

APPENDIX F

Traffic Engineering Report

To	Kaennetto Investments	Date	25 March 2026
Prepared by	Luke Huang, Modus Graduate Traffic Engineer	Approved by	Harj Singh, Modus Executive Director (RPEQ 22364)
Location	177 Francis Street, West End		
Subject	Proposed Residential Development - Traffic Engineering Report		
Status	Final	Attachments	Appendix A: Development Plans Appendix B: Traffic Concept Plan Appendix C: Swept Path Assessments

1 Introduction

1.1 Overview

Modus has been commissioned by Kaennetto Investments to provide traffic and transport advice in relation to the proposed Residential development located at 177 Francis Street, West End.

This Traffic Engineering Report has been produced by Modus to assess the traffic and transport engineering items in support of the proposed development. A copy of the proposed development plans are provided at **Appendix A**.

Modus has completed this Traffic Engineering Report in accordance with the usual care and thoroughness of the consulting profession. The assessment is based on accepted traffic engineering practices and standards applicable at the time of undertaking the assessment. Modus disclaims responsibility for any changes to project planning or road conditions that may occur after completion of the assessment.

2 Existing Conditions

2.1 Site Location

The development site is located at 177 Francis Street, West End and is bounded by Residential uses to the north and east, a vacant land to the west with Francis Street to the south.

Furthermore, the development site is currently zoned Low Density Residential within the Townsville City Council (TCC) Local Government Area.

Additionally, the development site is currently vacant with no crossovers provided onto Francis Street.

Figure 2-1 on the subsequent report page illustrates the development site location.

Figure 2-1 Development Site Location



2.2 Existing Road Network

Table 2-1 outlines characteristics of the existing road network in proximity to the development site.

Table 2-1 Key Road Characteristics

Road	Authority	Hierarchy	Speed Limit	Typical Form
Francis Street	Council	Local Street	50 km/hr	Two lanes, undivided

2.3 Active and Public Transport Facilities

A dedicated pedestrian footpath is not provided along the frontage of the site to connect to the wider pedestrian network. Additionally, there are no dedicated bicycle lanes provided along the frontage of the site.

Furthermore, there are five (5) bus stops within a 400m radius (a comfortable 5-minute walk) of the development site. The nearest bus stop is located along Percy Street approximately 100m west of the site.

3 Proposed Development

3.1 Overview

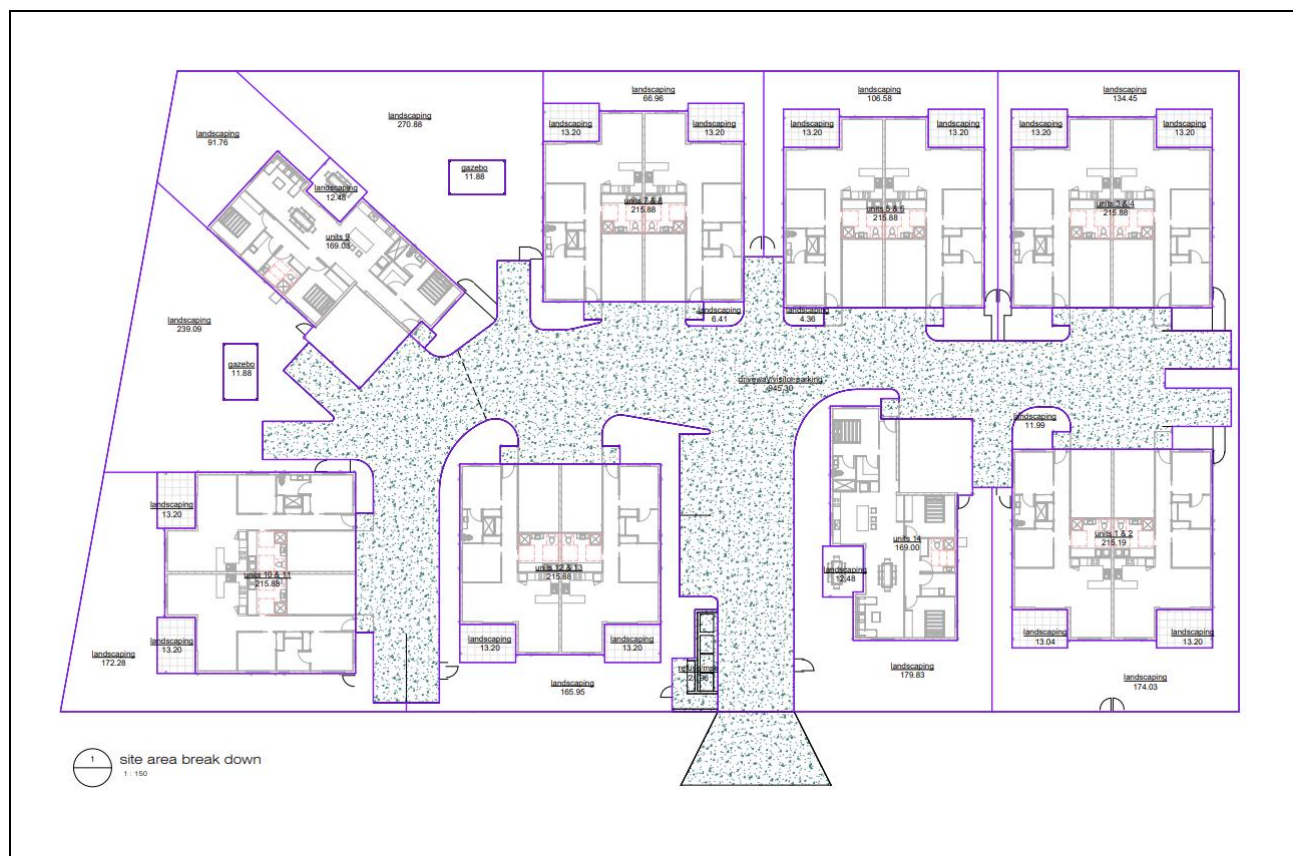
The proposed development will comprise a Multiple Dwelling use accommodating 14 units.

As part of the proposed development, vehicular access will be achieved via a 6.0m wide access onto Francis Street.

Furthermore, the proposed development will accommodate a total of 27 car parking spaces on-site.

Figure 3-1 illustrates the proposed development layout. A copy of the development plans are provided at **Appendix A**.

Figure 3-1 Proposed Development Layout



4 Traffic and Transport Review

4.1 Access Design

4.1.1 Driveway Design

In accordance with Australian Standards 2890.1, the minimum driveway requirements for the proposed development are outlined in Table 4-1.

Table 4-1 Driveway Design Compliance

Road Frontage	AS2890.1 Driveway Design Compliance	Access Conditions
Francis Street	Site Conditions	Minor Road Frontage User Class 2 25-100 Spaces
	Access Facility Category	2
	Required Driveway Widths	Minimum 6.0m – 9.0m
	Proposed Driveway Width	6.0m

Therefore, the proposed driveway width COMPLIES with Australian Standards 2890.1.

4.1.2 Crossover Design

Modus recommends the development accommodates crossover designs in accordance with the IPWEA Standard Drawings package as illustrated on the Traffic Concept Plan provided at **Appendix B**.

4.1.3 Driveway Location

In accordance with Australian Standards 2890.1, development accesses with a Class 2 Access Facility Category are to achieve a 6.0m separation to any formal intersections.

Provided that the proposed access location is not located within a 6.0m distance to any formal intersections, the proposed access location is considered acceptable.

4.1.4 Pedestrian Sight Splays

In accordance with Australian Standards 2890.1, pedestrian sight splays should be provided at the egress point of a driveway and measure 2.5m in depth and 2.0m in width from the property boundary.

The proposed development does accommodate pedestrian sight splay provisions in accordance with Australian Standards 2890.1

Therefore, the proposed pedestrian sight provisions are considered acceptable.

