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Newtown NSW 2042
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Newtown NSW 2042
P: (02) 9557 6202
F: (02) 9557 6219

Your reference: DEV2012/403/10

20 November 2020

PEET Flagstone City Pty Ltd
C/- RPS Group
Level 4 HQ South, 520 Wickham Street
FORTITUDE VALLEY QLD 4006

Attention: **Louisa Sloan**
Sent via email: Louisa.Sloan@rpsgroup.com.au

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2012/403
Date: 10 December 2020
Queensland Government

Dear Louisa

RE: FLAGSTONE CITY – STAGE 2D & STAGE 5I: CHANGE APPLICATION FURTHER ISSUES RESPONSE (TRAFFIC)

A change application was lodged with Economic Development Queensland (EDQ) regarding proposed modifications to the Flagstone City Stage 2D and 5I approvals (DEV2012/403/10). A Further Issues Letter was issued by EDQ on the 5th November 2020 regarding the change application to which this letter seeks to address the traffic and transport related items raised.

A revised subdivision plan has been prepared by RPS and is provided at **Attachment A**.

Updated concept design plans to support the response are provided in **Attachment B**.

1.0 Response Items

Bus Services

1.1. Item 1: Revised Roundabout Design

Provide a revised RPEQ certified design for the proposed roundabout in Stage 2Dii which demonstrates compliance with the following for single unit rigid buses of 12.5m (urban bus) and 14.5m in length (school bus):

- *Department of Transport and Main Roads Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design (March 2016);*
- *Department of Transport and Main Roads Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6);*
- *Austroads Guide to Road Design (Parts 3, 4-4C and 6);*
- *Austroads Design Vehicles and Turning Path Templates; and*
- *Department of Transport and Main Roads Queensland Manual of Uniform Traffic Control Devices, Part 13 Local Area Traffic Management (March 2018).*
- *Chapter 2 - Planning and Design, Section 2.3.2 Bus Route Infrastructure (page 6) of the Department of Transport and Main Roads Public Transport Infrastructure Manual 2015.*

The revised concept design for the roundabout is provided in **Attachment B**.

Design criteria and parameters adopted for the concept design of the proposed roundabout are detailed in Table 1.1. Roundabout signage shall be provided as per the requirements of the *Department of Transport and Main Roads Queensland* (TMR) *Manual of Uniform Traffic Control Devices* (MUTCD), with signage to be illustrated on detailed design plans at a later stage.

Table 1.1: Concept Design Criteria & Parameters

Design Standard	Design Criteria	Value	Comment
Austroads Design Vehicles and Turning Path Templates	Design Vehicle (Residential Collector)	12.5m Bus	TransLink also requested that the roundabout design consider requirements of a 14.5m coach.
	Vehicle Clearance	0.5m	-
Austroads Guide to Road Design (AGRD) *TMR Supplement to Austroads Guide to Part Design Part 4B (AGRD4B)*	Central Island Radius	8m (incl. 2m mountable apron)	Absolute minimum value adopted noting the local road environment
	Circulating Width	6.7m	Circulating width adopted considering a 12.5m HRV expected to have similar requirements to a 12.5m bus
	Entry Radius	<55m	Exit radius significantly greater than entry radius as specified in AGRD Part 4B
	Splitter Island Area	Approx. 3.5m^2	See below

It is noted that the guidelines recommend approach splitter islands be 5-8m^2 for roundabouts on local street networks. However, in this case splitter islands are proposed for the purposes of containing required signage only with pedestrian refuges not proposed. As such, the small splitter islands are deemed acceptable. This is consistent with a local roundabout recently constructed in the Yarrabilba PDA (i.e. Combs Street / Huggins Avenue).

Swept path diagrams are provided at **Attachment C** demonstrating the following:

- A 14.5m coach can safely manoeuvre around the roundabout wholly contained within the proposed pavement area with use of the proposed mountable apron
- A 12.5m bus can circulate the roundabout within the pavement area *without* the need to use the mountable apron. However, buses are expected to use the apron for ease of manoeuvring.

