre-Lodgement Meeting Minutes dated 16 November 2023, the subject development does not meet the thresholds to address stormwater quality. However, we propose to minimise the water quality impacts of the proposed development through the use of Stormwater Quality Best Management Practice (SQBMP) treatment measures by directing stormwater runoff towards grass buffers and soft landscaping wherever possible.**

	AO3.3 Development provides a stormwater quality treatment system which is designed in accordance with State Planning Policy - Water Quality.	

Environmental values

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Environmental values		
PO4 Development and drainage works including stormwater channels, creek modification works, bridges, culverts and major drains, protect and enhance the environmental values of the waterway corridors and drainage paths and permit terrestrial and aquatic fauna movement. Editor's note—Compliance with the performance outcomes and acceptable outcomes should be demonstrated by the submission of a site-based stormwater management plan for development.	**AO4.1** Development ensures natural waterway corridors and drainage paths are retained. **AND** **AO4.2** Development incorporates the use of natural channel design principles in constructed components to maximise environmental benefits and waterway stability in accordance with the Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff. **AND** **AO4.3** Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in accordance with the Queensland Urban Drainage Manual, Capricorn Municipal Development Guidelines and Australian Rainfall and Runoff.	**N/A.**
PO5 Development protects and enhances the environmental and water quality values of waterways, creeks and estuaries within or external to the site.	No acceptable outcome is nominated.	**N/A.**

Editor's note—The State Planning Policy - Guideline - Water Quality and Section 9 of the Environmental Protection Act 1994 define environmental values as 'a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety.'		

Overland flow path tenure

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Overland flow path tenure		
PO6 All overland flow paths are maintained under tenure arrangements that facilitate efficient infrastructure and enhance environmental sustainability. Editor's note—As a guide, Council prefers that the location of Council owned assets are contained within a road reserve, drainage system is contained within a road reserve, drainage easement, drainage reserve, public reserve, public pathway, park or waterway corridor.	No acceptable outcome is nominated.	**N/A.**

Detention Systems

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Detention Systems		
PO7 Detention basins are designed, located and constructed on land solely dedicated for stormwater management.	**AO7.1** Detention basins are designed in accordance with SC6.18 Stormwater management planning scheme policy.	**N/A.**
PO8 Development ensures that location and design of stormwater detention and water quality treatment: (a) minimises risk to people and property; (b) provides for safe access and maintenance; and (c) minimises ecological impacts to creeks and waterways.	**AO8.1** Development provides a stormwater management system designed in accordance with SC6.10 Flood hazard planning scheme policy and SC6.18 Stormwater management planning scheme policy.	**Complies. However, as detailed in the RRC Pre-Lodgement Meeting Minutes dated 16 November 2023, the subject development does not meet the thresholds to address stormwater quality. However, we propose to minimise the water quality impacts of the proposed development through the use of Stormwater Quality Best Management Practice (SQBMP) treatment measures by directing stormwater runoff towards grass buffers and soft landscaping wherever possible.**
PO9 Flood plain storage and function, and detention system functions are maintained. This shall include ensuring that: (a) detention system design does not remove floodplain storage; and (b) detention systems continue to operate effectively during a major storm event.	No acceptable outcome is nominated.	**N/A. Site is not deemed to be inundated by the regional 1% AEP flood event. Refer to Appendix F of the attached Site Based Stormwater Management Report.**
PO10 Detention basins shall not be provided in locations that prevent easy access to or maintenance of the detention basin.	**AO10.1** The location of detention basins are in accordance with SC6.18 Stormwater management planning scheme policy.	**Complies.**

Efficiency and whole of life cycle cost

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Efficiency and whole of life cycle cost		
PO11 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Editor's note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for development.	No acceptable outcome is nominated.	**Complies.**
PO12 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: (a) existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; (b) safe management of stormwater discharge from existing and future upslope development; and (c) implications for adjacent and down-slope development.	No acceptable outcome is nominated.	**Complies.**
PO13 Development provides proposed stormwater infrastructure which: (a) remains fit for purpose for the life of the development and maintains full functionality in the design storm event; and (b) can be safely accessed and maintained in a cost effective way.	No acceptable outcome is nominated.	**Complies.**

Erosion and sediment control

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Erosion and sediment control		
PO14 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: (a) the environmental values and water quality objectives of waters; (b) waterway hydrology; and (c) the maintenance and serviceability of stormwater infrastructure.	**AO14.1** Erosion and sediment control plan is to be designed and implemented in accordance with the Capricorn Municipal Development Guidelines.	**Complies.**

Water quality within catchment areas

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Water quality within catchment areas		
PO15 For development proposals within the Fitzroy River sub-basin, relevant environmental values are recognised and enhanced, and relevant water quality objectives are addressed. Editor's note—Section 3.2 of Queensland Water Quality Guidelines 2009 identifies values for water quality for waters in the Central Coast Queensland region.	**AO15.1** Development complies with the provisions of the State Planning Policy - Guideline - Water Quality. **AND** **AO15.2** Development adjoining the full supply height above the Fitzroy River Barrage includes the provision of an effective buffer that assists in filtering runoff, including: (a) a buffer distance of 100 metres to the water supply height of the barrage which excludes cropping or grazing	**N/A.**

	of a low intensity nature; and (b) fencing and water troughs installed on the land to prevent encroachment of animals within 100 metres of the full supply height above the barrage.	

Protecting water quality

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Protecting water quality		
PO16 The development is compatible with the land use constraints of the site for: (a) achieving stormwater design objectives; and (b) avoiding or minimising the entry of contaminants into, and transport of contaminants in stormwater.	**AO16.1** Development is undertaken in accordance with a stormwater management plan that: (a) incorporates stormwater quality control measures to achieve the design objectives set out in the State Planning Policy – Guideline – Water Quality; (b) provides for achievable stormwater quality treatment measures reflecting land use constraints, such as soil type, landscape features (including landform), nutrient hazardous areas, acid sulfate soil and rainfall erosion potential; and (c) accounts for development type, construction phase, local landscape, climatic conditions and design objectives. Editor's note—A stormwater management plan includes the design, construction, operation, maintenance of the stormwater system. Editor's note—SC6.18 — Stormwater management planning scheme policy provides guidance on preparing a stormwater quality management plan.	**N/A. As detailed in the RRC Pre-Lodgement Meeting Minutes dated 16 November 2023, the subject development does not meet the thresholds to address stormwater quality. However, we propose to minimise the water quality impacts of the proposed development through the use of Stormwater Quality Best Management Practice (SQBMP) treatment measures by directing stormwater runoff towards grass buffers and soft landscaping wherever possible.**

Protecting water quality in existing natural waterways

Table 9.3.6.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Protecting water quality in existing natural waterways		
PO17 The waterway is designed for stormwater flow management, stormwater quality management and the following end use purposes: (a) amenity including aesthetics, (b) landscaping and recreation; (c) flood management; (d) stormwater harvesting as part of an integrated water cycle management plan; (e) as a sustainable aquatic habitat; and (f) the protection of water environmental values.	No acceptable outcome is nominated.	**N/A.**
PO18 The waterway is located in a way that is compatible with existing tidal waterways.	**AO18.1** Where the waterway is located adjacent to, or connected to, a tidal waterway by means of a weir, lock, pumping system or similar: (a) there is sufficient flushing or a tidal range of more than 0.3 metres; or (b) any tidal flow alteration does not adversely impact on the tidal waterway; or (c) there is no introduction of salt water into freshwater environments.	**N/A.**
PO19 The construction phase for the waterway is compatible with protecting water environmental values in existing natural waterways.	**AO19.1** Erosion and sediment control measures are incorporated during construction to achieve design objectives set out in State Planning Policy - Guideline - Water Quality. Editor's note—Erosion and sediment control is to be designed and implemented in accordance with the International Erosion Control Association Best Practice Erosion and Sediment Control Guidelines.	**N/A.**

PO20 Stormwater overflows from the waterway do not result in lower water quality objectives in existing natural waterways.	**AO20.1** Stormwater run-off entering non-tidal waterways is pre-treated prior to release in accordance with the guideline design objectives, water quality objectives of local waterways, and any relevant local area stormwater management plan.	**N/A.**

Appendix G

Council Pre-Lodgement Minutes

PRELODGEMENT

MEETING MINUTES

MEETING DETAILS	
Date of Meeting: Thursday 16 November 2023 | 10:30am	
Council Attendees:	**Applicant Attendees:**
▪ Brendan Standen – Principal Planning Officer, Development Assessment ▪ Patricia Farrow – Senior Development Engineer, Development Engineering	▪ Sam Pourmoradian – Director, Radian Planning Group ▪ Siavash Es'haghi – Radiologist, Radiology Partners Pty Ltd ▪ Hooman Jaffar – Managing Director / Principal Architect, Real Space Architects

PROPOSAL:

Address: 67 and 69 North Street and 5 Voss Street, The Range

Real Property Description: Lot 12 and Lot 7 on RP603082, and Lot 4 on R26335

Details of Proposal: Construction of a new three (3) storey building that comprises approximately 2,300m^2 Gross Floor Area (GFA) and multi-level on-site car parking with 75 spaces. The primary use of the building will be for radiology and consultant rooms (health care services). The building will present to Voss Street.

Issues identified by the Applicant for discussion:

- *Built form and architectural design*
- *Proposed access and car parking provisions*
- *Waste management*
- *Confirmation of specialist reports*

Supporting information/documentation provided by Applicant:

- REQUEST FOR COUNCIL PRELODGEMENT MEETING, Ref No. RPG23-21, dated 23 October 2023 and prepared by Radian Planning Group
- Architectural Drawings, DWG No. SD001 – SD012, dated 20 October 2023 and prepared by Real Space Creative

MINUTES

PLANNING ASSESSMENT:

Defined Use: Health Care Services

Health care service *means the use of premises for medical purposes, paramedical purposes, alternative health therapies or general health care, if overnight accommodation is not provided on the premises.*

Planning Area/Zone: Community Facilities Zone (Rockhampton Health Services Precinct)

Type of Application Required: Development Permit for Material Change of Use

Category of Assessment: Assessable subject to Code assessment

DEVELOPMENT ASSESSMENT:

- The site is in the Community Facilities Zone (Rockhampton Health Services Precinct) under the *Rockhampton Region Planning Scheme 2015* (v4.4).
- The site is not mapped as being affected by any notable overlays. However, it is advised the Airport Environs Overlay (Obstacle Limitation Surfaces) applies, and the proposed building height penetrates the OLS for the premises.
- The proposal is defined as 'Health Care Services', which is categorised as Assessable development subject to Code assessment in the Zone and Precinct. The Zone and Precinct contemplate health services for the premises.
- Council officers are generally supportive of the proposed built form and architectural design, and provide the following comments:
    - The setback of the semi-basement level adjoining the common boundary with Lot 10 on RP603082 be increased to facilitate screen planting. Acceptable Outcome (AO)4.2 of the Community Facilities Zone Code requires a three-metre-wide landscape buffer along all boundaries shared with a sensitive land use; and/or
    - The north-eastern and south-western facades include treatments to improve their outward presentation. AO 3.1 of the Community Facilities Zone Code provides measures that may be implemented.
    - The Voss Street frontage of the site makes provision for on-site landscaping to soften the proposal's interface to street. This may be in the form of a garden bed/s.
- The specialist reports outlined in the pre-lodgement meeting request letter prepared by Radian Planning Group will need to be provided as part of the application material. Some commentary around the building height penetrating the OLS is recommended to respond to the Airport Environs Overlay Code.
- Council accepts there may be some level of cross utilisation between the proposed development and existing health care services in the Precinct, and therefore fewer on-site car parking spaces may be supported to what the Acceptable Outcome of the Access, Parking and Transport Code specifies. Notwithstanding this, there are clear car parking issues in the surrounding area and any reduction to the Acceptable Outcome will need to be supported by an analysis and detailed justification.

DEVELOPMENT ENGINEERING UNIT:

- There are three existing reticulated water connections to the lots forming the site. Council will condition that any redundant connections be disconnected.
- A Stormwater Management Plan will be required to address quantity. The proposal and premises do not meet the thresholds to address quality.
- Vehicle swept paths are to be included for all vehicles expected to access the site. Swept paths may also be required within the Lane, factoring in any on-street waste collection.
- Investigate the pedestrian movements between the two hospitals and the proposed facility to ensure the development facilitates safe and efficient pedestrian movement. Council officers would condition a footpath be constructed along the full frontage of the site.
- For on-site waste storage, the waste collection vehicle must be able to collect onsite and enter/exist in a forward gear.
- The use of wheelie bins and collection within Talford Lane may present issues with traffic exiting the proposed parking area. Council highlights there are already a large number of bins positioned in

Talford Lane for the units that could potentially cause issues with traffic exiting the parking area.

- There is a combined sewer line from 1-3 Canning Street that runs through 69 North Street to the existing manhole in 67 North Street. The combined line will need to be diverted as it cannot be built over.
- There is an existing 150mm diameter sewer main traversing 67 North Street with an access chamber and another line from Hillcrest Hospital joining at the same manhole.
- The proposed development is a Class 5 building and the carpark access would be Class 7A building.
- The Queensland Development Code, MP 1.4 'Building over or near relevant infrastructure' requires that the footings for a Class 5 building must be 5m clear of an existing sewer line. Council will not support a commercial development being built over sewer infrastructure, therefore a sewer diversion will be required.
- This only applies to the sewer within the development site as the property boundary is a defining limit under Council's Building Over Sewer Policy. Please note the footings for the building adjacent to 7 Voss Street will need to extend beyond the zone of influence in accordance with Queensland Development Code, MP 1.4 'Building over or near relevant infrastructure', if this applies.
- Council records do not show the hospital connecting into the manhole within the laneway, so that line may not be needed, however further investigation should be undertaken to check if something is connected at that point.

Infrastructure Charges (not including actual charges)

The Adopted Infrastructure Charges are available to view on Council's Website. These are located in the Fees and Charges Section. Please see the link below.

http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Infrastructure-Charges

PUBLIC AND ENVIRONMENTAL HEALTH:

Nil

OUTCOME SUMMARY:

Council officers are supportive of the proposed development, subject to demonstrated compliance with the relevant assessment benchmarks contained in the Planning Scheme and the proposal having regard to the recommendations of Council officers contained herein.

ADVISORY NOTE:

These notes have been provided as informal and non binding comments and are intended for use as a guide only in providing feedback on the proposal presented to the Unit. These discussions do not bind or fetter the Council in any way in exercising its statutory responsibilities in assessing any development application which might be made to the Council.

Link to DA Forms
https://planning.dsdmip.qld.gov.au/planning/better-development/application-forms-and-templates
Link to Planning Schemes
http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Planning-Schemes-and-Studies
Link to Development Assessment Fees
http://www.rockhamptonregion.qld.gov.au/About-Council/Finance-Rates-and-Budget/Fees-and-Charges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9 September 2024
Our Ref: 23BRT0650
Council Ref: D/80-2024

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/80-2024
Dated: 1 November 2024

Attention: Sam Pourmoradian

Radian Planning Group
PO Box 3099
Newmarket QLD 4051

Dear Sam,

RE: 67-69 North Street and 5 Voss Street, The Range
Traffic Engineering Response to Council Information Request

Introduction

TTM has been engaged to provide a traffic engineering response to items raised within Council's Information Request (IR) dated 23rd of July 2024. The request is in relation to the proposed health care service (medical centre) development at 67 – 69 North Street and 5 Voss Street, The Range. Council's application reference for the proposed development is D/80-2024.

The traffic items raised in the Information Request letter and TTM's responses are detailed as follows.

Item 1.0 – Traffic

1.1 The Transport Engineering Report submitted has failed to identify any traffic related impacts (road capacity, intersection performance etc) for the surrounding road network including Talford Lane, Voss Street and other critical intersections. Preliminary calculations indicate that the peak hour traffic generation from the proposed development may cause severe traffic related issues to the adjacent road network and intersections. The peak hourly traffic volumes predicted for the proposed development, in conjunction with the background volumes, far exceed the capacity of the road network particularly the southern section of Talford Lane from Voss to Albert Streets. To mitigate these severe impacts Council suggests an 'Entry Only' access point from Talford Lane and 'Exit Only' access point to North Street, towards the western boundary of the development site. This approach aims to manage traffic flow more effectively and minimise any impacts on the southern section of Talford Lane. Council acknowledges some internal modifications to the proposed building structure are required to achieve this outcome, while these changes minimise internal impacts, they should align with traffic management.

The report should assess traffic impacts in detail including but not limited to:

- *Talford Lane;*
- *North Street traffic;*
- *North Street/Talford Lane intersection; and*
- *North Street/Canning Street intersection etc.*

Note: Waste service vehicles can continually exit through Talford Lane outside the normal business hours as proposed.

TTM Response

1. Introduction

TTM attended a meeting with Council development engineers on Thursday 8th of August 2024. The following matters were discussed:

- The existing Talford Lane (south of Voss Street) is considered at capacity in terms of daily traffic
- Any access arrangement should consider discouraging additional traffic on Voss Street and Talford Lane (south)
- Wayfinding signage and traffic management solutions would be considered by Council
- Providing a direct driveway to North Street could potentially mean a significant redesign of the overall building and layout
- A road widening option of Talford Lane (north) and opening the road to two-way traffic between North Street and the site access should be considered and may alleviate traffic congestion concerns on Voss Street and Talford Lane

TTM subsequently prepared a conceptual layout and sought in-principle agreement for the proposed road widening and management solution on Talford Lane (northern end) which was issued to Council. It is understood that Council's officers were generally supported of the plan subject to the following:

1. A 6.5m wide rather than 6m wide carriageway be provided
2. Due to on street vehicle parking along the northern portion of North Street, a review of sight distances will need to be considered to ensure there is no issues with exiting traffic from Talford Lane
3. Due to the laneway now being dual access at its northern end, vehicle swept paths for a waste service vehicles need to be provided to demonstrate that there are no manoeuvring issues

2. Functional Layout

Based on Council's feedback and TTM's initial conceptual plans, a functional layout of the proposed road widening, intersection and signage treatments has been prepared with the following aspects:

- Minor road widening to accommodate two-way traffic to the site access which will include a 6.5m wide carriageway and retaining existing verge width
- Linemarking and pavement arrows to delineate two-way traffic movements on Talford Lane
- A no-right turn and "authorised vehicles excepted" signage to enforce left-turn movements out to North Street. The "authorised vehicles excepted" is permit emergency and service (such as waste collection vehicles) to continue south along Talford Lane.
- The proposed boundary alignment to cater for the road widening is approximately 1.2m setback from the existing property boundary alignment. A truncation at the north-eastern corner of the site is also proposed to improve sight lines between pedestrian on North Street and vehicles exiting from Talford Lane.
- Modified crossover to the site to accommodate the road widening

The proposed road widening and intersection treatments would assist with discouraging additional traffic to travel to the south of the site via Talford Lane/Voss Street whilst also providing the opportunity for the small car park from Ramsey Hospital to exit via Talford Lane and North Street, further reducing traffic volumes on Talford Lane (south) and Voss St.

Swept path analysis of design vehicles relevant to the original transport assessment report has been undertaken which demonstrate critical turn movements and sufficient clearances to kerbs, other vehicles and parking. This includes B99 large car movements through the Talford Lane / North Street intersection, refuse collection vehicle and service vehicle movements. All movements allow a minimum 300mm clearance (and general 500mm clearance) to all parts of structures and raised obstruction.

The proposed works and associated swept path drawings are illustrated in **Attachment 1.**

3. Sight Distances

Given the recent urbanisation and streetscape improvements along North Street, consideration should be given to the features that define North Street such as a roundabout treatment to safely manage traffic flow, single traffic lanes, parking on both sides of the road, bicycle lanes and median landscaping. Such features tend to result in a slower speed environment. Although design speeds are often assumed to be 10km/h above the posted speed when assessing sight line requirements, adopting a design speed of 60km/h, consistent with the posted speed, would be more appropriate in this instance.

Adopting Austroads' guidelines, the following intersection sight distance requirements for a 60km/h deign speed would be:

- Safe intersection sight distance (SISD) of 123m
- Minimum gap sight distance (MGSD) of 83m

These sight line requirements would be achievable at the proposed modification to the Talford Lane / North Street intersection.

Typical of most urban environments, it is acknowledged that some parked vehicles may momentarily impede sight lines. However, this is not considered a significant concern in this instance given the following:

- Parked cars are not considered permanent obstructions and offer partial visibility to other users on the road
- MGSD of 83m for a 60km/h speed environment, which is acceptable based on AS2890.1: 2004 for an access driveway (which would operate in a similar way to the Talford Lane approach), is achievable clear of the closest parked car, noting that kerb-side parking is already set back from the intersection by about 15m
- A stop control is recommended, providing the opportunity for motorists to stop and safely observe on-coming traffic / cyclists before proceeding
- Exiting traffic from Talford Lane only needs to consider on-coming traffic from one direction, reducing the complexity of the turn and potential indecision from the exiting motorist.

Further to the above, the sight lines available at Talford Lane / North Street intersection would be generally consistent with the existing sight line constraints at the Talford Street /North Street intersection to the east of the subject intersection. An assessment of crash history to determine if there were any pre-existing issues has been undertaken and is further detailed in the heading below.

4. Crash History Review

TTM has undertaken a crash history review of the Talford Lane / North Street intersection and Talford Street / North Street intersection. Crash data were sourced from Department of Transport and Main Roads (TMR) public data base, which includes information on location and characteristics of crashes in Queensland for all reported Road Traffic Crashes that occurred from 1st January 2001 to 30th November 2023, Fatal Road Traffic Crashes to 30th November 2023, Hospitalisation, Medical Treatment and Minor Injury Crashes to 30th June 2023 and Property Damage only crashes to 31st December 2010 (noting that Property Damage crashes ceased to be recorded by police after this date).

The findings are summarised as follows:

- Zero crashes were reported at the Talford Lane / North Street intersection in the most recent 5-year period (between Nov 2018 to Nov 2023).
- Three crashes were report at the Talford Street / North Street intersection to the east in the most recent 5-year period, detailed as follows:
  - Vehicles on adjacent approach (through – through) crash occurring in May 2019 (DCA Code 101) resulting in minor injury
  - Vehicles on adjacent approach (through – through) crash occurring in June 2019 (DCA Code 101) resulting in minor injury
  - Vehicles same direction rear-end crash occurring in February 2023 (DCA Code 301) resulting in hospitalisation

It is noted that the Talford Street / Knutsford St / North St intersection was upgraded in late 2019 that restricted north-south through movements (i.e. Talford Street to/from Knutsford St). As such, DCA Code 101 related crashes would no longer occur. Rear end crashes are typically related to distracted driving or tailgating, and as such, unrelated to the proposed development works.

Based on the above, the crash history at Talford Street to the east indicate that there have not been any left-turn/through crashes (i.e. DCA code 107). Given that the sight line parameters are similar to that of the proposed, it is anticipated that there would not be any exacerbation of historical crash types in the area.

5. Assessment Years and traffic growth

It is estimated that the targeted completion date for the development is 2026. On this basis, the following assessment years have been considered:

- Opening Year (Full Completion): 2026
- Design Horizon (Opening + 10 years): 2036

A growth rate of 1.0% has been adopted consistent with Section 11 of the original transport report. This growth rate has been applied to the 2024 surveyed volumes to obtain the Opening Year and the 10-year design horizon base traffic volumes.

Traffic movement diagrams for all scenarios are included in **Attachment 2.**

6. Development Traffic Demands

As per discussions with Council officers, the traffic generation estimates are considered conservative, particularly the peak hour estimates which are based on the peak traffic generated during morning /afternoon periods (as opposed to road network peaks). Additionally, with the site being located in a health precinct, there will likely be connected/linked/walk-up trips associated with other health facilities in the precinct. These

aspects have conservatively been excluded from the assessment but would likely reduce the overall traffic generation volumes associated with the proposed development.

TTM has updated the traffic movement diagrams to consider the proposed access arrangements (left-out to Talford Lane and North Street) in line with the distributional assumptions made in the original traffic assessment. Traffic movement diagrams for all scenarios are included in **Attachment 2.**

7. Road network performance

TTM has assessed the performance of the North Street / Canning Street roundabout and proposed Talford Lane / North Street intersection for the assessment year scenarios utilising SIDRA analysis software (version 9.1). This has been based on the updated site access and Talford Lane / North Street intersection arrangements. Acceptable levels for degree of saturation (DOS) are as follows:

- Roundabouts < 0.85
- Priority Intersections < 0.80

Detailed SIDRA outputs are provided in **Attachment 3.**

North Street / Canning Street roundabout

Figure 1 shows the configuration of the roundabout adopted in the SIDRA analysis. All default SIDRA inputs were used for the analysis.

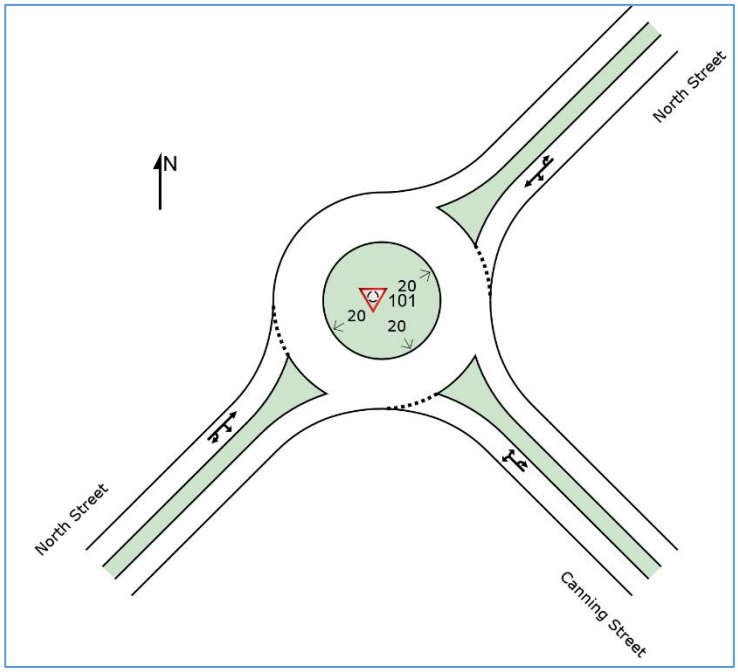


Figure 1: North Street / Canning Street roundabout – SIDRA Layout

A summary of the SIDRA Outputs is shown below in Table 1.

Table 1: North Street / Canning Street roundabout – SIDRA Results Summary

Scenario	DOS	Average Delay (sec)	LOS	95th Percentile Critical Queue (m)		
				South-east	North-east	South-west
AM Peak Hour						
2024 Survey	51.8%	8.4	A	27	30	30
2026 Base	53.6%	8.6	A	29	32	31
2026 Base + Development	57.0%	8.9	A	29	37	32
2036 Base	61.5%	9.7	A	39	44	39
2036 Base + Development	65.4%	10.1	B	40	51	41
PM Peak Hour						
2024 Survey	68.7%	9.9	A	42	24	57
2026 Base	70.5%	10.2	B	45	26	61
2026 Base + Development	71.8%	10.9	B	48	39	64
2036 Base	81.4%	12.8	B	64	365	95
2036 Base + Development	82.6%	13.8	B	69	53	100

The analysis indicates that the roundabout is expected to operate within capacity in all cases up to the 2036 design year. The worst case DOS of 82.6% in the 2036 Design Year PM peak Base + Development Case which is within the acceptable DOS threshold of 85% for roundabouts. Based on this assessment, no further mitigation works are required.

Proposed Talford Lane / North Street intersection

Figure 2 shows the proposed configuration of the intersection adopted in the SIDRA analysis. All default SIDRA inputs were used for the analysis.

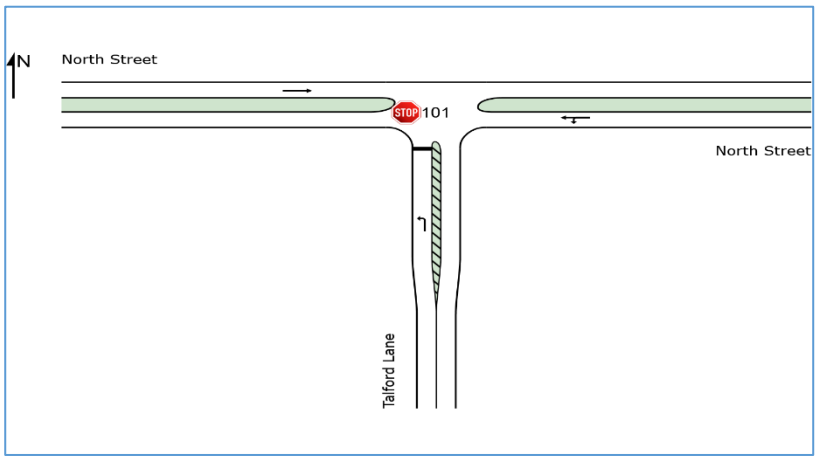


Figure 2: North Street / Talford Lane intersection – SIDRA Layout

A summary of the SIDRA Outputs is provided below in Table 2.

Table 2: Talford Lane / North Street intersection – SIDRA Results Summary

Scenario	DOS	Average Delay (sec)	95th Percentile Critical Queue (m)		
			South	East	West
AM Peak Hour					
2026 Base + Development	32.0%	1.0	1	0	0
2036 Base + Development	34.7%	0.9	1	0	0
PM Peak Hour					
2026 Base + Development	28.5%	1.1	3	0	0
2036 Base + Development	31.4%	1.0	3	0	0

The analysis indicates that the proposed intersection is expected to operate well within practical capacity in all cases up to the 2036 design year. The worst-case DOS of 34.7% in the 2036 Design Year AM peak Base + Development Case is well within the acceptable DOS threshold of 80% for priority-controlled intersections. Based on this assessment, no further mitigation works are required other than that recommended within the functional layout.

Daily Volumes

In terms of daily volumes, the midblock daily volume estimate between the North Street / Site access is estimated to be in the order of 1,217 vpd. While this exceeds the typical capacity of a laneway, the widened carriageway of 6.5m would adequately carry the additional traffic akin to a typical local street. This is considered appropriate given the additional volume is only concentrated at the northern portion of Talford

Lane where exiting the site would also be convenient for drivers to access the greater road network via North Street.

Conclusion

Overall, the proposed road widening and intersection treatment works at the northern end of Talford Lane would adequately mitigate the potential traffic implications associated with the development. A functional layout plan has been prepared that details a 6.5m wide carriageway, property setback, intersection treatment and enables two-way movements on Talford Lane. Notably, the traffic management solution aims to discourage drivers from using the local streets to the south of the site due to capacity constraints raised by Council. A road network performance assessment of the North Street / Canning Street roundabout and proposed Talford Lane / North Street intersection has been undertaken that demonstrates the intersections can operate to acceptable levels up to the 2036 design year.

TTM trusts that the information provided within the updated report is sufficient to fully address the traffic engineering item outlined in Council's Information Request. If you have any queries relating to the information provided herein, please don't hesitate to contact the undersigned on (07) 3327 9500.

Yours sincerely,

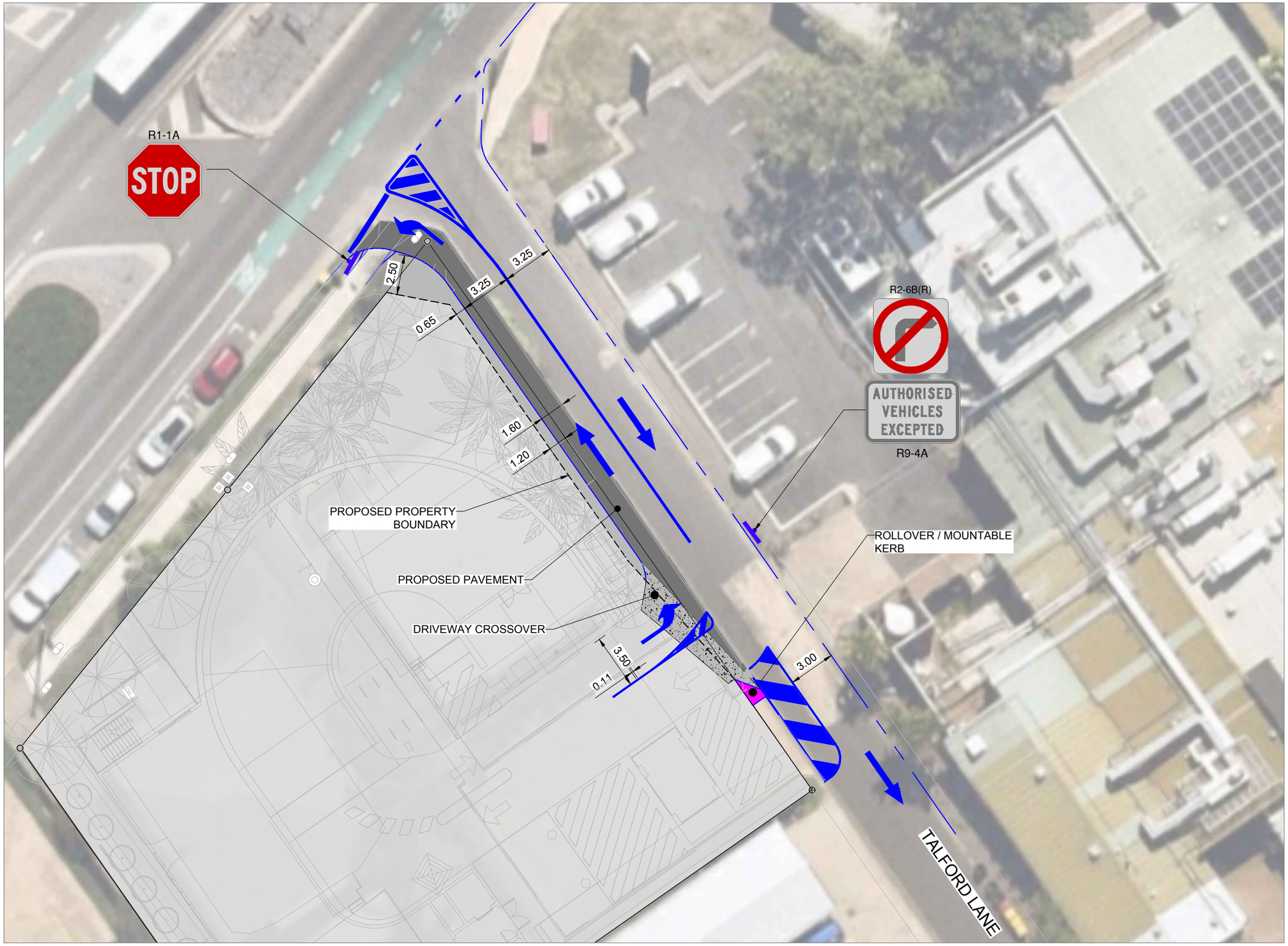
Ron Leong
Project Consultant - Transport
TTM Consulting Pty Ltd

Reviewed by,

Will Somerville
Senior Associate Director | RPEQ 14833
TTM Consulting Pty Ltd

Enc.

Attachment 1 – TTM Drawings



PRELIMINARY ADVICE ONLY

9 September 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	09-09-24	ARCHITECT PLANS UPDATED	AA	RL	WKS
A	26-08-24	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

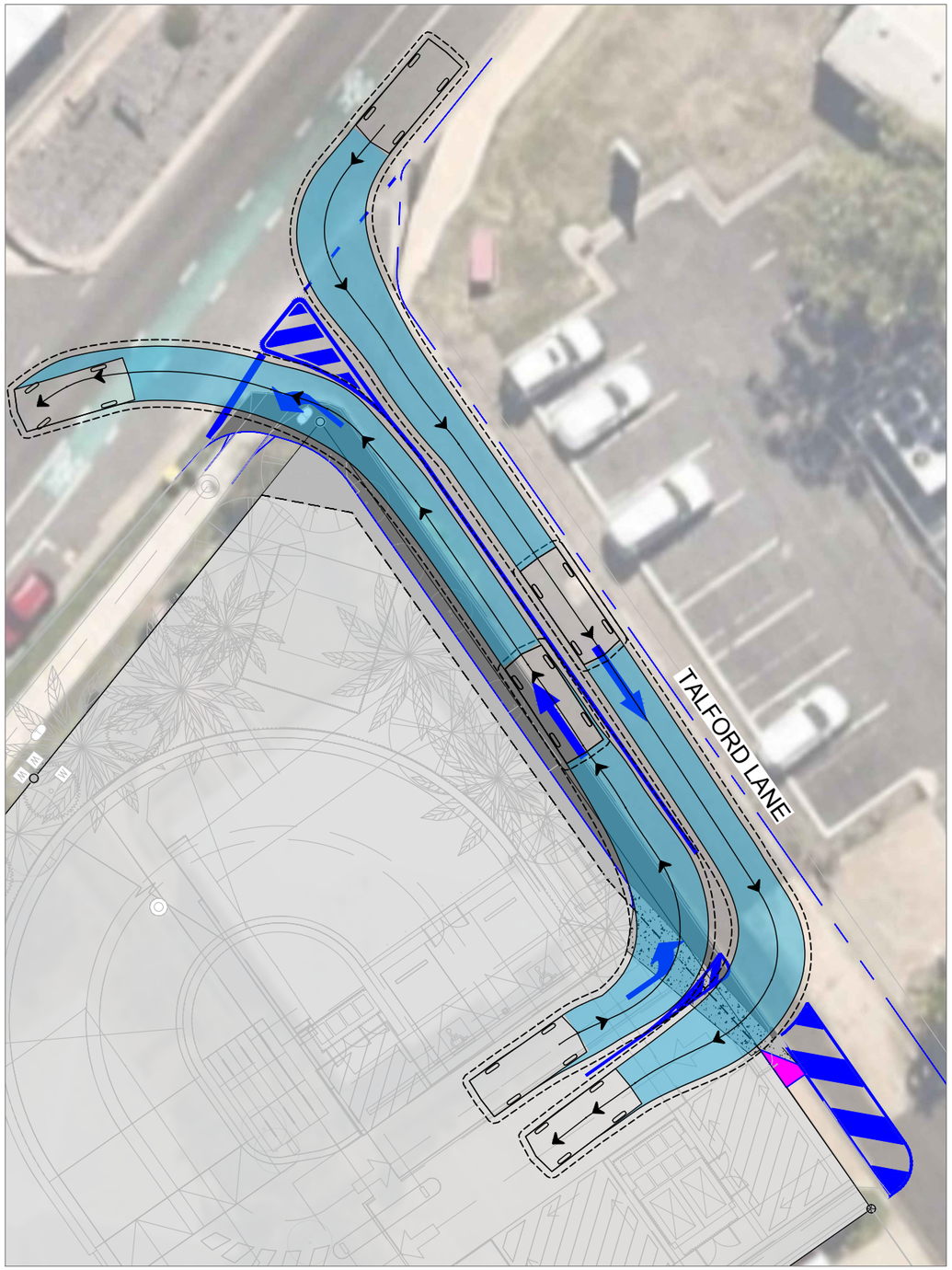
RADIAN PLANNING GROUP

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

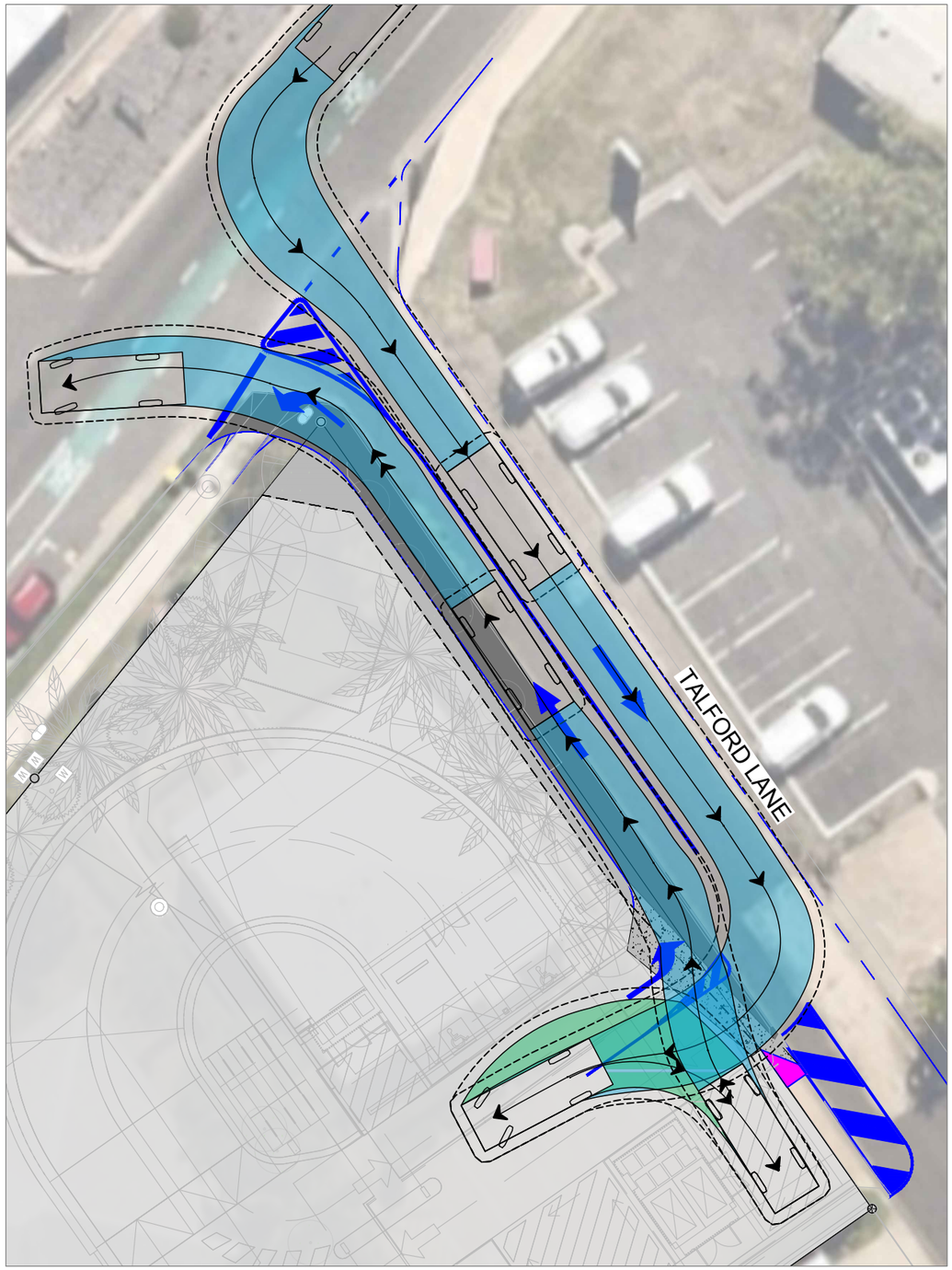
PROJECT
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE
SIGN AND LINEMARKING
FUNCTIONAL LAYOUT

PROJECT NUMBER	ORIGINAL SIZE
23BRT0650	A3
DRAWING NUMBER	REVISION
23BRT0650-05	B
DATE	SHEET
9 Sep 2024	1 OF 1



5.20m B99



6.40m SRV

PRELIMINARY ADVICE ONLY

9 September 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	09-09-24	ARCHITECT PLANS UPDATED	AA	RL	WKS
A	26-08-24	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