4.2 Car Parking Provisions

In accordance with the Townsville City Plan the minimum car parking requirements are outlined in Table 4-2.

Table 4-2 Minimum Car Parking Requirements

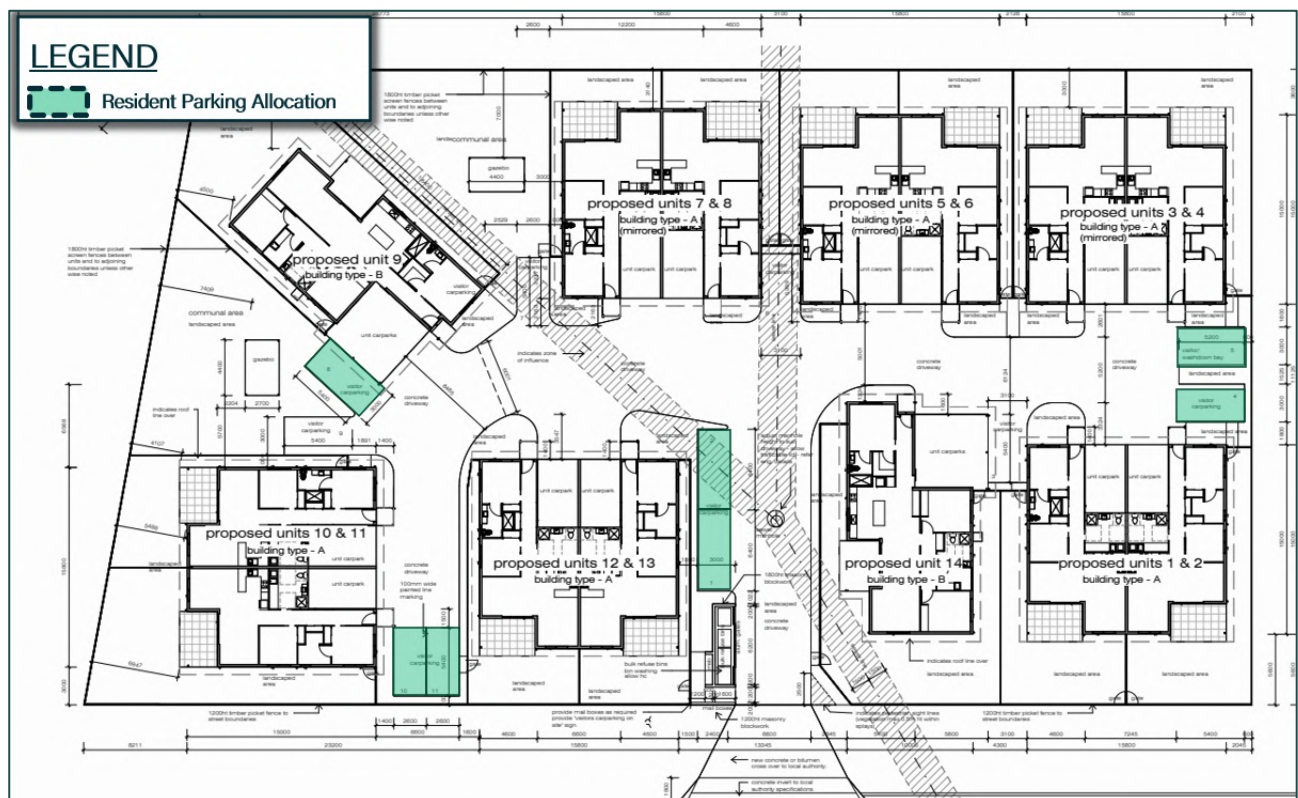
Land Use	Car Parking Rate	Yield	Car Parking Required	Car Parking Provided
Multiple Dwelling	1.7 Resident Spaces per dwelling 0.2 Visitor Spaces per dwelling	14 Units	23.8 (24) Resident Spaces 2.8 (3) Visitor Spaces	16 Resident Spaces 11 Visitor Spaces
TOTAL:			27 Spaces	27 Spaces

Therefore, the proposed development provides compliant car parking supply in accordance with the Townsville City Plan.

However, the development accommodates a technical shortfall in Resident parking spaces and a surplus in Visitor spaces.

On this basis, Modus recommends the spaces outlined in green as per Figure 4-1 be allocated exclusively for Resident parking.

Figure 4-1 Recommended Resident Parking Allocation



4.3 Car Parking Design

4.3.1 Car Parking Layout

Modus has conducted a design review of the car parking layout against the design guidelines within Australian Standards 2890.1, of which is summarised below in Table 4-3.

Table 4-3 Car Parking Layout Design Review

Design Criteria	AS2890 Requirement	Proposed Design	Compliant
Parking Spaces			
Car Space Length - General	Min 5.4m	Min 5.4m	✓
Parallel Space Length - Obstructed End (3.3m One-Way Aisle)	Min 6.4m	Min 6.4m	✓
Garage Internal Length - Single Vehicle	Min 5.4m	Min 5.4m	✓
Garage Internal Length - Double Vehicle	Min 5.4m	Min 5.4m	✓
Car Space Width - Visitors / Medium Turnover	Min 2.5m	Min 2.5m	✓
Parallel Space Width - General	Min 2.1m plus 0.3m door opening clearance	Min 2.4m	✓
Garage Internal Width - Single Vehicle	Min 3.0m	Min 3.0m	✓
Garage Internal Width - Double Vehicle	Min 5.4m	Min 5.4m	✓
Car Parking Door Opening Clearances	Min 0.3m	Min 0.3m	✓
Roadways and Parking Aisles			
Minimum Car Parking Aisle Width	Min 5.8m	Min 5.8m	✓
Minimum Two-Way Circulation Roadway	Min 5.5m	Min 5.5m	✓
Maximum Car Parking Length	Max 100.0m	Max 75.0m	✓

Therefore, the proposed car parking layout is designed in accordance with Australian Standards 2890.1.

4.3.2 Queueing Provisions

In accordance with Table 3.3 of Australian Standards AS2890.1, the proposed development is required to provide a minimum queueing provision of two (2) vehicles (equivalent to 12.0m in length) from the property boundary to the first high turnover space.

The proposed development accommodates a total length of 9.0m from the property boundary to the first parking space (of which is recommended to be allocated for Residents).

Provided that this car parking space will have a low parking turnover, the proposed queueing provisions are considered acceptable.

4.4 Servicing Requirements

The largest design service vehicle anticipated for on-site general servicing arrangements is a Heavy Rigid Vehicle (HRV).

Therefore, Modus has conducted a swept path assessment, which confirms the HRV design vehicle is able to safely and efficiently manoeuvre to, within and from the site ensuring a minimum 0.3m to any permanent obstructions, ensuring a forward-in / forward-out arrangement occurs.

This swept path assessment is provided at **Appendix C**.

4.5 Development Traffic Generation

In accordance with the TfNSW Guide to Transport Impact Assessment (2024) document, the peak hour traffic generating potential of the proposed development is outlined in Table 4-4.

Table 4-4 Proposed Development Traffic Generation Volumes

Land Use	Yield	AM Peak Traffic Generation Rates	PM Peak Hour Traffic Generation Rates	AM Peak Hour Traffic Generation Volumes	PM Peak Hour Traffic Generation Volumes
Multiple Dwelling	14 Units	0.41 trip per dwelling	0.6 trip per dwelling	6 vehicles per hour	9 vehicles per hour

Therefore, the proposed development is anticipated to generate up to 9 vehicles per hour (vph) in the peak hour period.

On average, this corresponds to a new vehicle on the external road network once every 6 minutes and 40 seconds over the peak hour period.

Therefore, the traffic generation associated with the proposed development is not anticipated to comprise the safety or efficiency of the external road network.

5 Summary

Therefore, Modus is of the opinion that the proposed development is acceptable from a traffic engineering perspective and will not have a substantial impact on the safety or efficiency of the external road network.

Should there be any issue with the above, please contact the undersigned.