A sight distance assessment is also provided at **Attachment D** demonstrating the proposed design achieves the mandatory sight distance *Criterion 1* and *Criterion 2* as required by AGRD4B. It is noted that Criterion 3 is not achieved, however is defined as non-mandatory in AGRD4B.

The information above and the concept design of the roundabout has been reviewed and certified by a *Registered Professional Engineer of Queensland* (RPEQ) as shown in **Attachment B** and countersigned herein.

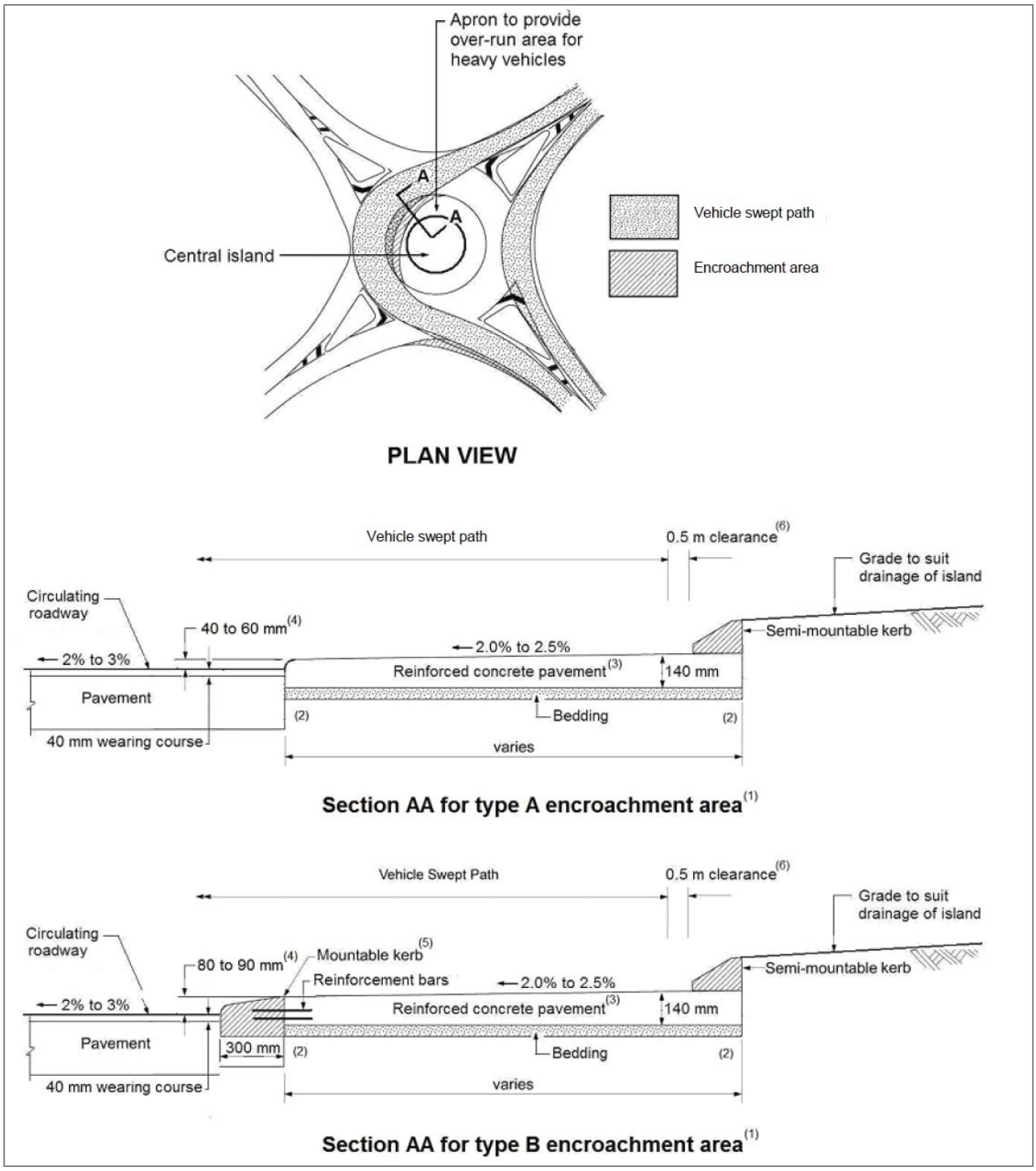
Based on the above, the revised concept design and supporting swept path analysis demonstrate the roundabout is suitable of safely catering for the design vehicles, and addresses EDQ's items.