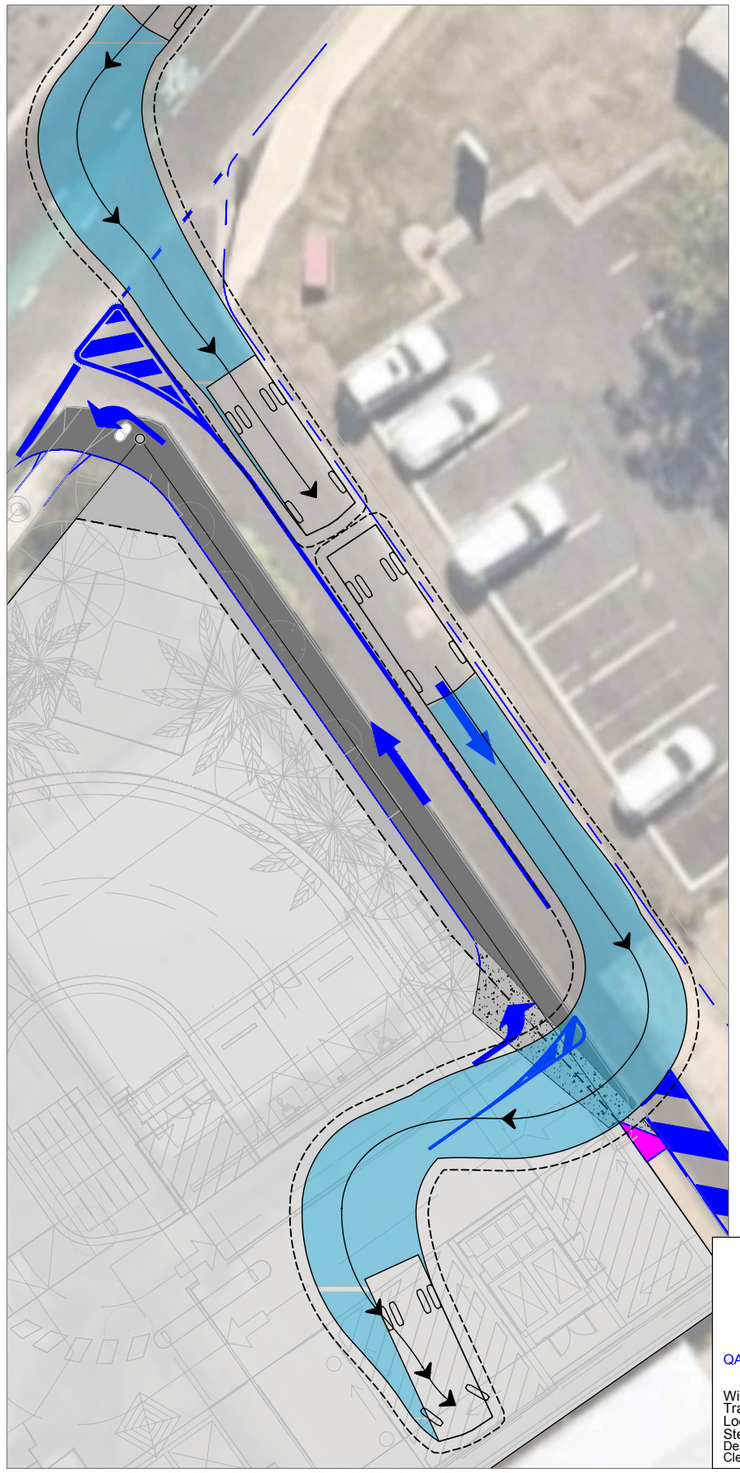
RADIAN PLANNING GROUP

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

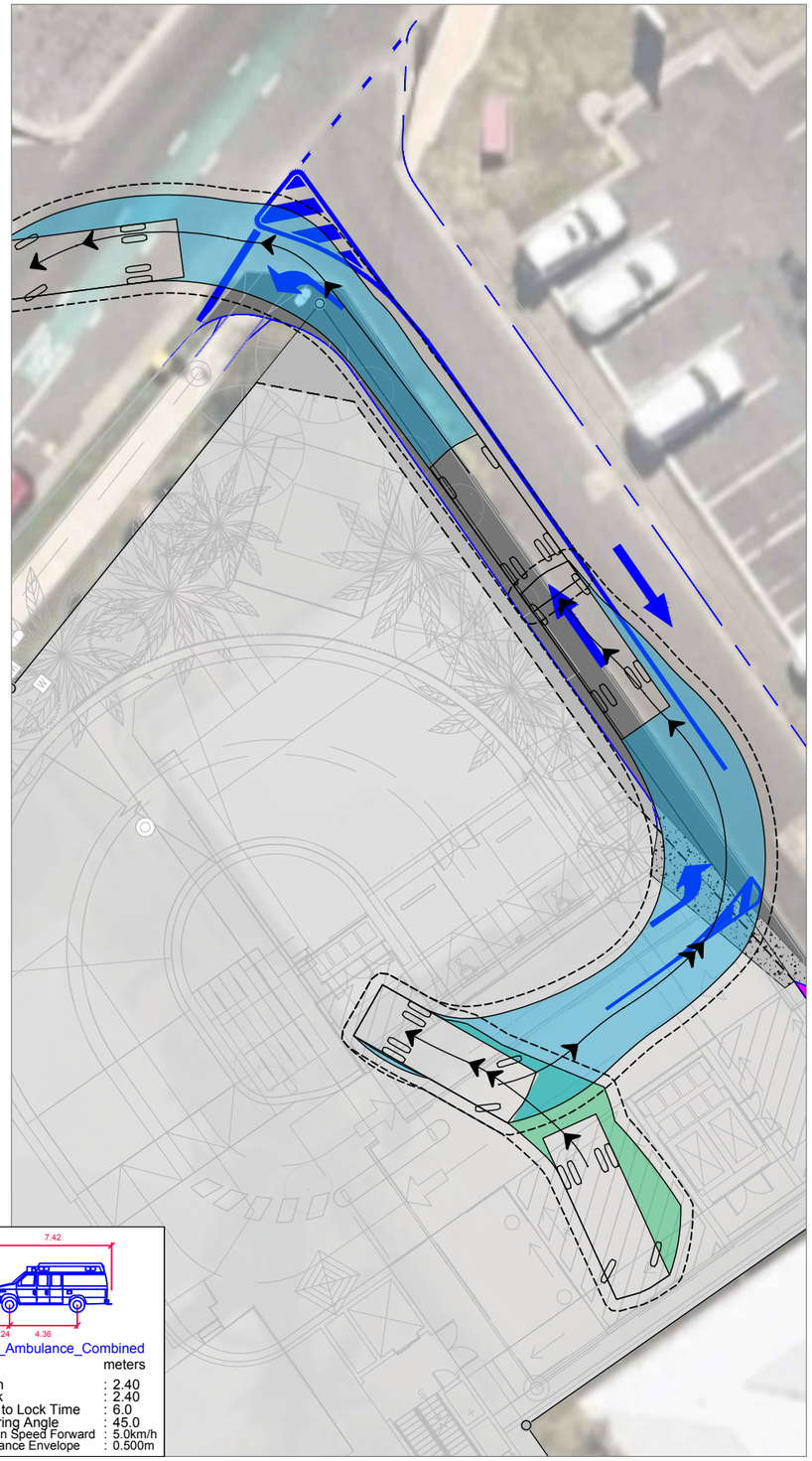
PROJECT
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE
SIGN AND LINEMARKING
SWEPT PATHS - 5.20m B99 & 6.40m SRV

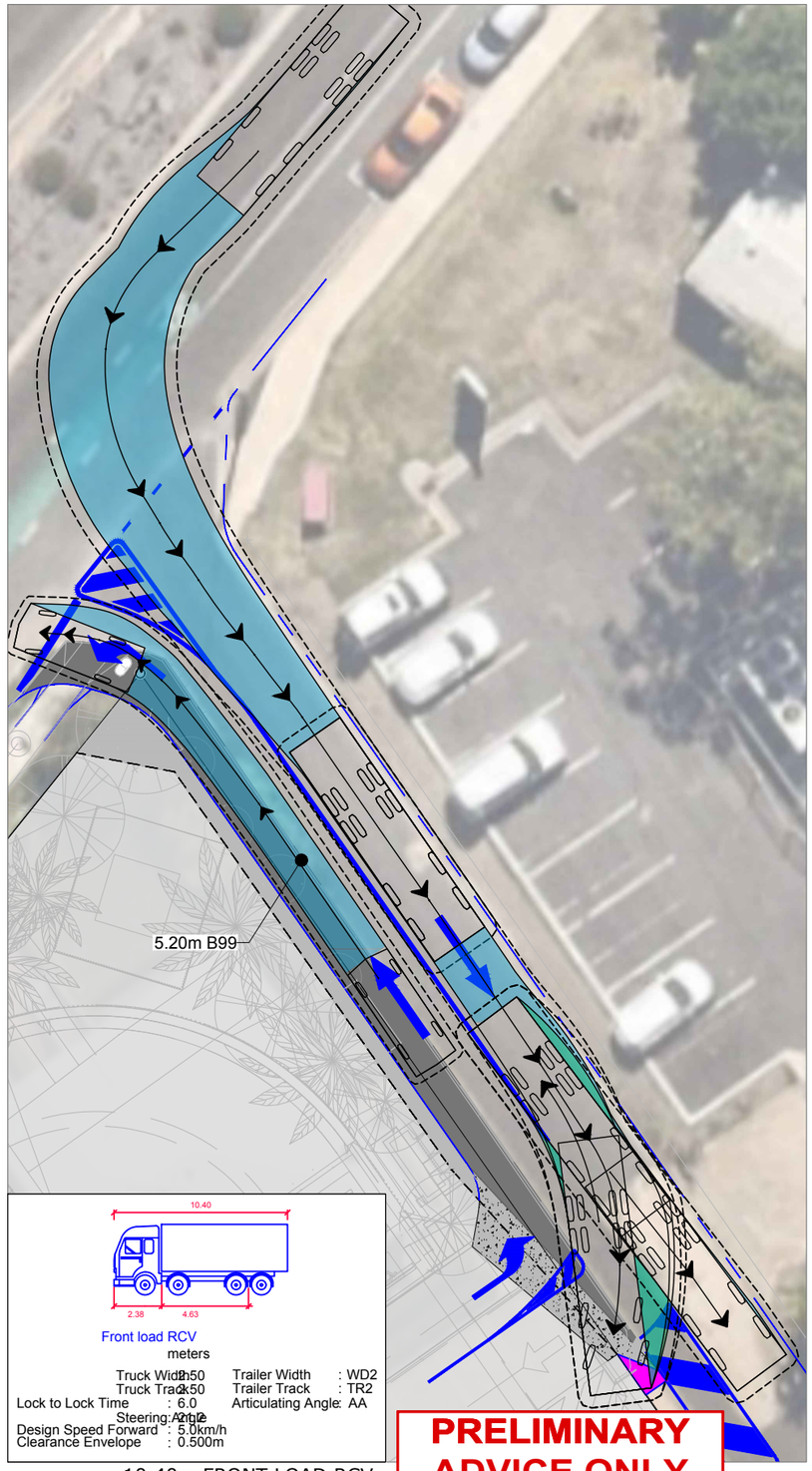
PROJECT NUMBER	ORIGINAL SIZE
23BRT0650	A3
DRAWING NUMBER	REVISION
23BRT0650-06	B
DATE	SHEET
9 Sep 2024	1 OF 1



7.42m QAS_AMBULANCE_COMBINED ENTRY



7.42m QAS_AMBULANCE_COMBINED EXIT



10.40m FRONT LOAD RCV

PRELIMINARY ADVICE ONLY

9 September 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	09-09-24	ARCHITECT PLANS UPDATED	AA	RL	WKS
A	26-08-24	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
RADIAN PLANNING GROUP

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

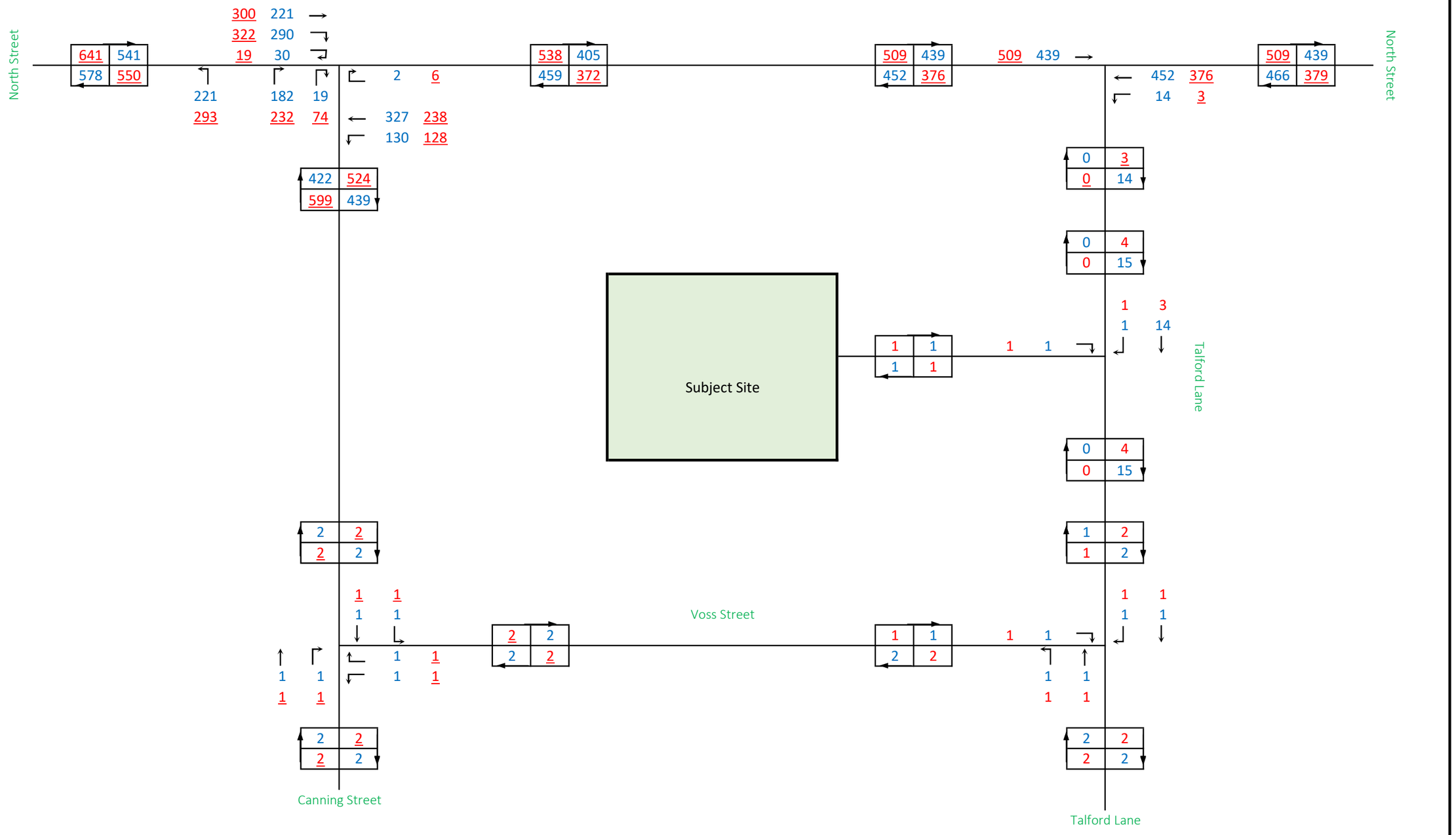
PROJECT
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE
SIGN AND LINEMARKING
SWEPT PATHS
7.42m QAS_AMBULANCE_COMBINED & 10.40m FRONT LOAD RCV

PROJECT NUMBER	ORIGINAL SIZE
23BRT0650	A3
DRAWING NUMBER	REVISION
23BRT0650-07	B
DATE	SHEET
9 Sep 2024	1 OF 1

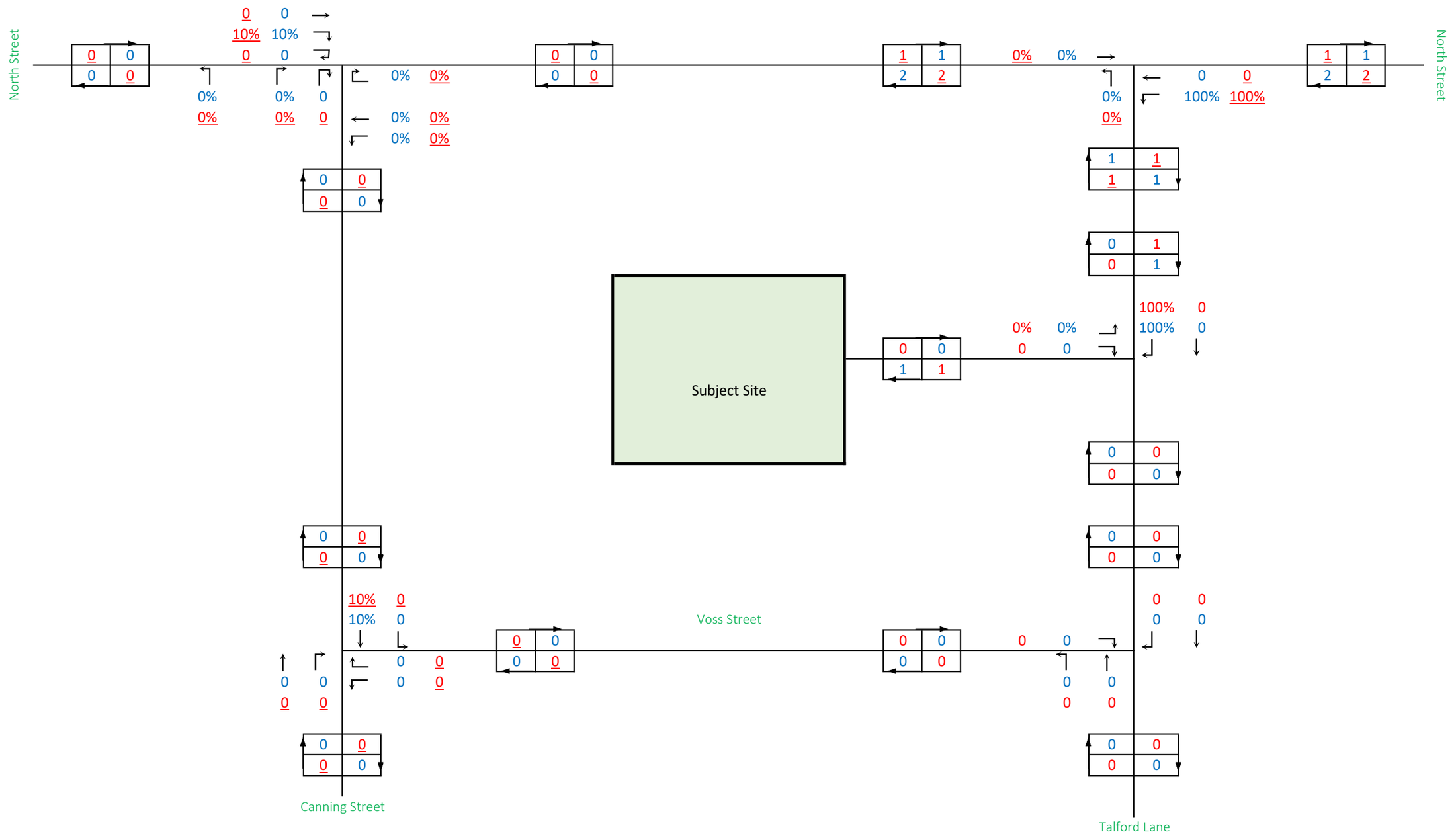
Attachment 2 – Updated Traffic Network Diagrams

TRAFFIC NETWORK DIAGRAM: 2024 SURVEY CASE



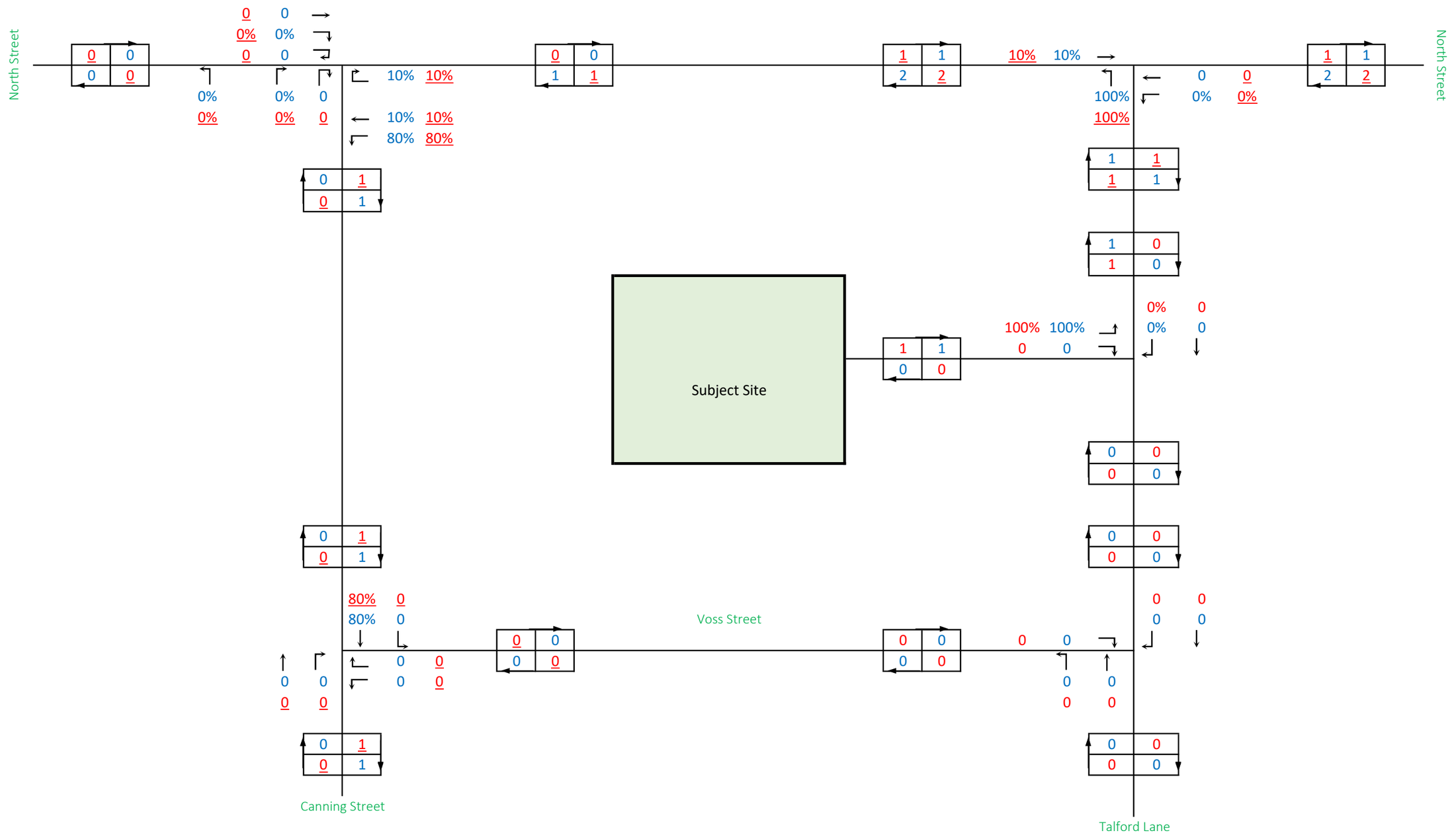
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: DEVELOPMENT DISTRIBUTION - ENTRY MOVEMENTS



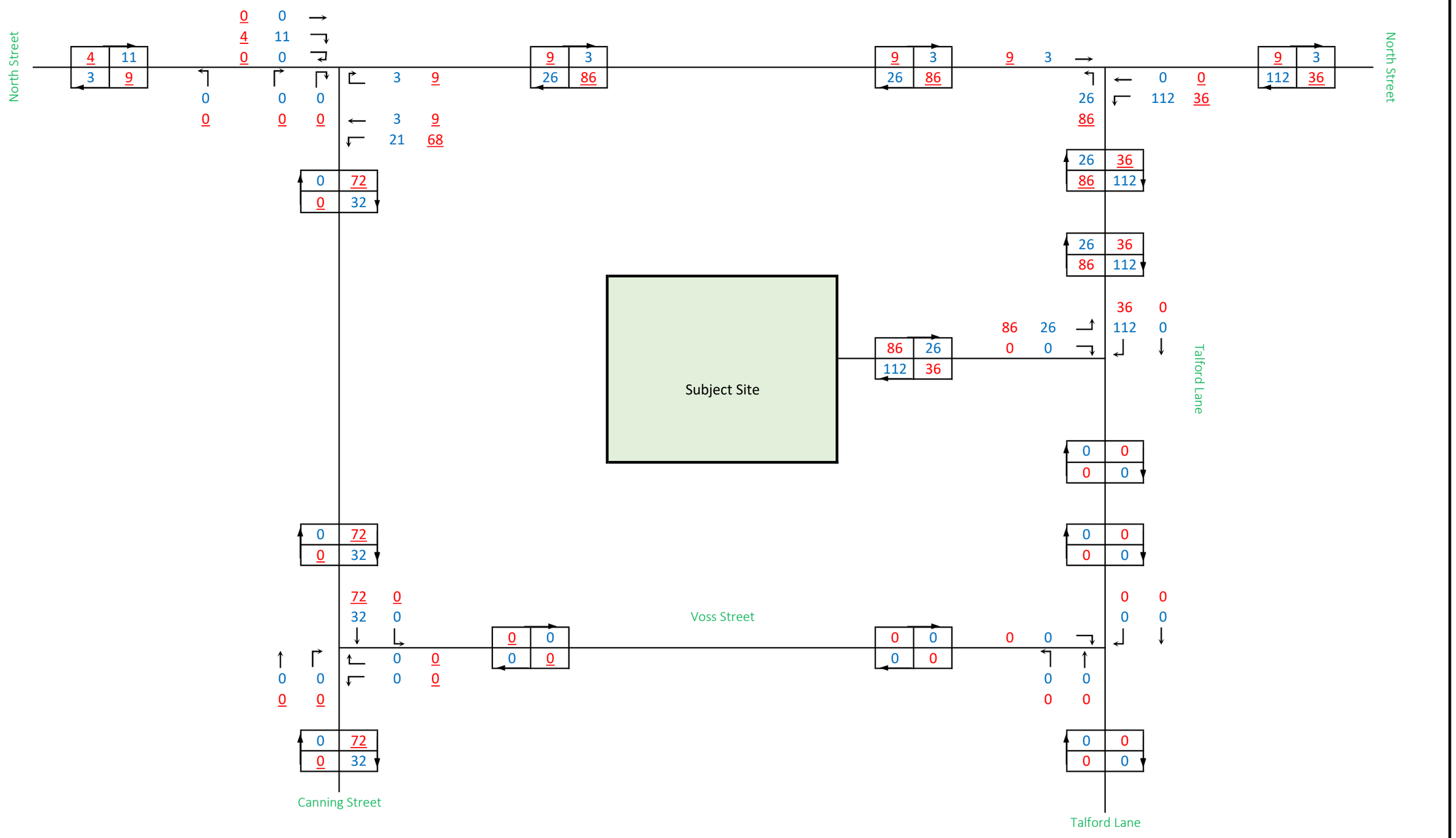
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: DEVELOPMENT DISTRIBUTION - EXIT MOVEMENTS



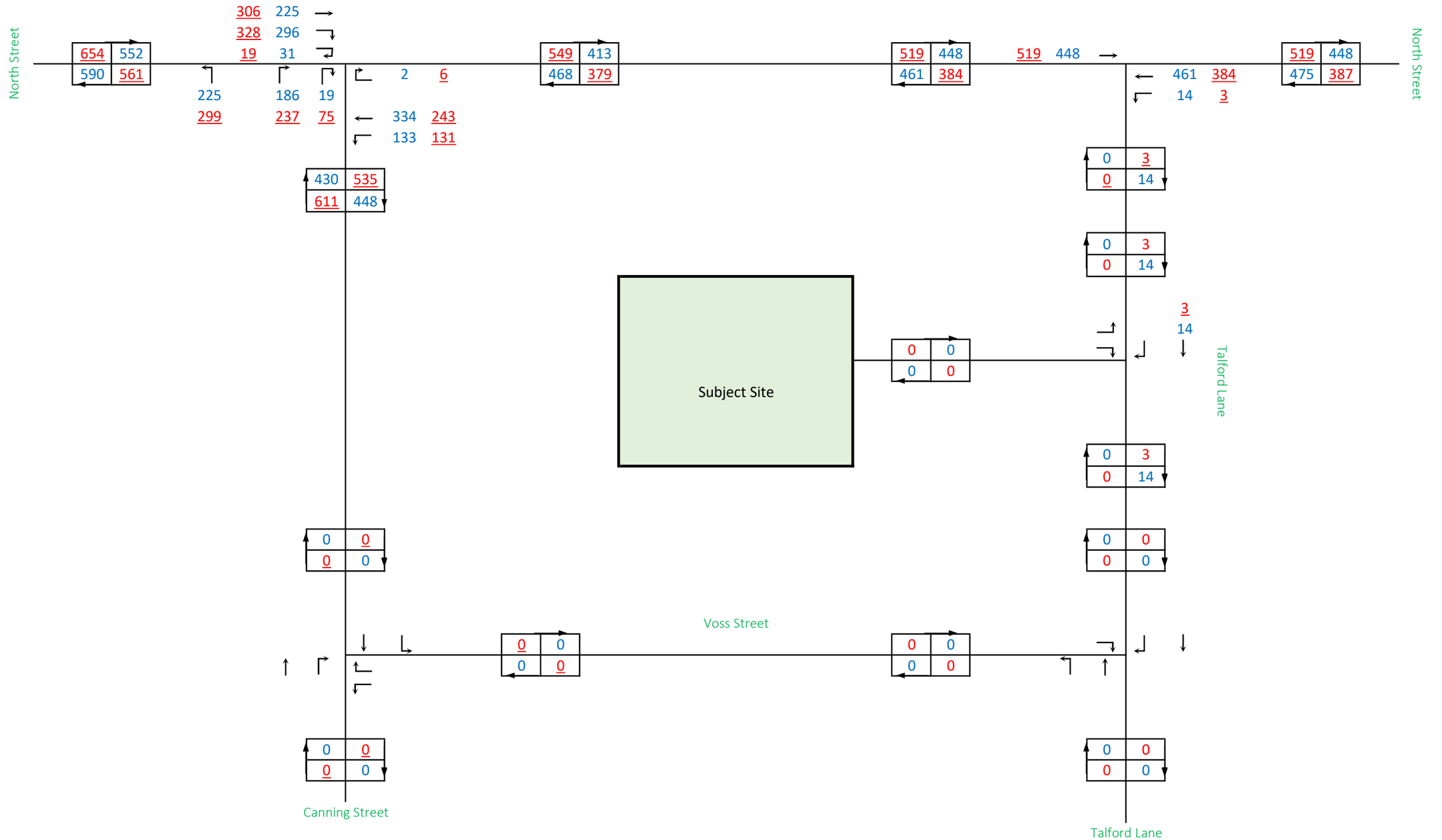
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: DEVELOPMENT VOLUME



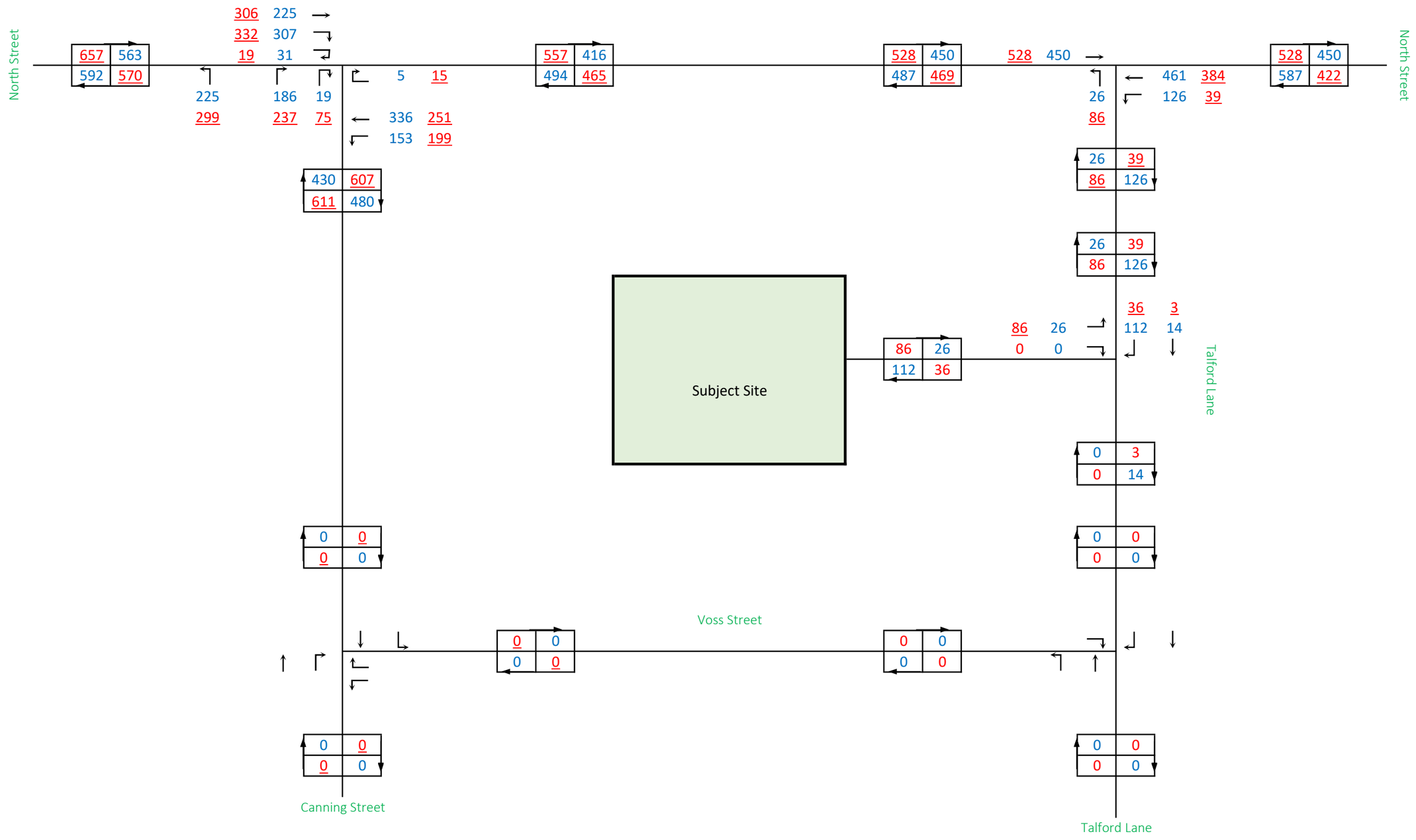
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: 2026 BASE CASE



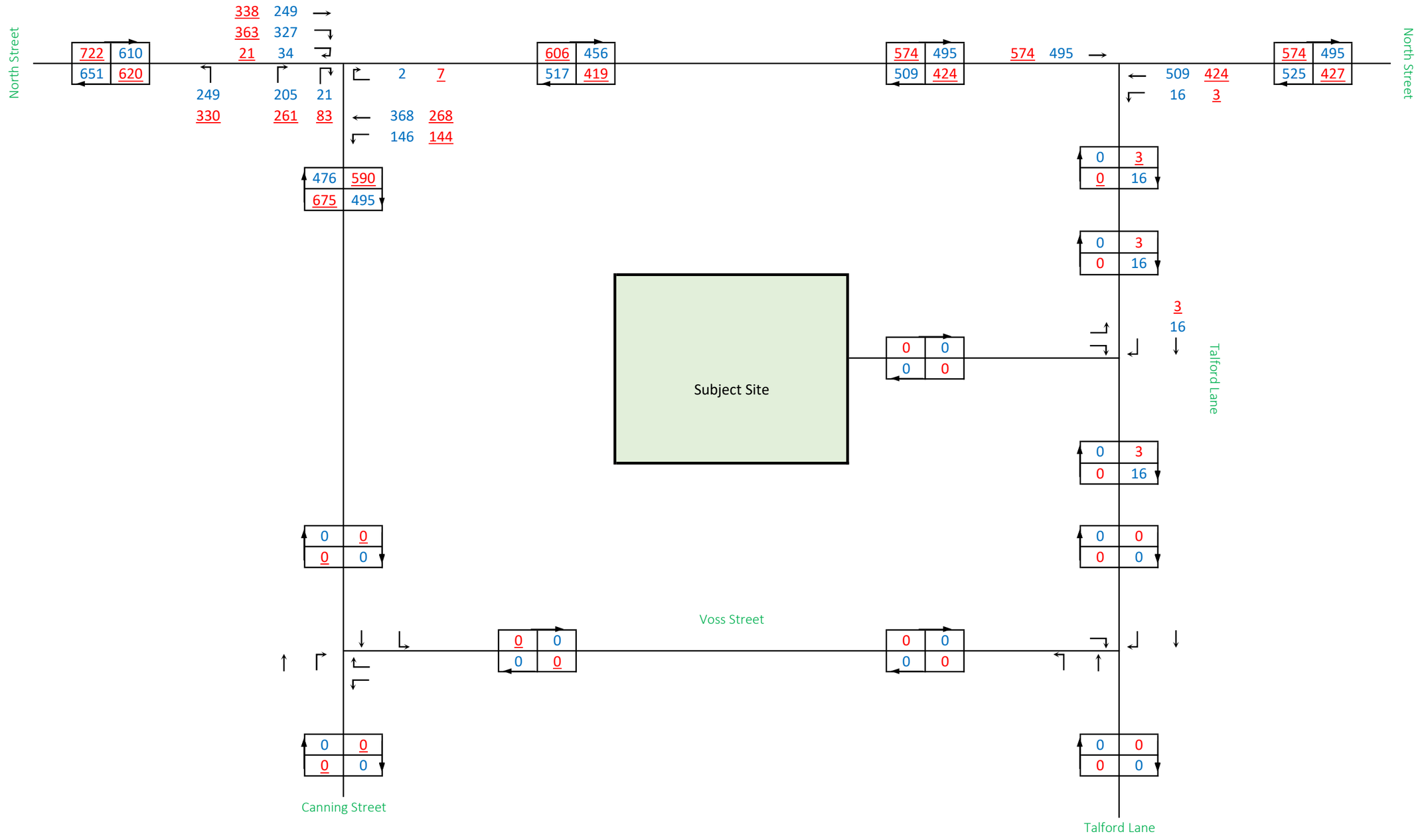
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: 2026 DEVELOPMENT CASE



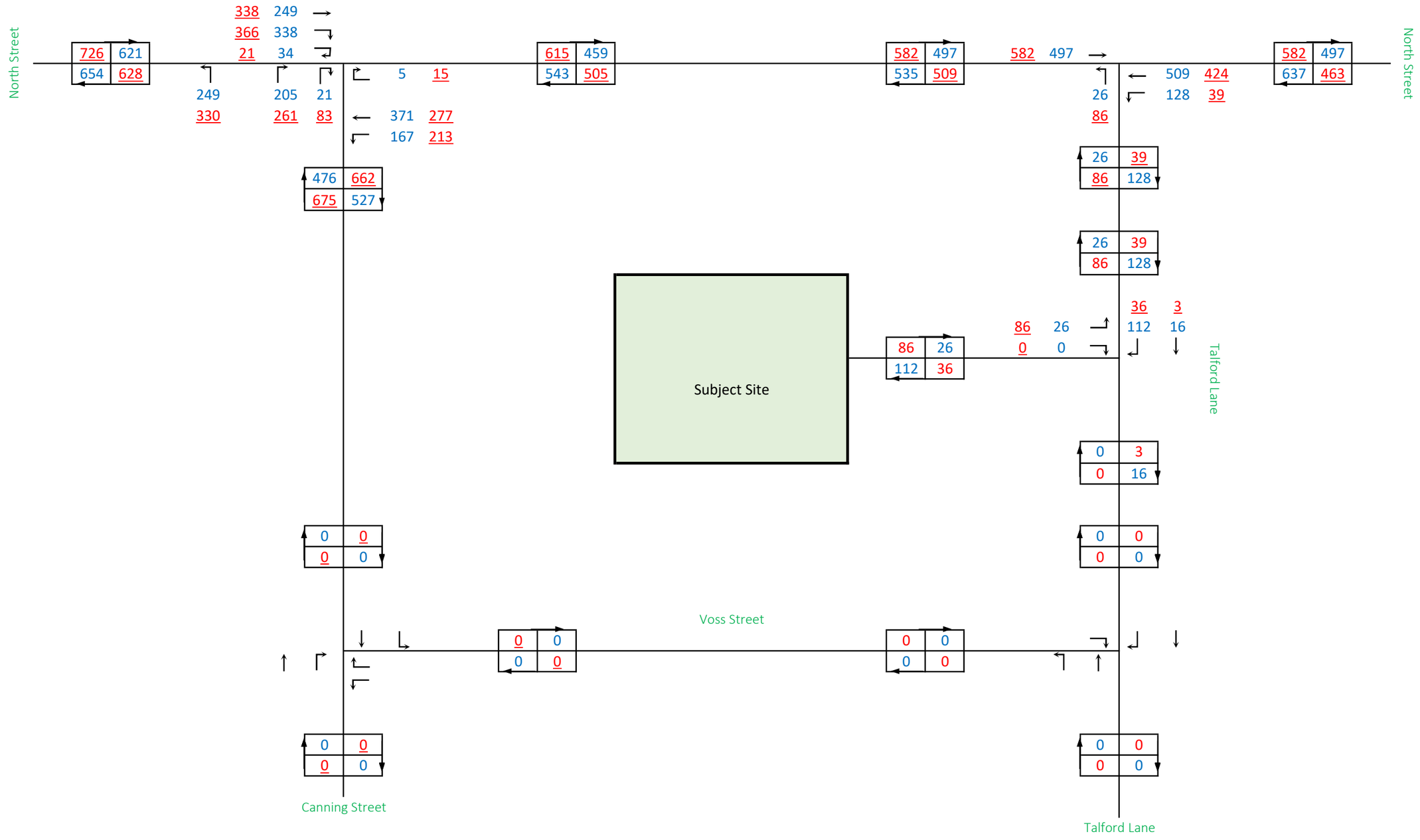
AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: 2036 BASE CASE



AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

TRAFFIC NETWORK DIAGRAM: 2036 DEVELOPMENT CASE



AM Peak 7:45 - 8:45
PM Peak 15:00 - 16:00

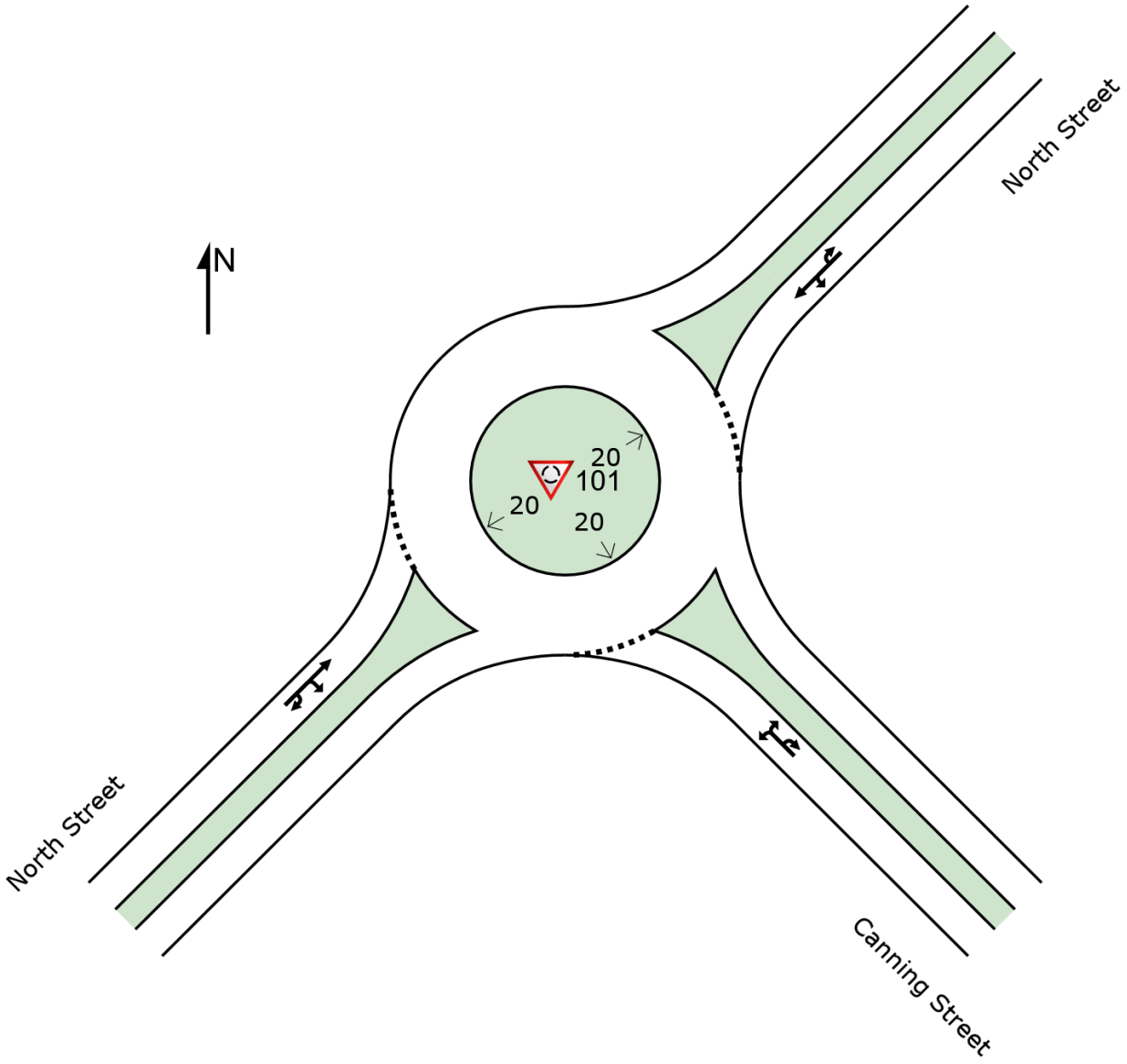
Attachment 3 – SIDRA Outputs

SITE LAYOUT

Site: 101 [2024 Survey Case AM Peak (Site Folder: General)]