Yours sincerely,



MODUS TRANSPORT AND TRAFFIC ENGINEERING

Harj Singh
Executive Director (RPEQ 22364)

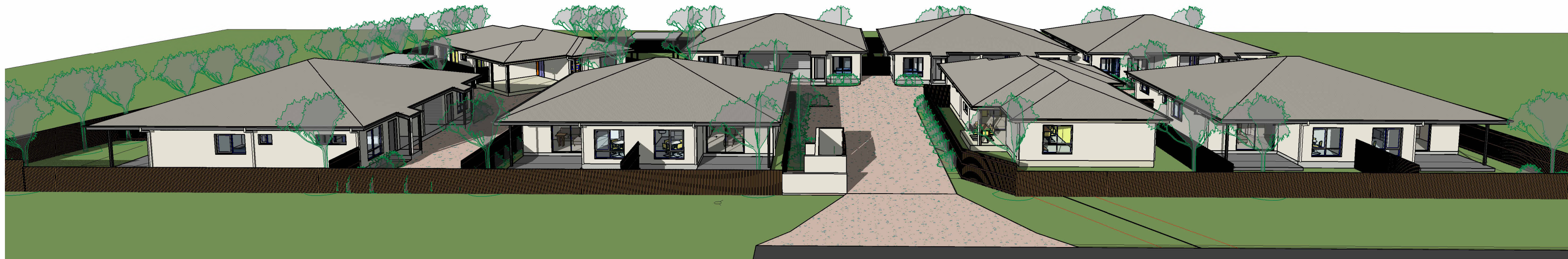
APPENDIX A

Development Plans

NOTES: * THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT. * COMPLY WITH ALL RELEVANT AUTHORITY REG. & BSA. * USE FIGURED DIMENSIONS ONLY. DO NOT USE SCALED MEASUREMENTS. * VERIFY ALL ON SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.		
Revision Schedule		
No	Description	Date
1		



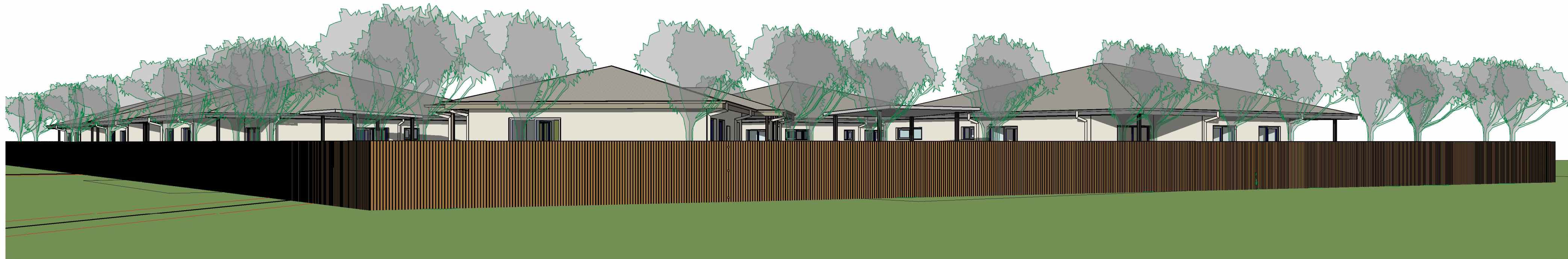
1 francis street - view 1



3 francis street - view 3



5 francis street - view aerial



4 percy street - view -1

Sheet List		
Count	Sheet Number	Sheet Name
1	sk_01	title page
1	sk_02	site plan
1	sk_03	site area breakdown
1	sk_04	services & detail survey plan
1	sk_05	Building - A
1	sk_06	Building - B

Grand total: 6



Preliminary
not to be used for construction purposes



© copyright concepts building design

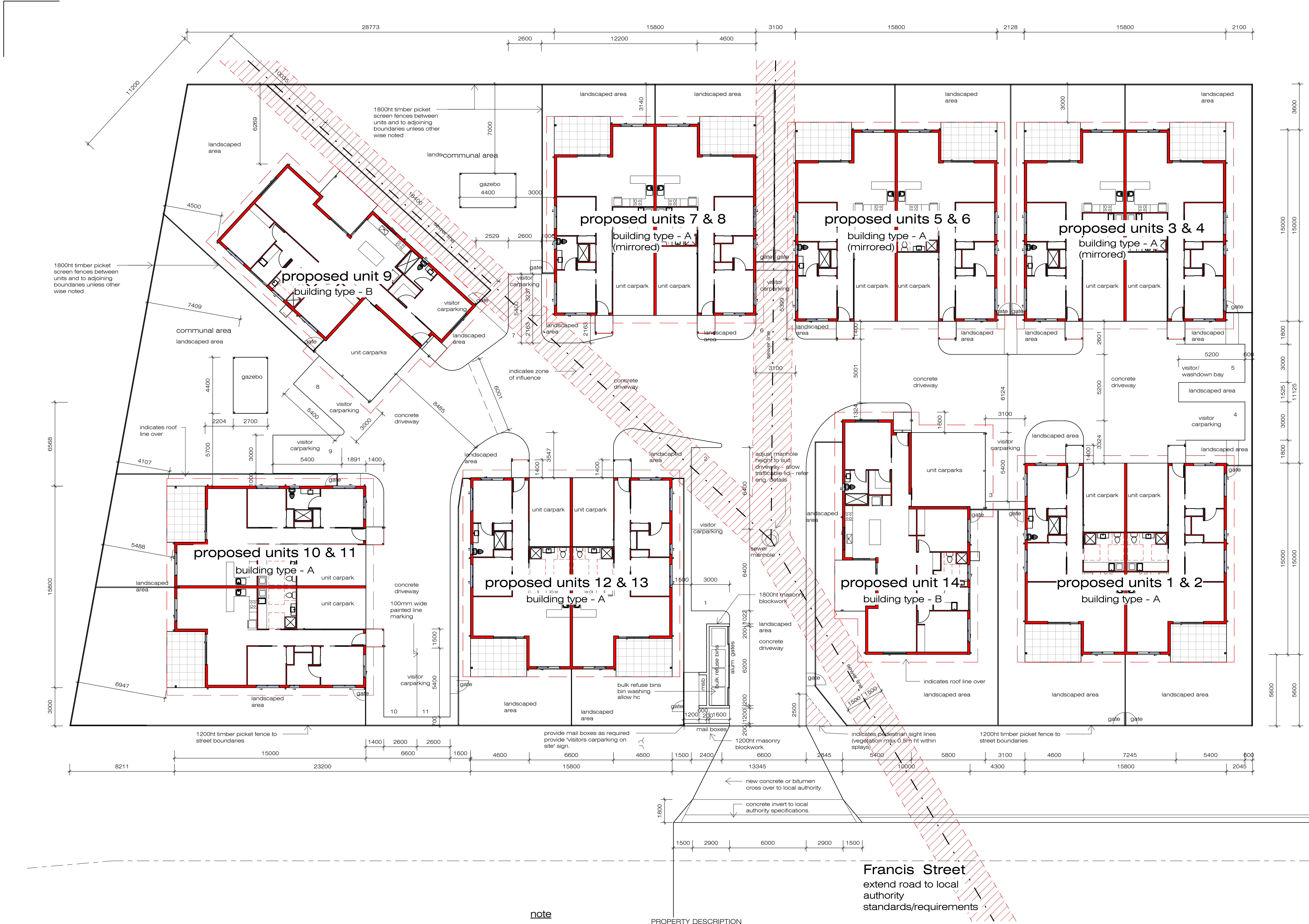
project:
Proposed Multiple Dwellings

for:
Kaenetto Investments P/L

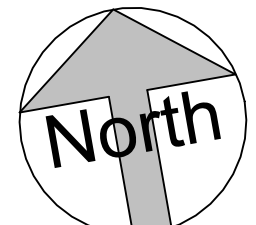
at:
177-179 Francis Street
Westend

Issue Date	dec 2026	25-051
Drawn	Author	
scale		
sheet	sk_01	printed 25/02/2026 7:45:58 PM