1.2. Item 1: Clarification Items

The design of the following is to be clarified:

- *the mountable apron and whether there is a change in level (or a lip) between the pavement and mountable section.*
- *the approach islands and whether these are actually raised islands or line marking only.*

A low change in level is proposed between the pavement and mountable apron generally in accordance with AGRD4B Figure 4.11 and TMR's Supplement to this guide. An extract of AGRD4B Figure 4.11 is provided below for ease of reference.



SOURCE: Austroads Guide to Road Design, Part 4B: Roundabouts, Figure 4.11

Figure 1.1: AGRD4B Figure 4.11 Extract: Typical Encroachment Detail & Mountable Apron

This low change in level discourages private vehicles from mounting the apron when circulating thereby improving deflection and reducing travel speed. However, the small lip will not significantly impact buses/coaches circulating the roundabout as it is intended for their use and 12.5m long buses are not required to use the apron to manoeuvre safely around the roundabout.

The proposed mountable apron and lip is similar to the example from the Yarrabilba PDA as shown in Figure 1.2.

Source: Google Street View

Figure 1.2: Darlington Drive / Combs Street / Leland Street Roundabout, Yarrabilba

It is noted that the TransLink *Public Transport Infrastructure Manual* (PTIM) states that traffic calming device are not supported on bus routes in new residential areas. However, while some forms of roundabouts may be used as traffic calming devices, the primary function of the proposed roundabout is access and network permeability.

As discussed above, a 12.5m bus, typically used by TransLink for local services, can circulate the roundabout without the use of the mountable apron remaining entirely within the road pavement. As such, there is not expected to be any adverse impacts to passenger / driver discomfort, service times or any notable noise pollution, nor is there any risk to students / pedestrians considering the design vehicles remain entirely within the road pavement.

1.3. Item 2: Corner Truncation

EDQ does not support the proposed 6 x 3 chord truncation at the corner of Flagstonian Drive and Road 1. This "minimum approach" to corner truncations is usually limited to lower order residential streets. Intersections with higher order roads are required to be provided with larger truncations.

The truncation approved with the earlier Development Approval is considered to be the minimum acceptable outcome as it considers vehicle, pedestrian, cycling movements, particularly in the school am and pm peak periods and does not compromises site distance at this major intersection.

Submit revised plans to reflect the current approved corner truncation.

The entry statement proposed has been modified to be incorporated within the Stage 2Di property boundary and as such, revised plans have been updated reverting back to the approved corner truncation (see **Attachment A**).

Turning Movement into Childcare Lot (Stage 2Di)

1.4. Item 3: Road 1 Central Median

To prevent right hand turn movements into and out of the childcare lot (Stage 2Di) from Road 1 the submitted traffic engineering memo suggests the utilisation of a double centre line, signage, and a left in/left out configured crossover. These prevention measures are considered insufficient to discourage right hand turning movements into and out of the childcare centre lot given the sizable residential catchment across the various Stage 2 residential zones to the north/ north east of the site.

Submit an amended traffic engineering memo that provides for a median along the full length of Road 1 from the Flagstonian Drive intersection up to the proposed roundabout.

As shown in **Attachment B**, a narrow median is proposed along the length of Road 1 from Flagstonian Drive to the proposed roundabout. This narrow median width is proposed noting the constraints of the approved 'Neighbourhood Connector' road reserve and accords with Logan City Council provisions. Furthermore, a wider median facilitating pedestrian storage may encourage pedestrians to cross midblock at this location which is not desirable.

As such, this item is expected to be suitably address in the revised concept plan.

1.5. Item 4: Dedicated Turn Pocket

The submitted traffic engineering memo identifies that the parking lane on Road 1 can be reduced and this road space used as an informal left turn lane into the childcare centre lot (Stage 2Di), thus providing space for vehicles travelling through on Road 1 to pass turning vehicles.