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [2024 Survey Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	233	3.0	233	3.0	0.489	7.0	LOS A	3.7	26.5	0.73	0.68	0.74	50.8
23	R2	All MCs	192	2.0	192	2.0	0.489	11.8	LOS B	3.7	26.5	0.73	0.68	0.74	50.4
23u	U	All MCs	20	0.0	20	0.0	0.489	13.8	LOS B	3.7	26.5	0.73	0.68	0.74	50.4
Approach			444	2.4	444	2.4	0.489	9.4	LOS A	3.7	26.5	0.73	0.68	0.74	50.6
NorthEast: North Street															
24	L2	All MCs	137	2.0	137	2.0	0.518	7.0	LOS A	4.1	29.6	0.72	0.64	0.74	51.8
25	T1	All MCs	344	5.0	344	5.0	0.518	7.3	LOS A	4.1	29.6	0.72	0.64	0.74	52.0
26u	U	All MCs	2	0.0	2	0.0	0.518	13.8	LOS B	4.1	29.6	0.72	0.64	0.74	51.3
Approach			483	4.1	483	4.1	0.518	7.3	LOS A	4.1	29.6	0.72	0.64	0.74	52.0
SouthWest: North Street															
31	T1	All MCs	233	1.0	233	1.0	0.510	5.8	LOS A	4.2	30.0	0.61	0.60	0.61	51.1
32	R2	All MCs	305	2.0	305	2.0	0.510	10.4	LOS B	4.2	30.0	0.61	0.60	0.61	50.3
32u	U	All MCs	32	0.0	32	0.0	0.510	12.5	LOS B	4.2	30.0	0.61	0.60	0.61	50.4
Approach			569	1.5	569	1.5	0.510	8.6	LOS A	4.2	30.0	0.61	0.60	0.61	50.6
All Vehicles			1497	2.6	1497	2.6	0.518	8.4	LOS A	4.2	30.0	0.68	0.63	0.69	51.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2024 Survey Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	308	4.0	308	4.0	0.611	6.9	LOS A	5.8	41.8	0.74	0.66	0.78	50.6
23	R2	All MCs	244	2.0	244	2.0	0.611	11.7	LOS B	5.8	41.8	0.74	0.66	0.78	50.2
23u	U	All MCs	78	0.0	78	0.0	0.611	13.7	LOS B	5.8	41.8	0.74	0.66	0.78	50.3
Approach			631	2.7	631	2.7	0.611	9.6	LOS A	5.8	41.8	0.74	0.66	0.78	50.4
NorthEast: North Street															
24	L2	All MCs	135	2.0	135	2.0	0.458	7.2	LOS A	3.3	24.0	0.75	0.66	0.75	51.6
25	T1	All MCs	251	3.0	251	3.0	0.458	7.5	LOS A	3.3	24.0	0.75	0.66	0.75	52.0
26u	U	All MCs	6	0.0	6	0.0	0.458	14.1	LOS B	3.3	24.0	0.75	0.66	0.75	51.2
Approach			392	2.6	392	2.6	0.458	7.5	LOS A	3.3	24.0	0.75	0.66	0.75	51.8
SouthWest: North Street															
31	T1	All MCs	316	2.0	316	2.0	0.687	9.0	LOS A	8.0	56.9	0.84	0.75	0.98	49.8
32	R2	All MCs	339	2.0	339	2.0	0.687	13.6	LOS B	8.0	56.9	0.84	0.75	0.98	49.0
32u	U	All MCs	20	0.0	20	0.0	0.687	15.6	LOS B	8.0	56.9	0.84	0.75	0.98	49.1
Approach			675	1.9	675	1.9	0.687	11.5	LOS B	8.0	56.9	0.84	0.75	0.98	49.4
All Vehicles			1697	2.4	1697	2.4	0.687	9.9	LOS A	8.0	56.9	0.78	0.70	0.85	50.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2026 Base Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	237	3.0	237	3.0	0.505	7.3	LOS A	4.0	28.5	0.75	0.70	0.77	50.6
23	R2	All MCs	196	2.0	196	2.0	0.505	12.1	LOS B	4.0	28.5	0.75	0.70	0.77	50.2
23u	U	All MCs	20	0.0	20	0.0	0.505	14.1	LOS B	4.0	28.5	0.75	0.70	0.77	50.2
Approach			453	2.4	453	2.4	0.505	9.7	LOS A	4.0	28.5	0.75	0.70	0.77	50.4
NorthEast: North Street															
24	L2	All MCs	140	2.0	140	2.0	0.536	7.3	LOS A	4.4	31.9	0.74	0.65	0.78	51.6
25	T1	All MCs	352	5.0	352	5.0	0.536	7.6	LOS A	4.4	31.9	0.74	0.65	0.78	51.9
26u	U	All MCs	2	0.0	2	0.0	0.536	14.1	LOS B	4.4	31.9	0.74	0.65	0.78	51.2
Approach			494	4.1	494	4.1	0.536	7.6	LOS A	4.4	31.9	0.74	0.65	0.78	51.8
SouthWest: North Street															
31	T1	All MCs	237	1.0	237	1.0	0.524	5.8	LOS A	4.4	31.3	0.62	0.60	0.62	51.1
32	R2	All MCs	312	2.0	312	2.0	0.524	10.5	LOS B	4.4	31.3	0.62	0.60	0.62	50.2
32u	U	All MCs	33	0.0	33	0.0	0.524	12.5	LOS B	4.4	31.3	0.62	0.60	0.62	50.3
Approach			581	1.5	581	1.5	0.524	8.7	LOS A	4.4	31.3	0.62	0.60	0.62	50.6
All Vehicles			1527	2.6	1527	2.6	0.536	8.6	LOS A	4.4	31.9	0.70	0.65	0.72	50.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2026 Base Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	315	4.0	315	4.0	0.627	7.2	LOS A	6.2	44.8	0.76	0.68	0.81	50.5
23	R2	All MCs	249	2.0	249	2.0	0.627	12.0	LOS B	6.2	44.8	0.76	0.68	0.81	50.1
23u	U	All MCs	79	0.0	79	0.0	0.627	14.0	LOS B	6.2	44.8	0.76	0.68	0.81	50.1
Approach			643	2.7	643	2.7	0.627	9.9	LOS A	6.2	44.8	0.76	0.68	0.81	50.3
NorthEast: North Street															
24	L2	All MCs	138	2.0	138	2.0	0.472	7.5	LOS A	3.6	25.5	0.76	0.67	0.78	51.5
25	T1	All MCs	256	3.0	256	3.0	0.472	7.7	LOS A	3.6	25.5	0.76	0.67	0.78	51.9
26u	U	All MCs	6	0.0	6	0.0	0.472	14.3	LOS B	3.6	25.5	0.76	0.67	0.78	51.1
Approach			400	2.6	400	2.6	0.472	7.8	LOS A	3.6	25.5	0.76	0.67	0.78	51.7
SouthWest: North Street															
31	T1	All MCs	322	2.0	322	2.0	0.705	9.4	LOS A	8.6	61.1	0.87	0.77	1.02	49.5
32	R2	All MCs	345	2.0	345	2.0	0.705	14.1	LOS B	8.6	61.1	0.87	0.77	1.02	48.8
32u	U	All MCs	20	0.0	20	0.0	0.705	16.1	LOS B	8.6	61.1	0.87	0.77	1.02	48.8
Approach			687	1.9	687	1.9	0.705	11.9	LOS B	8.6	61.1	0.87	0.77	1.02	49.1
All Vehicles			1731	2.4	1731	2.4	0.705	10.2	LOS B	8.6	61.1	0.80	0.71	0.89	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2026 Dev Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	237	3.0	237	3.0	0.510	7.4	LOS A	4.1	29.1	0.75	0.70	0.79	50.5
23	R2	All MCs	196	2.0	196	2.0	0.510	12.2	LOS B	4.1	29.1	0.75	0.70	0.79	50.1
23u	U	All MCs	20	0.0	20	0.0	0.510	14.2	LOS B	4.1	29.1	0.75	0.70	0.79	50.1
Approach			453	2.4	453	2.4	0.510	9.8	LOS A	4.1	29.1	0.75	0.70	0.79	50.3
NorthEast: North Street															
24	L2	All MCs	161	2.0	161	2.0	0.570	7.9	LOS A	5.0	36.6	0.77	0.68	0.84	51.4
25	T1	All MCs	354	5.0	354	5.0	0.570	8.2	LOS A	5.0	36.6	0.77	0.68	0.84	51.7
26u	U	All MCs	5	0.0	5	0.0	0.570	14.7	LOS B	5.0	36.6	0.77	0.68	0.84	51.0
Approach			520	4.0	520	4.0	0.570	8.2	LOS A	5.0	36.6	0.77	0.68	0.84	51.6
SouthWest: North Street															
31	T1	All MCs	237	1.0	237	1.0	0.536	5.9	LOS A	4.6	32.4	0.64	0.60	0.64	51.0
32	R2	All MCs	323	2.0	323	2.0	0.536	10.5	LOS B	4.6	32.4	0.64	0.60	0.64	50.2
32u	U	All MCs	33	0.0	33	0.0	0.536	12.6	LOS B	4.6	32.4	0.64	0.60	0.64	50.2
Approach			593	1.5	593	1.5	0.536	8.8	LOS A	4.6	32.4	0.64	0.60	0.64	50.5
All Vehicles			1565	2.6	1565	2.6	0.570	8.9	LOS A	5.0	36.6	0.71	0.66	0.75	50.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2026 Dev Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	315	4.0	315	4.0	0.643	7.7	LOS A	6.7	48.3	0.79	0.70	0.87	50.1
23	R2	All MCs	249	2.0	249	2.0	0.643	12.5	LOS B	6.7	48.3	0.79	0.70	0.87	49.7
23u	U	All MCs	79	0.0	79	0.0	0.643	14.5	LOS B	6.7	48.3	0.79	0.70	0.87	49.8
Approach			643	2.7	643	2.7	0.643	10.4	LOS B	6.7	48.3	0.79	0.70	0.87	49.9
NorthEast: North Street															
24	L2	All MCs	209	2.0	209	2.0	0.581	9.0	LOS A	5.4	38.6	0.83	0.75	0.95	50.8
25	T1	All MCs	264	3.0	264	3.0	0.581	9.2	LOS A	5.4	38.6	0.83	0.75	0.95	51.2
26u	U	All MCs	16	0.0	16	0.0	0.581	15.8	LOS B	5.4	38.6	0.83	0.75	0.95	50.4
Approach			489	2.5	489	2.5	0.581	9.3	LOS A	5.4	38.6	0.83	0.75	0.95	51.0
SouthWest: North Street															
31	T1	All MCs	322	2.0	322	2.0	0.718	9.9	LOS A	9.0	64.1	0.89	0.78	1.06	49.2
32	R2	All MCs	349	2.0	349	2.0	0.718	14.5	LOS B	9.0	64.1	0.89	0.78	1.06	48.5
32u	U	All MCs	20	0.0	20	0.0	0.718	16.5	LOS B	9.0	64.1	0.89	0.78	1.06	48.6
Approach			692	1.9	692	1.9	0.718	12.4	LOS B	9.0	64.1	0.89	0.78	1.06	48.8
All Vehicles			1824	2.4	1824	2.4	0.718	10.9	LOS B	9.0	64.1	0.84	0.75	0.96	49.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2036 Base Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	262	3.0	262	3.0	0.585	8.8	LOS A	5.5	39.2	0.83	0.76	0.94	49.6
23	R2	All MCs	216	2.0	216	2.0	0.585	13.6	LOS B	5.5	39.2	0.83	0.76	0.94	49.1
23u	U	All MCs	22	0.0	22	0.0	0.585	15.6	LOS B	5.5	39.2	0.83	0.76	0.94	49.2
Approach			500	2.4	500	2.4	0.585	11.2	LOS B	5.5	39.2	0.83	0.76	0.94	49.4
NorthEast: North Street															
24	L2	All MCs	154	2.0	154	2.0	0.615	8.9	LOS A	6.0	43.8	0.82	0.74	0.95	51.0
25	T1	All MCs	387	5.0	387	5.0	0.615	9.2	LOS A	6.0	43.8	0.82	0.74	0.95	51.3
26u	U	All MCs	2	0.0	2	0.0	0.615	15.7	LOS B	6.0	43.8	0.82	0.74	0.95	50.6
Approach			543	4.1	543	4.1	0.615	9.2	LOS A	6.0	43.8	0.82	0.74	0.95	51.2
SouthWest: North Street															
31	T1	All MCs	262	1.0	262	1.0	0.594	6.2	LOS A	5.4	38.5	0.71	0.62	0.71	50.8
32	R2	All MCs	344	2.0	344	2.0	0.594	10.8	LOS B	5.4	38.5	0.71	0.62	0.71	50.0
32u	U	All MCs	36	0.0	36	0.0	0.594	12.8	LOS B	5.4	38.5	0.71	0.62	0.71	50.1
Approach			642	1.5	642	1.5	0.594	9.0	LOS A	5.4	38.5	0.71	0.62	0.71	50.3
All Vehicles			1685	2.6	1685	2.6	0.615	9.7	LOS A	6.0	43.8	0.78	0.70	0.85	50.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2036 Base Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	347	4.0	347	4.0	0.715	9.1	LOS A	8.9	64.1	0.87	0.76	1.02	49.2
23	R2	All MCs	275	2.0	275	2.0	0.715	13.9	LOS B	8.9	64.1	0.87	0.76	1.02	48.8
23u	U	All MCs	87	0.0	87	0.0	0.715	15.8	LOS B	8.9	64.1	0.87	0.76	1.02	48.9
Approach			709	2.7	709	2.7	0.715	11.8	LOS B	8.9	64.1	0.87	0.76	1.02	49.0
NorthEast: North Street															
24	L2	All MCs	152	2.0	152	2.0	0.554	9.1	LOS A	5.0	35.6	0.84	0.76	0.96	50.8
25	T1	All MCs	282	3.0	282	3.0	0.554	9.4	LOS A	5.0	35.6	0.84	0.76	0.96	51.1
26u	U	All MCs	7	0.0	7	0.0	0.554	15.9	LOS B	5.0	35.6	0.84	0.76	0.96	50.4
Approach			441	2.6	441	2.6	0.554	9.4	LOS A	5.0	35.6	0.84	0.76	0.96	51.0
SouthWest: North Street															
31	T1	All MCs	356	2.0	356	2.0	0.814	13.2	LOS B	13.3	94.6	1.00	0.91	1.36	47.2
32	R2	All MCs	382	2.0	382	2.0	0.814	17.9	LOS B	13.3	94.6	1.00	0.91	1.36	46.5
32u	U	All MCs	22	0.0	22	0.0	0.814	19.8	LOS B	13.3	94.6	1.00	0.91	1.36	46.5
Approach			760	1.9	760	1.9	0.814	15.7	LOS B	13.3	94.6	1.00	0.91	1.36	46.8
All Vehicles			1911	2.4	1911	2.4	0.814	12.8	LOS B	13.3	94.6	0.92	0.82	1.14	48.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2036 Dev Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	262	3.0	262	3.0	0.591	9.0	LOS A	5.6	40.2	0.84	0.77	0.96	49.5
23	R2	All MCs	216	2.0	216	2.0	0.591	13.8	LOS B	5.6	40.2	0.84	0.77	0.96	49.0
23u	U	All MCs	22	0.0	22	0.0	0.591	15.8	LOS B	5.6	40.2	0.84	0.77	0.96	49.1
Approach			500	2.4	500	2.4	0.591	11.4	LOS B	5.6	40.2	0.84	0.77	0.96	49.3
NorthEast: North Street															
24	L2	All MCs	176	2.0	176	2.0	0.654	9.7	LOS A	7.0	50.6	0.86	0.78	1.03	50.4
25	T1	All MCs	391	5.0	391	5.0	0.654	10.1	LOS B	7.0	50.6	0.86	0.78	1.03	50.7
26u	U	All MCs	5	0.0	5	0.0	0.654	16.5	LOS B	7.0	50.6	0.86	0.78	1.03	50.0
Approach			572	4.0	572	4.0	0.654	10.0	LOS B	7.0	50.6	0.86	0.78	1.03	50.6
SouthWest: North Street															
31	T1	All MCs	262	1.0	262	1.0	0.606	6.3	LOS A	5.7	40.5	0.72	0.63	0.73	50.7
32	R2	All MCs	356	2.0	356	2.0	0.606	11.0	LOS B	5.7	40.5	0.72	0.63	0.73	49.9
32u	U	All MCs	36	0.0	36	0.0	0.606	13.0	LOS B	5.7	40.5	0.72	0.63	0.73	50.0
Approach			654	1.5	654	1.5	0.606	9.2	LOS A	5.7	40.5	0.72	0.63	0.73	50.3
All Vehicles			1725	2.6	1725	2.6	0.654	10.1	LOS B	7.0	50.6	0.80	0.72	0.89	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2036 Dev Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Canning Street Roundabout
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Canning Street															
21	L2	All MCs	347	4.0	347	4.0	0.734	9.8	LOS A	9.7	69.3	0.91	0.79	1.09	48.7
23	R2	All MCs	275	2.0	275	2.0	0.734	14.6	LOS B	9.7	69.3	0.91	0.79	1.09	48.3
23u	U	All MCs	87	0.0	87	0.0	0.734	16.6	LOS B	9.7	69.3	0.91	0.79	1.09	48.4
Approach			709	2.7	709	2.7	0.734	12.5	LOS B	9.7	69.3	0.91	0.79	1.09	48.5
NorthEast: North Street															
24	L2	All MCs	224	2.0	224	2.0	0.670	11.3	LOS B	7.4	53.2	0.92	0.85	1.16	49.3
25	T1	All MCs	292	3.0	292	3.0	0.670	11.6	LOS B	7.4	53.2	0.92	0.85	1.16	49.6
26u	U	All MCs	16	0.0	16	0.0	0.670	18.1	LOS B	7.4	53.2	0.92	0.85	1.16	48.9
Approach			532	2.5	532	2.5	0.670	11.6	LOS B	7.4	53.2	0.92	0.85	1.16	49.4
SouthWest: North Street															
31	T1	All MCs	356	2.0	356	2.0	0.826	14.0	LOS B	14.0	99.7	1.00	0.95	1.40	46.7
32	R2	All MCs	385	2.0	385	2.0	0.826	18.6	LOS B	14.0	99.7	1.00	0.95	1.40	46.0
32u	U	All MCs	22	0.0	22	0.0	0.826	20.6	LOS C	14.0	99.7	1.00	0.95	1.40	46.1
Approach			763	1.9	763	1.9	0.826	16.5	LOS B	14.0	99.7	1.00	0.95	1.40	46.4
All Vehicles			2004	2.4	2004	2.4	0.826	13.8	LOS B	14.0	99.7	0.95	0.87	1.23	47.9

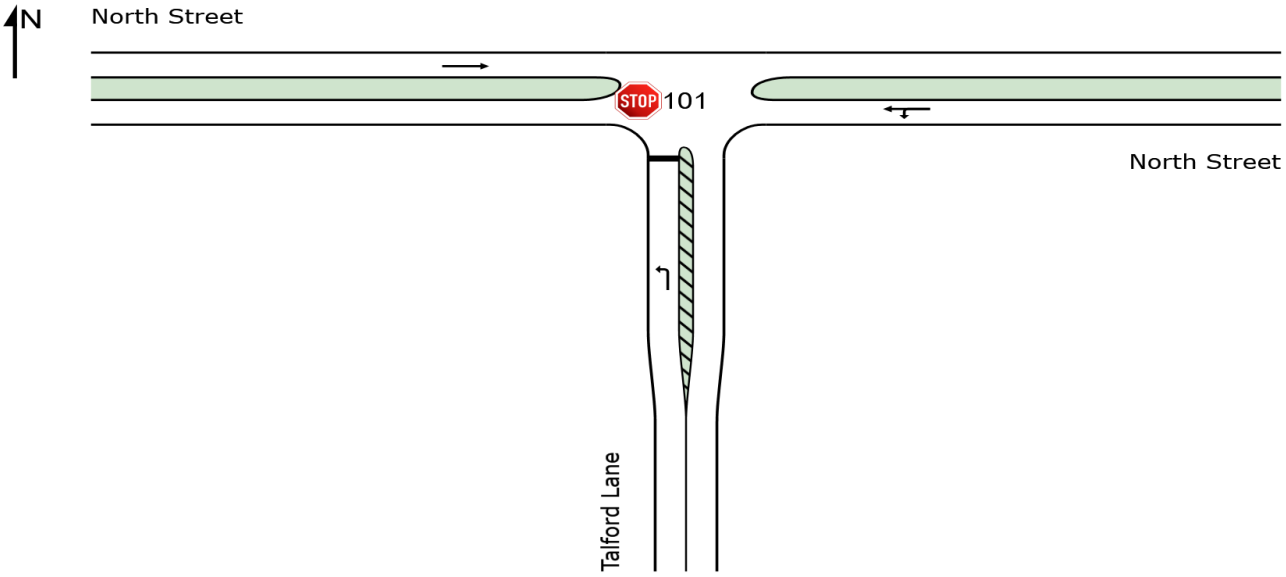
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2026 Dev Case AM Peak (Site Folder: General)]

North Street / Talford Lane
Site Category: (None)
Stop (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [2026 Dev Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Talford Lane
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Talford Lane															
1	L2	All MCs	27	0.0	27	0.0	0.033	10.4	LOS B	0.1	0.8	0.49	0.89	0.49	50.1
Approach			27	0.0	27	0.0	0.033	10.4	LOS B	0.1	0.8	0.49	0.89	0.49	50.1
East: North Street															
4	L2	All MCs	133	0.0	133	0.0	0.320	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	56.3
5	T1	All MCs	485	0.0	485	0.0	0.320	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	58.7
Approach			618	0.0	618	0.0	0.320	1.3	NA	0.0	0.0	0.00	0.13	0.00	58.1
West: North Street															
11	T1	All MCs	474	0.0	474	0.0	0.243	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			474	0.0	474	0.0	0.243	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			1119	0.0	1119	0.0	0.320	1.0	NA	0.1	0.8	0.01	0.09	0.01	58.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2026 Dev Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Talford Lane
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Talford Lane															
1	L2	All MCs	91	0.0	91	0.0	0.097	10.0	LOS A	0.4	2.6	0.46	0.90	0.46	50.4
Approach			91	0.0	91	0.0	0.097	10.0	LOS A	0.4	2.6	0.46	0.90	0.46	50.4
East: North Street															
4	L2	All MCs	41	0.0	41	0.0	0.229	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	56.9
5	T1	All MCs	404	0.0	404	0.0	0.229	0.1	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach			445	0.0	445	0.0	0.229	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.1
West: North Street															
11	T1	All MCs	556	0.0	556	0.0	0.285	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			556	0.0	556	0.0	0.285	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles			1092	0.0	1092	0.0	0.285	1.1	NA	0.4	2.6	0.04	0.10	0.04	58.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2036 Dev Case AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Talford Lane
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Talford Lane															
1	L2	All MCs	27	0.0	27	0.0	0.035	10.8	LOS B	0.1	0.9	0.51	0.90	0.51	49.9
Approach			27	0.0	27	0.0	0.035	10.8	LOS B	0.1	0.9	0.51	0.90	0.51	49.9
East: North Street															
4	L2	All MCs	135	0.0	135	0.0	0.347	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	56.3
5	T1	All MCs	536	0.0	536	0.0	0.347	0.1	LOS A	0.0	0.0	0.00	0.12	0.00	58.7
Approach			671	0.0	671	0.0	0.347	1.2	NA	0.0	0.0	0.00	0.12	0.00	58.2
West: North Street															
11	T1	All MCs	523	0.0	523	0.0	0.268	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			523	0.0	523	0.0	0.268	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			1221	0.0	1221	0.0	0.347	0.9	NA	0.1	0.9	0.01	0.09	0.01	58.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: TTM CONSULTING PTY LTD | Licence: NETWORK / Enterprise Level 5 | Processed: Tuesday, 27 August 2024 12:25:49 PM
Project: C:\Users\RLeong\TTM\2023 Synergy Projects - TotalSynergy\23BRT0650 67-69 North Street and 5 Voss Street, The Range\6 - Analysis\23BRT0650 SA01 Rev B RFI.sip9

MOVEMENT SUMMARY

Site: 101 [2036 Dev Case PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

North Street / Talford Lane
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Talford Lane															
1	L2	All MCs	91	0.0	91	0.0	0.102	10.3	LOS B	0.4	2.7	0.48	0.92	0.48	50.2
Approach			91	0.0	91	0.0	0.102	10.3	LOS B	0.4	2.7	0.48	0.92	0.48	50.2
East: North Street															
4	L2	All MCs	41	0.0	41	0.0	0.251	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
5	T1	All MCs	446	0.0	446	0.0	0.251	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			487	0.0	487	0.0	0.251	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.2
West: North Street															
11	T1	All MCs	613	0.0	613	0.0	0.314	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			613	0.0	613	0.0	0.314	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles			1191	0.0	1191	0.0	0.314	1.0	NA	0.4	2.7	0.04	0.09	0.04	58.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

10 April 2025
Our Ref: 23BRT0650

Attention: Sam Pourmoradian

Radian Planning Group
PO Box 3099
Newmarket QLD 4051

Dear Sam,

RE: 67-69 North Street and 5 Voss Street, The Range – Minor Change Application
Transport Engineering Assessment

1 Introduction

Colliers International Engineering and Design (TTMC) Pty Ltd has been engaged to prepare a transport engineering assessment investigating a proposed minor-change application of the approved medical centre at 67 – 69 North Street and 5 Voss Street, The Range. The site is the subject of a development approval for a medical centre, dated 25 October 2024. Council's reference no. for the approved development is D80-2024.

The conditions of approval relevant to traffic and transport aspects of this proposal, are detailed as follows:

- ***Condition 4.4*** *A new access to the development must be provided at Talford Lane.*
- ***Condition 4.5*** *All vehicular access to and from the development must be via Talford Lane only.*
- ***Condition 4.6*** *Access to the development site from Talford Lane must be limited to 'right in, left out' only.*
- ***Condition 4.7*** *Refuse collection vehicles only, must enter the development site via Talford Lane from the north and exit via Talford Lane to the south.*
- ***Condition 4.8*** *All vehicles must ingress and egress the development in a forward gear excluding refuse collection vehicles, per condition 4.7.*
- ***Condition 4.11*** *A minimum of sixty-six (66) parking spaces including two (2) persons with disabilities (PWD) parking spaces must be provided on-site. Eighteen (18) bicycle parking spaces must also be provided on-site*

2 Development Proposal

The proposed minor change development consists of two-levels only, comprising an undercroft car park and health care services of 1,383 m^2 GFA which includes a single radiology tenancy and medical tenancy. Table 1 summarises the proposed development yield against that approved for the site.

Table 1: Development Yield Comparison

Aspect	Approved Plans (D80-2024)	Proposed Minor Change	Change
Land Use: – health care services	• 1,978 m^2 GFA	• 1,376 m^2 GFA	• -602 m^2 GFA
Access Arrangements	• Access to be provided via Talford Lane. Right-in and left-out only.	• Access to be provided via Talford Lane right-in only • Access to be provided via North Street left-in/left-out only	• Entry only from Talford Lane • Additional Crossover to North Street. • Travel routes on the wider road network remain unchanged.
Talford Lane Road Widening	• Talford Lane (North) road widening to accommodate two-way traffic	• No road widening. Talford Lane remains one-way southbound.	• No road widening
Parking Supply	• 66 parking spaces (incl. 2 PWD bays)	• 41 parking spaces (incl. 2 PWD bays)	• -25 parking spaces
Service Vehicles	• RCV via Talford Lane • SRV via Talford Lane • Ambulance via Talford Lane	• RCV via Talford Lane • SRV via North Street • Ambulance via North Street	• Unchanged • SRV via North Street • Ambulance via North Street
Bicycle	• 18 bicycle parking spaces	• 12 bicycle parking spaces	• -6 bicycle parking spaces

The development plans are provided in **Attachment 1.**

Further details regarding each aspect are detailed in the following headings.

3 Access Arrangements

The approved development plan included a driveway to Talford Lane which will cater for right-in/left-out movements and road widening to accommodate two-way traffic on Talford Lane (north). The Talford Lane road widening is no longer proposed and an additional access to North Street is now proposed. As such, the proposed access arrangements include:

- Right-in only access to Talford Lane generally in its approved location

- Left-in/left-out only access to North Street

Due to the change in access compared to the approval, the design and compliance have been reassessed against the relevant Standards and Guidelines.

Further details of the access arrangements are detailed in the following headings.

3.1 Talford Lane Access

The design provisions of the access and the respective provisions of the Council's Planning Scheme and Capricorn Municipal Design Guidelines are detailed in Table 2

Table 2: Talford Lane Access Arrangements

Design Aspect	Council Requirement	Proposed Provision	Compliance
Width / Design Type	6.0m Type A, B1 Driveway	7.0m Type A, B1 Driveway in-line with Standard Drawing CMDG-R-042A	Performance Solution
Distance from: • signalised intersection • unsignalised intersection • signage, utility pole, gully pit Council asset etc.	 25m (min) 10m (min) 1m	 N/A 26m 14m from manhole	 N/A Compliant Compliant
Sight Distance	69m (desirable) 45m (minimum)	Visible to North Street / Talford Lane intersection (to north) and Visible to Voss Street / Talford Lane intersection (to South)*	Compliant
Driveway Sight Splays	2.0m wide x 2.5m deep	2.0m wide x 2.5m deep (min)	Compliant
Maximum Driveway grade	1:20 (5%) maximum within first 6m	1:20 maximum (5%) maximum within first 6m	Compliant

*Talford Lane at the site frontage is one-way southbound until the Voss Street / Talford Lane intersection after which is a two-way unmarked road.

In general, the proposed site access arrangements are generally consistent with Council's requirements. Further details in relation to deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided in the following sub-headings.

Width / Design Type

It is proposed that the driveway be designed to meet the requirements of the Capricorn Municipal Development Guidelines Standard Drawing CMDG-R-042A of a Type A, B1 driveway. The wider driveway is required to facilitate ingress movement for cars and service vehicles alike given the narrow roadway width of Talford Lane.

Overall the proposed access is designed generally in accordance with the Council requirements, apart from some design performance solutions which are deemed fit-for-purpose.

3.2 North Street Access

The design provisions of the access and the respective provisions of the Council's Planning Scheme and Capricorn Municipal Design Guidelines are detailed in Table 3

Table 3: North Street Access Arrangements

Design Aspect	Council Requirement	Proposed Provision	Compliance
Width / Design Type	6.0m Type B1 Driveway for cars (medium turnover on a major road) 7.0m Type B2 Driveway (due to ambulances)	6.8m Type B2 Driveway in-line with Standard Drawing CMDG-R-042A	Performance Solution
Distance from: • signalised intersection • unsignalised intersection • signage, utility pole, gully pit Council asset etc.	 25m (min) 10m (min) 1m	 N/A 23m 2m from utility pole	 N/A Compliant Compliant
Sight Distance	69m (desirable) 45m (minimum)	69m (minimum)	Compliant
Driveway Sight Splays	2.0m wide x 2.5m deep	2.0m wide x 2.5m deep (min)	Compliant
Maximum Driveway grade	1:20 (5%) maximum within first 6m	1:25 (4%) maximum within first 6m	Compliant

*Talford Lane at the site frontage is one-way southbound until the Voss Street / Talford Lane intersection after which is a two-way unmarked road.

In general, the proposed site access arrangements are generally consistent with the provisions of the Council requirements. Further details in relation to deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided in the following.

Width / Design Type

It is proposed that the driveway be designed to meet the requirements of the Capricorn Municipal Development Guidelines Standard Drawing CMDG-R-042A of a Type B2 driveway. The North Street access will primarily cater for car movements only but can accommodate delivery/emergency vehicle (ambulance access) if necessary. The proposed 6.8m driveway therefore satisfies the requirements for car access via a major road with medium turnover parking, but is marginally narrower than the requirement of 7.0m for service vehicles. Colliers swept path analysis demonstrates that there is sufficient vehicle clearances for service vehicle left-in/left-out movement at the access. The marginally narrower driveway is therefore not considered to have an adverse impact on manoeuvring.

Overall the proposed access is designed generally in accordance with the Council requirements, apart from some design performance solutions which are deemed fit-for-purpose.

4 Car Parking Arrangements

4.1 Car Parking Supply

The car parking supply requirements for the proposed development land uses have been determined in line with Table 9.3.1.3.2 of the Access, Parking and Transport Code. For the purposes of calculating parking requirements, Table 9.3.1.3.2 identifies the following:

- *Note – where the calculation of parking requirements results in a fraction, the number of required car spaces shall be the nearest whole number. Unless stated, parking spaces are uncovered.*

Table 4 provides a summary of the parking supply requirements, and the proposed provisions, for the development scheme.

Table 4: Council Car Parking Supply Requirement

Land Use	Council Requirement	Extent	Requirement	Provision
Health Care Services	1 space per 25 m^2 GFA	1,376 m^2 GFA	55 spaces	39 spaces 2 PWD spaces
Total			55 spaces	41 spaces

Based on the above Table, the proposed parking supply is 41 spaces which is below that required by the Council Planning Scheme.

As identified in the approved TIA, given the proximity of the Rockhampton Hospital and other health care developments in the precinct, consideration should be given to the cross-utilisation of parking demands. As such, Colliers has therefore undertaken a practical car parking demand assessment for the medical centre to determine the suitability of the proposed car parking supply. This assessment is detailed in **Section 4.1.1** and in-line with the approved TIA prepared for the approved medical centre development over the site.

PWD Parking

The Rockhampton Planning Scheme does not nominate specific rates for PWD parking. Colliers has therefore referred to the requirements of the National Construction Code (NCC). This NCC Guidelines identifies a requirement of minimum of 1 PWD space per 50 spaces for a Class 9a (healthcare) building – clinic not forming part of a hospital. This equates to 2 PWD spaces required for the proposed development which has been provided.

4.1.1 Practical Car Parking Demand

The approved development consists of a reduced parking supply when compared to the Council Planning Scheme requirements. A first-principles assessment was previously undertaken to determine the practical car parking demand and, as such, has been updated to consider the revised GFA.

Based on information provided by the project team with respect to the floor plate and potential number of consulting rooms, the following assumptions have been made:

- Radiology: 6 consulting rooms plus x-ray, OPG, CT Scanning, MRI and 6 x ultrasound
- GP Clinic or medical specialist: 2 consulting rooms

Overall, the makeup could comprise 18 consulting rooms.

The assessment has considered the reduced number of consulting rooms with all other factors adopted in the previous first-principles assessment remaining unchanged. Refer to the approved TIA for complete details. On this basis, the updated first-principles parking demand assessment is detailed as follows:

- Staff parking
  - 1 staff per consulting room
  - 3 administrative staff per tenancy (radiology and specialist or GP clinic) – 6 total
  - 85% of staff would drive with the remaining trips achieved through alternative modes such as active travel, public transport, taxi or drop-off/pickup by a family member or friend. This is consistent with 2021 census data for travel to work within The Range.
  - Of the staff that drive, a car occupancy of 1 staff per car
  - Not all consulting rooms are anticipated to peak at the same time. It is anticipated that 70% of consulting rooms will be occupied by during the peak period
  - Based on the above, this would generate a staff parking demand for 15 spaces
- Visitor parking
  - During the peak periods, it is anticipated that there would be up to 2 patients per occupied consulting room. This allows for 1 patient in consultation and 1 patient waiting.
  - 1 patient per car
  - 95% of patients would drive with the remaining trips achieved through public transport or taxi. This value is higher than the travel-to-work census data due to patients being less likely to walk, ride or be dropped off for a short appointment.

- It is expected that patients will have appointments at the hospital and medical centre, enabling cross-utilisation. With a dedicated pathway connection between the Rockhampton hospital car park approximately 100m from the North Street frontage, it is anticipated 10% of visitors would be linked to the hospital as an original trip.
- Based on the above, **this would generate a visitor parking demand for 22 spaces.**

Based on the above first principles assessment, the site could generate a peak parking demand of **37 cars**, which would meet the proposed supply of 41 spaces.

Overall, the proposed parking supply is anticipated to meet the practical car parking demands of the site which is based on consideration of operator requirements, target demographic and proximity to active and public transport and the Rockhampton hospital.

4.2 Car Parking Layout

Due to the changes in the car park layout, the layout has been reassessed in accordance with the relevant Standards. Table 5 summarises the parking design requirements and compliance aspects.

The proposed car parking will be provided across a single level. Table 5 identifies the characteristics of the proposed parking layouts with respect to Council's requirements.

Table 5: Council Parking Design Requirements

Design Aspect	AS2890 Provision	Proposed Provision	Compliance
Parking space length: • Staff space (Class 1) • Visitor space (Class 3) • Small car space • PWD space	 5.4m (min) 5.4m (min) 5.0m (min) 5.4m (min)	 5.4m (min) 5.4m (min) 5.0m (min) 5.4m (min)	 Compliant Compliant Compliant Compliant
Parking space width: • Staff space (Class 1) • Visitor space (Class 3) • Small car space • PWD space	 2.4m (min) 2.6m (min) 2.3m (min) 2.4m + 2.4m 'Shared Area'	 2.6m (min) 2.6m (min) 2.3m (min) 2.4m + 2.4m 'Shared Area'	 Compliant Compliant Compliant Compliant
Aisle Width: • Parking aisle • Circulation road/ramp (curved)	 6.2m (min) As per AS2890.1, Figure 2.9	 6.2m (min) As per AS2890.1, Figure 2.9	 Compliant Compliant
Parking envelope clearance	Located as per AS2890.1, Figure 5.2	Located as per AS2890.1, Figure 5.2	Compliant
Maximum Gradient: • PWD parking • Parking aisle	 1:40 (2.5%) 1:20 (5.0%)	 1:40 (2.5%) (max) 1:20 (5.0%) (max)	 Compliant Compliant

Design Aspect	AS2890 Provision	Proposed Provision	Compliance
Blind Aisle Extension	1.0m extension to aisle width beyond final space	1.0m extension to aisle width beyond final space	Compliant
Height Clearance: • General Minimum • Over PWD space	 2.3m 2.5m	 2.3m (min) 2.5m (min)	 Compliant Compliant
Turnaround Bay	Beyond last publicly accessible parking space if blind aisle exceeds width of six 90 degree spaces	Turnaround bay provided beyond last publicly accessible public space	Compliant

Overall the proposed car parking layout is designed generally in accordance with the Australian Standards, which is therefore considered suitable.

5 Service Vehicle Arrangements

The approved refuse collection arrangements are to be retained via Talford Lane as per the approval. The ambulance bay is to be relocated toward the northern portion of the site and will be accessed via North Street. SRVs can share the use of the ambulance bay. A 3.5m height clearance over the travel path and ambulance/SRV bay is required.

Colliers has undertaken an updated swept path analysis demonstrating that the above-mentioned service vehicles can enter the site in a forward direction, manoeuvre on-site to load/unload goods and exit the site in a forward direction. Given the low anticipated frequency of deliveries, the shared use of the dedicated loading bay with special use vehicles will be sufficient to cater for the servicing needs of the development. This can be managed through scheduling. Colliers's swept path drawings are shown in **Attachment 2.**

Overall, the proposed service vehicles arrangements are consistent with the approval and are considered satisfactory.

6 Active Transport

6.1 Bicycle Parking

The bicycle parking supply requirements for the proposed development have been determined in line with Table SC6.4.7.1 of the Rockhampton Planning Scheme.

Table 6: Bicycle Parking Requirements

Land Use	Council Requirement	Extent	Requirement	Provision
Health Care Services	1 staff (Class 1 or 2) space per 400 m^2 GFA	1,376 m^2 GFA	4 staff spaces	**4 staff spaces** **8 visitor spaces**
	1 visitor (Class 3) space per 200 m^2 GFA		7 visitor spaces	

Based on the above table, the development requires 4 staff Class 1 or 2 bicycle spaces and 8 Class 3 visitor spaces. The development provides 4 class 2 spaces in a lockable enclosure and 4 rails (8 visitor bicycle spaces) within the semi-basement level which complies with the requirements.

6.2 Pedestrian Access

Building pedestrian access is proposed to the North Street and Voss Street frontages separate to the vehicle access consistent with the approval.

7 Traffic Assessment

Colliers previously completed a detailed traffic impact analysis, dated 9th September 2024, in response to Council's Information Request for the approved development. It included a left-out only movement to North Street via widened Talford Lane with all exit movements to the south-east the North Street / Canning Street roundabout. All entry movements will approach from the north-east via Talford Lane. The intersections assessed included:

- The North Street / Canning Street roundabout
- The North Street / Talford Lane priority-controlled intersections

The assessment demonstrated the following:

- The North Street / Canning Street roundabout analysis indicates that the roundabout is expected to operate within capacity in all cases up to the 2036 design year. The worst-case DOS of 82.6% in the 2036 Design Year PM peak Base + Development Case which is within the acceptable DOS threshold of 85% for roundabouts. Based on this assessment, no further mitigation works are required.
- The North Street / Talford Lane analysis indicates that the proposed intersection is expected to operate well within practical capacity in all cases up to the 2036 design year. The worst-case DOS of 34.7% in the 2036 Design Year AM peak Base + Development Case is well within the acceptable DOS threshold of 80% for priority-controlled intersections. Based on this assessment, no further mitigation works are required other than that previously recommended – noting that the Talford Lane road widening is now no longer proposed.

A summary of the comparative directional movements between the approved and proposed development is summarised in Table 7 below.

Table 7: Entry and Exit Movement Comparison (approved vs proposed)

Direction of Traffic Movements	Approved Development	Proposed Development
• Entry movements	Entry via Talford Lane only (left-in from North Street)	Entry via Talford Lane only and North Street

Direction of Traffic Movements	Approved Development	Proposed Development
• Exit movements	Exit movements via Talford Lane only (left-out to North Street)	Exit movements via North Street access (left-out to North Street)

Overall, a detailed traffic impact analysis has previously been undertaken as part of the assessment which indicates there is sufficient capacity to accommodate the anticipated traffic generation for the approved development. With no notable changes in directional traffic distribution and a decrease in overall GFA, any further detailed traffic analysis is therefore considered unwarranted.

Conclusion

The proposed development includes a reduction in building levels (from five to two levels) to include a single level of health care services with an undercroft car park. The approved Talford Lane road widening is no longer proposed. Talford Lane access will be modified to an entry only access and an additional left-in/left-out driveway to North Street is proposed.

41 spaces are to be provided which is expected to accommodate the peak parking demands of the development. The supply is considered acceptable given the target market of the site, cross-utilisation of car parks, advice from potential operators of the facility and the operational characteristics of the site. The car park layouts, as a minimum, comply with Council requirements and Australian Standards.

The approved refuse vehicle collection arrangements and SRV loading arrangements will remain consistent with the approval. The ambulance bay will be relocated toward the northern side of the site and accessed via North Street.

The approved traffic impact analysis indicates that there is sufficient capacity on the adjacent road network to accommodate the approved development. With no significant changes in traffic directional flows and a reduction in GFA and subsequently traffic generation, further detailed traffic analysis is unwarranted and no further mitigating works are required.

Colliers is satisfied that the proposed development constitutes a minor change. If you have any queries relating to the information provided herein, please don't hesitate to contact the undersigned on (07) 3327 9500.

Yours sincerely,

Ron Leong
Project Consultant - Transport
Colliers International
Engineering & Design (TTMC) Pty Ltd

Reviewed by,

Will Somerville
Senior Associate Director | RPEQ 14833
Colliers International
Engineering & Design (TTMC) Pty Ltd

Attachment 1 – Development Plans

PROPOSED NEW MEDICAL CENTRE

67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

RealSpace creative

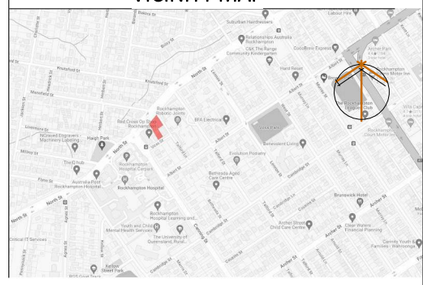
DRAWING INDEX

1 ARCHITECTURAL DRAWINGS

PROJECT DATA

DA APPROVAL:	
LOT:	12/7/4
RP DATA:	RP603082/R26335
SITE AREA:	
67 NORTH STREET:	771sqm
69 NORTH STREET:	683sqm
5 VOSS STREET:	607sqm
TOTAL GROSS SITE AREA:	2061sqm
GFA:	
SEMI BASEMENT:	-sqm
GROUND FLOOR:	1376qm
TOTAL:	1376sqm
SITE COVER:	74.48% (1535/2061)
CARPARKING:	41

VICINITY MAP



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Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediatley to RealSpace Creative for instructions.

Authorisation

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ABN 20 601 291 141
www.real-space.com.au

Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: @A1

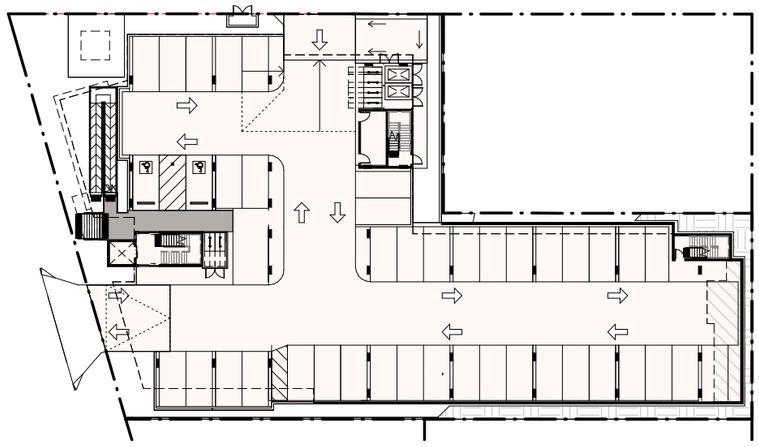
STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
COVER SHEET

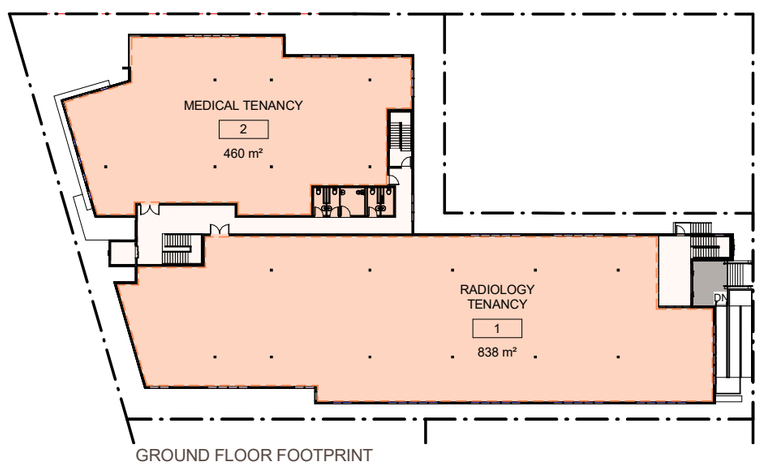
DRAWING NO: DA001
ISSUE NO: A
DRAWN: TJ

DEVELOPMENT SUMMARY

GFA CALCUATION



SEMI-BASEMENT FOOTPRINT



GROUND FLOOR FOOTPRINT

	GFA	ENTRY PORCH	GBA	NLA
SEMI-BASEMENT FOOTPRINT	-sqm	32sqm	1652sqm	-sqm
GROUND FLOOR FOOTPRINT	1376sqm	15sqm	1522sqm	1298sqm
TOTAL	1376sqm	47sqm	3174sqm	1298sqm

*__Gross Floor Area (GFA)__, for a building, means the total floor area of all storeys of the building, measured from the outside of the external walls and the centre of any common walls of the building, other than areas used for— (a) building services, plant or equipment; or (b) access between levels; or (c) a ground floor public lobby; or (d) a mall; or (e) parking, loading or maneuvering vehicles; or (f) unenclosed private balconies, whether roofed or not.