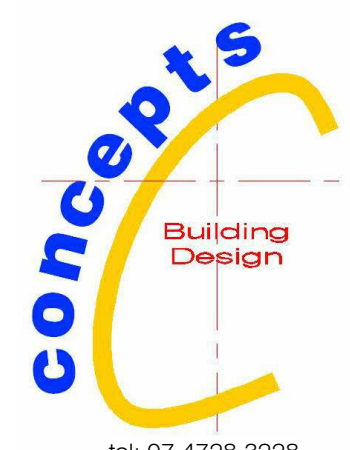
sheet size = A1



NOTES:		
* THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT		
* COMPLY WITH ALL RELEVANT AUTHORITY REGS & BSA		
* USE FIGURED DIMENSIONS ONLY. DO NOT USE SCALED MEASUREMENTS		
* VERIFY ALL ON SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION		
Revision Schedule		
No	Description	Date



Preliminary
not to be used for construction purposes



tel: 07 4728 3228

© copyright concepts building design

project:
Proposed Multiple Dwellings

for:
Kaenetto Investments P/L

at:
177-179 Francis Street
Westend

Issue Date	dec 2025	25-051
Drawn	Author	
scale	As indicated	
sheet	sk 02	
printed	25/02/2026 7:45:59 PM	

sheet size = A1

- note**
1. provide hard standing area for bulk refuse or wheelie bins provide hose cock & hose
 2. a/c condensers are to be located below fence lines and not located on the frontage of the buildings or on balconies and must not be visible from the street frontage or from adjoining properties.
 3. refer engineers details for all civil & storm water details
 4. landscaping - refer landscape consultant plans for details

PROPERTY DESCRIPTION			
LOT No:	Lot 1,2,3,&4		
PLAN No:	RP 711746		
SITE AREA:	4433M2		
Parking Schedule			
Levels	unit parking		Visitor parking
Ground Floor	16		11
Sub-total	16		11
Total parks provided	27		

1 site plan
1 : 150

Francis Street
extend road to local
authority
standards/requirements

Gross Area Schedule				
number	Count	Name	Area	percentage
building				
1	1	units 1 & 2	215.19 m²	5%
2	1	units 3 & 4	215.88 m²	5%
3	1	units 5 & 6	215.88 m²	5%
4	1	units 7 & 8	215.88 m²	5%
5	1	units 9	169.03 m²	4%
6	1	units 10 & 11	215.88 m²	5%
46	1	units 12 & 13	215.88 m²	5%
47	1	units 14	169.00 m²	4%
building: 8	8		1632.61 m²	37%
driveway/parking				
7	1	driveway/visitor parking	945.30 m²	21%
51	1	refuse/msb	21.96 m²	0%
driveway/parking: 2	2		967.26 m²	22%
landscape				
48	1	gazebo	11.88 m²	0%
49	1	gazebo	11.88 m²	0%
13	1	landscaping	13.20 m²	0%
16	1	landscaping	11.99 m²	0%
17	1	landscaping	179.83 m²	4%
24	1	landscaping	174.03 m²	4%

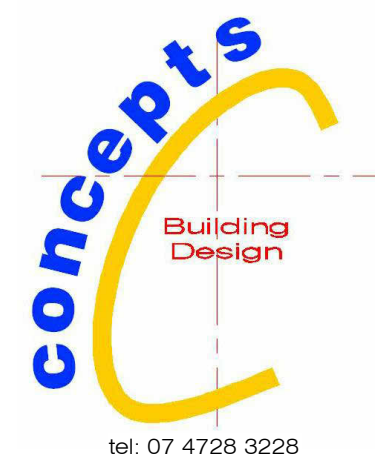
Gross Area Schedule				
number	Count	Name	Area	percentage
25	1	landscaping	134.45 m²	3%
26	1	landscaping	106.58 m²	2%
27	1	landscaping	66.96 m²	2%
28	1	landscaping	270.88 m²	6%
29	1	landscaping	165.95 m²	4%
30	1	landscaping	172.28 m²	4%
31	1	landscaping	6.41 m²	0%
32	1	landscaping	4.36 m²	0%
33	1	landscaping	13.04 m²	0%
34	1	landscaping	12.48 m²	0%
35	1	landscaping	13.20 m²	0%
36	1	landscaping	13.20 m²	0%
37	1	landscaping	13.20 m²	0%
38	1	landscaping	13.20 m²	0%
39	1	landscaping	12.48 m²	0%
40	1	landscaping	13.20 m²	0%
41	1	landscaping	13.20 m²	0%
42	1	landscaping	13.20 m²	0%
43	1	landscaping	13.20 m²	0%
44	1	landscaping	13.20 m²	0%
45	1	landscaping	13.20 m²	0%
50	1	landscaping	239.09 m²	5%
52	1	landscaping	91.76 m²	2%
landscape: 29	29		1831.54 m²	41%
Grand total: 39	39		4431.41 m²	100%



NOTES:		
* THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT.		
* COMPLY WITH ALL RELEVANT AUTHORITY REGS & BSA.		
* USE FIGURED DIMENSIONS ONLY. DO NOT USE SCALED MEASUREMENTS.		
* VERIFY ALL ON SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.		
Revision Schedule		
No	Description	Date
1		