EDQ is not satisfied that the submitted traffic engineering memo has considered in the analysis school peak traffic volumes, including bus movements, or pedestrian movement along the Road 1 footpath, which will have the effect of forcing vehicles to give way and queue on Road 1. Therefore, there is a risk of vehicles queuing on Road 1 back into the intersection with Flagstonian Drive.

Submit an amended traffic engineering memo that provides for a dedicated left turn slot from Road 1 into the childcare centre lot (Stage 2Di).

The concept plans has been amended to include a short auxiliary left-turn (AUL(s)) lane for vehicles entering the childcare centre access from Road 1.

The key AUL(s) design elements proposed are as follows:

- **Storage Length:** 10m
- **Taper Length:** 30m
- **Lane Width:** 3m

The above exceeds minimum requirements for an AUL(s) adopting a design speed of 60km/h. This design is considered highly conservative noting the following:

- As per the original Change Application Technical Memo, a turn warrants assessment indicated that only a Basic Left Turn (BAL) treatment is required
- Noting the posted speed limit of 50km/h (40km/h during school peaks) and the proximity of the Flagstonian Drive intersection, eastbound vehicle speeds are expected to be significantly lower than 60km/h.

The extended taper in proposed design minimises lateral shift for through traffic, with lateral movement required less than 1.5m/s as per the requirements of the AGRD4A.

As such, the proposed AUL(s) concept design is considered to suitably address this item.

1.6. Item 5: Temporary Access to Display Village

The submitted traffic engineering memo relies on the construction of the Road 1 roundabout to facilitate turning movements for vehicles exiting the Display Village. However, the proposed sub staging defers the construction of the roundabout until after the establishment of the Display Village. Therefore it is considered that the only way to facilitate all turning movements for vehicles exiting the Display Village before the construction of the roundabout on Road 1 will be to extend Flagstonian Drive beyond the Road 1 intersection (an appropriate distance) and construct a temporary vehicle turn around within the future Flagstonian Drive road reserve.

Submit an updated traffic engineering memo to reflects this outcome.

An interim extension of Flagstonian Drive is proposed north of Road 1 to facilitate turnarounds in the short-term. This extension will include a temporary turnaround head (cul-de-sac) allowing display village egress traffic to turn around in the event that the display village is established prior to the construction of the proposed roundabout. Car parking may also be accommodated on the western side of the Flagstonian Drive temporary extension subject to ongoing considerations.

This temporary extension will remain in place until Flagstonian Drive is extended north to service lots being delivered in Stage 5. As such, for the period in which the proposed left-in / left-out display village access is in operation, vehicle turnarounds will be possible either by the temporary Flagstonian Drive extension or proposed roundabout.

The concept plan in Attachment B shows an indicative temporary turnaround within the Flagstonian Drive road reserve capable of accommodating a 14.5m bus turnaround (as shown in Attachment C swept paths). This extension concept is indicative only and will be subject to more detailed design in the near future considering other relevant factors.

1.7. Item 6: Advice Note

It is acknowledged that the proposed driveway into Stage 5N (Lot 50021) is temporary. While concerns have been raised about the potential conflict of the driveway with indented bus bay, given this is not a permanent driveway into Stage 5N EDQ is likely to include a condition similar to the one shown below. This condition ensures that the temporary driveway is removed and the indented bus bay is reinstated prior to any bus operations commencing in this stage

EDQ's advice on this matter is noted and acknowledged. It is expected that the specific dates / timing of any such condition will be discussed at this time to ensure this aligns with the delivery of the Display Village and Sales office provisions.

2.0 Concluding Statement

I trust that the above information is sufficient to demonstrate that there are no significant traffic and transport impacts associated with the proposed works to preclude approval and relevant conditioning on transport planning grounds.

The information and plans included herein is expected to suitably address the issues raised by EDQ and accommodate the proposed change application provisions.

As mentioned, the concept design prepared as been reviewed and certified by an RPEQ and has also countersigned this response letter overleaf.