*__Gross Building Area (GBA)__. The total enclosed and unenclosed area of the building at all building floor levels measured between the normal. OUTSIDE face of any enclosing walls, balustrades and supports. Excluding external staircases and ramps.

0

Amendments Register

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Amendments Register

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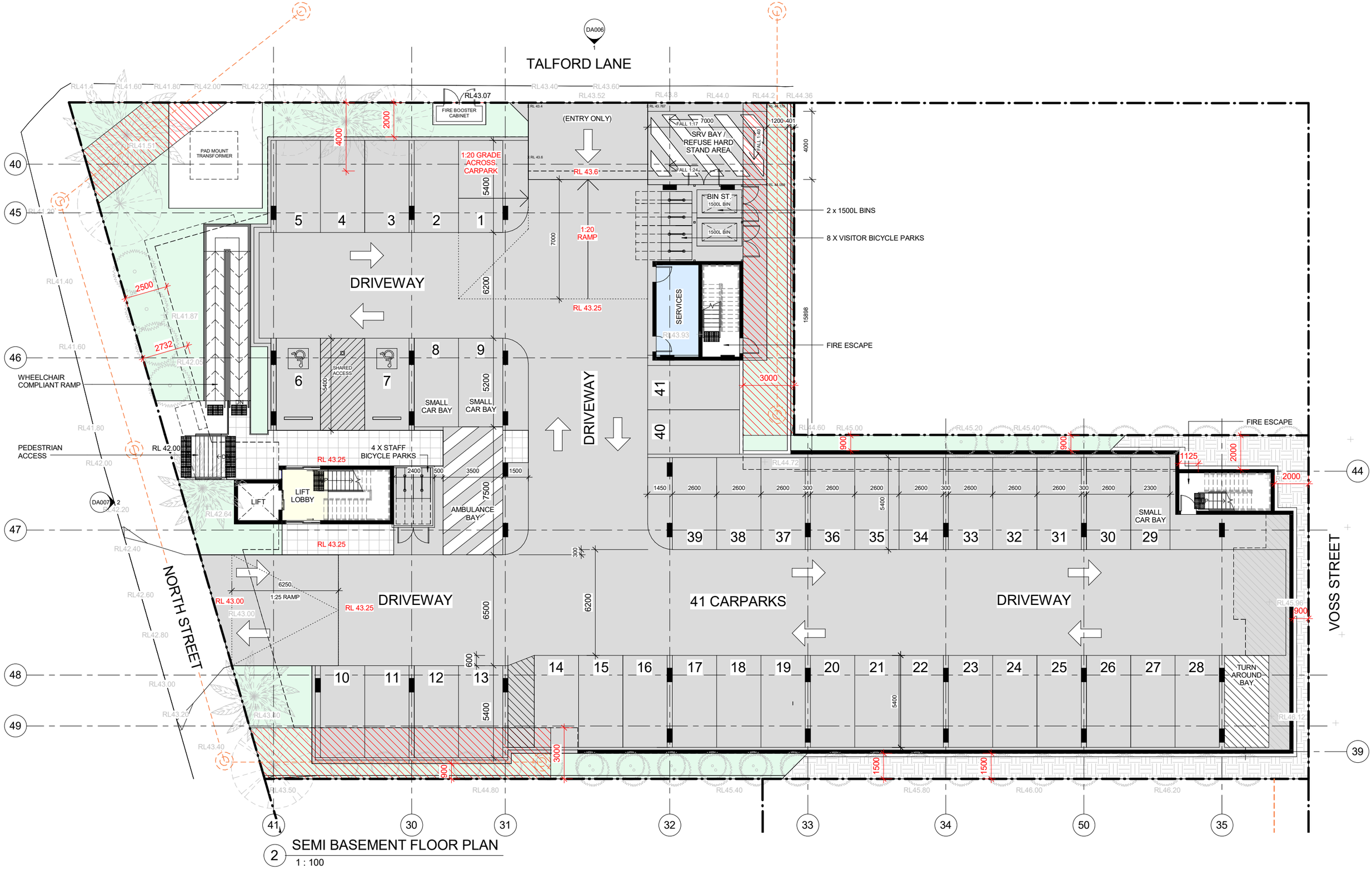
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: As indicated @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
GFA CALCULATION

DRAWING NO: DA001.2
ISSUE NO: A
DRAWN: TJ



2 SEMI BASEMENT FLOOR PLAN

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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CLIENT:
THE RADIOLOGY PARTNERS COMPANY

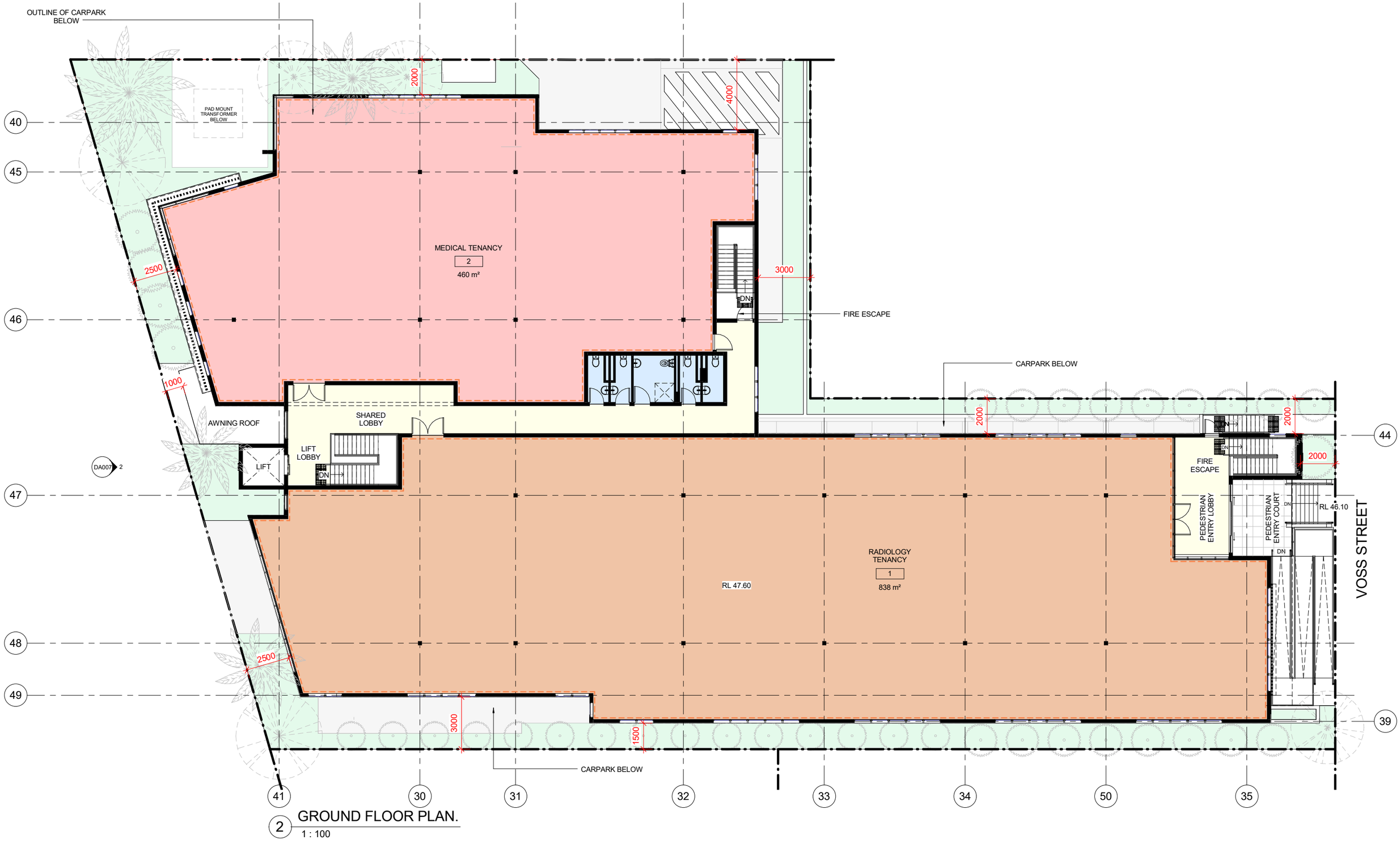
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
SEMI BASEMENT FLOOR PLAN

DRAWING NO: DA004.0
ISSUE NO: A
DRAWN: TJ



2 GROUND FLOOR PLAN.

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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Hooman Jaffar

CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

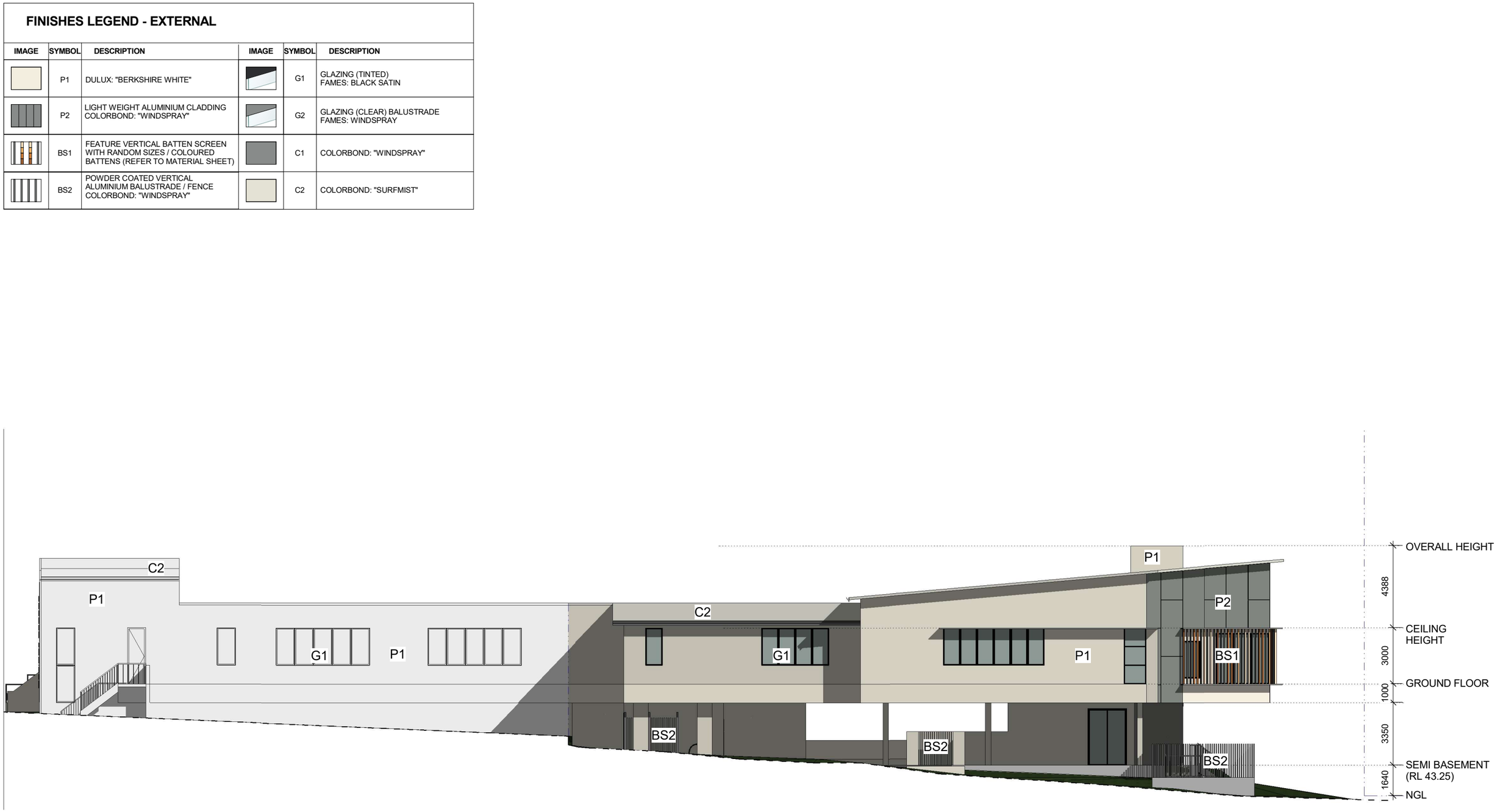
STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GROUND FLOOR PLAN

DRAWING NO: DA004.1 | ISSUE NO: A | DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"



1 NORTH EAST ELEVATION
1 : 100

0

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: As indicated @A1

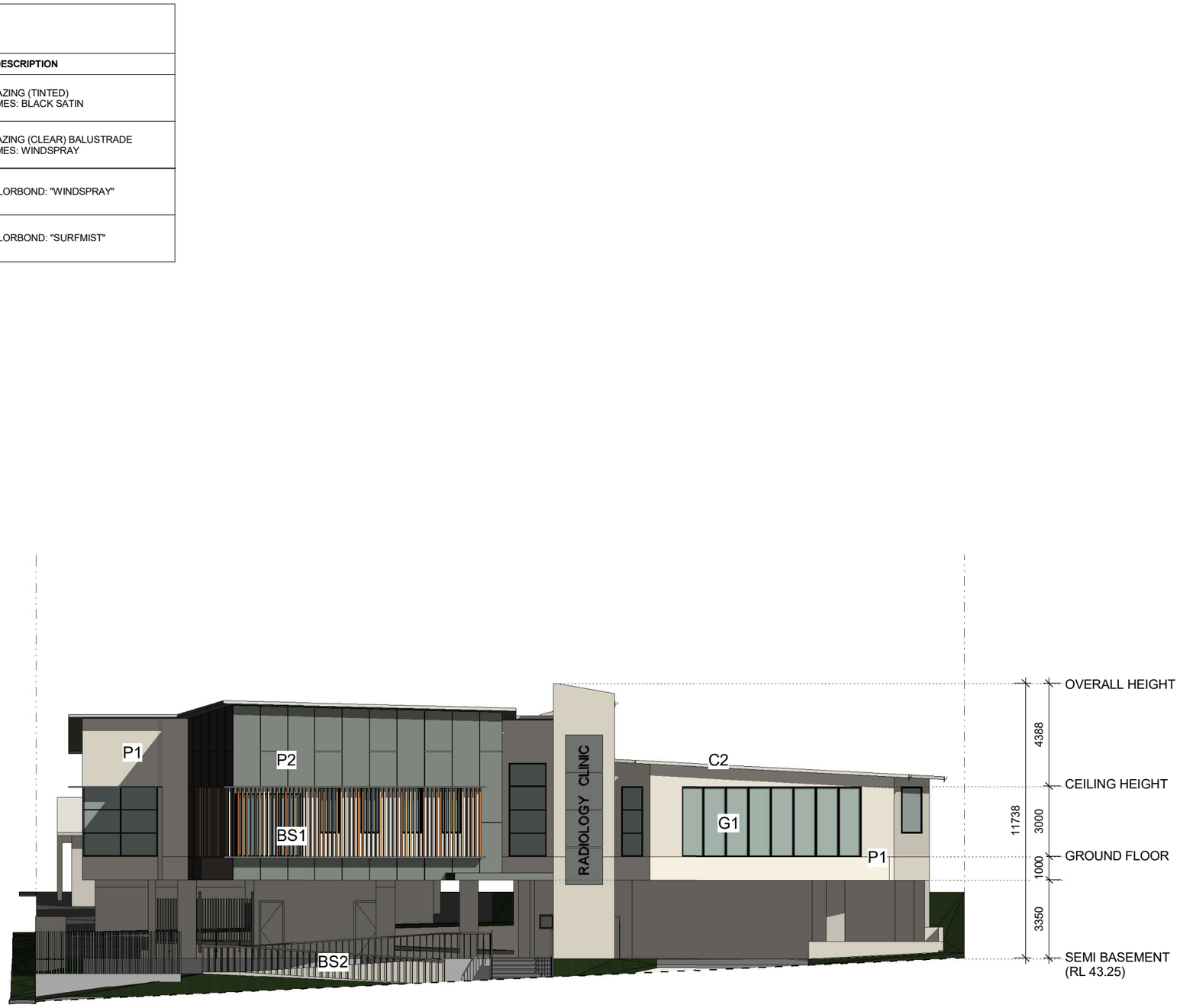
STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
ELEVATIONS

DRAWING NO: DA006
ISSUE NO: A
DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"



2 NORTH WEST ELEVATION.
1 : 100

0

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: As indicated @A1

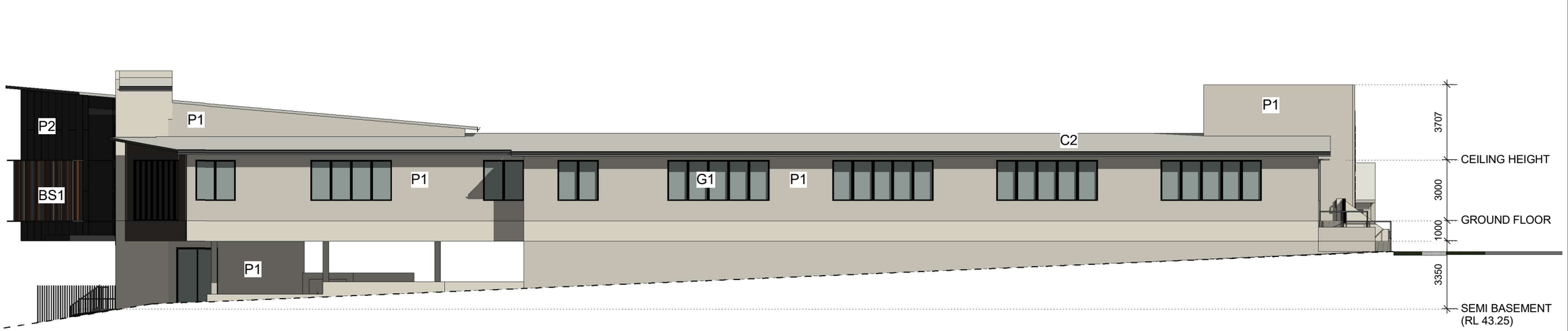
STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
ELEVATION

DRAWING NO: DA007
ISSUE NO: A
DRAWN: TJ

FINISHES LEGEND - EXTERNAL

IMAGE	SYMBOL	DESCRIPTION	IMAGE	SYMBOL	DESCRIPTION
	P1	DULUX: "BERKSHIRE WHITE"		G1	GLAZING (TINTED) FAMES: BLACK SATIN
	P2	LIGHT WEIGHT ALUMINIUM CLADDING COLORBOND: "WINDSPRAY"		G2	GLAZING (CLEAR) BALUSTRADE FAMES: WINDSPRAY
	BS1	FEATURE VERTICAL BATTEN SCREEN WITH RANDOM SIZES / COLOURED BATTENS (REFER TO MATERIAL SHEET)		C1	COLORBOND: "WINDSPRAY"
	BS2	POWDER COATED VERTICAL ALUMINIUM BALUSTRADE / FENCE COLORBOND: "WINDSPRAY"		C2	COLORBOND: "SURFMIST"



1 SOUTH WEST ELEVATION
1 : 100

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Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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CLIENT:
THE RADIOLOGY PARTNERS COMPANY

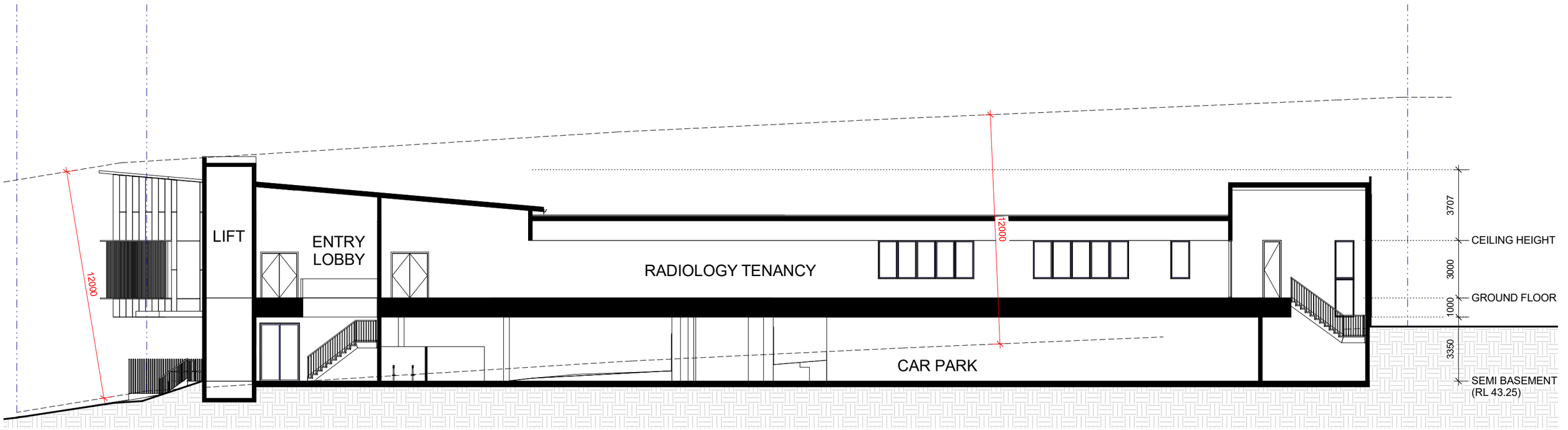
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: As indicated @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
ELEVATIONS

DRAWING NO: DA008
ISSUE NO: A
DRAWN: TJ



1 CROSS SECTION 1

1 : 100

0

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

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RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

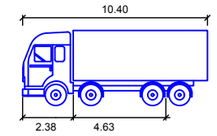
PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
CROSS SECTION

DRAWING NO: DA009
ISSUE NO: A
DRAWN: TJ

Attachment 2 – Colliers Drawings



Front load RCV

meters

Truck Width	: 2.50	Trailer Width	: WD2
Truck Track	: 2.50	Trailer Track	: TR2
Lock to Lock Time	: 6.0	Articulating Angle	: AA
Steering Angle	: 21.2		
Design Speed Forward	: 5.0km/h		
Clearance Envelope	: 0.500m		

PRELIMINARY ADVICE ONLY

10 April 2025

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	10-04-25	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

RADIAN PLANNING GROUP

Colliers International Engineering & Design (TTMC) Pty Ltd

ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003

T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT

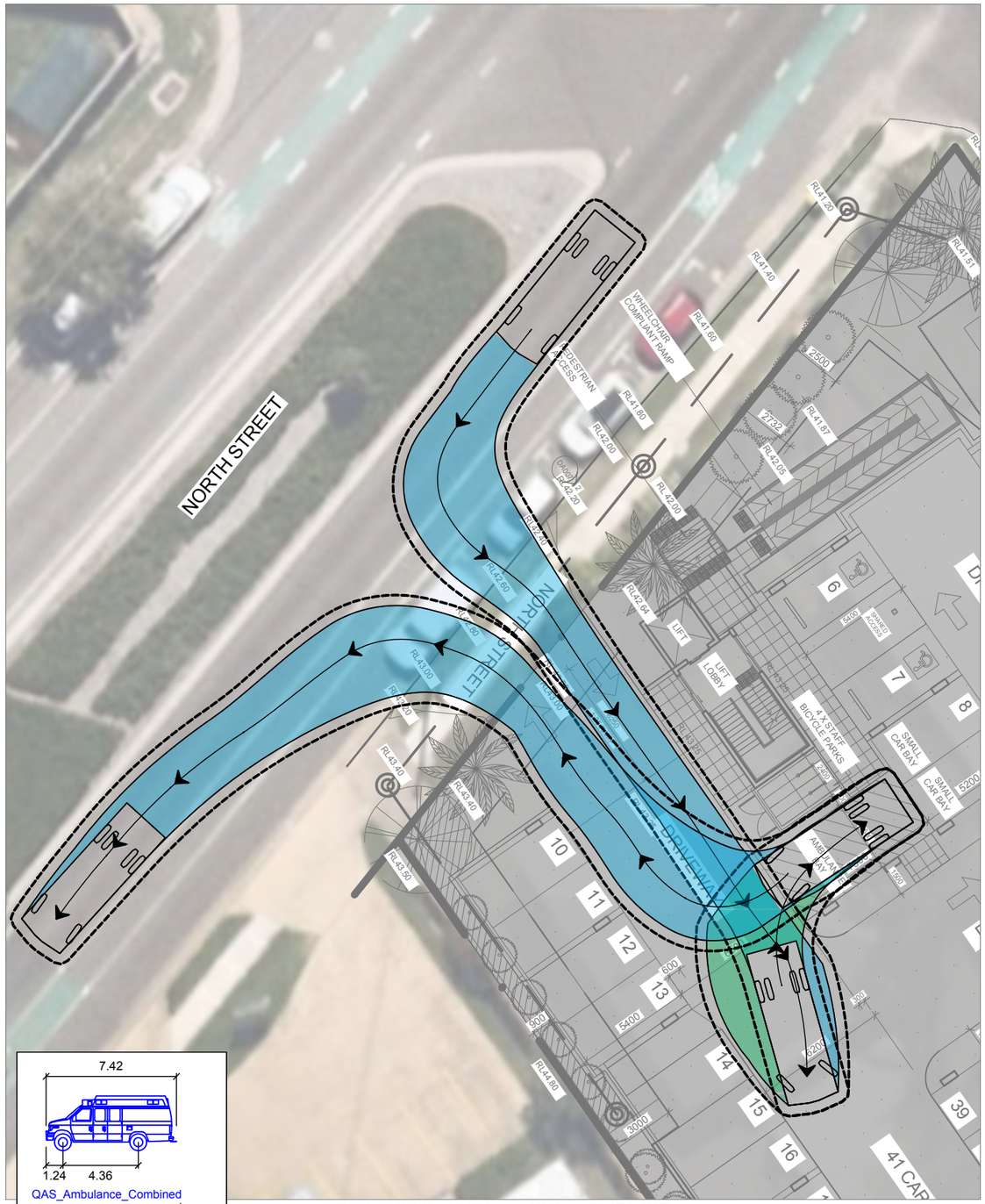
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE

SWEPT PATH ANALYSIS

DESIGN VEHICLE - 10.40m FRONT LOAD RCV

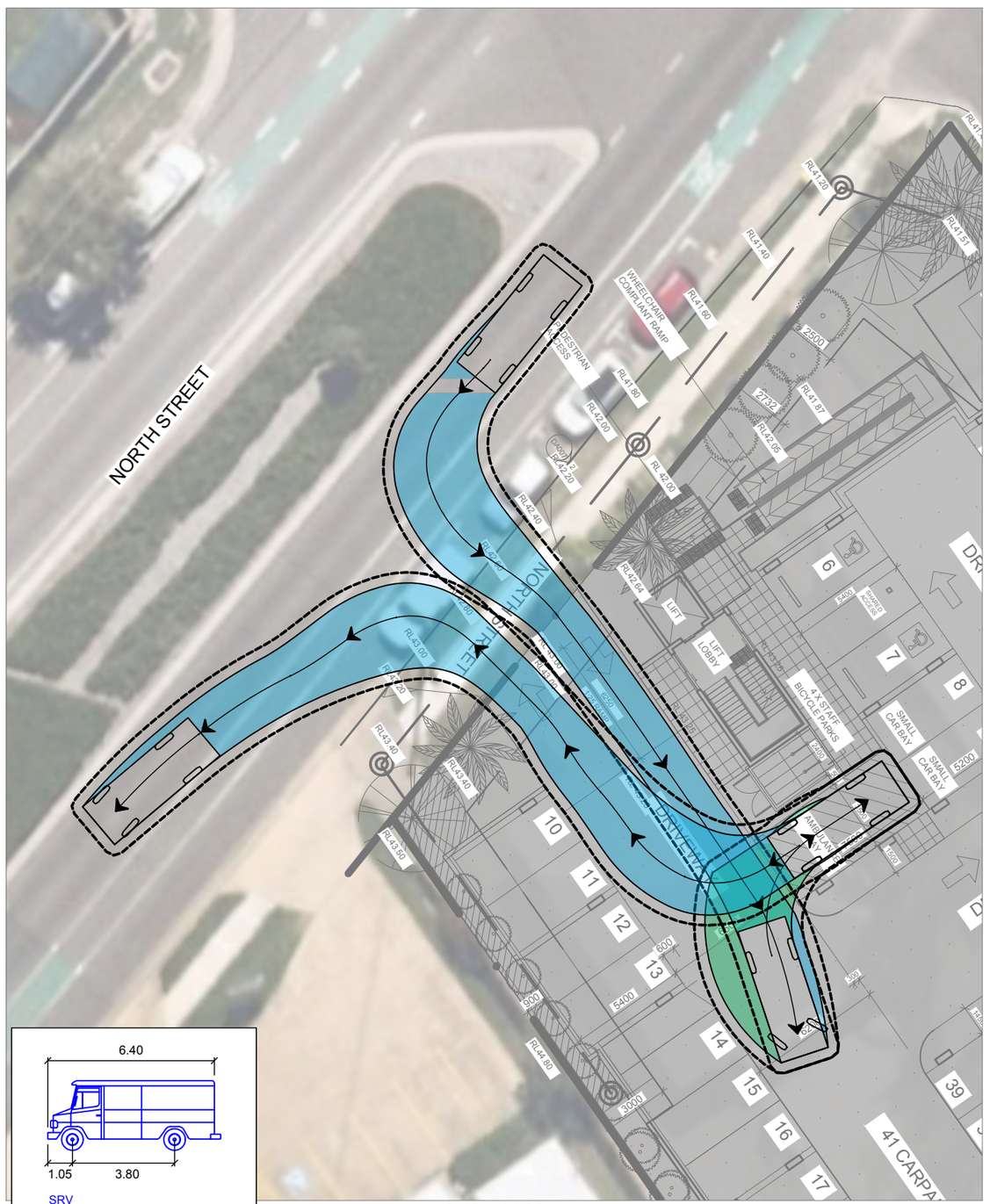
PROJECT NUMBER	23BRT0650
ORIGINAL SIZE	A3
DRAWING NUMBER	23BRT0650-08
REVISION	A
DATE	10 Apr 2025
SHEET	1 OF 1



QAS_Ambulance_Combined

	meters
Width	: 2.40
Track	: 2.40
Lock to Lock Time	: 6.0
Steering Angle	: 45.0
Design Speed Forward	: 5.0km/h
Clearance Envelope	: 0.500m

7.42m QAS_AMBULANCE_COMBINED



SRV

	meters
Width	: 2.30
Track	: 2.30
Lock to Lock Time	: 6.0
Steering Angle	: 38.1
Design Speed Forward	: 5.0km/h
Clearance Envelope	: 0.500m

6.40m SRV

PRELIMINARY ADVICE ONLY

10 April 2025

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	10-04-25	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

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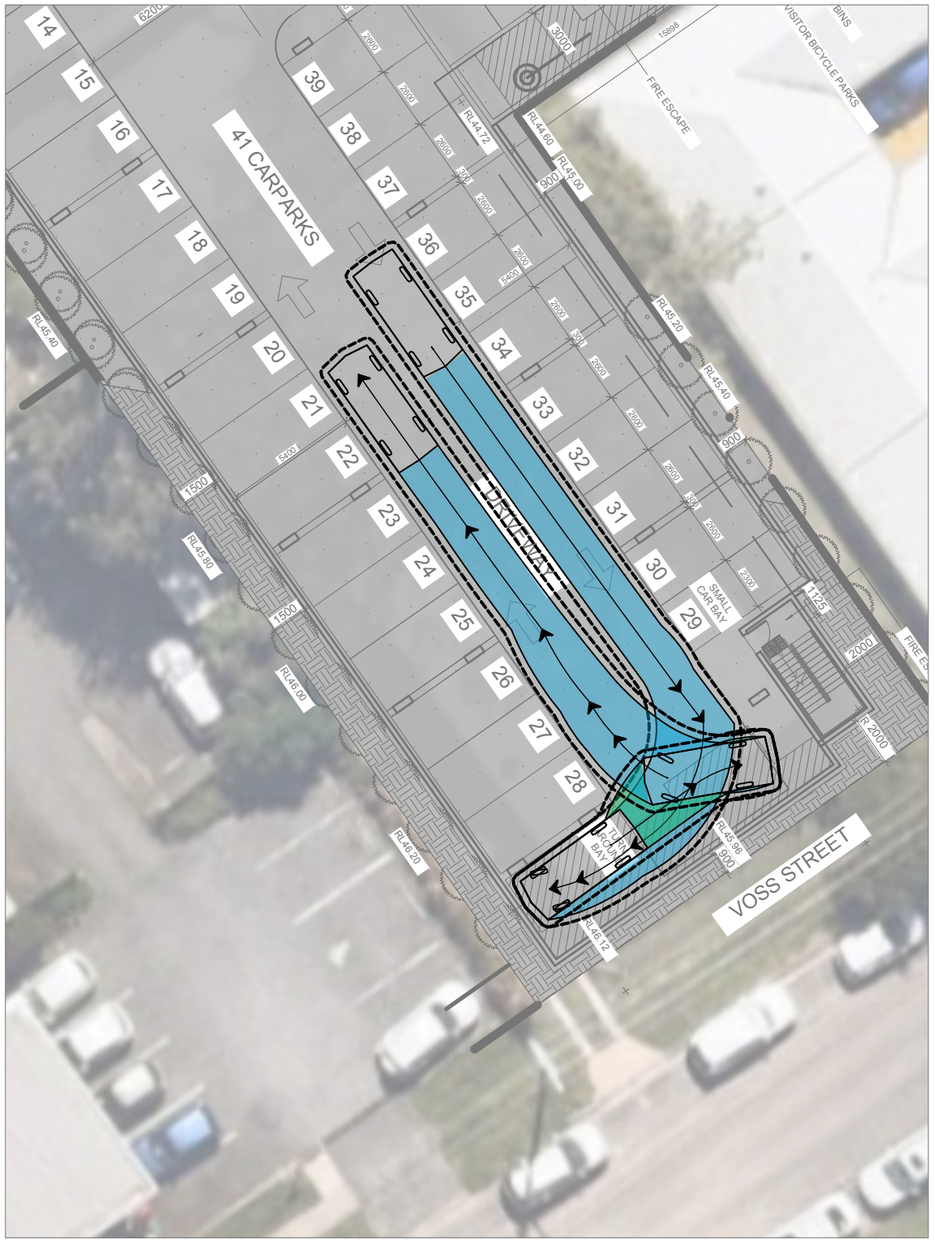
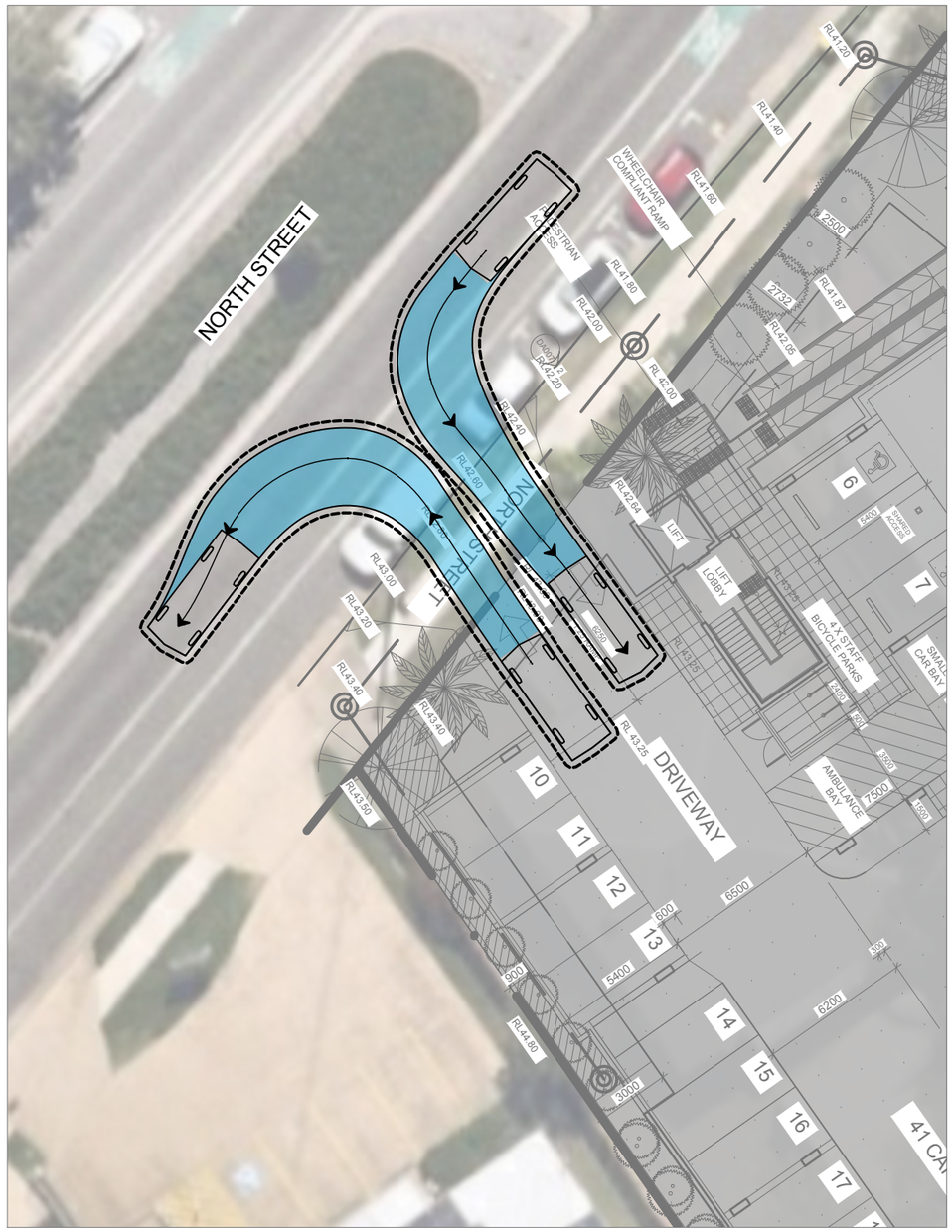
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

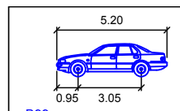
PROJECT
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE
SWEPT PATH ANALYSIS
DESIGN VEHICLE - 7.42m QAS_AMBULANCE & 6.40m SRV

PROJECT NUMBER	ORIGINAL SIZE
23BRT0650	A3
DRAWING NUMBER	REVISION
23BRT0650-09	A
DATE	SHEET
10 Apr 2025	1 OF 1







B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9
Design Speed Forward	: 5.0km/h
Clearance Envelope	: 0.300m

PRELIMINARY ADVICE ONLY

10 April 2025

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	10-04-25	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

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PROJECT

67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE

SWEPT PATH ANALYSIS

DESIGN VEHICLE - B99 VEHICLE

PROJECT NUMBER	ORIGINAL SIZE
23BRT0650	A3
DRAWING NUMBER	REVISION
23BRT0650-10	A
DATE	SHEET
10 Apr 2025	1 OF 1

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

Operational Waste Management Plan

Proposed Healthcare Development

At 67-69 North Street / 5 Voss Street, Rockhampton

On Behalf of The Radiology Partners Company

About TTM/CED

TTM is proud to announce we have joined Colliers. Our team across QLD, NSW and VIC scale their rapidly growing Australian Engineering & Design business and expand their service offering through our development and infrastructure related services.

We look forward to offering a full-service engineering & design capability to our clients and collaborating with Colliers' experts across all major property asset classes and markets, to provide integrated solutions at any point across project or asset life cycles.

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic, and waste services is fundamental to the success of any architectural or development project.

We have over 60 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (07) 3327 9500
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E: ttmbris@ttmgroup.com.au

Revision Record

No.	Author	Reviewed/Approved	Signed	Description	Date
1.	J. Stoward	M. Krisanski		DRAFT – OMWP	11/06/2024
2.	J. Stoward	N. Lee		FINAL – OWMP	25/06/2024
3.	J. Stoward	M. Krisanski		Update	10/04/2025

Contents

Table Index

Figure Index

Disclaimer

This report has been prepared by Colliers for the exclusive use of the client for the specific purpose stated within. The findings, conclusions, and recommendations presented in this report are based on the information available, assumptions made, and methodologies applied at the time of analysis.

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1 Introduction

1.1 Background

Colliers International Engineering and Design has been engaged by The Radiology Partners to prepare an Operational Waste Management Plan to support the proposed healthcare development located at 67-69 North Street / 5 Voss Street, The Range. This iteration of the OWMP has been updated based on amendments made to the architecturals and to support the minor change application being put forward.

1.2 Scope

The content of this OWMP is intended to provide information on the typical movement of waste streams from generation to collection. Information on refuse management is given for each use within the development. The items covered within the OWMP are described in Table 1-1.

Table 1-1: Scope Items

Item	Description
Refuse streams	Identification of refuse streams & anticipated development refuse volumes likely to be produced
Refuse separation	Recommendations for appropriate segregation methods for each refuse stream
Refuse collections	Assessment of refuse collection vehicle (RCV) access and manoeuvring
Refuse storage	Detailed analysis of refuse storage facilities and design
Refuse transfer	Assessment of refuse transfer between refuse storage and collections areas
Refuse disposal	Recommendations for refuse disposal within the development
Refuse management equipment	Identification of recommended and optional refuse management systems and equipment
Refuse management operations	Recommendations for operational efficiency and ongoing management, including refuse minimisation, tenant education and safety
Building design	Recommendations for design of refuse management facilities

Detailed information including site plans and drawings, recommended refuse management equipment and system specifications, common refuse signage as well as a list of terms and abbreviations are provided in the appendices.

The recommendations in this report relate to the operational phase of the development only. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan.

1.3 Site Analysis

The site is located at 67-69 North Street / 5 Voss Street, The Range and is formally described as Lot 1 on SP339247 as depicted in Figure 1-1. The site has three street frontages: North Street, Talford Lane and Voss Street with all vehicular access occurring via Talford Lane.

Figure 1-1: Site Location
Source: Nearmaps, image dated 06/11/2024

1.4 Current Site Use

The development site is currently occupied by both residential dwellings and an existing medical centre (refer Figure 1-2).

Figure 1-2: Current Site
Source: Google Maps, image dated January 2023

1.5 Development Information

The proposed development consists solely of medical tenancies. The relevant refuse generating areas are presented in Table 1-2.

Table 1-2: Development Statistics

Level	Description	Measure *
Semi-Basement	Carparking	41 Carparks
Ground Floor	Medical Tenancy	430 m^2
	Radiology Tenancy	791 m^2

2 Refuse Management

This section provides the detailed refuse information and associated calculations in addition to outlining the arrangements for the collection, storage, transfer, and disposal of refuse within the development as deemed to satisfy council's current assessment benchmarks. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1 Regulatory & Governance Considerations

2.1.1 Common Waste Streams

This plan has been prepared to align with RRC's refuse requirements of SC6.20 Waste Management Planning Scheme Policy. As this development is a healthcare site, Colliers have referred to RRC requirements as outlined in the Refuse PSP under sections SC6.20.1 through to SC6.20.9 as these sections are related directly to the relevant uses.