Preliminary
not to be used for construction purposes



© copyright concepts building design

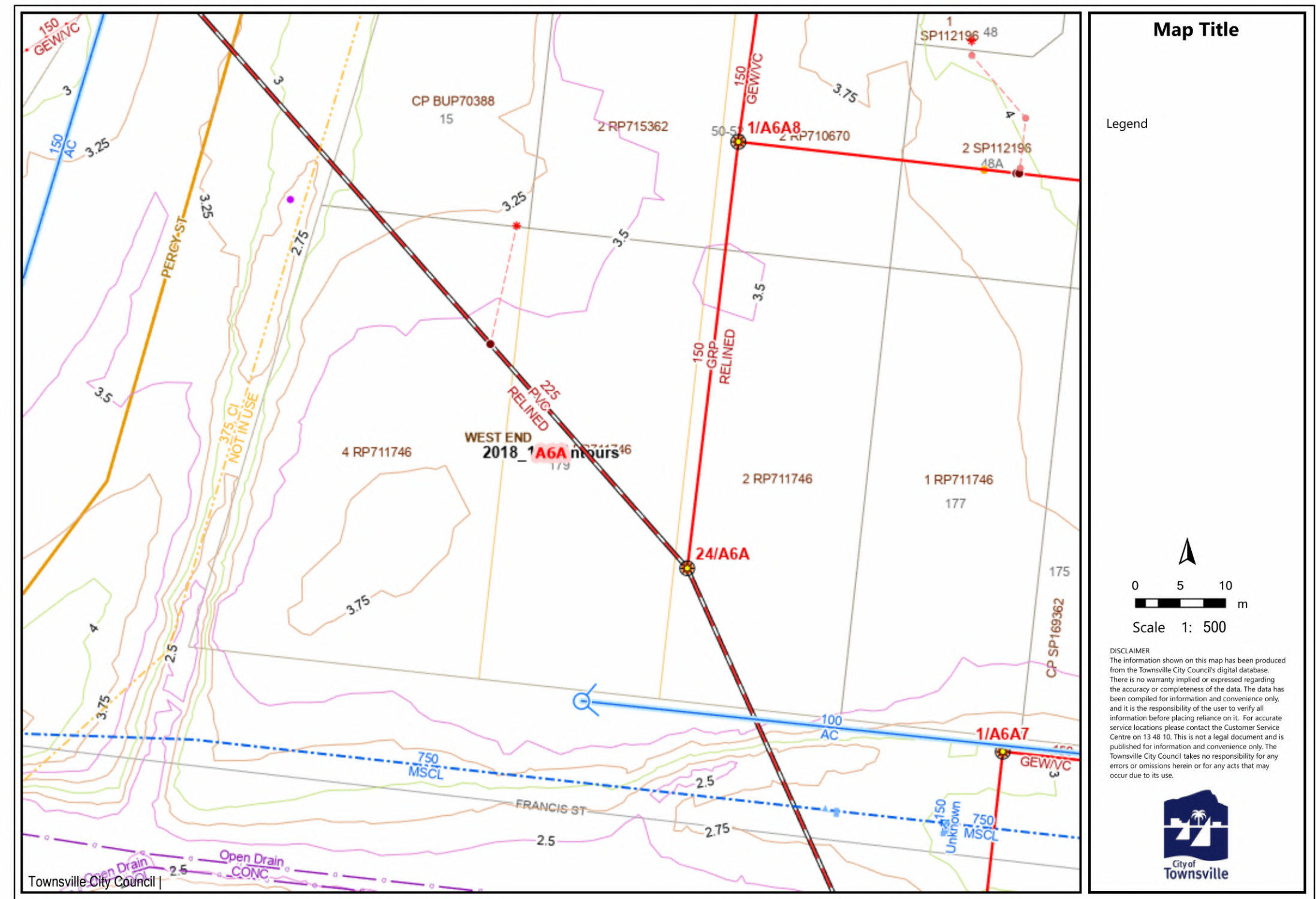
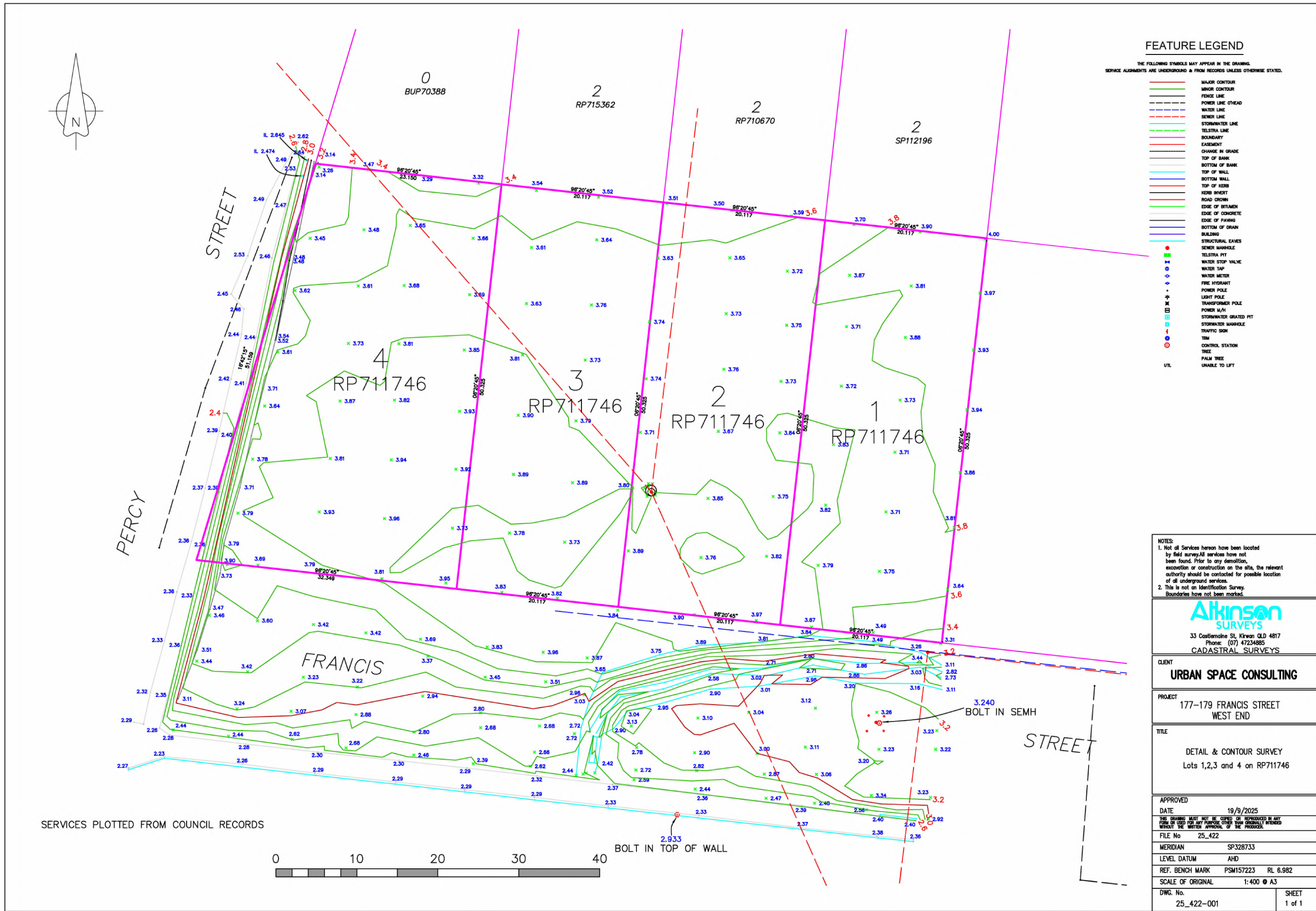
project:
Proposed Multiple Dwellings

for:
Kaenetto Investments P/L

at:
177-179 Francis Street
Westend

Issue Date dec 2025		25-051
Drawn	Author	
scale	1 : 150	
sheet	sk_03	
printed: 25/02/2026 7:45:59 PM		