Yours faithfully

Luke Darragh

Manager – Gold Coast & Northern NSW
Principal Traffic Engineer / Transport Planner

BITZIOS CONSULTING

Brad Newman (*RPEQ 22800*)

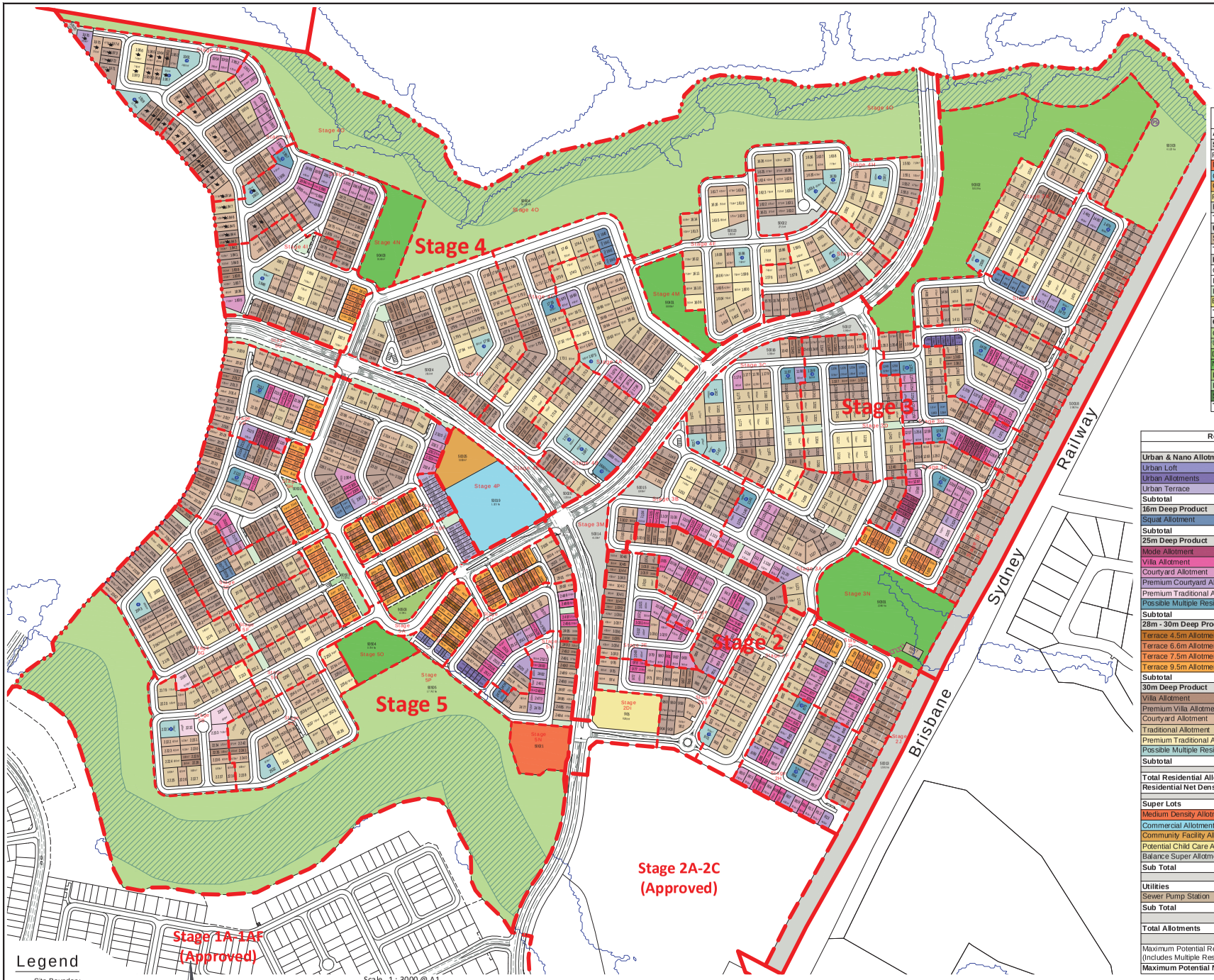
Senior Traffic Engineer / Transport Planner

BITZIOS CONSULTING

Attachments
A: Revised Subdivision Plan
B: Concept Design Plans
C: Swept Path Diagrams