Table 2-1: RRC's Planning Scheme Compliance Checklist

Refuse Planning Scheme Policy		
Item	**Requirement**	**Compliance / Comment**
SC6.20.3 General Requirements		
1	Development must comply with the Environmental Protection (Waste Management) Regulations for storage and collection of solid wastes.	Compliant
2	Waste and recycling is collected by Rockhampton Regional Council from all properties with the exception of single titled complexes, office buildings and industrial buildings. Body corporate or building owners may contract out their waste and recycling collection, this may include Rockhampton Regional Council waste services.	Compliant
3	The collection of refuse is to be considered during the planning phase of a development or subdivision. Once the aesthetic and physical limitations of dedicated road kerbside collection are exhausted, the development may make allowance for on-site collection.	Compliant
4	Council will assess on a case-by-case basis whether a waste management plan will be required for a development application. This will depend on the complexity of the issues involved. Where a pre-lodgement meeting is arranged for a proposed development, Council can provide comment on this requirement at this meeting.	Provided
SC6.20.4 Waste and recycling collection services policy and procedure		
1	Office - Minimum facilities appropriate for the waste produced but not less than adequate space for two (2) by three (3) cubic metre commercial type waste and recycling bins.	See section 2.2
SC6.20.5 Storage Areas		
1	The waste and recycling bin storage area is to be aesthetically screened from any road frontage or adjoining property and to be setback two (2) metres from any road frontage or property boundary. The waste and recycling storage area is to be integrated into the building design wherever possible, permitting drive in and drive out access so as to ensure that the collection vehicle is able to enter and exit the site in a forward gear.	Compliant
2	The waste and recycling bin storage area must be surrounded by at least a 1.8-metre-high fence that obstructs from view the contents of the bin from a public place whether	Compliant

	from a nearby roadway or adjacent land. This area is kept in a clean odour free and tidy condition.	
3	Waste storage areas are not to be located directly adjacent to any dwelling units or to adjoining properties. Adequate clearance is to be provided around the waste and recycling storage bins to allow for manoeuvring and washing of the bins, and the storage area. Any run-off water from the cleaning process cannot run off property or be permitted to enter any stormwater drain. A trade waste permit will be required for any proposal to discharge to Council's sewerage reticulation.	Compliant
4	The waste storage area is to be constructed of impermeable, durable materials so that they can be easily cleaned.	Compliant
5	If a waste chute is to be provided, this is to be constructed to allow waste to fall into the centre of the bin and separate chutes are to be provided for general waste and recyclables. Separate bins are to be provided for each waste stream.	Not applicable
6	Both the customer and service provider can access the waste and recycling bin storage area and collection point conveniently.	Compliant
7	The location and design and operation of the waste and recycling bin storage area does not have adverse acoustic, odour or visual impacts on surrounding properties.	Compliant
SC6.20.6 Drained Wash Down Areas		
1	The requirement for a drained wash down area will be determined on a case-by-case basis, depending on the number of bins stored together, the size of the bins and the amount and type of waste and recycling generated. However, in general three (3) or more domestic general waste bins housed together will require a drained wash down area.	Compliant
2	For any drained wash down area to accommodate waste and recycling containers, a suitable hosecock (with backflow prevention) and hoses are to be provided at the waste and recycling bin area and wash down is to be drained to sewer and fitted with an approved stormwater diversion valve arrangement in accordance with a Plumbing and Drainage Permit and Sewerage Trade Waste Permit. Alternatively, a commercial bin cleaning service is acceptable, provided no wastewater is discharged from the site to sewer. All works are to be in accordance with the Plumbing and Drainage Act 2018, Water Supply (Safety and Reliability) Act 2008 and Council's Trade Waste Management Plan.	Compliant
SC6.20.7 Access & Manoeuvrability		
1	Access for refuse collection vehicles to the designated collection areas must be maintained at all times. Access to the waste storage area must be available at all times and the collection vehicles must be able to enter and exit the site in a forward gear. Turnaround facilities for a refuse collection vehicle are to be provided for no through roads and staged subdivision developments.	Compliant
2	Council will assess the accessibility of the site having regard to the number of units/apartments proposed and the safe and acceptable collection of the waste and recycling. It is noted that for a complex where greater than ten (10) units/apartments are proposed, kerbside collection of waste bins is not preferred, and on-site collection is recommended. In addition, the waste and/or recycling collection vehicle must be able to enter and exit the site in a forward gear. Council acknowledges that compliance with both these requirements is not reasonable in all instances, and this will be assessed on a case-by-case basis.	Compliant
3	All entry and exit gates are to be of a width and design that allows for sufficient ingress and egress for the waste and recycling collection vehicle. This will require a six (6) metre wide crossover. Any development application with a proposed crossover less than six (6) metres is to include written confirmation from a proposed waste collection contractor and or Council's waste collection service, giving full details of the proposed system,	Not applicable

	including the bin sizes, number of bins and the frequency of collection and the collection vehicle size.	
4	The minimum vertical clearance required for movement of a waste and recycling collection vehicle in a residential development is 4.5 metres (side lift or rear lift) and 6.5 metres for bulk bin collection front lift. Any development application proposed with vertical clearances less than those identified above, is to include written confirmation from a proposed waste collection contractor giving full details on the type of collection vehicle proposed, bin sizes, number of bins, and the frequency of collection.	Front-lift on street proposed
5	For proposed mobile garbage bins the distance to wheel them must not exceed fifty (50) metres, or for a residential care facility or retirement facility the distance must not exceed twenty-five (25) metres. The mobile bins travel path must be free of steps or other obstructions and have a maximum grade of one (1) in fifteen (15).	Compliant
SC6.20.8 Collection Points		
1	The collection point for residential 240 litre waste and recyclable bins is to be located either on the dedicated road frontage of the site (if less than ten (10) units/apartments), or where appropriate within the site if the waste and recycling collection vehicle can access the site.	Front-lift on street proposed
2	The requirements for waste and recycling bins for non-residential development will be assessed on a case-by-case basis and will be based on the type and amount of waste and recycling generated by the development, which will depend on the operational activities of the development.	Compliant
SC6.20.9 Specialised Waste (Medical/Chemical)		
1	Medical waste including chemicals and sharps etcetera must be stored and disposed of in accordance with the Environmental Protection (Waste Management) Regulations. Licensed waste containers and approved contractors only are permitted for the collection and disposal of specialised waste.	Compliant – see section below

Table 2-2: RRC's Waste Management Code Compliance Checklist

9.3.7.3.1 Specific Benchmarks for Assessment			
Item	**Performance Outcomes**	**Acceptable Outcomes**	**Compliance / Comment**
Design of Waste Storage Areas			
PO1 / AO1	For on-site waste collection, waste storage areas are located and designed so that: a) they are easily accessed and convenient to use, b) sufficient space is provided for safe entry and exit and servicing by service vehicles without the need for manual handling, c) sufficient height clearance is provided for the safe operation of both front and side bin lifting operations, d) they are clear of car parking bays, loading bays and similar areas; and e) they are clear of footpaths and pedestrian access.	Waste storage areas are designed and maintained in accordance with SC6.20 — Waste management planning scheme policy.	Compliant with PO1.
Kerbside Waste Servicing			
PO2 / AO2	Kerbside collection of waste containers ensures the safety and amenity of road and footpath users.	Waste bins are located on the footpath so that: bins are located one (1) metre apart from other bins and obstructions:	Front-lift on street collection has

		a) all bins are accommodated within the street frontage of the site, b) a clear pedestrian access way two (2) metres wide is retained; and c) bins are capable of being serviced by the collection vehicle travelling forward, without having to reverse the vehicle.	been proposed and designed for.
PO3 / AO3	Waste storage minimises adverse impacts on adjoining properties.	Waste storage areas are: a) integrated with the building design; or b) set back a minimum of two (2) metres from any boundary; and c) screened from neighbouring properties and the street by a fence of 1.8 metres minimum height; and d) not located directly adjoining dwelling units on the site and on neighbouring properties. Waste bins are fitted with lids.	Compliant
PO4 / AO4	Waste storage areas: a) have a level area on impermeable, durable materials so that they are easily cleaned; and b) have adequate clearance between and around waste storage bins to allow for manoeuvring and washing of bins.	No acceptable outcome is nominated.	Compliant
Water Management			
PO5 / AO5	Waste storage areas are designed to separate stormwater and wash-down water.	Wash-down water drains to either the reticulated sewerage system or an on-site sewerage facility if not in a sewer area. Wash-down areas are: a) provided with a tap and water supply; and b) provided with a stormwater diversion valve and arrestor trap.	Compliant

2.1.2 Medical Waste Streams

Table 2-3 illustrates the clinical waste management components outlined in this Operational Waste Management Plan (OWMP) to adhere to Queensland's Clinical and Related Waste Guidelines. These guidelines are derived from the *Australian Standard AS 3816:2018 – Management of Clinical and Related Wastes*, which serves as the primary regulatory framework governing clinical and related wastes. For additional details, it is advisable to consult this standard.

Colliers have amended the medical waste management protocols for this site by recommending, for further security, that the extremely low volume of medical waste is stored in the respective tenancies and the collections contract directly collect from. This is due to the significant reduction in medical GFA.

Table 2-3: Clinical and Related Waste Regulation Compliance Queensland

Guideline Section	Details	Section #	Compliance
Part 3: Segregation of Waste	A person who operates premises at which clinical or related waste is generated must ensure the waste is segregated into: a) The following categories of clinical waste; a. Animal waste, b. Discarded sharps, c. Human tissue waste, d. Laboratory and associated waste directly resulting from the processing of specimens. b) The following categories of related waste: a. Chemical Waste, b. Waste constituted by, or contaminated with, cytotoxic drugs, c. Human body parts, d. Pharmaceutical waste, e. Radioactive waste c) General waste.	Section 2	Complies – all information provided and aligning
Part 4: Storage	Clinical and related waste must be: • bagged and stored in rigid-walled, leak-proof secondary containers, preferably in a bunded area with an impervious surface (e.g., concrete) • stored in bags and containers with the appropriate colours and labels, • kept so as not to cause environmental nuisance (e.g., by refrigerating potentially odorous materials), • kept in an area not accessible to unauthorised people or animals. Clinical or related waste must be packaged, labelled, handled, and transported appropriately to minimise the potential for contact with the waste and reduce the risk to the environment from accidental releases. Schedule 7A of the WRR Regulation contains requirements (known as the design rules) for waste containers and waste transport vehicles. Mobile waste containers employed in the development must be coloured, marked and designated in accordance with Australian Standard 4123.7.		Complies – all information provided and aligning
Part 5: Transportation	A summary of the recommendations for on-site movement of clinical waste include: • move waste in rigid-walled, leak-proof, puncture resistant containers, • avoid moving waste in plastic bags, • do not use waste disposal chutes, • minimise exposure to waste (e.g., avoid moving waste during visiting hours and mealtimes, or through public areas), • avoid overfilling containers.		Complies – all information provided and aligning

2.2 Prescribed Refuse Volumes

The generation rates and service frequency used for the calculation of non-residential refuse produced have been applied based on rates prescribed by Rockhampton Regional Council to achieve compliance. It should be noted that these rates are standardised generation rates and not site specific however, give an estimation on the maximum potential waste generation. A maximum non-residential collection frequency of 3 days per week has been established to mitigate a balance between odour and noise concerns.

2.2.1 Refuse Generation Rates

Refer to Table 2-4 for the accepted refuse generation rates for each of the commonly separated refuse streams. Rockhampton Regional Council does not have established waste generation rates for any non-residential tenancies and thus Colliers have employed Brisbane City Council[1] rates to estimate waste volumes.

Table 2-4: Common Refuse Generation Rates

Generation Rate	Applied To	Measure	General Waste	Combined Recycling	Days of Operation
Office	All Areas	L / 100m^2 / Day	10	20	7

The medical waste generation is expected to be negligible in comparison to the previous development application and thus, as noted above, no longer requires its own medical waste room in the semi-basement level. As noted earlier, it is proposed that the collections contractor collect directly from the medical tenancy and swap the bins full for empty.

Colliers have ensured that the relevant legislation has been adhered to as noted in section 2.1 - clinical and related waste guidelines from Department of Environment and Science as well as the Waste Reduction and Recycling Regulation of 2023.

[1] These can be found here: https://cityplan.brisbane.qld.gov.au/eplan/rules/0/269/0/10350/0/234

2.2.2 Common Refuse Volume Calculations

Refer to Table 2-5 for the accepted common refuse volume calculations.

Table 2-5: Non-Residential Refuse Calculations

Area Description	Measure	Quantity	General Waste L/Week	Commingle Recycling L/Week	Secure Destruction L/Week
Radiology	NLA (m^2)	791	301	421	181
Medical Tenancy	NLA (m^2)	430	554	775	332
Total Weekly Volumes (L / Week)			**855**	**1,197**	**513**
Volumes per Day (L / Day)			**122**	**171**	**73**
Volumes per Collection (L / Collection)			**855**	**1,197**	**513**
Collection and Equipment Details	Collections per Week		0.5	0.5	0.5
	Storage Capacity		7 Days	7 Days	7 Days
	Equipment Size		1,500L	1,500L	240
	Equipment Quantity Required		0.57	0.80	2.14
	Equipment Quantity Provided		1	1	2

2.3 Equipment Requirements & Specifications

Table 2-6 outlines the number of bins and additional equipment required for each component based on the generation calculations above. As refuse volumes may vary from assessment benchmarks, bin numbers and sizes may need to be altered to suit the building operation. The tables depict the maximum number of bins and equipment expected.

Table 2-6: Bin Requirements

Component	Refuse Stream	Bin / Equipment Type/Size	Bin / Equipment Number	Collection Frequency
Common Waste Streams	General Waste	1,500 L	1	Fortnightly
	Commingled Recycling	1,500 L	1	Fortnightly
	Secure Paper	240 L Bins	1	Fortnightly
Medical Waste Streams	Clinical	240 L Bins	2	As required
	Sharps	S22 – 14.5 L	2	As required
	Pharmaceutical	120 L Bin	1	As required
Misc Waste Streams	e-Waste	Area	1 m^2	As required
	Hard Waste	Area	4 m^2	As required

2.4 Refuse Disposal

The tables in this section summarise general recommended disposal arrangements for frequently generated and infrequently generated refuse for each development component. Section 2.4.1 describes the frequently generated refuse streams that are generated by healthcare facilities.

Section 2.4.2 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily managed by collection frequency and ad hoc storage arrangements.

2.4.1 Refuse from Healthcare Operations

Details about refuse disposal and transfer are listed in the table blow.

Table 2-7: Healthcare Waste Disposal

Refuse Stream	Disposal Details
WASTE	
General Waste	**Disposal and Transfer** There will be receptacles within the health care facility for collection and storage of at least one day of general waste. Bins should be placed according to the operational requirements of the facility. There should be bins in back-of-house / staff areas, in patient rooms, examination / treatment rooms as well as in the public access areas. Waste bins should be accompanied by a recycling bin (commingled recycling or bins for cardboard, paper, plastics, glass etc.) in order to facilitate separation of general waste and recycling. Waste bins should always be lined with bags and the bags tied before removal. **Transfer** Bins are typically collected by staff / cleaners in the course of their normal duties and the bagged and tied waste decanted into larger bins or bags connected to cleaners' trolleys. The waste material is then transferred at the end of the shift with other items.
RECYCLING	
Commercial Comingled, including: • Glass, • Aluminium, • steel cans, • tins, • paper, • small cardboard, • semi rigid plastics.	**Disposal** There will be receptacles within health care facility for collection and storage of at least one day of recycling. Recycling bins are typically placed next to the general waste bins. Recycling bins will usually be used for all recycling materials (comingled recycling). However, cardboard, paper, plastics, glass etc. can be collection separately if large quantities are produced. **Transfer** Bins are typically collected by staff / cleaners in the course of their normal duties and decanted in loose form into larger bins or bags connected to cleaners' trolleys. The comingled recycling material is then transferred at the end of the shift with other items. Items for recycling must not be bagged and disposed in loose form.

Refuse Stream	Disposal Details
Medical Waste Streams	
Clinical & Sharps Waste	**Disposal** Clinical waste generated from medical facilities should be segregated into designated bins labelled accordingly. All bins must be securely sealed and labelled. These bins should be placed in collocated disposal/dirty utility rooms or at accessible points throughout the ward. Sharps containers of appropriate sizes should be placed in treatment rooms. **Transfer** At the end of each day or when full, trained staff equipped with appropriate personal protective equipment (PPE) should transfer clinical waste to a central storage area. Waste should be carefully placed transported following safety protocols to avoid spills or contamination. **Storage** Clinical waste should be stored in a secure, well-ventilated, and designated storage area away from public access. The area must comply with regulatory standards and be easily accessible for waste collection services. **Collection and Disposal** Scheduled waste collection services or licensed contractors should handle the final disposal of clinical waste. Disposal methods must adhere to local regulations and guidelines for the safe and environmentally friendly elimination of clinical waste.
Pharmaceutical Waste	**Classification** Pharmaceutical waste includes expired, unused, or contaminated medications, vaccines, and chemicals. Segregate these waste items based on their characteristics into appropriate categories like non-hazardous, hazardous, or controlled substances. **Disposal** Expired or unwanted medications should be returned to manufacturers or designated collection programs whenever possible. For non-returnable pharmaceutical waste, segregation into specific containers labelled with their contents is essential. Follow disposal guidelines provided by regulatory bodies for different categories of pharmaceutical waste. **Transfer** Trained personnel wearing appropriate PPE should transfer pharmaceutical waste to designated storage areas. Avoid mixing different types of pharmaceutical waste during transfer to prevent reactions or contamination. **Storage** Store pharmaceutical waste in clearly labelled, secure containers in a well-ventilated and designated area. Keep records of stored waste types and quantities and ensure the storage area complies with safety standards. **Collection and Disposal** Contract licensed waste management services specialising in pharmaceutical waste disposal. Ensure compliance with local regulations for the safe and environmentally friendly disposal of pharmaceutical waste, including incineration or other approved methods.

2.4.2 Infrequently Generated Waste

Table 2-8: Disposal of Infrequently Generated Refuse

Refuse Stream	Disposal Details
Garden Organics refuse / Green Waste	Garden organic refuse also referred to as green waste will be produced from landscaped areas or potted plants around this development. Green waste is produced largely on a weather or seasonal dependent basis and based on plant selections. Green waste is usually removed by the designated maintenance contractor. Interim storage is not provided. The engaged contractor will be required to send this material to a composting or resource recovery facility rather than to a landfill.
Hard Waste / Bulky Goods	Bulk bins will be provided for bulky waste disposal or make other coordinated collection arrangements where items are unsuitable for bulk bin disposal or where significant volumes are generated such as during tenancy refits.
Hazardous Waste (paints, batteries, and cartridges) **Electronic Waste**	Where applicable, occupants usually make their own arrangements for the disposal of specialised or hazardous waste and electronic waste such as recycling of toner cartridges and batteries. Please refer to RRC and QLD government websites for disposal options. Batteries are highly volatile and must be disposed of separately and never in the general waste or commingled recycling bins. Colliers recommend a communal disposal point is provided by site management and located in the main lobby. It is expected that the building management assist with disposal of hazardous, electronic, or liquid waste and any paint or chemicals as required and requested. Hazardous waste must be handled with due care, separated, and securely stored for collection by a specialist waste contractor. Please refer to local RRC and QLD government websites for further information.

2.5 Refuse Storage & Access Requirements

All refuse will be disposed and stored within bins housed within dedicated refuse storage areas. Separate storage is provided for medical and non-medical waste streams.

2.5.1 Common Refuse Room Design Requirements

Table 2-9 outlines the common refuse storage area design criteria addressed in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

Table 2-9: Common Refuse Storage Area Design Requirements

Positioning Considerations
Positioned in immediate proximity of the designated loading point
Is in a purpose-built storage area which is vermin proofed and used solely for the storage of refuse leaving the site or specifically designed for service vehicle use only.
Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
Is positioned away from entrances to shops or residential premises
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Visual Amenity Considerations
Is enclosed on all sides except for the access points to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
Is designed to minimise their visual impact on the surrounding areas.
Functional Design Considerations
Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area
Doors / shutters wide enough to allow for the easy removal of the largest container to be stored.
Permits unobstructed access for removal of the containers to the service point.
The height of the bin storage area allows for waste bins to be opened and closed.
Does not have any steps or lips.
Adequate artificial lighting.
Be fire rated and ventilated in accordance with the National Construction Code – Building Code of Australia.
Bin Washing and Room Cleaning Considerations
A hose cock provided inside the room for cleaning bins and the enclosures.
The walls, ceilings, floors, and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
The floors to be graded to fall to a drainage point.
Drainage points connected to sewer in accordance with trade waste requirements.
Roofed and designed to prevent entry by rainwater.

2.5.2 Medical Refuse Room Design Requirements

Table 2-10 outlines the medical refuse storage area design criteria required for compliance with the *Australian Standard AS 3816:2018 – Management of Clinical and Related Wastes* and *Queensland's Clinical and Related Waste Guidelines*. It is important to note that Table 2-10 does not capture all requirements and for additional details, it is advisable to consult the relevant standards and guidelines as AS3816 cannot be reproduced in this report.

As noted earlier, the medical tenancy will store the medical/clinical waste in house and will be responsible for adhering to the state guidelines.

Table 2-10: Medical Refuse Storage Area Design Requirements

Queensland's Clinical & Related Waste Guidelines
Clinical and related waste must be: • bagged and stored in rigid-walled, leak-proof secondary containers, preferably in a bunded area with an impervious surface (e.g., concrete), • stored in bags and containers with the appropriate colours and labels, • kept so as not to cause environmental nuisance (e.g., by refrigerating potentially odorous materials), • kept in an area not accessible to unauthorised people or animals.
Clinical or related waste must be packaged, labelled, handled, and transported appropriately to minimise the potential for contact with the waste and reduce the risk to the environment from accidental releases. Schedule 7A of the WRR Regulation contains requirements (known as the design rules) for waste containers and waste transport vehicles.
Mobile waste containers employed in the development must be coloured, marked, and designated in accordance with Australian Standard 4123.7.

2.5.3 Refuse Room Configuration

Figure 2-1 shows a potential configuration for the refuse storage areas. The configuration and size of each enclosure is provided to ensure the majority of bins are either directly accessible for disposal or can be easily rotated.

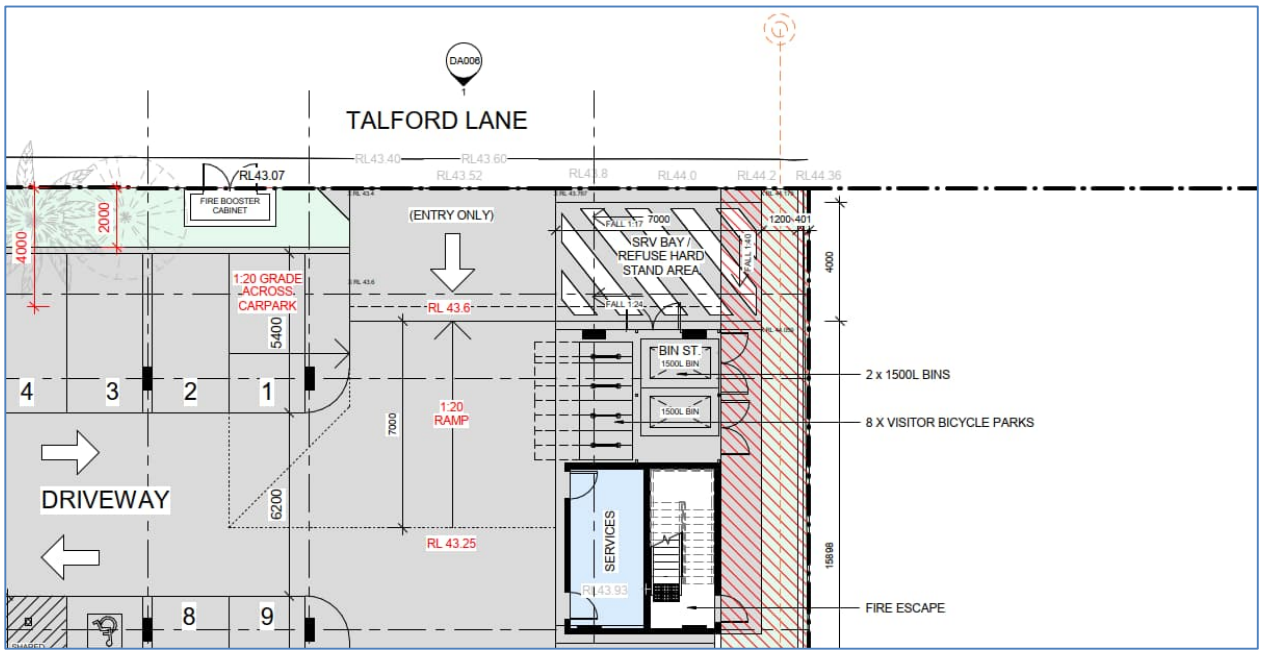


Figure 2-1: Potential Refuse Storage Area Configuration

Source: RealSpace Creative, Project: 67-69 North Street / 5 Voss Street, Rockhampton, Drawings: Semi-Basement Floor Plan, Drawing Number: DA004, Dated: 09/04/2025

2.6 Refuse Transfer

Refuse will be immediately disposed into receptacles or bins and stored in designated areas on each level. Placement of these areas will align with the operation of the healthcare facility. The general waste and recycling will be decanted into the front-lift bins stored in the bin room.

All clinical waste bins will be removed by the clinical waste contractor for emptying and cleaning and replaced with clean ones (full for empty exchange). They will be divided into clinical waste, sharps and pharmaceutical waste. Non-clinical waste bins will be cleaned on-site after emptying. These bins will be stored securely in their respective tenancies.

Refuse Transfer Path Design Elements
The bins to be transferred via hard stand pathway.
Allows bins to be easily manoeuvred.
Does not impede traffic flow.
Does not extend through any habitable parts of a building or food premise
Does not have any lips, stairs, or steps for bins to be manoeuvred easily.

2.7 RCV & Bin Servicing Arrangements

General waste and recycling will be collected directly from the bin storage room directly adjacent the RCV loading area. Once the bins have been serviced, they will be returned to the bin storage room where building management staff will clean the bins as required and per business-as-usual operation.

The type of vehicles allocated, and demand will be subject to final design and potential selection of volume reduction equipment. The collection days and frequency form a part of the contract between building management and council's contractor and is agreed to, based on both the building and contractors' business requirements.

As noted earlier, the medical refuse will be collected directly from the tenancy and swapped full for empty by the collections contractor.

Figure 2-2 provides a snapshot of the swept paths. Further details on vehicle access and on-site manoeuvring can be found in the traffic report. Full swept paths are provided in Appendix B.

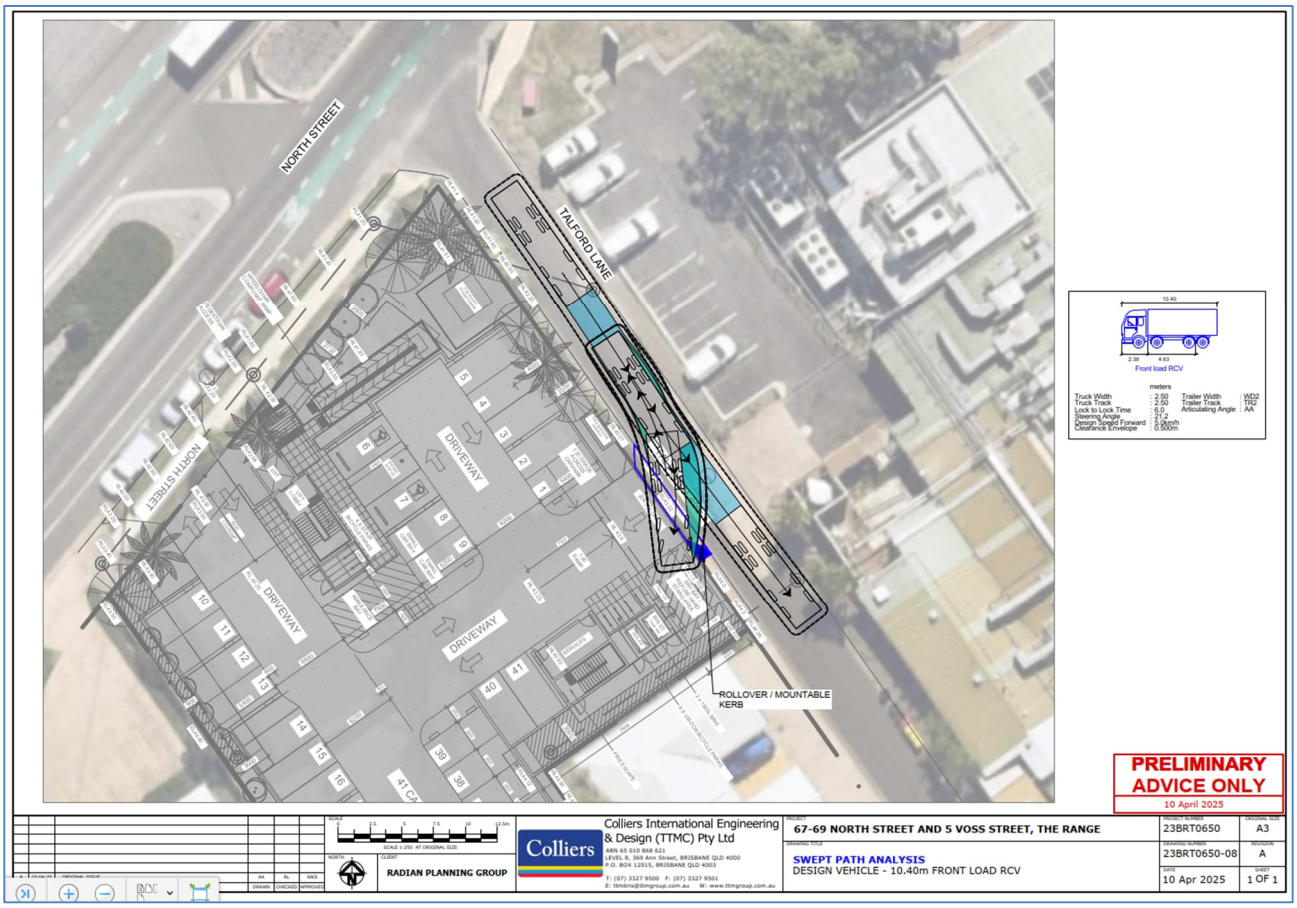


Figure 2-2: RCV Swept Path

3 Operational Waste Recommendations

This section does not contain information relevant for regulatory assessment.

This section relates to the outcomes and waste management practices of the development during the operational phase as recommended by Colliers. It is intended for use as a live document by the end user of the development to assist with the ongoing management of the development.

3.1 On-going Management

The tables below relate to a cycle of ongoing implementation, operation, review, and amendment of the refuse strategy. These tables are intended to serve as a live document to be completed and updated during the operational phase of the development and therefore intentionally left blank.

Responsibilities have to be assigned for all on-going refuse management related activities during the operation of the development. Colliers recommend the appointment of dedicated personnel to champion refuse management and sustainability. The following lists (Table 3-1 to Table 3-3) are designed to help manage and assign responsibilities and monitor the refuse operations. On-going management of the refuse strategy will maintain efficient services, a safe environment and improve on sustainability outcomes.

3.1.1 Implementation Phase

Refuse management tasks during the implementation of the refuse strategy are required prior to and during the early stages of building occupancy. An opportunity to revisit these tasks is provided at set intervals with the review of the refuse strategy.

Table 3-1: Implementation Checklist

Task	Assigned	Remarks
Certify the as-built form of all refuse related areas. This task does not refer to building certification but is typically undertaken by a specialist waste consultant prior to building certification. This offers an opportunity to identify variances in building form versus design and recommend alternate or mitigating refuse management strategies. This task may also be needed during building refits and change of use in tenancies.		
Appoint personnel to oversee or undertake refuse management tasks. A facilities or dock manager is typically appointed undertakes most operational tasks, engaging contractors for specialist tasks.		
Conduct internal safety review. An internal safety review is required to be undertaken to identify potential hazards in the implementation of the refuse strategy and risk mitigation opportunities. This includes the use of any refuse management equipment installed, as well as refuse transfer paths		
Development of policy and procedures Must be undertaken after safety review and abide by all relevant occupational health and safety legislation, regulations, and guidelines to ensure site safety for visitors, staff, and contractors. Also includes assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		

Task	Assigned	Remarks
Engage refuse collection contractors. Either Council's appointed collections contractor or a private contractor (for non-residential developments) must conduct a site visit for the purposes of risk assessing the site prior to conducting services. Contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete and procedural documentation is provided to the appropriate personnel. RCV manoeuvrability testing and the establishment of service frequency and timing is also undertaken at this time.		
Install signage in all refuse disposal and storage points. Signage is required to be installed to educate building occupants on location of disposal and refuse storage points. Additionally, to identify the accepted items disposed of in each refuse. The installed signage should be colour coded in accordance with AS 4123.7 – 2006 Mobile waste containers. Examples of signage are provided in the appendices.		
Leasing / Body Corporate Agreements All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment. This should also extend to on charging of costs and concessions for waste reduction and recycling performance.		
Education and Training. Provision of equipment manuals, induction, training, health and safety procedures, risk assessments and personal protective equipment (PPE) to all staff / contractors associated with all waste management activities in order to control hazards. The step is repeated through the operational phase of the development as required due to changes is users or personnel.		
Consider fit out and move-in refuse. Higher volumes of waste are generated during the initial occupant move-in or final fit out. This typically includes large volumes of cardboard. Additional bins or collections may be required. This also applies to high turnover events and refits.		
Baseline Refuse Auditing A baseline audit once the development reaches 80% occupancy undertaken by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage based on initial waste practices and set recycling rate targets.		

3.1.2 Occupation/Operational Phase

Refuse management tasks during the occupation or operational phase of the development relate to the day to day and business as usual operational tasks that must be undertaken to execute the refuse strategy.

Table 3-2: Occupation/Operation Checklist

Task	Assigned	Remarks
Facilitate disposal from communal areas, public realm, and tenancies. Appointed staff are required to transfer refuse generated in communal areas and the public realm to the refuse storage area for final disposal, this includes litter removal. Best practice operations in non-residential development include having dedicated cleaning staff to handle all waste generated within tenancies, rather than tenancy staff. This results in maximum recovery of available streams.		
Manage rotations of bins to ensure convenient access. Check bin fill levels and rotate / swap bins as required. Sufficient capacity must be provided for the disposal of all streams at all times including reduced personnel on site (such as weekends or public holidays). Where equal access to a refuse stream is not maintained, other streams may be contaminated leading lost resources.		
Manage bin transfers to temporary holding or agreed servicing point. Bins are required to be presented to the temporary holding or agreed servicing point prior to the scheduled service time and ensure the area is free from obstruction. Late bin placement or servicing obstruction may lead to missed bin services.		
General cleaning. Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for visitors, staff, and contractors. General cleaning is required for all refuse holding and transfer areas including: • Refuse bins, rooms, and storage areas, • Refuse transfer areas including lifts and staircases, • Any other refuse management equipment.		
Perform spot checks on bin contents and refuse streams. Appointed staff regularly check for compliance and stream contamination. Early intervention prevents the development of poor practice and lost resources. Feedback and education are provided to the relevant parties (see below).		
Ongoing education and communication. On-going education is important to ensure people continue to use the facilities as originally intended and to avoid ongoing contamination of recoverable refuse streams. Appointed personnel should be actively involved in education of occupants and encouraging participation in recycling activities. Widespread communication of the achievements of the refuse strategy and areas for improvement encourage participant buy-in.		

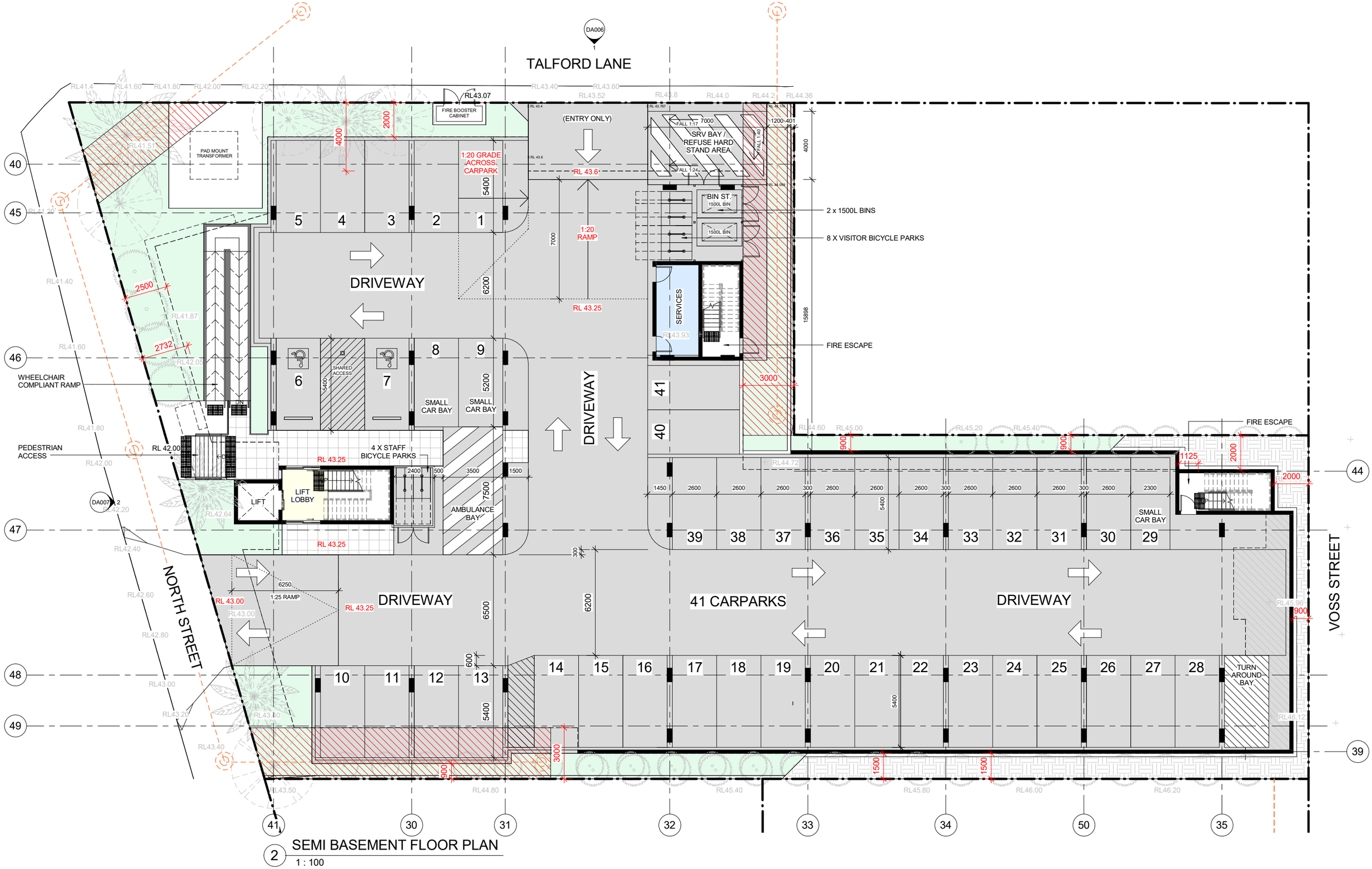
3.1.3 Review/Amendment Phase

The review and amendment refuse management tasks relate to tasks undertaken on a routine (e.g. quarterly, bi-annually, or annually) or ad-hoc basis. At the completion of the review and amendment phase, the cycle restarts with the implementation of the amended refuse strategy.

Table 3-3: Review and Amendment Phase

Task	Assigned	Remarks
Coordination of specialised cleaning contractors as required. Typical specialised cleaning services may include cleaning internal areas of compaction equipment (if selected); this reduces risk of blockage, odour, and risk of fire.		
Maintenance and servicing of refuse management equipment as per schedule. Frequency depends on equipment, building operation and manufacturer specification. Routine maintenance reduces downtime and detrimental impact of unscheduled equipment breakdown.		
Coordination of specialised equipment contractors as required. May extend to ad hoc services requiring specialist equipment such as bulky / hard waste removal.		
Internal safety review. Routine safety reviews are required to identify changes to the site, work practices or legislation that may impact existing policies and procedures. Reviews should include visual inspection of equipment and user PPE. Any policy or procedure updates arising from a safety review must be immediately communicated.		
Audit operational refuse volumes and composition. As similarly undertaken at the beginning of occupancy a review by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage and identify opportunities for improvement in refuse strategy. Alternatively, an internal audit may be undertaken by visual inspection during on-site waste management handling activities. For example, cleaners may observe contents of waste receptacles when decanting caddies in larger bins and recording results, this method is less accurate than a comprehensive audit, however, give immediate indicative results and may be undertaken on an ongoing basis.		
Review bin quantities and refuse management equipment. Reviewing bin quantities and equipment is required ensure operational sustainability of refuse volumes and equipment remains fit for purpose. Consideration should be given where alternate equipment may provide improved outcomes. This review may form part of the external audit process (above) as recommendations made.		

Appendix A Site Plans



2 SEMI BASEMENT FLOOR PLAN

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediatley to RealSpace Creative for instructions.

Authorisation

Reg No.

RealSpace Creative Pty. Ltd.
PO Box 5314
Q Super Centre QLD 4218

T 0418 728 962
ABN 20 601 291 141
www.real-space.com.au

Registered Architect No. 4136 (QLD)
Hooman Jaffar

CLIENT:
THE RADIOLOGY PARTNERS COMPANY

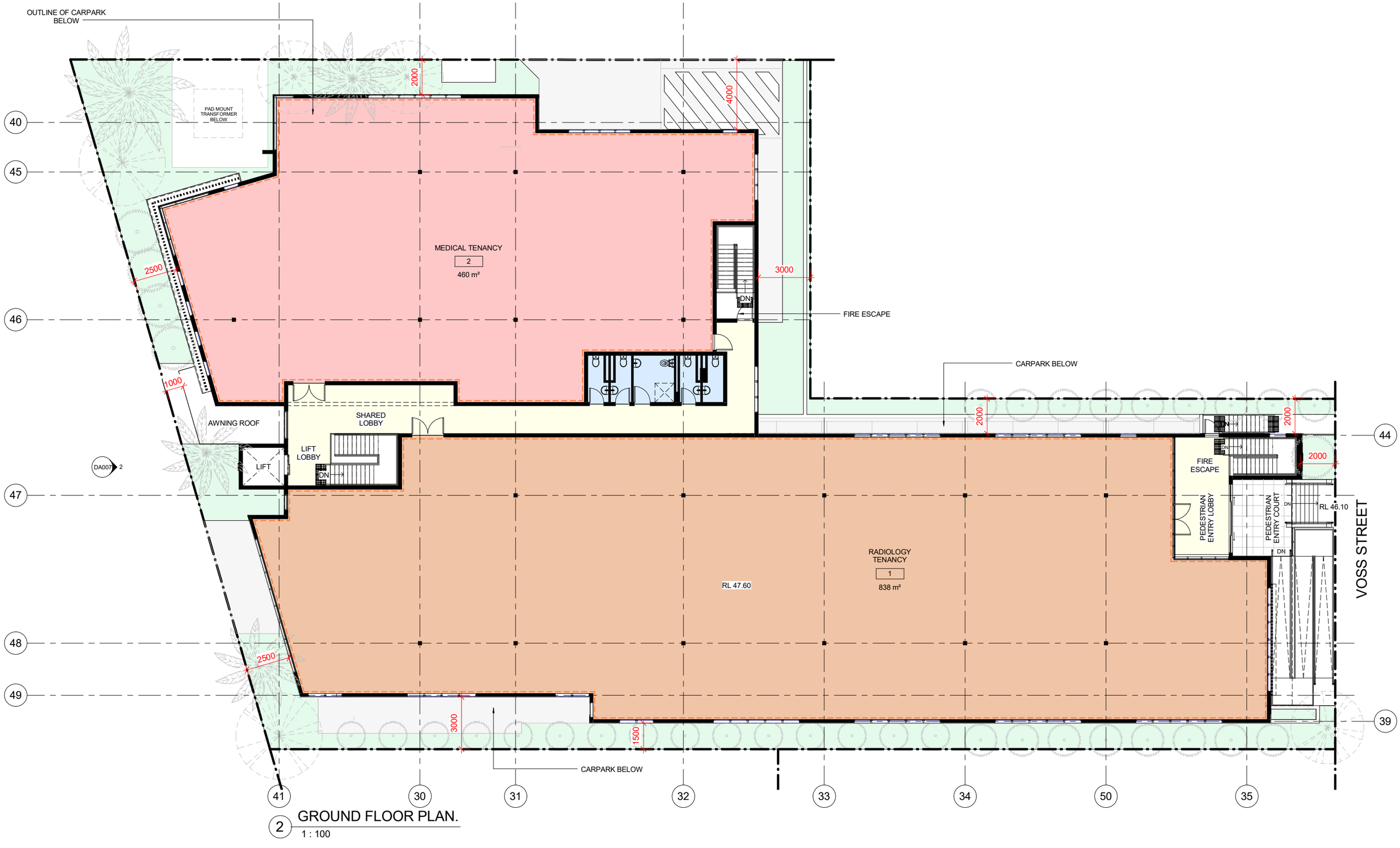
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
SEMI BASEMENT FLOOR PLAN

DRAWING NO: DA004.0
ISSUE NO: A
DRAWN: TJ



2 GROUND FLOOR PLAN.

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediatley to RealSpace Creative for instructions.

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Hooman Jaffar

CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

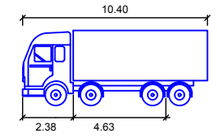
PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GROUND FLOOR PLAN

DRAWING NO: DA004.1 | ISSUE NO: A | DRAWN: TJ

Appendix B Swept Path Analysis



Front load RCV

meters

Truck Width	: 2.50	Trailer Width	: WD2
Truck Track	: 2.50	Trailer Track	: TR2
Lock to Lock Time	: 6.0	Articulating Angle	: AA
Steering Angle	: 21.2		
Design Speed Forward	: 5.0km/h		
Clearance Envelope	: 0.500m		

PRELIMINARY ADVICE ONLY

10 April 2025

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	10-04-25	ORIGINAL ISSUE	AA	RL	WKS

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

RADIAN PLANNING GROUP

Colliers International Engineering & Design (TTMC) Pty Ltd

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LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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PROJECT

67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

DRAWING TITLE

SWEPT PATH ANALYSIS

DESIGN VEHICLE - 10.40m FRONT LOAD RCV

PROJECT NUMBER	23BRT0650
ORIGINAL SIZE	A3
DRAWING NUMBER	23BRT0650-08
REVISION	A
DATE	10 Apr 2025
SHEET	1 OF 1

Appendix C Systems & Specifications

The table below provides contextual examples of the specific equipment types specified in this OWMP and is not intended to provide an exhaustive list of all potential options of the required equipment.