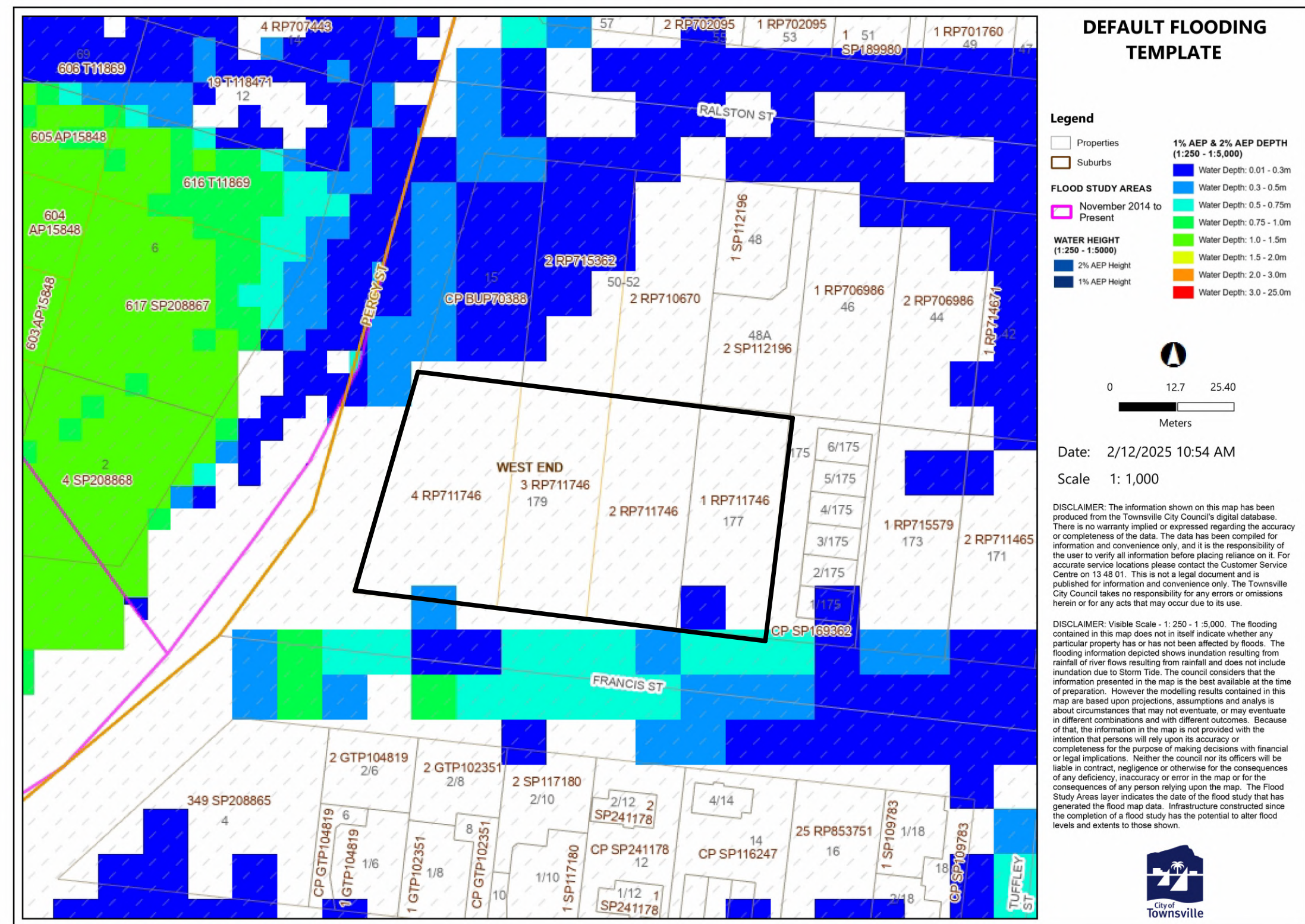
sheet size = A1



A product of



Legend located on next page



NOTES:

- * THIS DRAWING IS ONLY INTENDED TO OBTAIN A LOCAL AUTHORITY BUILDING PERMIT.
- * COMPLY WITH ALL RELEVANT AUTHORITY REG. & BSA.
- * USE FIGURED DIMENSIONS ONLY. DO NOT USE SCALED MEASUREMENTS.
- * VERIFY ALL ON SITE DIMENSIONS & LEVELS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

Revision Schedule

No	Description	Date

URBAN SPACE CONSULTING

RJG BUILDERS
YOUR CHOICE FOR A PROFESSIONAL BUILD

Preliminary
not to be used for construction purposes

concepts
Building Design

tel: 07 4728 3228

© copyright concepts building design

project:
Proposed Multiple Dwellings

for:
Kaenetto Investments P/L

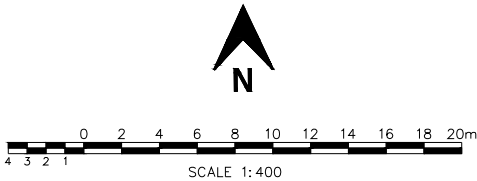
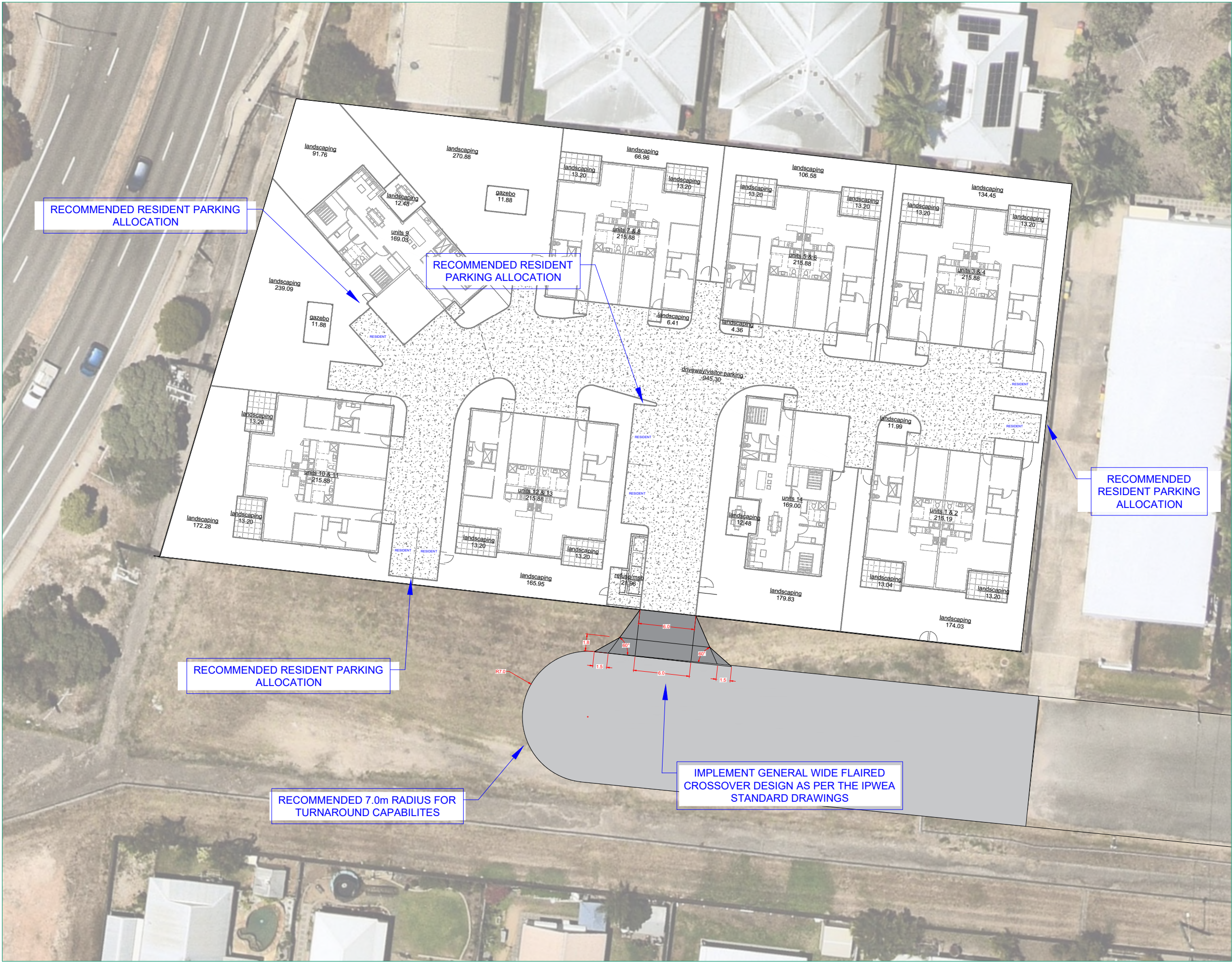
at:
177-179 Francis Street
Westend

Issue Date	dec 2025	25-051
Drawn	Author	
scale	1:100	
sheet	sk 04	printed 25/02/2026 7:46:03 PM