Attachment A

Revised Subdivision Plan



Land Budget Stages 2 – 5

Land Use	Stage 2 Area	Stage 3 Area	Stage 4 Area	Stage 5 Area	Overall Area	Overall %
Area of Subject Site	**16.883 ha**	**47.116 ha**	**54.976 ha**	**50.968 ha**	**169.943 ha**	**100.0%**
Saleable Area						
Residential Allotments	9.636 ha	19.742 ha	21.369 ha	19.663 ha	70.410 ha	41.4%
Medium Density Allotment	—	—	—	0.665 ha	0.665 ha	0.4%
Commercial Allotment	—	—	1.324 ha	—	1.324 ha	0.8%
Community Facility Allotment	—	—	0.500 ha	—	0.500 ha	0.3%
Potential Child Care Allotment	0.628 ha	—	—	—	0.628 ha	0.4%
Balance Super Allotments	1.581 ha	3.822 ha	0.747 ha	—	6.150 ha	3.6%
Total Area of Allotments	**11.845 ha**	**23.564 ha**	**23.940 ha**	**20.328 ha**	**79.677 ha**	**46.9%**
Utilities						
Sewer Pump Station	—	0.045 ha	—	—	0.045 ha	0.0%
Total Area of Utilities	**—**	**0.045 ha**	**—**	**—**	**0.045 ha**	**0.0%**
Road						
Collector Road	1.502 ha	4.238 ha	4.559 ha	2.432 ha	12.731 ha	7.5%
Local Road	3.465 ha	7.612 ha	9.528 ha	8.745 ha	29.350 ha	17.3%
Linear Connections	0.071 ha	0.178 ha	0.359 ha	0.459 ha	1.067 ha	0.6%
Entry Statements	—	—	—	—	—	0.0%
Total Area of New Road	**5.038 ha**	**12.028 ha**	**14.446 ha**	**11.636 ha**	**43.148 ha**	**25.4%**
Open Space						
Corridor Park	—	4.123 ha	14.787 ha	17.742 ha	36.652 ha	21.6%
Conservation Park (Within Corridor Park)	—	*2.650 ha*	*6.357 ha*	*10.710 ha*	*19.717 ha*	
District Recreation Park	—	5.010 ha	—	—	5.010 ha	2.9%
Neighbourhood Recreation Park	—	2.346 ha	1.803 ha	0.704 ha	4.853 ha	2.9%
Local Recreation Park	—	—	—	0.188 ha	0.188 ha	0.1%
Local Linear Recreation Park	—	—	—	0.370 ha	0.370 ha	0.2%
Stormwater Detention	—	—	—	—	—	0.0%
Total Open Space	**—**	**11.479 ha**	**16.590 ha**	**19.004 ha**	**47.073 ha**	**27.7%**