Bin Types	Waste Streams	Examples	Information
Residential unit bins	General waste and recycling	 	Various options and sizes. Built and standalone bin available. Examples: https://www.bunnings.com.au
Back of House and Communal area bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Tenant to supply depending on preference and space available. Example: 60L multisort bins https://www.sourceseparationsystems.com.au-/product/multisort
Refuse / Cleaners Trolleys	All Streams	 	Assisted manual transfer of refuse. Examples: https://rubbermaidcommercial.com.au/products/waste-management/mega-brute https://www.materialshandling.com.au/products/deluxe-compact-cleaning-carts
1100L bins	General waste, recycling, paper / cardboard	 	Dimensions approx. 1070 x 1240 x 1330mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au, https://www.australianwastemanagement.com.au
Clinical / sanitary bins	Clinical, medical, pharmaceutical hygiene and sanitary waste		Various options and sizes available, depending on type of clinical / sanitary waste and contractor. Examples: 500mL to 25L, 60L, 120L or 240L Examples: https://www.suez.com.au

Bin Types	Waste Streams	Examples	Information
			

Appendix D Refuse Signage

Refuse Signage

Waste signage guideline are provided by the Queensland government: https://www.qld.gov.au/environment/pollution/management/waste/recovery/recycling/signage.

General Refuse Signage

Other Refuse Signage

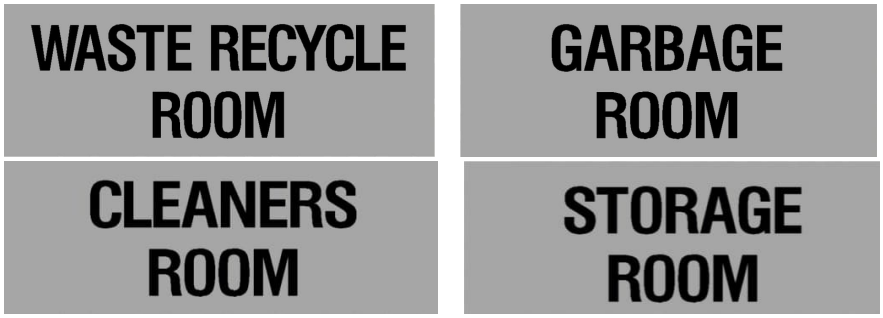
Colour coding as per AS 4123.7-2006

Mixed (Commingled) Recycling	*PMS 108*
General waste (landfill)	*PMS 032C*
Organics	*PMS 15-0343*
Paper and cardboard recycling	*PMS Process Blue C*
Soft Plastics	*PMS 1655*
Used Cooking Oil	*Grey*

Other Refuse, Facility and Safety Signage

Various signage including refuse area, safety and facility signage should be arranged through certified signage providers. Example signs can be found at http://www.signblitz.com.au, https://www.wayout.com.au or https://www.smartsign.com.

Example Refuse Room Signage



Example Facility Signage

Example Safety Signage

Appendix E Terms & Abbreviations

In this OWMP, a term or abbreviation has the following meaning unless indicated otherwise:

TERM	ABBREVIATION	DEFINITION
Equipment		
Bin (Refuse Bin)		A plastic or steel container for disposal and temporary storage of waste or recycling items. Various types and sizes exist for different items and purposes. Examples include residential unit bins, bulk bins, MGB, steely bins and specialised for medical waste or cigarette butts.
Bin Storage Area		An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin		A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.00m³ to 4.50m³ used for the storage of refuse that is used for on-site refuse collection.
Bulk Mobile Garbage Bin	Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 660L to 1100L used for the storage of refuse.
Collection Point		An identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area.
Compactor		A receptacle that provides for the mechanical compaction and temporary storage of refuse. It allows to reduce bin numbers and collection frequency.
Composter		A container or machine used for composting specific food scraps and/or organic materials.
Food Waste Recycling System		Defined as a vacuum or pump-based system for shredding, macerating, or pulping of food waste. The food waste is transferred through pressure (service) pipes to sealed liquid storage tanks.
Green Waste		All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste		Non-hazardous liquid waste generated by commercial premises should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bin	MGB	A plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste		Putrescible waste is the component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal, and organic products.
Recycling		Recycling contains all material suitable for re-manufacture or re-use, e.g. glass bottles and jars; plastics such as PET, HDPE, and PVC; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk, and shampoo containers; paper, cardboard, junk mail, newspapers, and magazines.
Refuse		Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste, and bulky items.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Tolley		A cart on wheels that can be used to collect smaller quantities of refuse from different areas or rooms of a building or site and wheel the collected refuse to a (bulk) bin storage area where it is disposed. Refuse trolleys are commonly used in hotels or offices.
Regulated Waste		Regulated waste is waste prescribed under legislation as regulated waste.

TERM	ABBREVIATION	DEFINITION
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.
Waste		Waste is referred to as refuse material with the exclusion of recycling, green waste, hazardous waste, special waste, liquid waste, and restricted solid waste.
Waste (General Waste)		General waste is generally referred to as material free of any actual or apparent contamination such as pathological / infectious, radioactive materials and / or hazardous chemical. Reporting use is for material considered to be free of food waste.
Wheelie Bin		A MGB of up to 360L, usually with 2 wheels for easy transfer. A common type is a 240L wheelie bin used for kerbside collection in many residential areas.
Measures		
Cubic Metre	m^3	Volume in cubic metre(s) related to refuse management equipment.
Ground Floor Area	GFA	The GFA of all storeys of a building is measured from the outside of the external walls or the centre of a common wall. It is commonly measured in square metres.
Kilogram	kg	Kilogram(s) related to refuse weight.
Litre	L	Litre(s) related to refuse volumes.
Square Metre	m^2	Square metre(s) related to refuse areas.
Ton	T	Ton(s) related to refuse weight.
Collection Vehicles		
Body Truck		A conventional heavy vehicle with a covered loading area. It is generally not specifically designed for emptying the content of bins into the truck during refuse collections but can be used to carry entire (full) bins for servicing by bin swap-over.
Refuse Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Refuse Collection Vehicle	REL RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins, from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Tank Truck		An RCV that is specifically designed to collect liquid wastes such as waste cooking oil and food waste pulp. The waste is typically pumped from a waste storage tank into the truck via a hose. Liquid waste management equipment is often provided by the contractor who collects the waste and operates the truck.

PINNACLE
ENGINEERING GROUP

ENGINEERING SERVICES REPORT

PROPOSED COMMERCIAL DEVELOPMENT
67-69 North Street and 5 Voss Street, The Range QLD

RADIOLOGY PARTNERS PTY LTD

APRIL 2025
REVISION 03

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
23 May 2025
DATE
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: **D/80-2024**
Dated: **1 November 2024**

Pinnacle Engineering Group
ABN: 80 608 431 625
P.O. Box 517 Paradise Point QLD 4216

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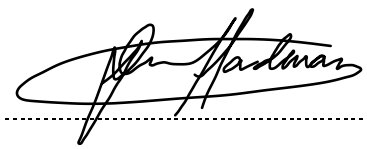
In accordance with the requirements of the *Queensland Professional Engineers Act 2002*, this document was prepared under the supervision of, reviewed and approved by the following experienced Registered Professional Engineer of Queensland (RPEQ).



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Document control

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02	24-June-2024	A. Cresswell	J. Hardman	24-June-2024	Issued for approval
03	04-April-2025	A. Cresswell	J. Hardman	04-April-2025	Revised layout - Issued for approval

Distribution of copies

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Document version:	REV 03
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Table of Contents

Appendices

List of Tables

List of Figures

1 Introduction

Pinnacle Engineering Group (Pinnacle) was engaged by Radiology Partners Pty Ltd to undertake the preliminary engineering investigations to provide supporting documentation for the proposed development application for a medical centre development located at 67-69 North Street and 5 Voss Street, The Range QLD within the local authority of the Rockhampton Regional Council (RRC).

The current revision of this report (revision 04) has been amended in support of a revised development layout, to support a 'minor change' application to the existing development approval D/80-2024 dated 1st November 2024. Generally speaking, the proposed change is a reduction in overall size of the medial centre, reducing from approximately 1,988m^2 GFA over four levels, to 1,383m^2 over 2 levels.

1.1 Scope of Investigation

This report covers the following civil engineering elements associated with the proposed development including:

- Water Supply;
- Sewerage Reticulation;
- Stormwater Drainage;
- Bulk Earthworks; and
- Gas, Electrical and Telecommunications.

1.2 Site Description

1.2.1 Site Details and Location

Street Address	-	67-69 North Street and 5 Voss Street, The Range QLD 4700
RP Description	-	Lot 7 and Lot 12 on RP603082 and Lot 4 on R26335
Site Area	-	0.2068 Hectares
Current Zoning	-	Community Facilities
Proposed Use	-	Medical Centre
Local Authority	-	RRC

Refer to Figure 1.1 for site location.

1.2.2 Existing Site Conditions and Topography

A review of the topographic survey has revealed that the subject site generally grades from the southern property boundary to the northern boundary. The subject site is currently occupied by three detached dwellings, which are supplemented by vegetation and landscaping typical of a residential site. Furthermore, there is a small concrete and hardstand area towards the eastern boundary of the site.

Currently, the highest elevation of approximately RL46.30m AHD is reached at the southwest corner of the subject site while the lowest elevation of approximately RL41.20m AHD is reached along the northeast corner of the subject site.

The topographic survey is included in Appendix B. Refer to Figure 1.2 for the existing aerial view of the subject site.

1.2.3 **Proposed Development**

The proposed development will deliver a medical centre over two storeys, with on-grade car parking on ground level. Access to the proposed medical centre and carparking will be facilitated via a new heavy-duty vehicle cross-over from Talford Lane and to the east of the site, as well as a new heavy-duty vehicle cross-over from North Street to the north of the subject site.

Architectural drawings of the proposed development are included within in Appendix A.

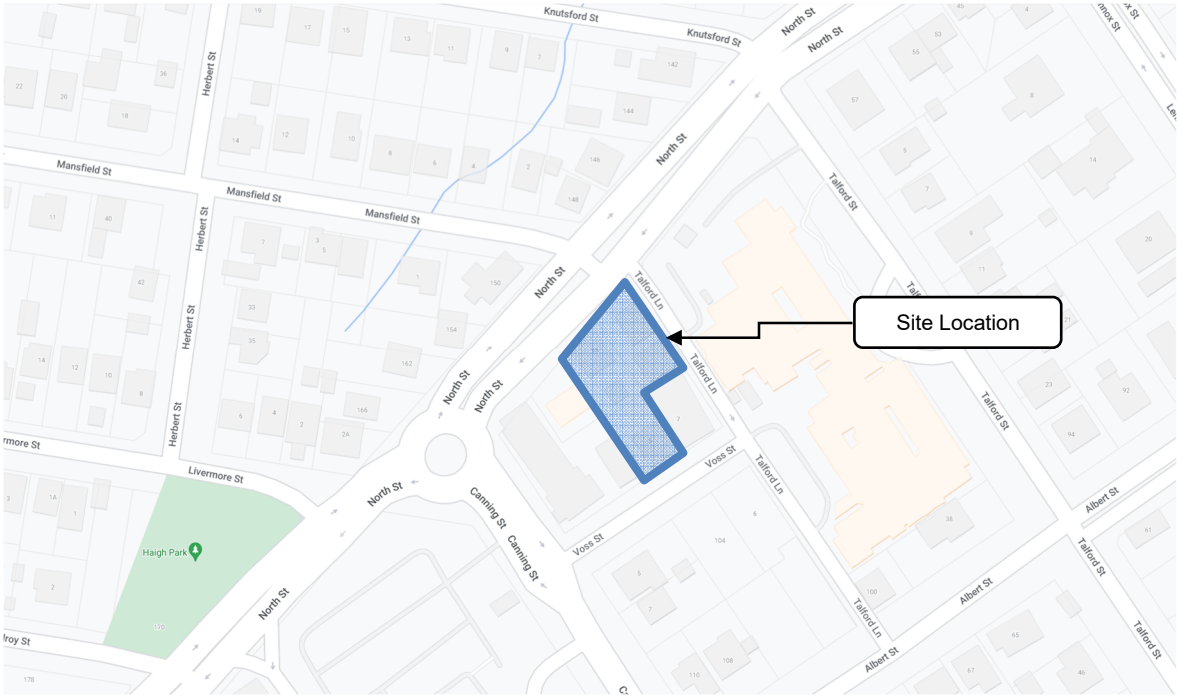


Figure 1.1: Map View (Source: Google Maps)

Figure 1.2: Aerial View (Source: www.nearmap.com.au)

2 Water Reticulation

2.1 Existing Infrastructure

A review of the topographic survey and Council's online interactive mapping has confirmed the location of existing 150mm and 100mm diameter modified polyvinyl chloride (M-PVC) water mains within the North Street and Voss Street road reserves to the north and south of the subject site respectively.

The topographic survey is included within Appendix B.

2.2 Development Water Reticulation Demand

The proposed development's water reticulation demands on the existing potable water infrastructure were determined using the methods described in the Capricorn Municipal Development Guidelines: D11 – Water Supply Network Design Guidelines. These demands were used to determine the consumption rates for the proposed development. Potable water demand factors and flow parameters were sourced from Table D11.07.1, to determine the potable water consumption rates for the proposed development, and are published below in Table 2.1.

Table 2.1: Water Demand Factors and Consumption Rates

Design Parameter	Potable Water Factors and Consumption Rates
Development Type	Local Commercial (Medical Centre)
Demand Conversion Rate	75 EP/Gross Ha
Gross Area	0.2102 Ha
EP	15.77
Average Day Flow (AD)	500L/EP/day
Mean Day Max Month (MDMM) / AD	1.4
Peak Day (PD) / AD	1.89
Peak Hour (PH) / PD	0.0833
PH / AD	0.1575
AD	7,883L/day or 0.091L/sec
MDMM	11,036L/day or 0.128L/sec
PD	14,898L/day or 0.172L/sec
PH (Maximum)	1,242L/hour or 0.345L/sec
Fire Flow	30L/s for 4 hours
Peak Hour Demand	30.345L/sec

The proposed development will result in a water demand of 30.345L/sec for the childcare centre and healthcare services respectively. With a maximum velocity of 2.0m/s, in accordance with the Capricorn Municipal Design Guidelines, a water service connection with a minimum internal diameter of 139mm is required for the proposed medical centre.

We note however that fire flow may be provided by the existing hydrants located within the adjacent the North Street and Voss Street road reserves to the north and south respectively. Hydrant coverage shall be confirmed by the hydraulic consultant during the detailed design phase of the project.

2.3 Proposed Water Reticulation Works

The medical centre will be serviced by the existing 150mm diameter M-PVC water main located within the North Street road reserve to the north of the subject site.

It is envisaged that the water reticulation and connection detailed design will be undertaken as part of a future Operational Works application to Council. The internal water reticulation design and meter sizing will be undertaken by a Hydraulic Consultant during the detailed design phase of the project and is subject to a future Plumbing and Drainage application to Council.

A plan detailing the existing and proposed services for the site is included in Appendix C.

3 Sewerage Reticulation

3.1 Existing Infrastructure

A review of the topographic survey and Council records has confirmed that an existing 150mm diameter earthenware sewerage main trisects the subject site with reticulation running on a south to north alignment through the northern portion of the site. A branch network passes through 67 North Street, extending to the eastern verge of the Talford Lane road reserve to the east of the site.

Additionally, an existing 100mm diameter PVC rising main bisects the northern portion of the site on a west to east alignment, connecting into the existing gravity main described above.

The topographic survey and a record of Council's online mapping is included within Appendix B.

3.2 Proposed Demand

The proposed development's sewer reticulation demands on the existing sewer infrastructure were determined using the methods described in the Capricorn Municipal Development Guidelines: D12 –Sewerage Network. These demands were used to determine the consumption rates for the proposed development. The sewer demand factors and flow parameters were sourced from Table D12.38.01 to determine the consumption rates for the proposed development, and the results are presented in Table 3.1 below.

Table 3.1: Sewerage Demand Factors and Consumption Rates

Design Parameter	Sewer Factors and Consumption Rates
Development Type	Medical centre
Demand Conversion Rate (100sqm GFA)	0.7 ET/100m^2 GFA
Gross Floor Area (m^2)	1,383m^2
ET	9.8
Average Dry Weather Flow (ADWF)	540L/ET/day
ADWF	5,292 L/day or 0.061 L/sec
PDWF (2.5 x ADWF)	13,230 L/day or 0.153 L/sec
PWWF (5 x ADWF)	26, 460L/day or 0.306 L/sec
Design Flow	0.306 L/sec

Based on the above assessment it is envisaged that the proposed development will place a demand of 0.306 L/sec during PWWF on the downstream sewerage network. An engineering services plan detailing the existing and proposed sewerage infrastructure is included in Appendix C.

3.3 Proposed Works

It is proposed to connect the development to the existing sewerage main located within the subject site via a new commercial sewer property connection. A realignment of the existing sewerage main which trisects the site is also proposed for the site. A sewerage diversion plan detailing the existing and proposed sewerage infrastructure is included in Appendix C. Furthermore, an email detailing Council's preliminary approval of the sewerage realignment is included within Appendix F.

It is envisaged that the sewerage infrastructure and connection detailed design will be undertaken as a part of a future Operational Works application to Council. The internal sewerage infrastructure will be designed by a Hydraulic Consultant during the detailed design phase of the project and is subject to a future Plumbing and Drainage application to Council. A plan detailing the existing and proposed services for the site is included in Appendix C.

4 Stormwater Drainage

The strategy and constraints associated with stormwater drainage were assessed as part of a separate investigation by Pinnacle and are not covered in detail within this report. We refer Council to the Site Based Stormwater Management Plan for the subject site prepared by Pinnacle for an in-depth analysis of the prevailing stormwater conditions.

A brief summary of the stormwater drainage elements is provided in the following sections of this report.

4.1 Lawful Point of Discharge

The Lawful Point of Discharge for the subject site is taken as the existing kerb and channel located within the North Street road reserve to the north of the subject site and Talford Street to the east of the site.

4.2 Existing Drainage Network

There is no existing stormwater infrastructure immediately adjacent to the subject site. Runoff from the subject site is discharged to the North Street and Talford Lane kerb and channels to the north and east of the site respectively. The flows are conveyed in the North Street kerb and channel until reaching an existing on grade gully inlet pit adjacent to the West Street intersection, approximately 365m away. Additionally, an existing on grade gully pit is located within the median strip kerb of North Street, approximately 90m to the east. Flow from these networks is ultimately discharged to an existing overland flow path within the rear of the properties along North Street and Knutsford Street to the north of the subject site.

4.3 Proposed Drainage Works

It is intended to discharge stormwater to the Lawful Point of Discharge via piped and overland flow. Detention and quality treatment of stormwater will be provided if required through the use of private infrastructure.

In accordance with QUDM, the minor 10% AEP storm discharge (Q_{10}) will be conveyed to the Lawful Point of Discharge via a piped drainage network with the major 1% AEP storm discharge (Q_{100}) being conveyed by piped and overland flow.

Engineering services layouts detailing the existing and proposed services for the site is included in Appendix C.

4.4 Flood Assessment

A review of Council's online interactive mapping indicates that the subject site is located outside of the mapped floodplain investigation area.

5 Bulk Earthworks

5.1 Earthworks Design

Earthworks for the site will be designed generally in accordance with the requirements of the RRC Planning Scheme and as appropriate to the regulatory control and the Australian Standard for Earthworks for Commercial and Residential Development (AS3798-2007).

5.2 General Site Earthworks

A soil assessment report shall be prepared by a geotechnical engineer to provide guidance to the treatment of the subject site prior to and during the earthworks excavation and suitability for building foundation construction. It is intended that with minimal site earthworks the proposed layout will be achieved.

The key variables associated with the site's earthworks are the depth and distribution of the existing materials and the strength and depth profile of the substrata material. It is advised that the soil report for the site investigates these key items in depth to ensure that suitable soil treatments, accurate cost estimation and building design can be facilitated.

5.3 Acid Sulphate Soils

A review of Council's Interactive Online Mapping system has identified the subject site as being located outside the mapped Acid Sulphate Soil zone.

Council's acid sulphate soils mapping is included within Appendix E.

5.4 Erosion and Sediment Management

Due to the expected highly erosive soil onsite, erosion protection measures will be incorporated into the construction phase of the project with these measures being designed and documented as a part of the detailed civil works for the site in accordance with industry best practice and IEAust Guidelines.

Ultimately, during the operational phase of the project, the sediment management will be undertaken through the use of soft landscaping to ensure onsite erosion is kept to a minimum.

An erosion and sediment control strategy is provided in the Site Based Stormwater Management Plan for the subject site prepared by Pinnacle.

6 Electrical, Gas and Telecommunications

A Before You Dig Australia (BYDA) investigation was undertaken to confirm the location of existing electrical, gas and telecommunications services in the vicinity of the site.

The BYDA investigation confirmed the location of telecommunications infrastructure, owned and operated by Telstra, within the North Street and Voss Street road reserves to the north and south of the subject site respectively. Furthermore, an optic fibre network, owned and operated by Powerlink Queensland, was also identified within the North Street and Canning Street road reserves to the north and west of the subject site respectively.

Overhead powerlines, owned and operated by Ergon Energy, are located within the northern verges of the North Street and Voss Street road reserves to the north and south of the subject site respectively.

An existing 63mm diameter medium-density polyethylene (MDPE) gas main and 32mm diameter MDPE underground gas main have been identified within the northern verge of North Street and the northern verge of Voss Street.

It is envisaged that the proposed development will connect to the existing services within the adjacent road reserves as outlined above. The connections to the electrical and telecommunications networks will be undertaken by specialist consultants during the detailed design phase of the project.

The BYDA data is included in Appendix D with the location of the existing telecommunications, electrical and gas infrastructure shown on the engineering services layouts included in Appendix C.

7 Impacts on Local Infrastructure and Likely Upgrades

The proposed medical centre development will result in additional loading on the surrounding local infrastructure.

Initial investigations indicate that there is sufficient residual capacity within the surrounding local infrastructure to accommodate the additional demands from the proposed development.

The potential impacts on the local infrastructure and likely upgrades are summarised in Table 7.1 below.

Table 7.1: Local Infrastructure Impacts and Requirements

Infrastructure Type	Authority	Impacts	Connection and/or Upgrade Requirements
Water Reticulation	Fitzroy River Water	Additional water demand due to development	Connect to the existing water main within the North Street road reserve located to the north of the subject site.
Sewerage Reticulation	Fitzroy River Water	Additional sewer loadings due to development	Connect to the existing sewerage main within the subject site via a new commercial sewer property connection.
Stormwater	RRC	Additional loading due to development	Discharge all stormwater to the Lawful Point of Discharge being the existing kerb and channel within the North Street road reserve.
Telecommunications	Telstra, Powerlink Qld	New connections	New connection to existing telecommunications infrastructure located within the adjacent road reserves.
Electrical	Ergon Energy	New connections	New connection to existing telecommunications infrastructure located within the adjacent road reserves.
Gas	APA Group	New connections	New connection the existing gas infrastructure located within the Voss Street road reserve.

8 Reference Documentation

Rockhampton Region Planning Scheme Version 4.4 (RRC, 2023)

Capricorn Municipal Development Guidelines (CMDG, 2022)

Water Services Association of Australia, 2014. “Sewerage Code of Australia. WSA 02-2014”, Second Edition, Version 3.1

Water Services Association of Australia, 2011. “Water Supply Code of Australia. WSA 03-2011”, Second Edition, Version 3.1

PINNACLE ENGINEERING GROUP

Appendix A

Proposed Development Plans

PROPOSED NEW MEDICAL CENTRE

67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

RealSpace creative

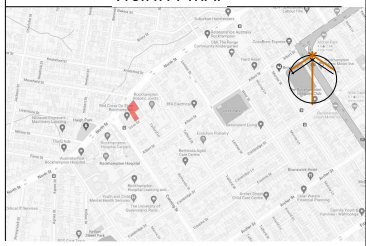
DRAWING INDEX

1 ARCHITECTURAL DRAWINGS

PROJECT DATA

DA APPROVAL:	
LOT:	12/7/4
RP DATA:	RP603082/R26335
SITE AREA:	
67 NORTH STREET:	771sqm
69 NORTH STREET:	683sqm
5 VOSS STREET:	607sqm
TOTAL GROSS SITE AREA:	2061sqm
GFA:	
SEMI BASEMENT:	-sqm
GROUND FLOOR:	1376qm
TOTAL:	1376sqm
SITE COVER:	74.48% (1535/2061)
CARPARKING:	41

VICINITY MAP



Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediately to RealSpace Creative for instructions.

Authorisation

Reg No.

RealSpace Creative Pty. Ltd.
PO Box 5314
Q Super Centre QLD 4218

T 0418 728 962
ABN 20 601 291 141
www.real-space.com.au

Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

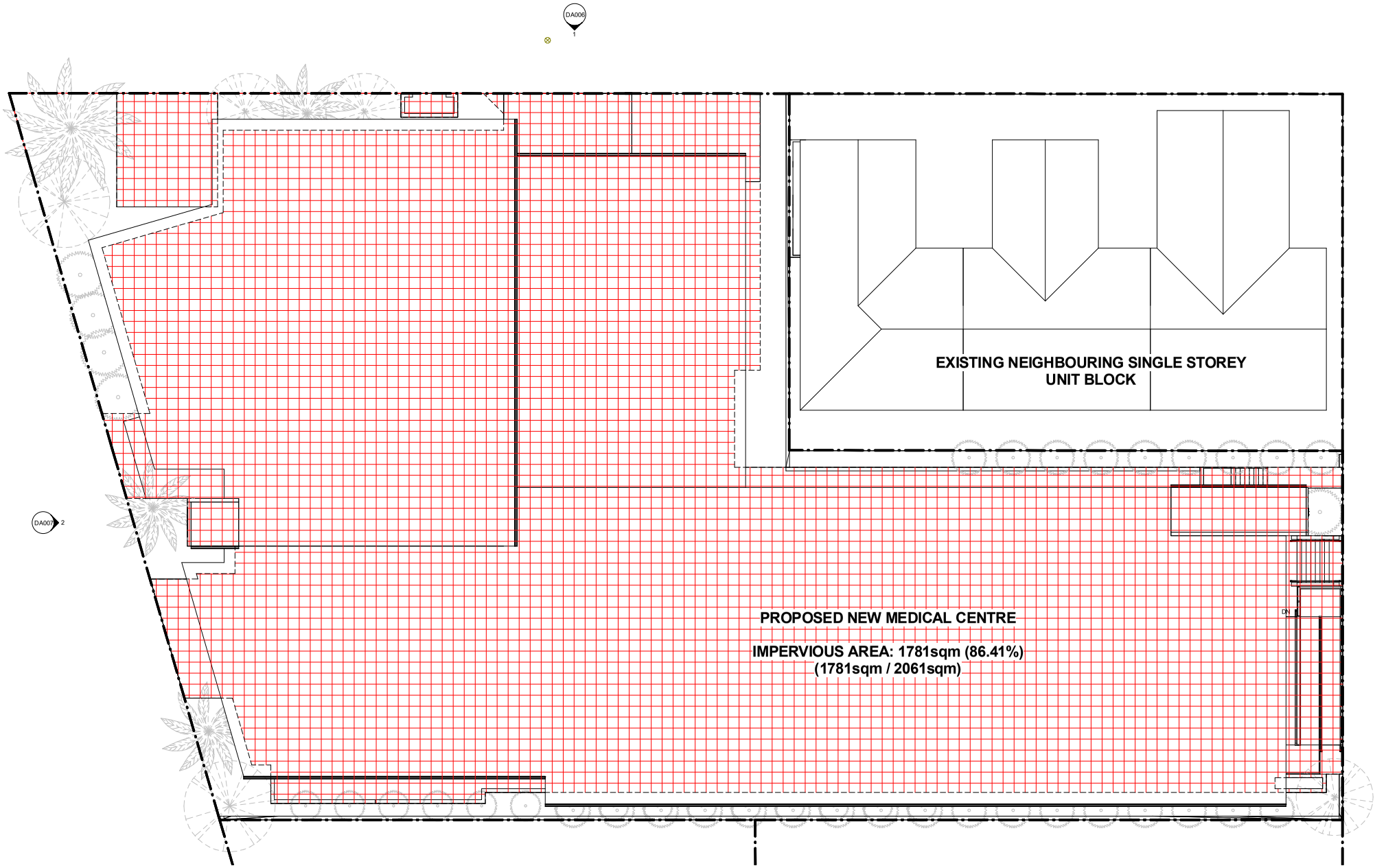
CLIENT:
THE RADIOLOGY PARTNERS COMPANY
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
COVER SHEET

DRAWING NO: DA001 | ISSUE NO: A | DRAWN: TJ



1 IMPERVIOUS AREA
1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification
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RealSpace creative

CLIENT:
THE RADIOLOGY PARTNERS COMPANY

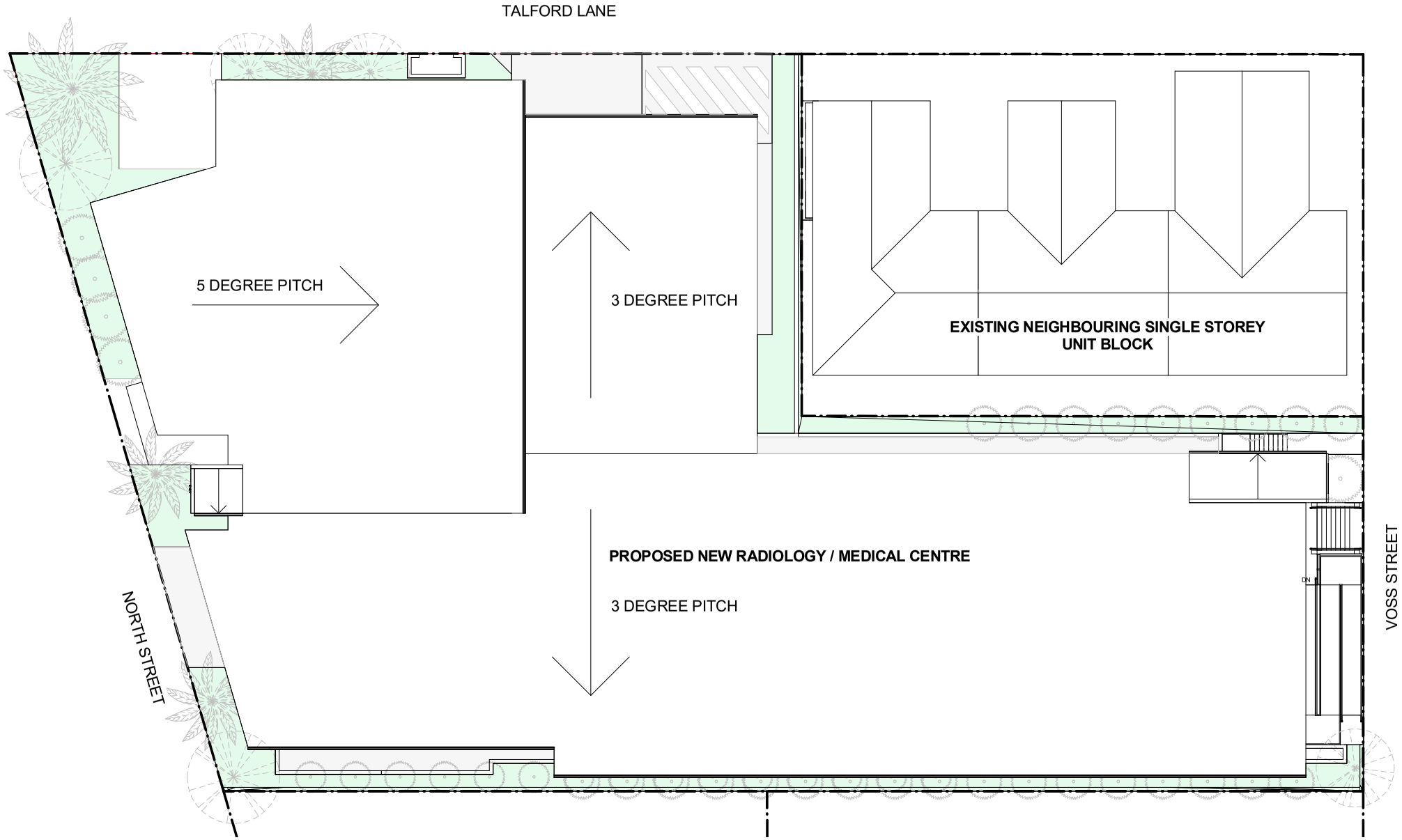
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
IMPERVIOUS AREA

DRAWING NO: DA002.6
ISSUE NO: A
DRAWN: TJ



2 SITE PLAN.
1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification
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CLIENT:
THE RADIOLOGY PARTNERS COMPANY

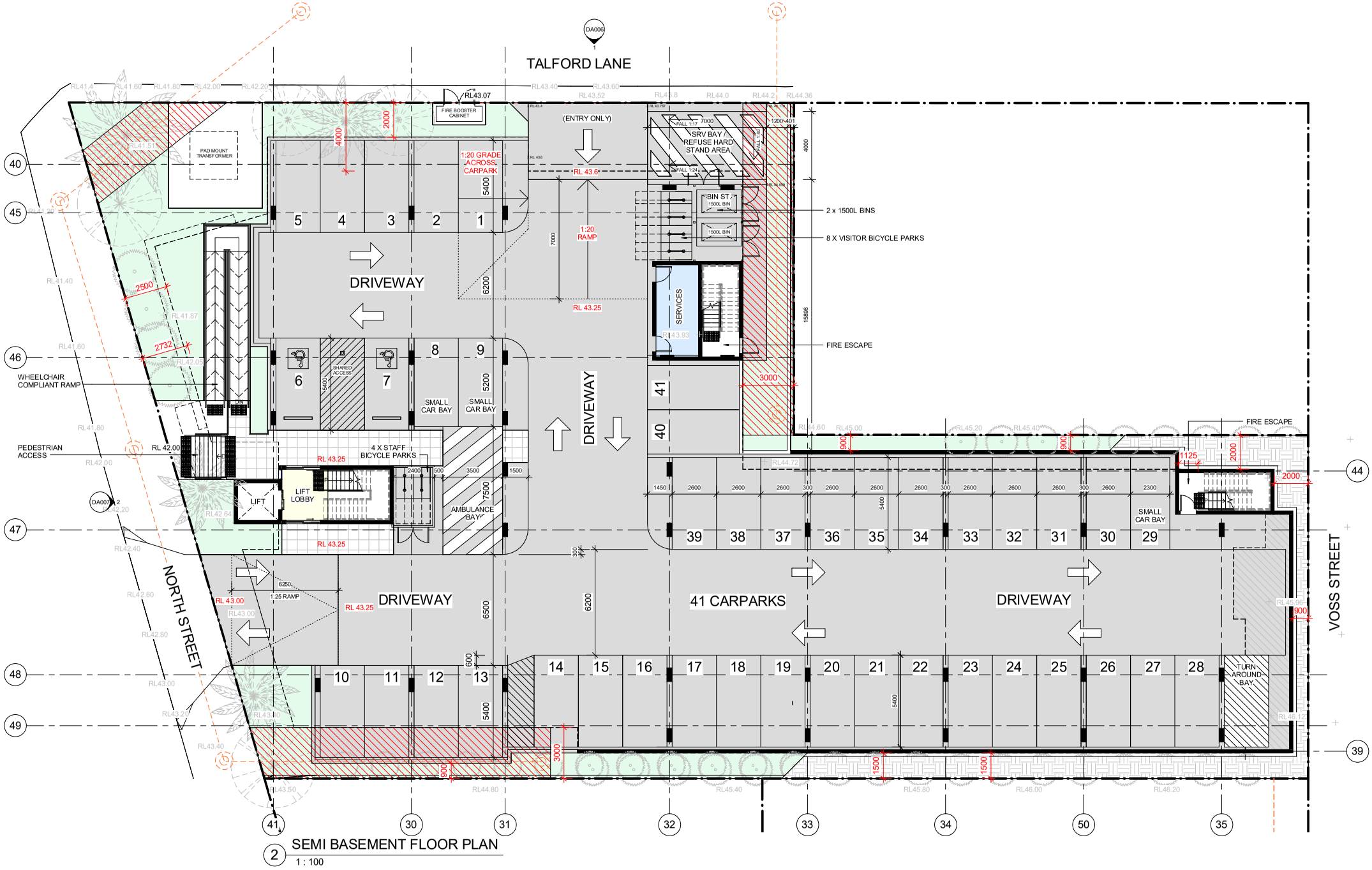
SITE ADDRESS:
67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001
DATE: 09/04/2025
SCALE: 1 : 100 @A1

STAGE:
DEVELOPMENT APPLICATION

DRAWING TITLE:
SITE PLAN

DRAWING NO: DA003
ISSUE NO: A
DRAWN: TJ



2 SEMI BASEMENT FLOOR PLAN

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

Verify all dimensions, siting, window sizes, positioning and setting out on site before commencing construction or manufacture. Do NOT scale from drawings. Refer any discrepancy immediately to RealSpace Creative for instructions.

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Registered Architect No. 4136 (QLD)
Hooman Jaffar

RealSpace creative

CLIENT: THE RADIOLOGY PARTNERS COMPANY

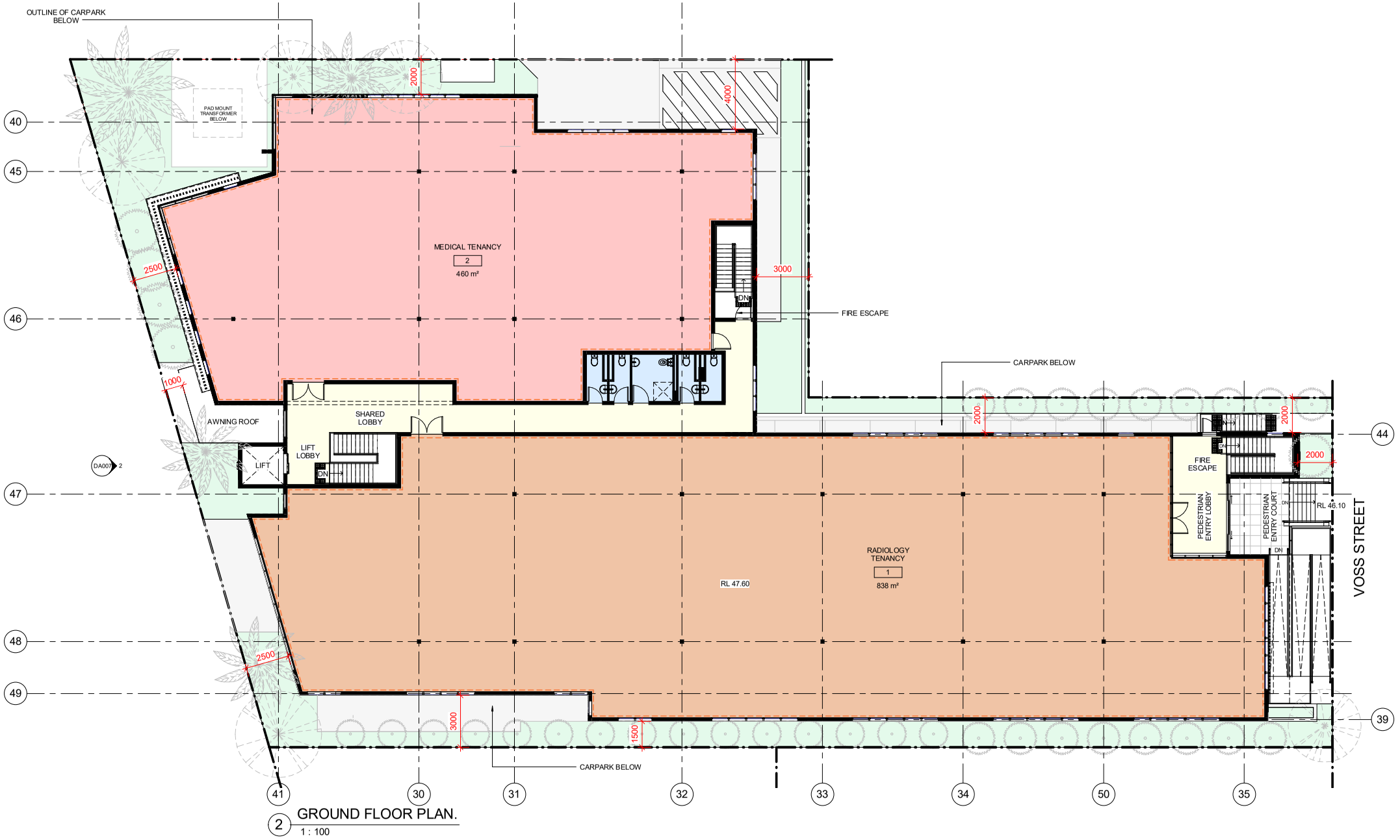
SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: SEMI BASEMENT FLOOR PLAN

DRAWING NO: DA004.0 | ISSUE NO: A | DRAWN: TJ



2 GROUND FLOOR PLAN.

1 : 100

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Amendments Register

ISSUE	DESCRIPTION	DATE	INITIALS

Verification

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Hooman Jaffar

RealSpace creative

CLIENT: THE RADIOLOGY PARTNERS COMPANY

SITE ADDRESS: 67-69 NORTH STREET / 5 VOSS STREET, ROCKHAMPTON

PROJECT NO: RHH-23001 | DATE: 09/04/2025 | SCALE: 1 : 100 @A1

STAGE: DEVELOPMENT APPLICATION

DRAWING TITLE: GROUND FLOOR PLAN

DRAWING NO: DA004.1 | ISSUE NO: A | DRAWN: TJ

PINNACLE ENGINEERING GROUP

Appendix B

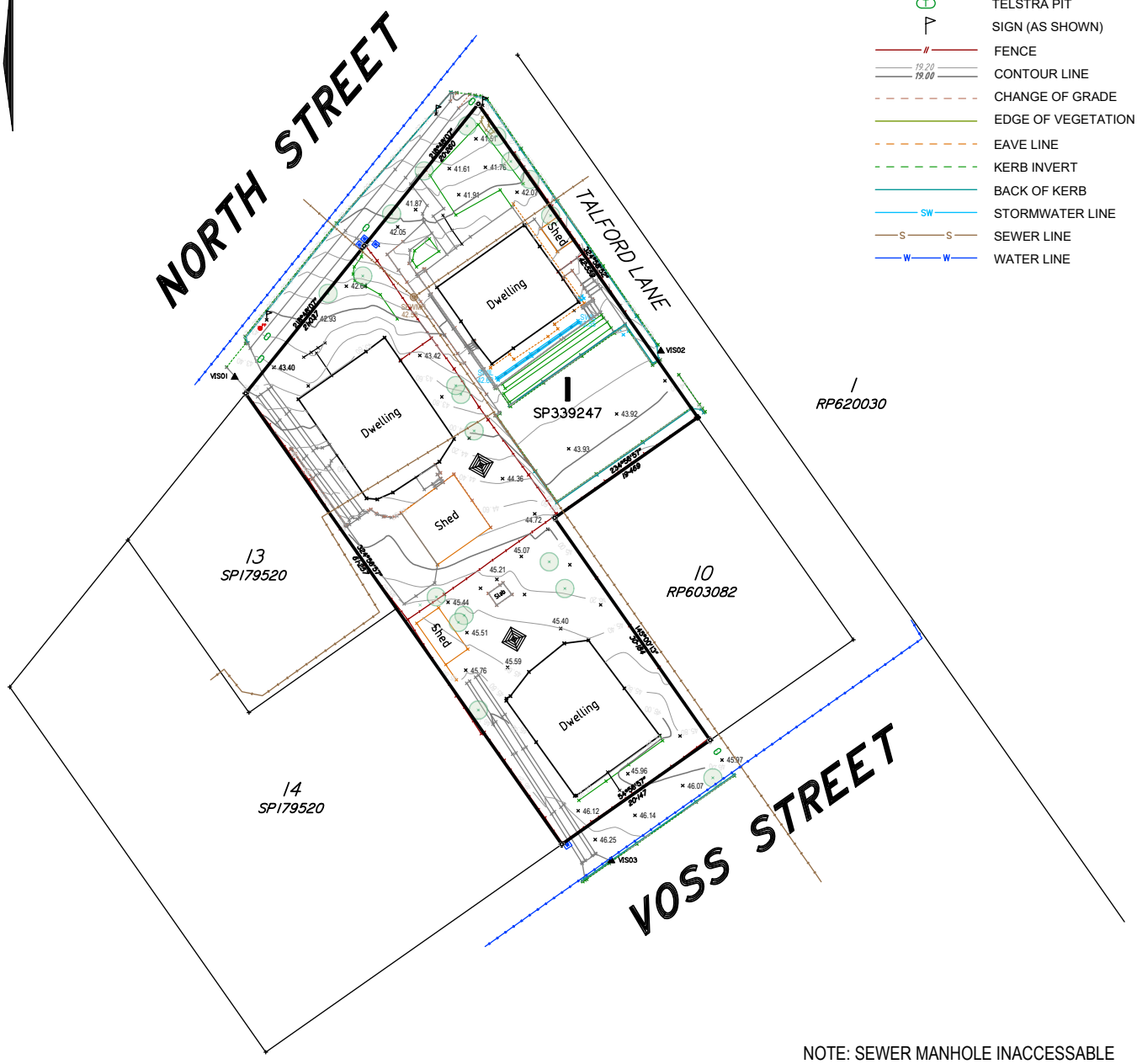
Topographic Survey

Scale 1:500 – Lengths are in Metres.

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

LEGEND

- OP — ORIGINAL PEG
- TEMPORARY BENCH MARK
- PP — POWER POLE
- SEWER MANHOLE
- W — WATER METER
- TELSTRA PIT
- SIGN (AS SHOWN)
- FENCE
- CONTOUR LINE
- CHANGE OF GRADE
- EDGE OF VEGETATION
- EAVE LINE
- KERB INVERT
- BACK OF KERB
- SW — STORMWATER LINE
- S — SEWER LINE
- W — WATER LINE



NOTE: SEWER MANHOLE INACCESSABLE

SURVEY CONTROL TABLE

STATION I.D.	EASTING	NORTHING	ELEVATION	TYPE
VIS01	243970.197	7412459.434	43.572	PLUG (IN CONC)
VIS02	244017.620	7412462.345	43.826	SCREW (IN KERB)
VIS03	244012.116	7412405.659	46.302	NAIL (IN KERB)

Rev	Description	Drawn	Checked	Date
A	Original Issue	LC	WE	21/08/2023

This plan is prepared from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose. Services shown hereon have been located where possible by field survey. If not able to be located, services may have been plotted from the records of relevant authorities where available. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services. This note is an integral part of this plan.