sheet size = A1

APPENDIX B

Traffic Concept Plan



PROJECT
177 FRANCIS STREET, WEST END

CLIENT
KAENNETTO INVESTMENTS

DRAWING TITLE
MODUS TRAFFIC CONCEPT PLAN

DRAWING NUMBER
MOD25529QLD - SK01

DATE		REVISION	
09 03 2026		A	
REV	DATE	DESIGNER	APPROVED BY



ABN 49 668 863 269
310 Edward Street, BRISBANE CITY QLD 4000

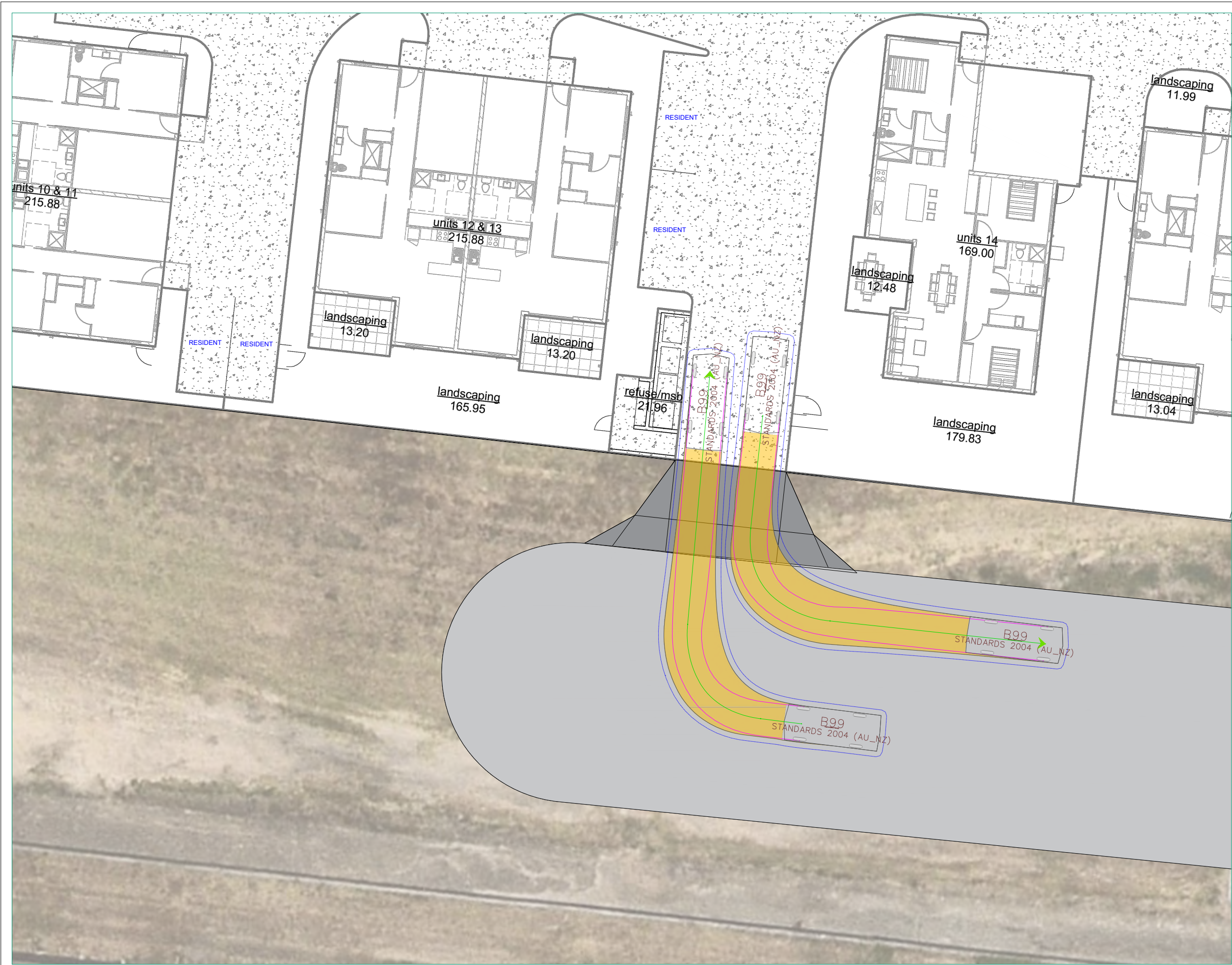
PRELIMINARY ADVICE ONLY
NOT TO BE USED FOR CONSTRUCTION

MODUS ENGINEERING ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY MODUS ENGINEERING SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. MODUS ENGINEERING DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OR RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.

RPEQ CERTIFICATION

APPENDIX C

Swept Path Assessment

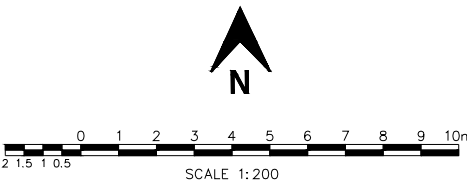


DESIGN VEHICLE ADOPTED

	B99	Meters
	Width	: 1.94
	Track	: 1.84
	Lock to Lock Time	: 6.0
	Steering Angle	: 33.5
	Turning Radius (Kerb to Kerb)	: 6.30

SWEPT PATH LEGEND

	VEHICLE BODY
	FRONT TIRES
	VEHICLE PATH
	VEHICLE CLEARANCE (300mm)
	VEHICLE CLEARANCE (600mm)
	VEHICLE
	5KM/H DESIGN SPEED