CONTOUR & DETAIL PLAN

PROJECT: Contour & Detail Plan

LOCATION: Voss Street, The Range

REAL PROPERTY DESCRIPTION: Lot 12 RP603082, Lot 7 RP603082 & Lot 4 R26335

CLIENT: Radiology

VISION

Airlie Beach | Mackay | Townsville | Rockhampton | Brisbane | Gold Coast

E : admin@visionsurveysqld.com.au P : 13000VISION

Horiz. Datum:	MGA (GDA 1994) ZONE 56 VIDE PSM 202934		Scale:	1 : 500 @ A3	Drawing No: 23644-CD001
Vert. Datum:	AHD VIDE PSM 202934 RL: 8.679		Drawn:	LC	Sheet: 1 of 1
Local Authority:	RRC	Contour Interval: 0.20m	Surveyor:	ME	Revision: A

Appendix C

Engineering Layouts

LEGEND

Symbol	Description
— T —	EXISTING TELSTRA CABLE
— S —	EXISTING SEWERAGE RETICULATION
— W —	EXISTING WATER RETICULATION
— SWD —	EXISTING STORMWATER PIPE
— OE —	EXISTING OVERHEAD ELECTRICAL
— UE —	EXISTING UNDER GROUND ELECTRICAL
— 6.50 —	EXISTING CONTOURS
— S —	PROPOSED SEWERAGE RETICULATION
— W —	PROPOSED WATER RETICULATION
— SWD —	PROPOSED STORMWATER PIPE
	EXTENT OF AC ROAD REINSTATEMENT
	CONCRETE DRIVEWAY / PAVED AREA
	PERVIOUS AREA
	EXISTING LOT BOUNDARY
	INDICATIVE WORKS AREA
→	SEWER RETICULATION FLOW DIRECTION
↑	ROOF WATER KERB ADAPTOR. REFER TO CMDG STD DWG CDMG-R-061 FOR DETAILS.
→ → —	PROPOSED CUT OFF SWALE
	PROPOSED WATER METER

NOTES

1. THE LOCATION OF THE EXISTING SERVICES HAS BEEN PLOTTED FROM SURVEY AND RECORDS AND IS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
2. THE FINAL ALIGNMENT AND SIZING OF THE SERVICES INTERNAL TO THE PROPOSED DEVELOPMENT IS PRELIMINARY ONLY AND SUBJECT TO DETAILED DESIGN AND FUTURE OPERATIONAL WORKS APPLICATIONS TO COUNCIL.

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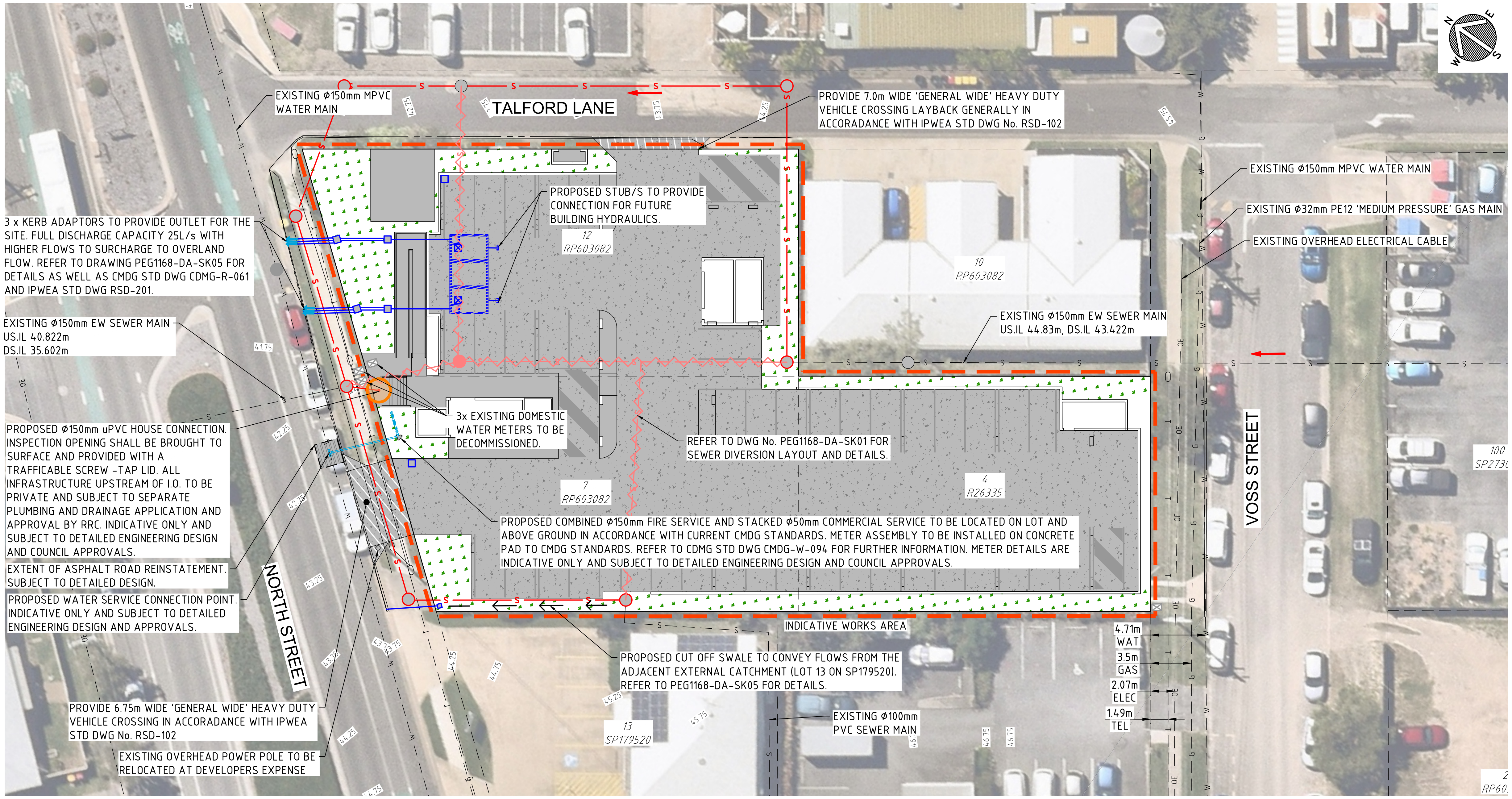
UNDERGROUND PUBLIC UTILITY PLANT EXISTS IN THIS VICINITY. THE CONTRACTOR IS ADVISED TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM THE EXACT LOCATION OF PUBLIC UTILITY PLANT ON SITE PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION OR CONSTRUCTION WORKS.



PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
WWW.PINNACLEENG.COM.AU

REV	DESCRIPTION	DRAWN	DATE
A	ORIGINAL ISSUE	J.W.	12.06.2024
C	REVISED DEVELOPMENT LAYOUT	J.L.	03.04.2025

TASK	BY	INITIAL	DATE
REVIEW	A. CRESSWELL		03.04.2025
DESIGN	J. WATERS		03.04.2025
DRAWN	J. WATERS		03.04.2025

SCALE: 2 1 0 2 4 6 8 10 — 1:200
(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT 67 & 69 NORTH STREET AND 5 VOSS STREET THE RANGE, QLD 4700 (LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: ENGINEERING SERVICES LAYOUT

STATUS: PRELIMINARY
(NOT TO BE USED FOR CONSTRUCTION)

APPROVED | RPEQ No

DRAWING NUMBER: PEG1168-DA-SK06 | REVISION: C

LEGEND

— — T — — —	EXISTING TELSTRA CABLE
— — S — — —	EXISTING SEWERAGE RETICULATION
— — W — — —	EXISTING WATER RETICULATION
— — SWD — — —	EXISTING STORMWATER PIPE
— — OE — — —	EXISTING OVERHEAD ELECTRICAL
— — UE — — —	EXISTING UNDER GROUND ELECTRICAL
— — —6.50— — —	EXISTING CONTOURS
——— S ———	PROPOSED SEWERAGE RETICULATION
	ROOF / BUILDING HARDSTAND AREA
	CONCRETE DRIVEWAY / PAVED AREA
	PERVIOUS AREA
	PROPOSED BUILDING EXCLUSION CORRIDOR
	EXISTING LOT BOUNDARY
	INDICATIVE WORKS AREA
	SEWER RETICULATION FLOW DIRECTION
	EXISTING SEWER TO BE DECOMMISSIONED
1 / 1	SEWER PIPE, STRUCTURE LABEL, RODDING END, MANHOLE, INLINE BEND, HOUSE CONNECTION & END CAP

NOTES

1. THE LOCATION OF THE EXISTING SERVICES HAS BEEN PLOTTED FROM SURVEY AND RECORDS AND IS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
2. THE FINAL ALIGNMENT AND SIZING OF THE SERVICES INTERNAL TO THE PROPOSED DEVELOPMENT IS PRELIMINARY ONLY AND SUBJECT TO DETAILED DESIGN AND FUTURE OPERATIONAL WORKS APPLICATIONS TO COUNCIL.

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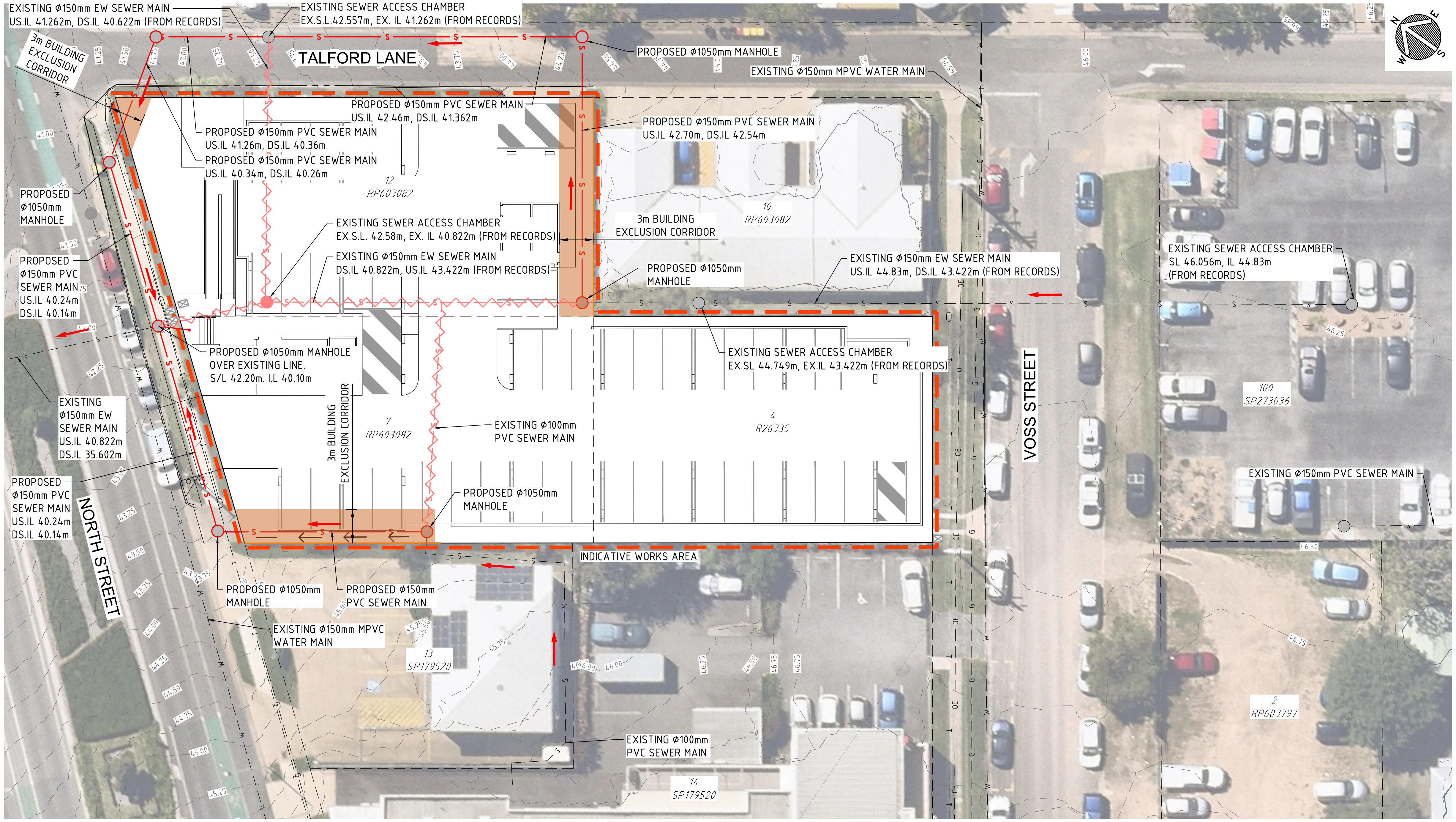


PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
WWW.PINNACLEENG.COM.AU

REV	DESCRIPTION	DRAWN	DATE
A	ISSUED FOR COMMENT	J.H.	31.01.2024
B	REVISED AS PER COUNCILS COMMENTS	J.H.	14.02.2024
C	MINOR REVISION	J.W.	12.06.2024
D	REVISED DEVELOPMENT LAYOUT	J.L.	03.04.2025

TASK	BY	INITIAL	DATE
REVIEW	B. POPA		03.04.2025
DESIGN	A. CRESSWELL		03.04.2025
DRAWN	M. GLASSON		03.04.2025

SCALE 1:200 (2 1 0 2 4 6 8 10)
(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT
RADIOLOGY PARTNERS PTY LTD

PROJECT
PROPOSED HEALTH CARE SERVICES DEVELOPMENT
67 & 69 NORTH STREET AND 5 VOSS STREET
THE RANGE, QLD 4700
(LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE
SEWER DIVERSION LAYOUT

STATUS
PRELIMINARY
(NOT TO BE USED FOR CONSTRUCTION)

APPROVED
RPEQ No

DRAWING NUMBER
PEG1168-DA-SK01

REVISION
D

LEGEND

SWD	PROPOSED STORMWATER
T	EXISTING TELSTRA CABLE
S	EXISTING SEWERAGE RETICULATION
W	EXISTING WATER RETICULATION
SWD	EXISTING STORMWATER PIPE
OE	EXISTING OVERHEAD ELECTRICAL
UE	EXISTING UNDER GROUND ELECTRICAL
	INDICATIVE WORKS AREA
9.0	EXISTING SURFACE CONTOURS (0.25m)
	PROPOSED LOT BOUNDARY
	EXISTING BOUNDARY
	SILT FENCE
	DISTURBED AREA
	TURFED AREAS
	PROPOSED LAND RESUMPTION AREA
XXX	GULLY PIT SEDIMENT BARRIER
CHECK DAM	SAND BAG CHECK DAM
	VEHICLE SHAKEDOWN
	FIELD INLET TREATMENT
	DIRECTION OF OVERLAND FLOW
	EXISTING SEWER FOR REMOVAL

NOTES

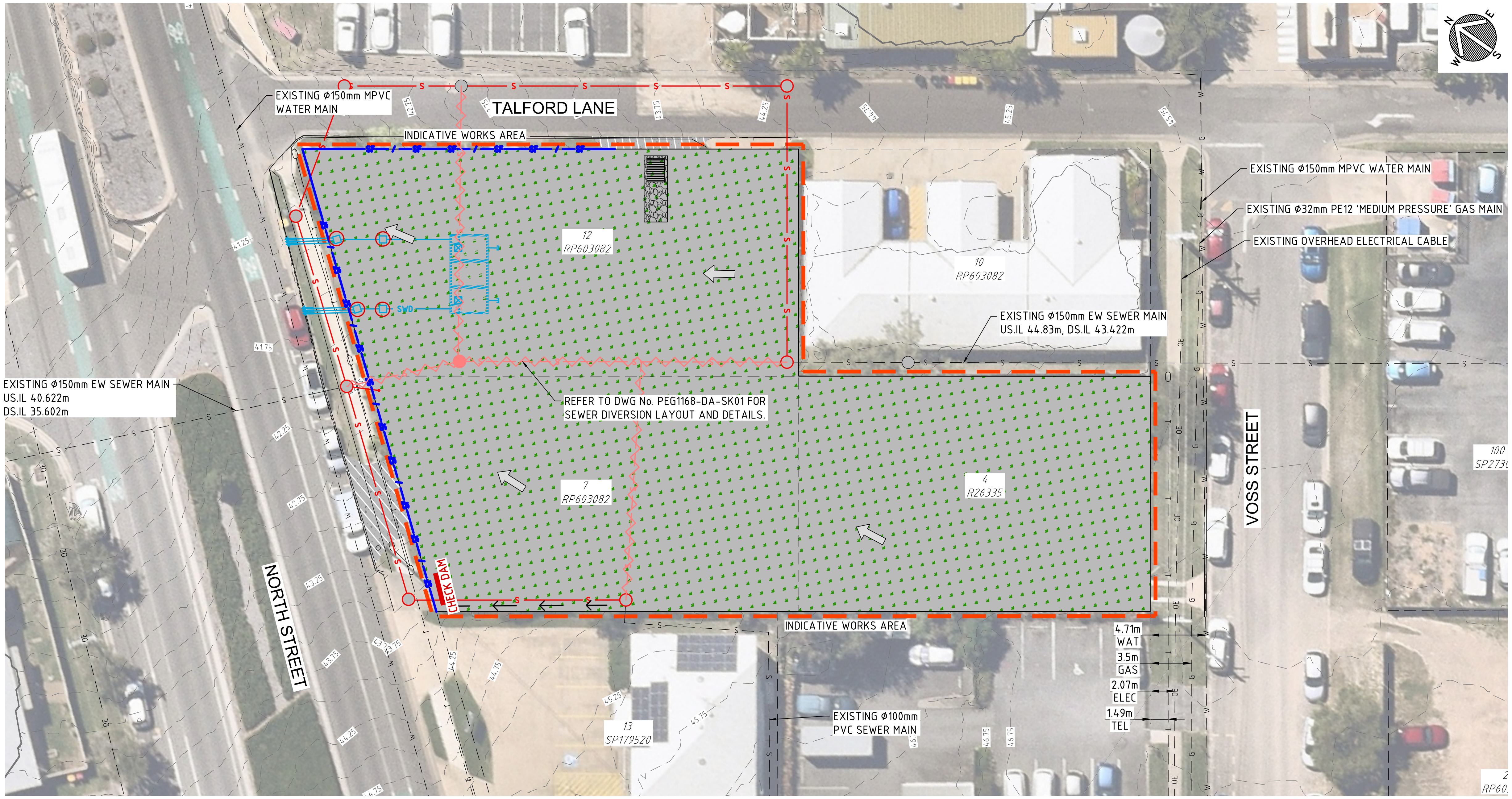
1. FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS REFER TO DWG No. PEG1168-DA-SK08.

CONCEPTUAL ONLY

IT IS THE PRINCIPAL CONTRACTOR'S RESPONSIBILITY TO ERECT AND MAINTAIN SATISFACTORY EROSION AND SEDIMENT CONTROLS DURING THE ENTIRE CONSTRUCTION PHASE OF THE PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY AND THE SUPERINTENDENT.

BEFORE YOU DIG
www.byda.com.au

UNDERGROUND PUBLIC UTILITY PLANT EXISTS IN THIS VICINITY. THE CONTRACTOR IS ADVISED TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM THE EXACT LOCATION OF PUBLIC UTILITY PLANT ON SITE PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION OR CONSTRUCTION WORKS.



PINNACLE ENGINEERING GROUP
LEVEL 1 19 SHORT STREET, SOUTHPORT QLD 4215
(PO BOX 517, PARADISE POINT QLD 4216)
WWW.PINNACLEENG.COM.AU

REV	DESCRIPTION	DRAWN	DATE
A	ORIGINAL ISSUE	J.W.	16.09.2024
C	REVISED DEVELOPMENT LAYOUT	J.L.	03.04.2025

TASK	BY	INITIAL	DATE
REVIEW	A. CRESSWELL		03.04.2025
DESIGN	J. WATERS		03.04.2025
DRAWN	J. WATERS		03.04.2025

SCALE 1:200
(SCALE ABOVE DENOTES ORIGINAL SHEET SIZE - A1)

CLIENT: RADIOLOGY PARTNERS PTY LTD

PROJECT: PROPOSED HEALTH CARE SERVICES DEVELOPMENT 67 & 69 NORTH STREET AND 5 VOSS STREET THE RANGE, QLD 4700 (LOT 7 & 12 ON RP603082 AND LOT 4 ON R26335)

DRAWING TITLE: EROSION AND SEDIMENT CONTROL LAYOUT

STATUS: PRELIMINARY (NOT TO BE USED FOR CONSTRUCTION)

APPROVED

RPEQ No

DRAWING NUMBER: PEG1168-DA-SK07

REVISION: C

PINNACLE ENGINEERING GROUP

Appendix D

BYDA Data

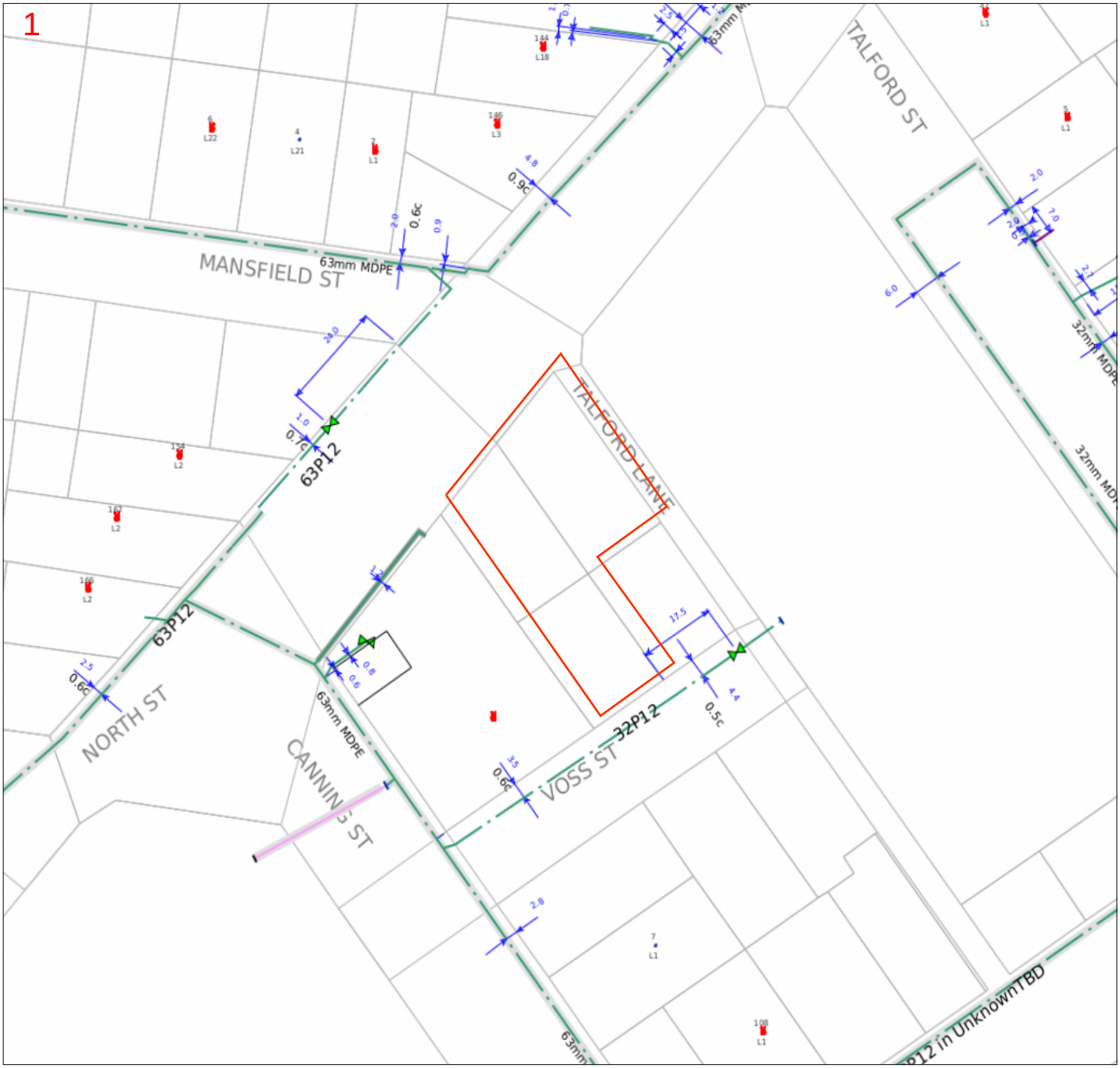
Site Address	69 North Street The Range 4700	**Sequence No**	240298217
Name	Jai Waters		
Email	jai@pinnacleeng.com.au		

Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Scale 1: 6000	N	Enquiry Area / Map Key Area

Site Address	69 North Street The Range 4700	Sequence No	240298217

Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



LEGEND

PIPE AND BOUNDARIES		PIPE CODE / MATERIALS		OBJECTS or TERMS	
LOW PRESSURES		C# (e.g. C2)	Cast Iron	VALVES	
MEDIUM PRESSURES		CU	Copper	BURIED VALVES	
HIGH PRESSURES		N2	Nylon	REGULATORS	
TRANSMISSION PRESSURES		P# (e.g. P6)	Polyethylene (PE)	GAS SUPPLIED = YES	
PRIORITY MAIN (BEHIND PIPE)		P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT	
PROPOSED (COLOUR BY PRESSURE)		P2,P4,P8	High Density PE	CP TEST POINT/ ANODE	T / A
LPG (COLOUR BY PRESSURE)		S# (e.g. S8)	Steel	SYPHON	
ABANDONED		W2	Wrought Galv. Iron	TRACE WIRE POINT	
IDLE		W3	Poly Coat Wrought Galv. Iron	PIPELINE MARKER	
SLEEVE		*Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter*		NOT TIED IN	N.T.I.
CASING / SPLIT (BEHIND PIPE)	/			DEPTH OF COVER	C
EASEMENT/ JURISDICTION				BACK / FRONT OF KERB	Bok Fok

EXAMPLES 40P6 in 80C2 — 40mm High Pressure Medium Density Polyethylene in an 80mm Cast Iron Casing

63S8 — 63mm Medium Pressure Steel

This map is created in colour and shall be printed in colour

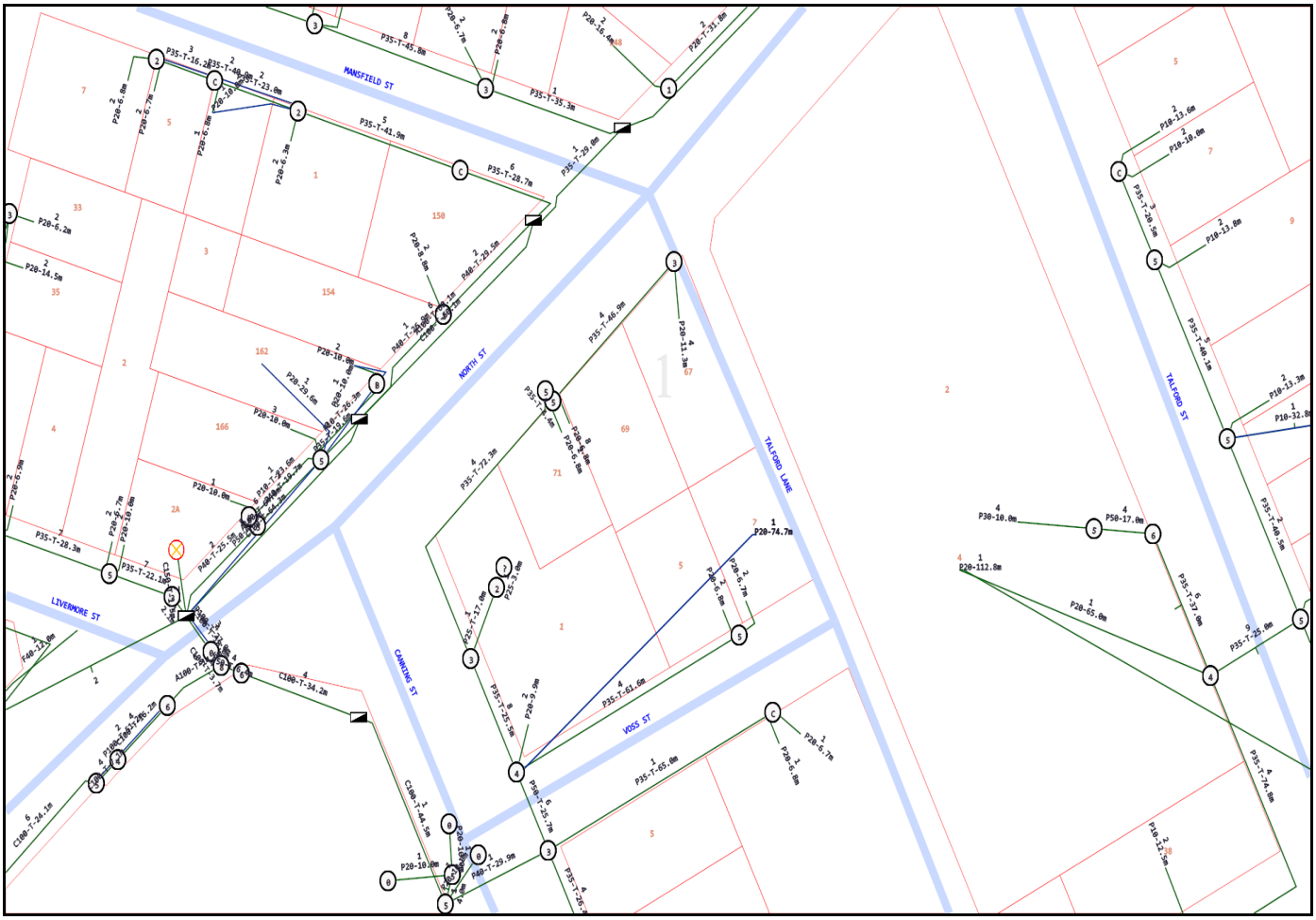
Line / Polygon Request

Map Key

1

Scale 1:700

0 0.009km



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

LEGEND

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

LEGEND

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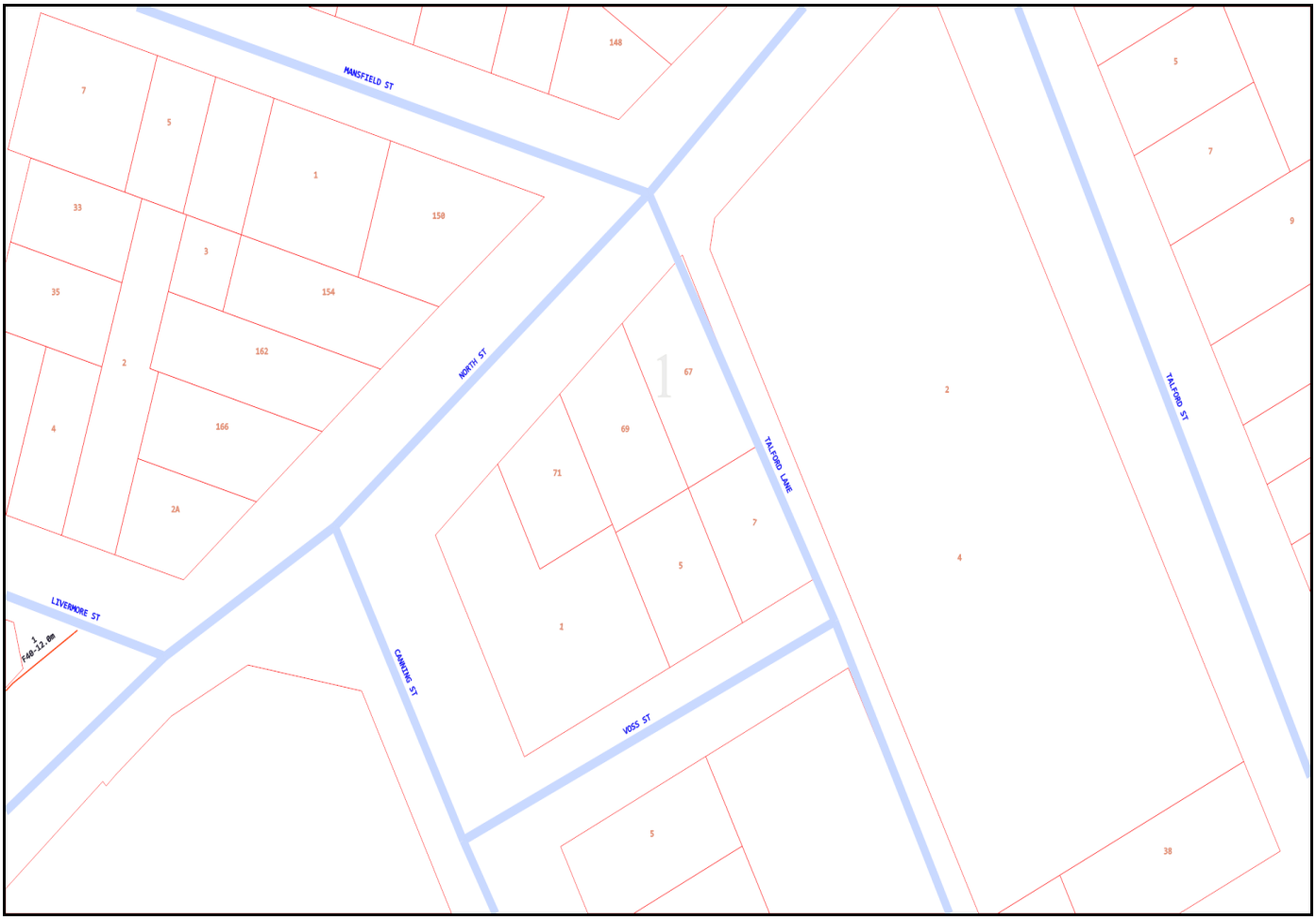
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

Sequence Number: 240298213

Date Generated: 07 Jun 2024

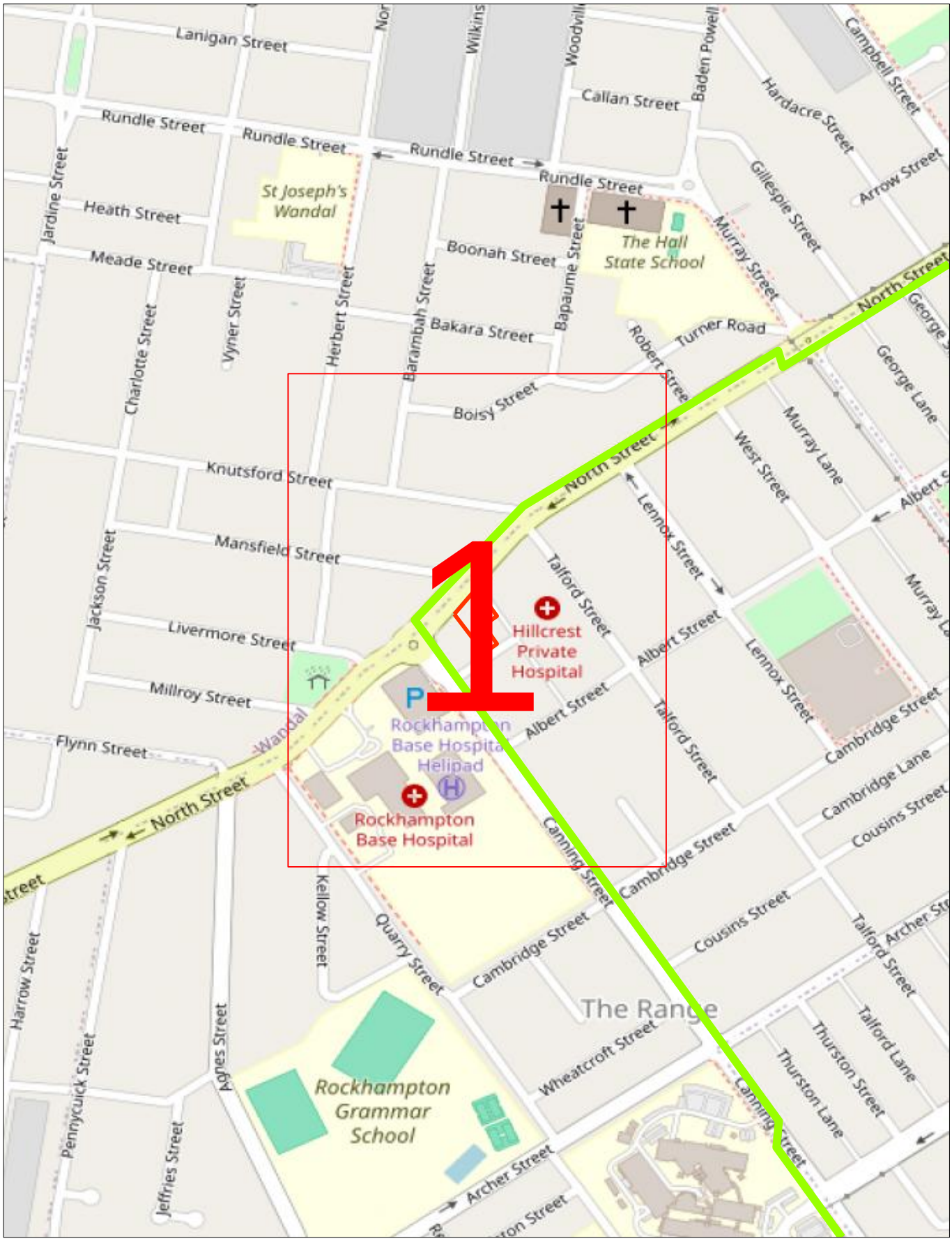
For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

Date: 07/06/2024

Overview Map

Enquiry No: 240298219

69 North Street The Range



Powerlink Queensland makes every effort that the information contained on this map is up to date and correct but accepts no responsibility for this information.

The information is provided as a guide only. For up to date and specific information you should contact our Virginia office on (07) 3866 1313.

LEGEND:

1	Detail Map Area		High Voltage Cable
	Powerlink Substation		Pilot Cable
	Other Substation		Optic Fibre
	Possible Comms		Decommissioned

0 0.05km

Affected BYDA Work Area Symbols

Imagery sourced from Open StreetMaps

Powered by: dbydsuite

Date: 07/06/2024

Map 1

Enquiry No: 240298219

69 North Street The Range

Powerlink Queensland makes every effort that the information contained on this map is up to date and correct but accepts no responsibility for this information.

The information is provided as a guide only. For up to date and specific information you should contact our Virginia office on (07) 3866 1313.

N W E S

0 0.02km

Imagery sourced from Open StreetMaps

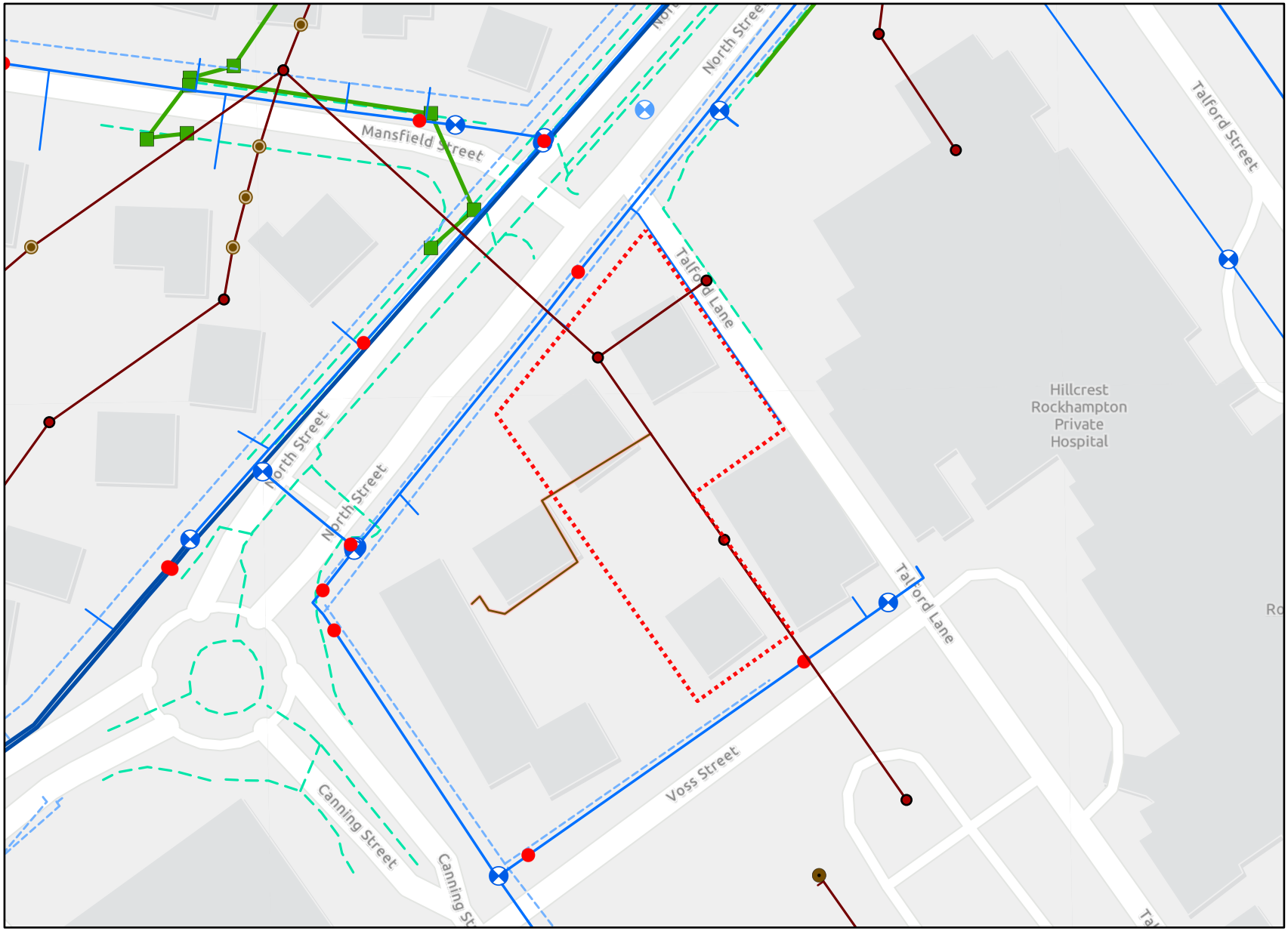
LEGEND:

- Powerlink Substation
- Other Substation
- Possible Comms
- High Voltage Cable
- Pilot Cable
- Optic Fibre
- Decommissioned

Affected BYDA Work Area Symbols

Powered by dbydsuite

Job # 36861007
Seq # 240298218
Job site: 69 North Street The Range QLD 4700
Provided by Rockhampton Regional Council



Legend

- BYDA Enquiry

Stormwater
- Stormwater Junctions
- Connector; Reticulation Main
- Subsoil Drain

Water
- Hydrants
- Gate, Sluice, Butterfly
- Other Valve Type
- Trunk Main
- Reticulation Main
- Water Service
- Abandoned Mains

Sewer
- Roll Over
- Lamp Hole | Inspection Opening
- Access Chambers
- Sewer Jump Ups
- Combined Main
- Reticulation Main

In an emergency contact Rockhampton Regional Council on 07 4936 8710

07/06/24 (valid for 30 days)

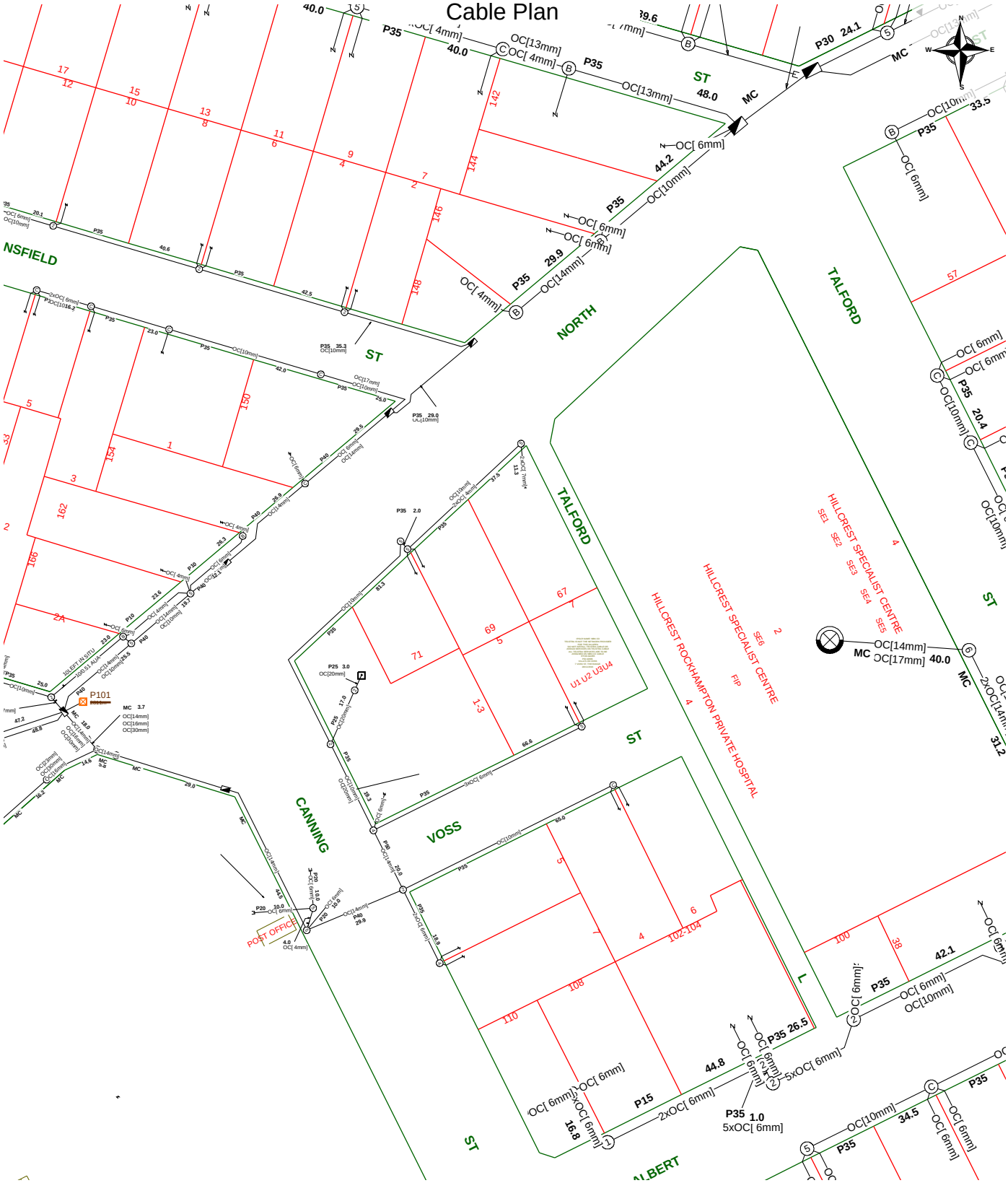
Plans generated by SmarterWX™ Automate

0 10 20 40 m

N

Scale 1:1,000

Cable Plan



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

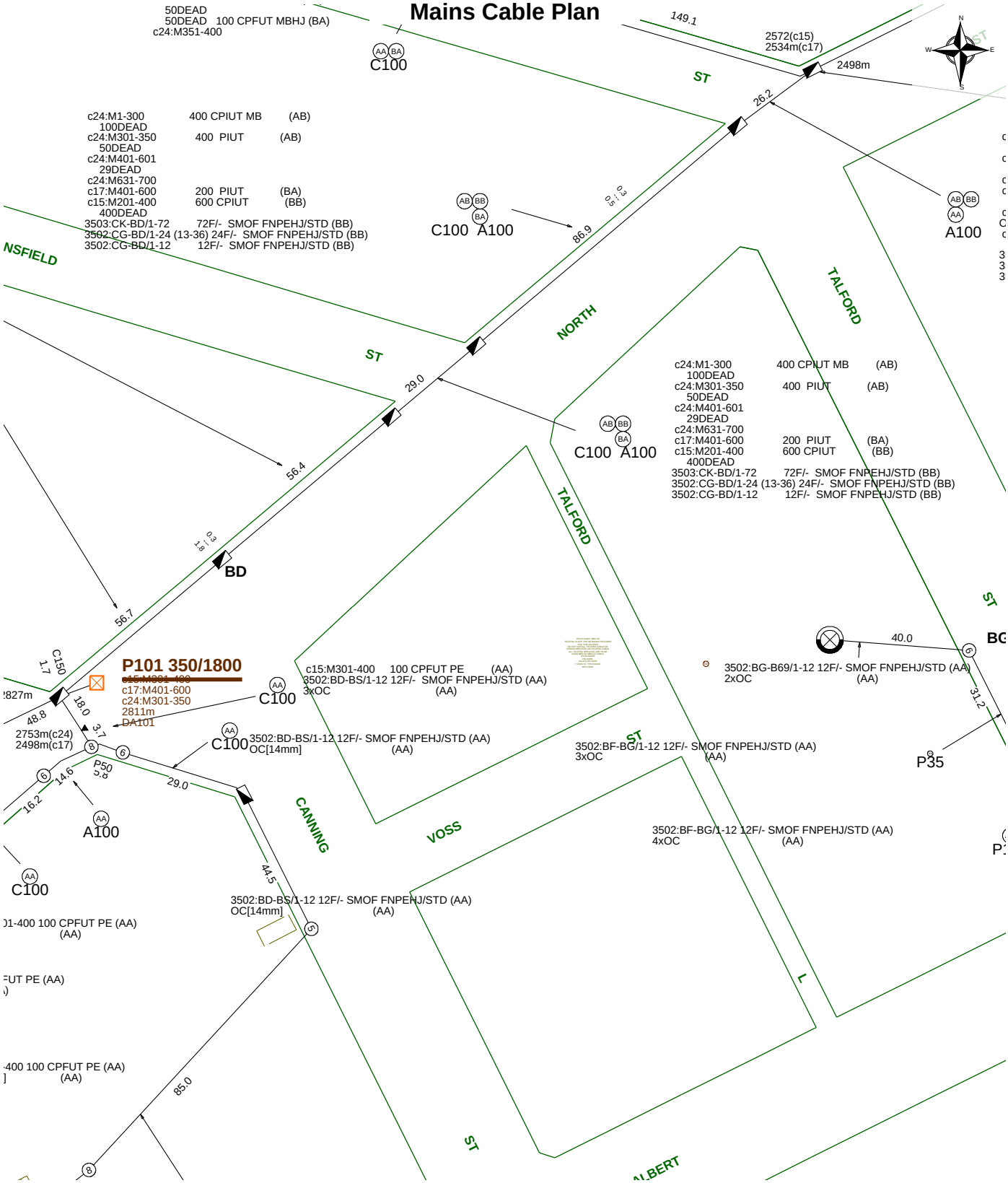
Generated On 07/06/2024 16:31:19

Sequence Number: 240298215

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

Mains Cable Plan



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 240298215
TELSTRA LIMITED A.C.N. 086 174 781	CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.
Generated On 07/06/2024 16:31:21	

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

OPENING ELECTRONIC MAP ATTACHMENTS -

Telstra Cable Plans are generated automatically in either PDF or DWF file types, dependent on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.

DWF Map Files (all sizes over A3)

Autodesk Viewer (Browser) (https://viewer.autodesk.com/) or

Autodesk Design Review (http://usa.autodesk.com/design-review/) for DWF files. (Windows PC)

PDF Map Files (max size A3)

Adobe Acrobat Reader (http://get.adobe.com/reader/)

Telstra BYDA map related enquiries email

Telstra.Plans@team.telstra.com

1800 653 935 (AEST Business Hours only)

REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY

Report online - https://www.telstra.com.au/forms/report-damage-to-telstra-equipment

Ph: **13 22 03**

If you receive a message asking for a phone or account number say:

"I don't have one" then say "Report Damage" then press 1 to speak to an operator.

Telstra New Connections / Disconnections

13 22 00

Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).

NetworkIntegrity@team.telstra.com

https://www.telstra.com.au/consumer-advice/digging-construction

Certified Locating Organisation (CLO)

https://dbydlocator.com/certified-locating-organisation/

Please refer to attached Accredited Plant Locator.pdf

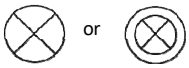
Telstra Smart Communities
Information for new developments (developers, builders, homeowners)
https://www.telstra.com.au/smart-community

LEGEND

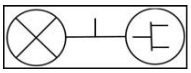
For more info contact a Certified Locating Organisation or Telstra Plan Services 1800 653 935

Exchange
(Major Cable Present)

Footway Access Chamber
(can vary from 1-lid to 12-lid)



Pillar / Cabinet
(above ground / free standing)



Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V Electricity

OC

Other Carrier Telecommunications Cable/Asset

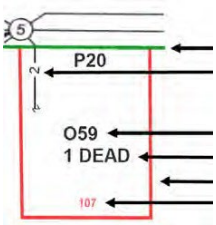
Dist

Distribution cables in Main Cable ducts

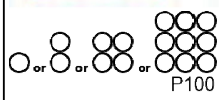
MC

Main Cable ducts on a Distribution plan

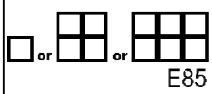
Blocked or damaged duct.



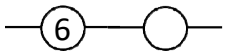
Roadside / Front Boundary
2 pair lead-in to property from pit in street 1
pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)
Side / Rear Property Boundary
Property Number



Single to multiple round conduit
Configurations 1,2,4,9 respectively
(attached text denotes conduit type and size)

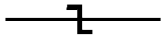


Multiple square conduit
Configurations 2, 4, 6 respectively
(attached text denotes conduit type and size)



Cable Jointing Pit
(number / Letter indicating Pit Type)

Elevated Joint
(above ground joint on buried cable)

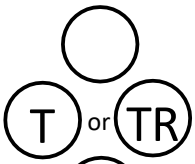


Telstra Plant in shared Utility trench

Aerial Cable / Overhead (includes on wall)

Aerial Cable
(attached to joint Use Pole e.g. Power)

Direct Buried Cable



Marker Post Installed

Buried Transponder

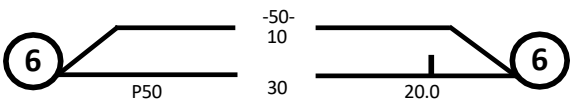
Marker Post, Transponder

Optical Fiber cable direct buried

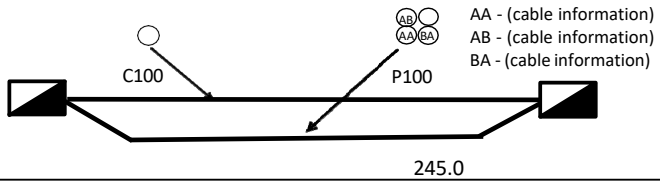
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / Plastic, C - Concrete,
GI - Galanised iron, E - Earthenware
Conduit sizes *nominally* range from 20mm to 100mm
P50 50mm PVC conduit
P100 100mm PVC conduit
A100 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits. approximately 20.0m apart, with a direct buried 30-pair cable along the same route



AA - (cable information)
AB - (cable information)
BA - (cable information)

Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100)

- Use suitably qualified and supervised professionals, particularly if you are working near assets that contain electricity cables or gas pipes.

- Ensure the below minimum clearance distances between the construction activities and the actual location of our assets are met. If you need clearance distances for our above ground assets, or if the below distances cannot be met, call **1800 786 306** to discuss.

  Minimum assets clearance distances.

  - 300mm when laying asset inline, horizontal or vertical.
  - 1000mm when operating vibrating equipment. Eg: vibrating plates. No vibrating equipment on top of asset.
  - 1000mm when operating mechanical excavators or jackhammers/pneumatic breakers.
  - 2000mm when performing directional bore in-line, horizontal and vertical.
  - No heavy vehicle over 3 tonnes to be driven over asset with less than 600mm of cover.

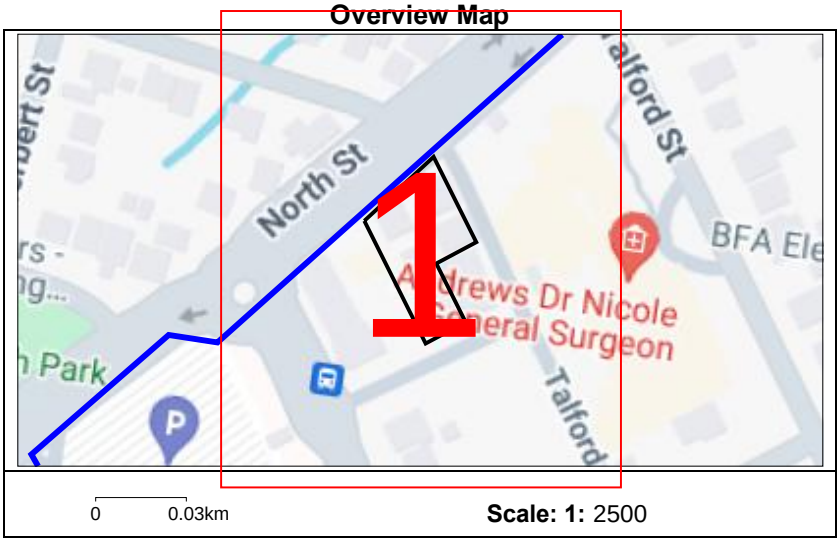
- Reinstate exposed TPG network infrastructure back to original state.

PRIVACY & CONFIDENTIALITY

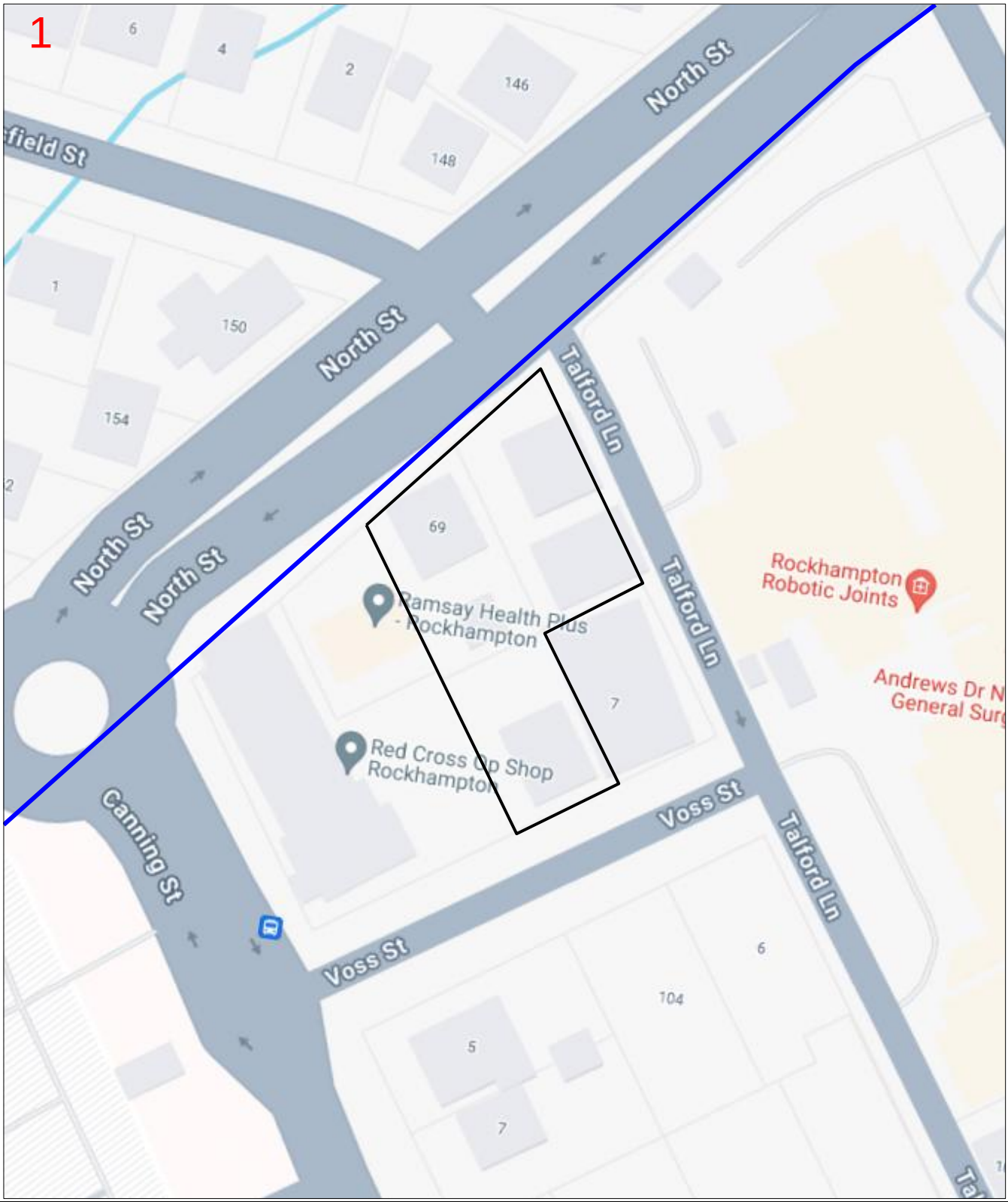
- Privacy Notice – Your information has been provided to us by Before You Dig Australia to respond to your Before You Dig Australia enquiry. We will keep your personal information in accordance with TPG's privacy policy, see www.tpg.com.au/about/privacy.

- Confidentiality – The information we have provided to you is confidential and is to be used only for planning and designing purposes in connection with your Before You Dig Australia enquiry. Please dispose of the information by shredding or other secure disposal method after use. We retain all intellectual property rights (including copyrights) in all our documents and plans.

Overview Map



TPG Telecom Limited



Enquiry Number: 240298214

Map Sheet: 1

Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area	◇		
AAPT/PowerTel Pit	●	TransACT Pit	●
AAPT/PowerTel Duct	／	TransACT Duct	／
DDA Pit	●	SOUL Pattinson Telecoms Pit	●
DDA Duct	／	SOUL Pattinson Telecoms Duct	／
Agile/Adam Pit	●	PIPE Networks Pit	●
Agile/Adam Duct	／	PIPE Networks Duct	／

PINNACLE ENGINEERING GROUP

Appendix E

RRC Overlays and Codes

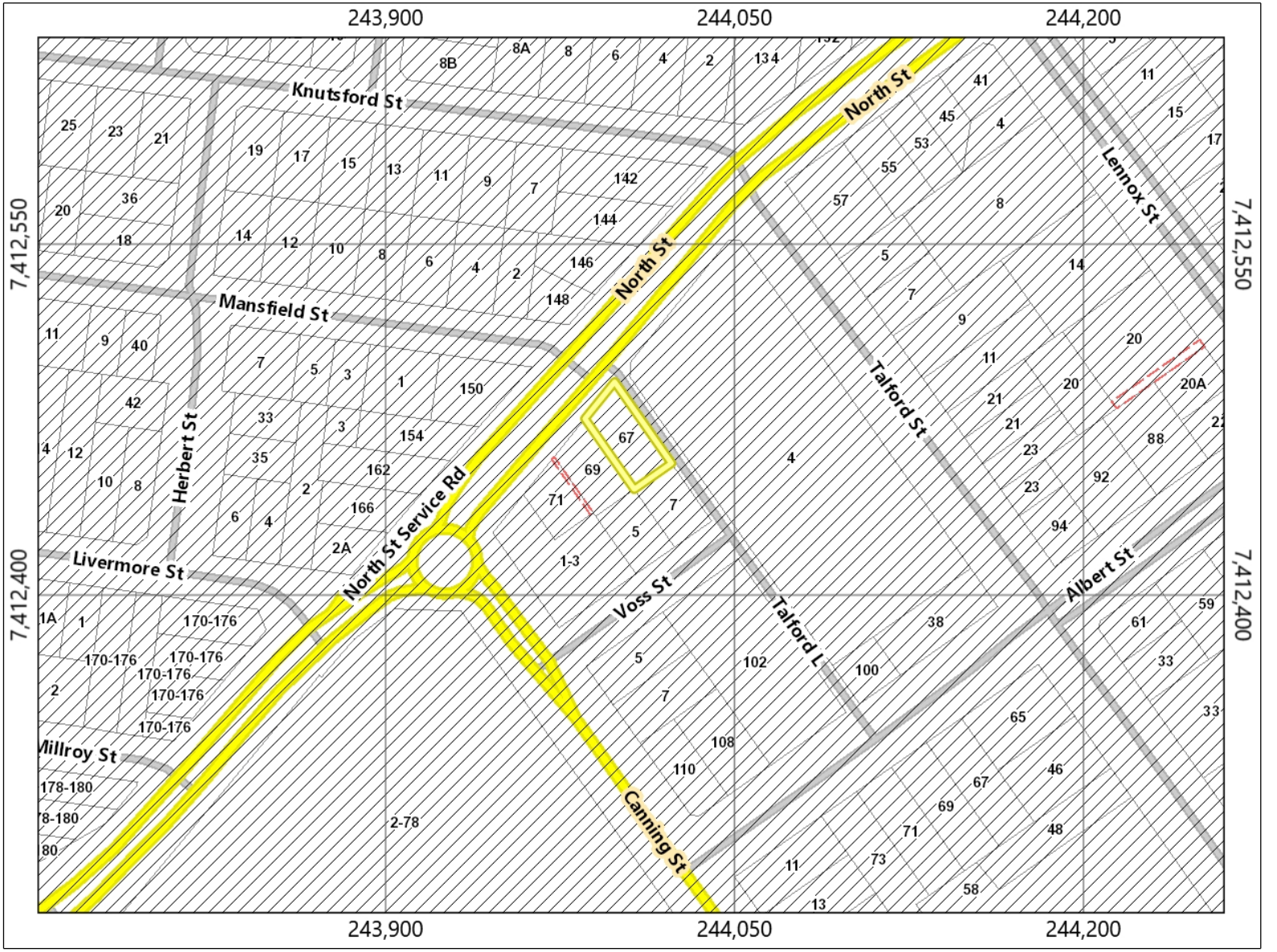
RichTextBox1

Spatial reference

GDA2020_MGA_Zone_56

A4 Page scale at 1: 2,534.30

Printed from RRPS on 11/06/24



Legend

- Limit of know or potential acid sulphate soils (Department of Resources)
- Land at or below 5m AHD
- Land above 5m and below 20m AHD
- Ocean
- Erosion Prone Area
- Hazard
  - Medium Hazard
  - High Hazard
- Development Information
- Fitzroy River Flood
  - H1 (Low)
  - H2 (Medium)
  - H3 (High)
  - H4 (High)
  - H5 (Extreme)
  - H6 (Extreme)
- Fitzroy River Flood Study Extent
- Floodplain Investigation Area
- North Rockhampton Flood Management Area
- Coastal Management District
- Roads1
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Easements
- Property Parcels
- Ocean
- DCDB Parks
- CQ LGA Boundaries

GDA 2020

Rockhampton Regional Council

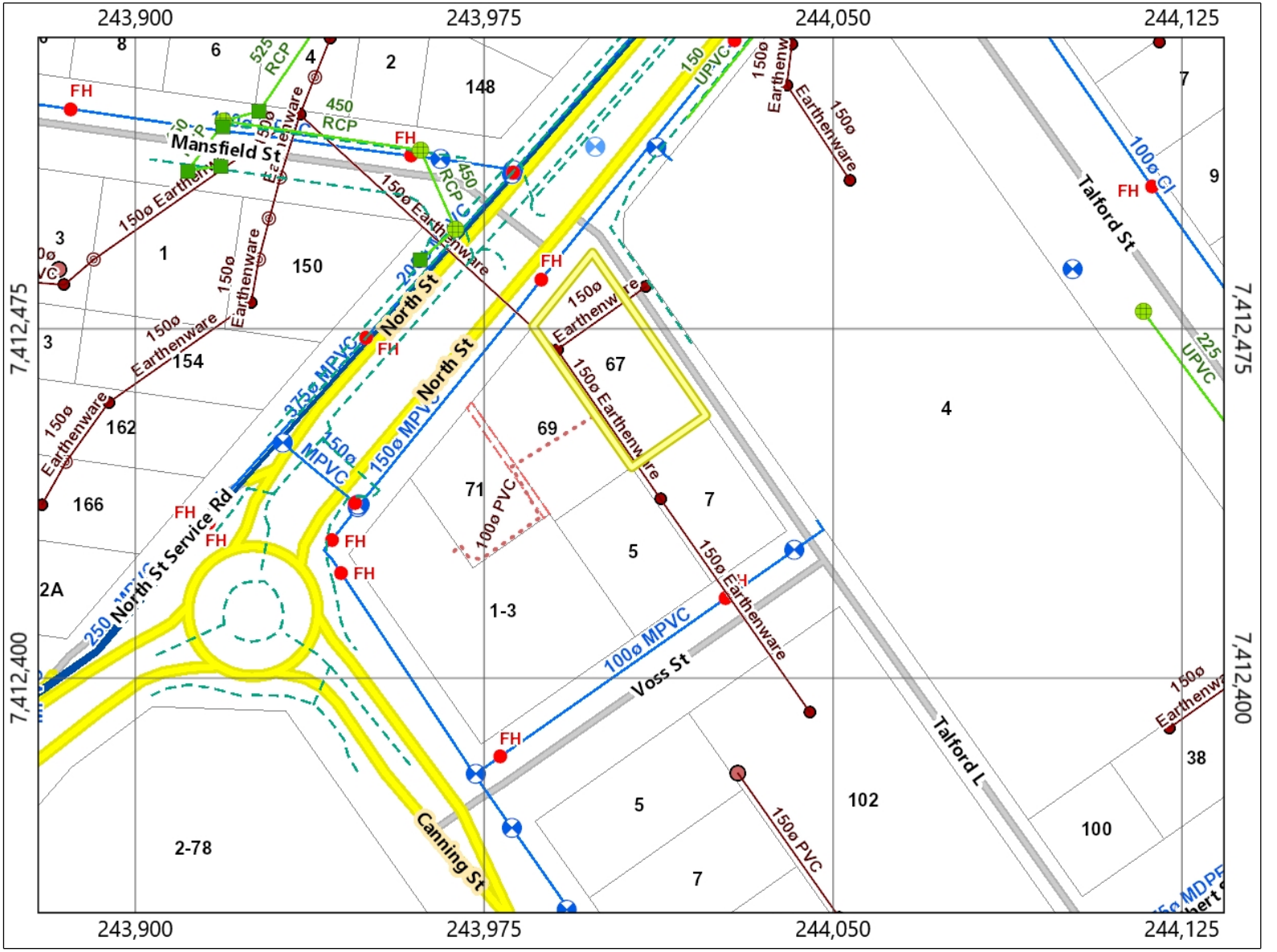
RichTextBox1

Spatial reference

GDA2020_MGA_Zone_56

A4 Page scale at 1: 1,267.15

Printed from RRPS on 11/06/24

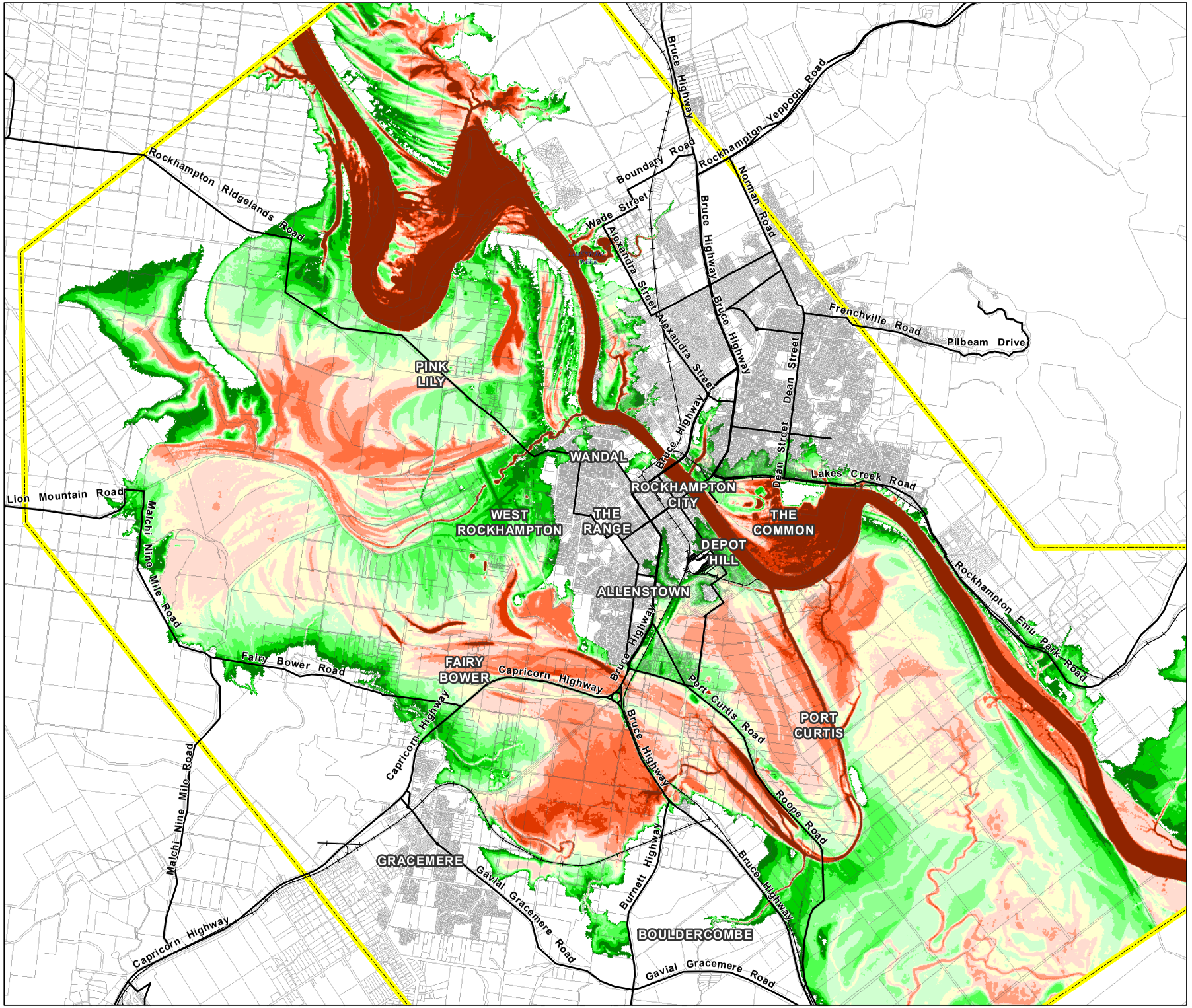


Legend

- Not Avaliable
- Stormwater Main Labels
- Junctions Labels
- Culverts
- Stormwater Junctions
  - Inlets
  - Access Chambers
- Stormwater Pipes
  - Open Channel
  - Mains
  - Culvert Pipes
  - Inter-allotment
  - Other
- Subsoil pipes
- Subsoil Clean Out pits
- Sewer Gravity Mains
  - Combined Main
  - Reticulation Main
  - Trunk Main
- Sewer Rising Mains
- Sewer Access Chambers
  - Access Chambers
  - Roll Over
  - Lamp Hole | Inspection Opening
  - Overflow Chambers
- Not Avaliable
- Hydrants
- Water Valves
  - Other Valve Type
  - Gate, Sluice, Butterfly
  - Air Valve
  - Ball Cock, Stop Cock
  - Ball Valve
  - Motor Sluice Valve
  - Non Return Valve
  - Pressure Reducing Valve
  - RPZ Valve
  - Reflux Valve
  - Scour Valve
  - Sluice Bypass Valve
  - Tap
- Water Mains
  - Other Main Type
  - Trunk Main
  - Reticulation Main
  - Raw Water Main
  - Scour Line
- Roads1
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Easements
- Property Parcels
- Ocean

GDA 2020

Rockhampton Regional Council



2014 TUFLOW MODEL

Peak Flood Depths and Extents (1% AEP) Basecase

Figure 9

Hydraulic Model Extent Boundary

Peak Deths (m)

- 0.0 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 3.5
- 3.5 - 4.0
- 4.0 - 4.5
- 4.5 - 5.0
- > 5.0

N

Scale: 1:75,000 (when printed at A3)

0 0.5 1 2 3

Kilometers

PROJECT ID 60313918

LAST MODIFIED smithc5 20-Jun-2014

FILE NAME 60313918_WIS_0117

AECOM

9.3.8 Water and sewer code

9.3.8.1 Application

This code applies to assessing development where the code is identified as applicable in the tables of assessment.

When using this code, reference should be made to section 5.3.2 and, where applicable, section 5.3.3 located in Part 5.

9.3.8.2 Purpose

(1) The purpose of the water and sewer code is to ensure that development is provided with potable water and sewerage infrastructure in an efficient and sustainable way, which maintains public health.

(2) The purpose of the code will be achieved through the following overall outcomes:

(a) development facilitates the efficient provision of water, including infrastructure for supply, treatment, storage and reticulation;

(b) development facilitates the efficient provision of sewerage infrastructure, including reticulation, treatment, storage and disposal;

(c) whole of life cycle costs for water and sewerage infrastructure are minimised; and

(d) adverse impacts on the environment and the amenity of the locality are avoided and optimal use of water resources is maintained.

9.3.8.3 Specific benchmarks for assessment

Table 9.3.8.3.1 Development outcomes for assessable development

Water

Table 9.3.8.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Water		
PO1 A water supply is provided that is adequate for the current and future needs of the intended development.	**AO1.1** AO1.1.1 Where within a water supply planning area, the development is connected to Council's reticulated water supply system in accordance with SC6.21 — Water supply infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. Editor's note—Where development is located outside of the water supply planning area to refer to the requirements under the Plumbing Code of Australia.	**Complies.**

PO2 Reticulated water supply networks ensure that the installation is sustainable and minimises whole of life cycle costs.	**AO2.1** Where within a water supply planning area, water supply systems and connections are designed and constructed in accordance with SC6.21 — Water supply infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. **AND** **AO2.2** Where within a water supply planning area, staged developments are connected to the water supply network and operational prior to the commencement of the use or endorsement of the survey plan.	**N/A.**

Sewer

Table 9.3.8.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Sewer		
PO3 Sewerage treatment and disposal is provided that is appropriate for the level of demand generated, protects public health and avoids environmental harm.	**AO3.1** Where within a sewer planning area, the development is connected to Council's reticulated waste water system in accordance with SC6.17 — Sewerage infrastructure planning scheme policy and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. Editor's note—Where development is located outside of the sewer planning area to refer to the requirements under the Plumbing Code of Australia.	**Complies.**
PO4 Reticulated sewer networks ensure that the installation of infrastructure assets is sustainable and minimises whole of life cycle costs.	**AO4.1** Where within a sewer planning area, waste water systems and connections are designed and constructed in accordance with SC6.17 — Sewerage infrastructure planning scheme policy	**Complies.**

	and the Capricorn Municipal Development Guidelines. Editor's note—A network analysis may be required to demonstrate compliance with this acceptable outcome. **AND** **AO4.2** Where within a sewer planning area, staged developments are connected to the waste water network and operational prior to the commencement of the use or endorsement of the survey plan.	

Point source waste water management

Table 9.3.8.3.1 Development outcomes for assessable development (part)

Performance outcomes	Acceptable outcomes	Assessment
Point source waste water management		
PO5 The waste water management plan provides that waste water is managed in accordance with a waste management hierarchy that: (a) avoids waste water discharge to waterways; or (b) minimises waste water discharge to waterways by reuse, recycling, recovery and treatment for disposal to sewer, surface water and groundwater if it is agreed waste water discharge to waterways can not practically and reasonably be avoided.	**AO5.1** A waste water management plan (WWMP) is prepared by a suitably qualified person. The waste water management plan accounts for: (a) waste water type; (b) climatic conditions; (c) water quality objectives; and (d) best practice environmental management.	**N/A.**

Appendix F

Preliminary Council Approval for the Proposed Sewerage Main Realignment

Jai Waters

From: Mohit Paudyal <Mohit.Paudyal@rrc.qld.gov.au>
Sent: Thursday, 8 February 2024 9:21 AM
To: Andrew Cresswell
Subject: RE: 67-69 North Street and 5 Voss Street, The Range - Existing Sewer diversion
Attachments: Sewer Plan - AC level - I.pdf

Hi Andrew,

No issue with the proposal for the realignment. Our advice as below:

- Minimum 3m building exclusion corridor is to be provided;
- Limit the work within Talford Lane as possible;
- Would be best to run sewer within the vicinity of eastern boundary of 67 North Street, in Talford Lane (if possible).

Attached is the existing sewerage plan with Access Chamber level (Surface Level and Invert Level) and length of sewerage main between access chamber.

As discussed, detail survey need to be conducted rather than design based on the levels indicated in sewer plan.

Regards,
Mohit Paudyal
Senior Development Engineer | Development Engineering Unit
Rockhampton Regional Council
Ph: 07 4932 9000 | E-mail: mohit.paudyal@rrc.qld.gov.au
Address: PO Box 1860, Rockhampton Q 4700 | Web www.rockhamptonregion.qld.gov.au
Like us www.facebook.com/RockhamptonRegionalCouncil **Follow us** www.twitter.com/RRCouncil

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From: Andrew Cresswell <andrew@pinnacleeng.com.au>
Sent: Friday, February 2, 2024 11:22 AM
To: Mohit Paudyal <Mohit.Paudyal@rrc.qld.gov.au>
Cc: 'Sam Pourmoradian' <Sam@radianplanning.com.au>; Andrew Cresswell <andrew@pinnacleeng.com.au>
Subject: RE: 67-69 North Street and 5 Voss Street, The Range - Existing Sewer diversion

Morning Mohit, Further to our discussion earlier this week and thanks again for your time to provide comments to the attach corr

Morning Mohit,

Further to our discussion earlier this week and thanks again for your time to provide comments to the attached.

Please see the attached concept sewer diversion plan showing the proposed alignments the way I see it at this point in time along with the exclusion corridors as discussed. Can you please let me know your comments on the attached.

Also would it be possible for you to send through any as constructed plans you may have on this sewer and the surrounding areas so I can be confident to achieve minimum grades for the proposed infrastructure.

Thanks again and speak soon.

If you have any queries, please don't hesitate to contact me at any time.

Kind regards,

Andrew Cresswell
Director (ADEng(Civil)), DBus, AIEAust

P: 0434 997 989
E: andrew@pinnacleeng.com.au

PINNACLE ENGINEERING GROUP
ABN: 80 608 431 625
Level 1, 19 Short Street, Southport QLD 4215
(PO Box 517, Paradise Point QLD 4216)
www.pinnacleeng.com.au

From: Andrew Cresswell <andrew@pinnacleeng.com.au>
Sent: Monday, January 29, 2024 3:04 PM
To: 'Mohit.Paudyal@rrc.qld.gov.au' <Mohit.Paudyal@rrc.qld.gov.au>
Cc: 'Sam Pourmoradian' <Sam@radianplanning.com.au>; Andrew Cresswell <andrew@pinnacleeng.com.au>
Subject: 67-69 North Street and 5 Voss Street, The Range - Existing Sewer diversion

Hi Mohit,

Thanks for your time just now.

Please see the attached sewer diversion plan as discussed. Also attached is the prelodgment minutes to give you some context.

I look forward to workshopping this with you and discussing a way forward.

If you have any queries, please don't hesitate to contact me at any time.

Kind regards,

Andrew Cresswell
Director (ADEng(Civil)), DBus, AIEAust

P: 0434 997 989
E: andrew@pinnacleeng.com.au

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(PO Box 517, Paradise Point QLD 4216)
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LANDSCAPE CONCEPT PLAN - SEMI BASEMENT & GROUND FLOOR

NEARMAP DATED: 06/11/24 (PHOTOMANIPULATED)

1 LARGE TREES
Large canopied rounded tree species to provide shade over the frontage, provide visual amenity and landscape softening of the proposed development; Refer Proposed Planting Schedule (ie: *Handroanthus impetiginosus, Waterhousia floribunda*)

2 SHADE/ SCREEN TREES
Tree planting to provide shade over the frontage and screening from the adjacent streets; Refer Proposed Planting Schedule (ie: *Tristaniopsis laurina* 'Luscious')

3 COLUMNAR SCREEN TREES
Columnar planting to assist in providing vertical softening of the proposed building to adjoining streetscape; Refer Proposed Planting Schedule (ie: *Elaeocarpus eumundii, Polyalthia longifolia var. pendula)*

4 PALMS
Large feature palms to provide visual amenity and assist in building presentation to the streetscape; Refer Proposed Planting Schedule (ie: *Ptychosperma elegans)*

5 SCREEN PLANTING
Planting to provide visual amenity and privacy screening; Refer Proposed Planting Schedule (ie: *Syzygium australe* SAN01 Straight and Narrow)

6 SHRUBS AND GROUNDCOVERS
Mass planting to large areas to assist in building presentation to the streetscape and to provide visual amenity; Refer Proposed Planting Schedule

7 CLIMBERS
Climbing plant species for visual amenity and vertical softening to fence; Refer Proposed Planting Schedule (ie: *Pandorea jasminoides* Southern Belle)

8 PODIUM PLANTERS
Cascading plants to podium planters to provide visual amenity and softening of building presentation; Refer Proposed Planting Schedule (ie: *Russelia equisetiformis*)

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/80-2024

Dated: 1 November 2024

ANDREW GOLD LANDSCAPE ARCHITECTURE
PO BOX 5220, MT GRAVATT EAST QLD 4122
T 07 3420 0006 **M** 0405 389 243 **E** andrew@agla.com.au

PROPOSED HEALTH CARE SERVICE (MEDICAL CENTRE)
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

JOB NUMBER	SHEET NO.	ISSUE	REASON	DATE	DRAWN BY
24.098	1	D	SUBMISSION TO RCC	10/04/25	AG / PD / AC

1:250@A3
0 1 2 3 4 5 10m

PROPOSED PLANTING SCHEDULE

CODE	SPECIES	COMMON NAME	SIZE*	SPACING(m)**	HEIGHT(m)	WIDTH (m)
PROPOSED LARGE TREES						
1.1	*Handroanthus impetiginosus*	Pink Trumpet Tree	45L	as shown	10	8
1.2	*Harpullia pendula*	Tulipwood	45L	as shown	10	8
1.3	*Hymenosporum flavum*	Native Frangipani	45L	as shown	12	6
1.4	*Waterhousia floribunda*	Weeping Lillypilly	400L	as shown	15	10
PROPOSED SHADE/ SCREEN TREES						
2.1	*Stenocarpus sinuatus*	Firewheel Tree	45L	as shown	8	5
2.2	*Tristaniopsis laurina* Luscious	Water Gum	45L	as shown	10	5

***PLANT CONTAINER SIZE:**

400L	400 Litre container stock min	Min. height at time of planting: 5.5m
45L	45 Litre container stock min	Min. height at time of planting: 1.9-2.3m

****PLANT SPACING:**

The proposed densities of plants will be derived as a compromise between growth rate, anticipated size, and the ability to provide a good vegetative cover within a reasonable space of time.

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

23 May 2025

DATE

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Development Permit No.: **D/80-2024**

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PROPOSED HEALTH CARE SERVICE (MEDICAL CENTRE)
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

JOB NUMBER	SHEET NO.	ISSUE	REASON	DATE	DRAWN BY
24.098	2	D	SUBMISSION TO RCC	10/04/25	AG / PD / AC

PROPOSED PLANTING SCHEDULE

CODE	SPECIES	COMMON NAME	SIZE*	SPACING(m)**	HEIGHT(m)	WIDTH (m)
PROPOSED COLUMNAR SCREEN TREES						
3.1	*Acronychia imperforata*	Fraser Island Apple	25L	as shown	8	4
3.2	*Elaeocarpus eumundii*	Smooth Leaved Quandong	25L	as shown	12	5
3.3	*Polyalthia longifolia var. pendula*	Indian Mast Tree	25L	as shown	12	2
PROPOSED PALMS						
4.1	*Ptychosperma elegans*	Solitaire Palm	200L	as shown	12	6
4.2	*Wodyetia bifurcata*	Foxtail Palm	200L	as shown	10	5

***PLANT CONTAINER SIZE:**

200L	200 Litre container stock min	Min. height at time of planting: 3.6m
25L	25 Litre container stock min	Min. height at time of planting: 1.2-1.5m

****PLANT SPACING:**

The proposed densities of plants will be derived as a compromise between growth rate, anticipated size, and the ability to provide a good vegetative cover within a reasonable space of time.

ROCKHAMPTON REGIONAL COUNCIL

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23 May 2025

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PROPOSED HEALTH CARE SERVICE (MEDICAL CENTRE)
67-69 NORTH STREET AND 5 VOSS STREET, THE RANGE

JOB NUMBER	SHEET NO.	ISSUE	REASON	DATE	DRAWN BY
24.098	3	D	SUBMISSION TO RCC	10/04/25	AG / PD / AC

PROPOSED PLANTING SCHEDULE

CODE	SPECIES	COMMON NAME	SIZE*	SPACING(m)**	HEIGHT(m)	WIDTH (m)
PROPOSED SCREEN PLANTING						
5.1	*Radermachera pierrei* Summerscent	Summerscent	300mm	1.5	3-4	2.5
5.2	*Syzygium australe* Aussie Southern	Lillypilly	200mm	1.5	5	2
5.3	*Syzygium australe* SAN01 Straight and Narrow	Narrow Lillypilly	300mm	1.2	5-8	1.2
PROPOSED SHRUBS AND GROUNDCOVERS						
6.1	*Allamanda cathartica* Sunee	Dwarf Yellow Allamanda	140mm	0.8	1	1.2
6.2	*Crinum pedunculatum*	Swamp Lily	200mm	1	2	2
6.3	*Liriope muscari* Evergreen Giant	Liriope	140mm	0.6	0.8	0.8
6.4	*Lomandra confertifolia* Little Con	Little Con	140mm	0.25	0.3	0.4
6.5	*Myoporum ellipticum*	Creeping Boobialla	140mm	1	0.4	2.5
6.6	*Zamia furfuracea*	Cardboard Palm	200mm	1	1	2
PROPOSED CLIMBERS						
7.1	*Pandorea jasminoides* Southern Belle	Bower of Beauty	300mm	as shown	2-4	2-4
PROPOSED PODIUM PLANTERS						
8.1	*Russelia equisetiformis*	Coral Fountain	140mm	1.0	1.5	4

***PLANT CONTAINER SIZE:**

300mm	300mm dia minimum pot size
200mm	200mm dia minimum pot size
140mm	140mm dia minimum pot size

ROCKHAMPTON REGIONAL COUNCIL

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23 May 2025

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Dated: **1 November 2024**

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24.098	4	D	SUBMISSION TO RCC	10/04/25	AG / PD / AC