PROJECT
177 FRANCIS STREET, WEST END

CLIENT
QCWS

DRAWING TITLE
B99 SWEPT PATH ASSESSMENT

DRAWING NUMBER
MOD25529QLD - SK02

DATE		REVISION	
09 03 2026		A	
REV	DATE	DESIGNER	APPROVED BY

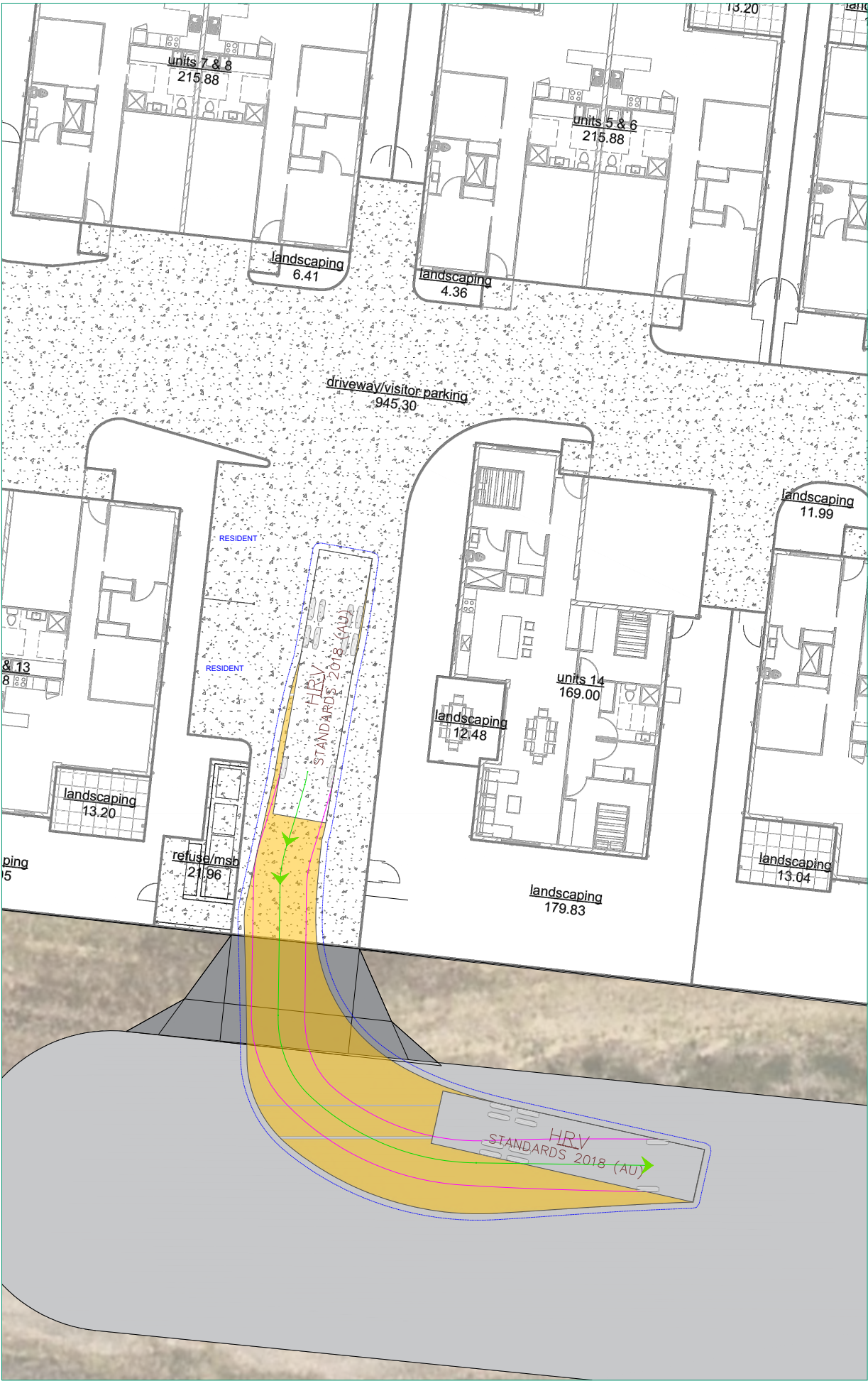
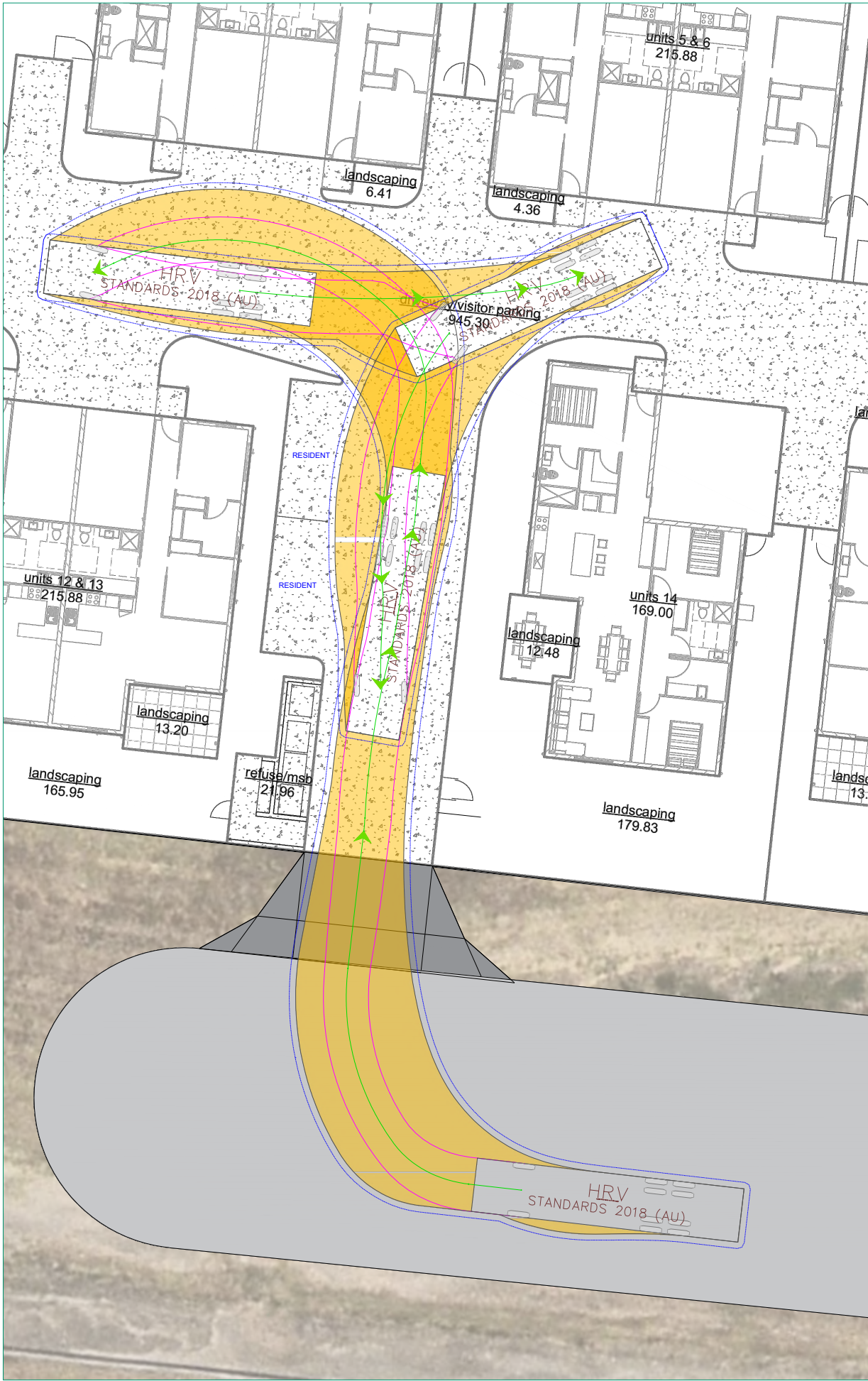


ABN 49 668 863 269
310 Edward Street, BRISBANE CITY QLD 4000

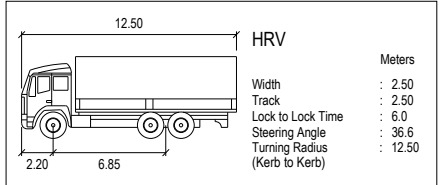
PRELIMINARY ADVICE ONLY
NOT TO BE USED FOR CONSTRUCTION

MODUS ENGINEERING ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY MODUS ENGINEERING SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. MODUS ENGINEERING DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OR RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.

RPEQ CERTIFICATION

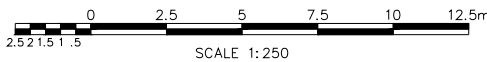


DESIGN VEHICLE ADOPTED



SWEPT PATH LEGEND

- VEHICLE BODY
- FRONT TIRES
- VEHICLE PATH
- VEHICLE CLEARANCE (300mm)
- VEHICLE CLEARANCE (600mm)
- VEHICLE
- 5KM/H DESIGN SPEED



PROJECT

177 FRANCIS STREET, WEST END

CLIENT

QCWS

DRAWING TITLE

HRV SWEPT PATH ASSESSMENT

DRAWING NUMBER

MOD25529QLD - SK04

DATE

09 03 2026

REVISION

A

REV	DATE	DESIGNER	APPROVED BY

MODUS
Transport and Traffic Engineering

ABN 49 668 863 269
310 Edward Street, BRISBANE CITY QLD 4000

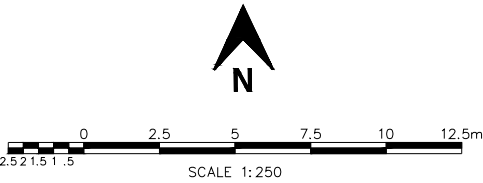
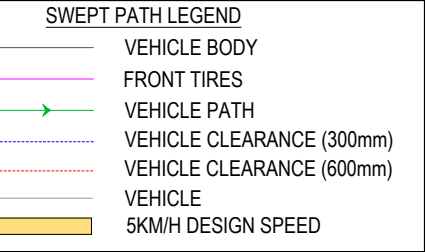
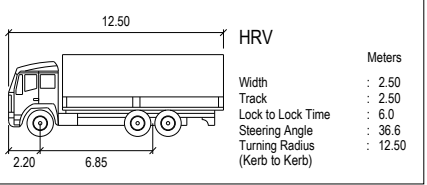
PRELIMINARY ADVICE ONLY
NOT TO BE USED FOR CONSTRUCTION

MODUS ENGINEERING ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY MODUS ENGINEERING SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. MODUS ENGINEERING DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OR RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.

RPQ Certification



DESIGN VEHICLE ADOPTED



PROJECT
177 FRANCIS STREET, WEST END

CLIENT
QCWS

DRAWING TITLE
HRV SWEPT PATH ASSESSMENT

DRAWING NUMBER
MOD25529QLD - SK05

DATE		REVISION	
09 03 2026		A	
REV	DATE	DESIGNER	APPROVED BY



ABN 49 668 863 269
310 Edward Street, BRISBANE CITY QLD 4000

PRELIMINARY ADVICE ONLY
NOT TO BE USED FOR CONSTRUCTION

MODUS ENGINEERING ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY MODUS ENGINEERING SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. MODUS ENGINEERING DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OR RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.

RPEQ CERTIFICATION