Yield Breakdown Stages 2 – 5

Residential Allotments	Typical Size	Typical Area	Stage 2	Stage 3	Stage 4	Stage 5	Overall	
Urban & Nano Allotments Product								
Urban Loft	4.7 x 11.5m	50m²	—	—	—	8	8	0%
Urban Allotments	7.5 x 16m	120m²	—	7	—	6	13	1%
Urban Terrace	6.2 x 27.5m	170m²	—	—	—	20	20	1%
Subtotal			**—**	**7**	**—**	**34**	**41**	**2%**
16m Deep Product								
Squat Allotment	14 x 16m	220m²	—	12	4	8	24	1%
Subtotal			**—**	**12**	**4**	**8**	**24**	**1%**
25m Deep Product								
Mode Allotment	8.5 x 25m	213m²	—	8	—	4	12	1%
Villa Allotment	10 x 25m	250m²	28	14	2	19	63	4%
Courtyard Allotment	14 x 25m	350m²	40	37	22	18	117	7%
Premium Courtyard Allotment	16 x 25m	400m²	15	18	8	9	50	3%
Premium Traditional Allotment	20 x 25m	500m²	—	4	—	4	8	0%
Possible Multiple Residential Allotment	—	—	2	9	3	2	16	1%
Subtotal			**85**	**90**	**35**	**56**	**266**	**16%**
28m - 30m Deep Product								
Terrace 4.5m Allotment	4.5 x 28m	126m²	—	—	—	34	34	2%
Terrace 6.6m Allotment	6.6 x 28m	185m²	—	—	—	35	35	2%
Terrace 7.5m Allotment	7.5 x 28m	210m²	8	8	5	43	64	4%
Terrace 9.5m Allotment	9.5 x 28m	265m²	4	4	2	44	54	3%
Subtotal			**12**	**12**	**7**	**156**	**187**	**11%**
30m Deep Product								
Villa Allotment	10 x 30m	300m²	34	49	56	45	184	11%
Premium Villa Allotment	12.5 x 30m	375m²	34	92	113	81	320	19%
Courtyard Allotment	14 x 30m	420m²	52	94	113	109	368	22%
Traditional Allotment	20 x 30m	600m²	19	55	64	43	181	11%
Premium Traditional Allotment	25 x 30m	720m²	—	21	32	10	63	4%
Possible Multiple Residential Allotment	—	—	1	4	14	3	22	1%
Subtotal			**140**	**315**	**392**	**291**	**1138**	**69%**
Total Residential Allotments			**237**	**436**	**438**	**545**	**1656**	**100%**
Residential Net Density			18.0 dw/ha	14.6 dw/ha	13.2 dw/ha	18.1 dw/ha	**15.6 dw/ha**	
Super Lots			**Lots**	**Lots**	**Lots**	**Lots**	**Lots**	
Medium Density Allotment			—	—	—	1	1	
Commercial Allotment			—	—	1	—	1	
Community Facility Allotment			—	—	1	—	1	
Potential Child Care Allotment			1	—	—	—	1	
Balance Super Allotments			1	6	5	—	12	
Sub Total			**2**	**6**	**7**	**1**	**16**	
Utilities								
Sewer Pump Station			—	1	—	—	**1**	
Sub Total			**—**	**1**	**—**	**—**	**1**	
Total Allotments			**239**	**443**	**445**	**546**	**1673**	
Maximum Potential Residential Dwellings (Includes Multiple Residential Allotments)			**240**	**455**	**466**	**554**	**1715**	
Maximum Potential Net Residential Density			18.2 dw/ha	15.2 dw/ha	14.1 dw/ha	18.4 dw/ha	**16.1 dw/ha**	

Legend

- Site Boundary
- Proposed Stage Boundary
- Proposed Sub Stage Boundary
- Existing Q100
- (1) Residential Allotment (Max. no. of dwellings)
- (PS) Indicative Pump Station Location
- 10m Wide EMT (Railway)
- 6m Wide SPS Access EMT

Note:
All dimensions and areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.

Scale 1 : 3000 @ A1
0 15 30 60 90 120 150 180

Road linemarkings and turn slots are indicative only and subject to detailed design.

Source Information:
Site boundaries: Registered Survey Plans / Vens.
Adjoining information: DCDB.
Contours: Bradlees.

REVISION
A: 17/07/18 Amend District Recreation Park
B: 31/07/18 Amend Sub-Staging & Open Space
C: 22/11/2018 Further Issues Amendments
D: 22/02/2019 Further Issues Amendments
E: 07/03/2019 Further Issues Amendments
F: 15/07/2019 Stage 2-5 Layout Amendments
G: 24/07/2019 Incorporate EDQ Feedback
H: 23/09/2019 Stage 2 & 3 Layout Amendments
I: 11/03/2020 Road and Bus Stops Updates
J: 07/10/2020 Stage 2 & 5 Layout Amendments
K: 19/11/2020 Stage 2 Layout Amendments

PROJECT: Flagstone Precinct 1

Job Ref.	110056	Date.	19 November 2020
Comp By.	WW / JC / MD	DWG Name.	Precinct 1 Stages 2-5
Chk'd By.	DG / MD	Locality.	Flagstone
Local Authority.	Economic Development Queensland		

CLIENT: PEET

Plan of Subdivision
Stages 2 – 5
Overall Allotment Layout - Sub - Staging

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com

Scale	Sheet	Plan Ref	Rev
1 : 3000	A1	110056 – 481	K

Attachment B

Concept Design Plans

NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

WARNING!

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

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Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D & 5I Concept Plan	A.P	20.11.20

Scale @ A3 — 0 10 20 30 40 50 60 — 1:1250

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

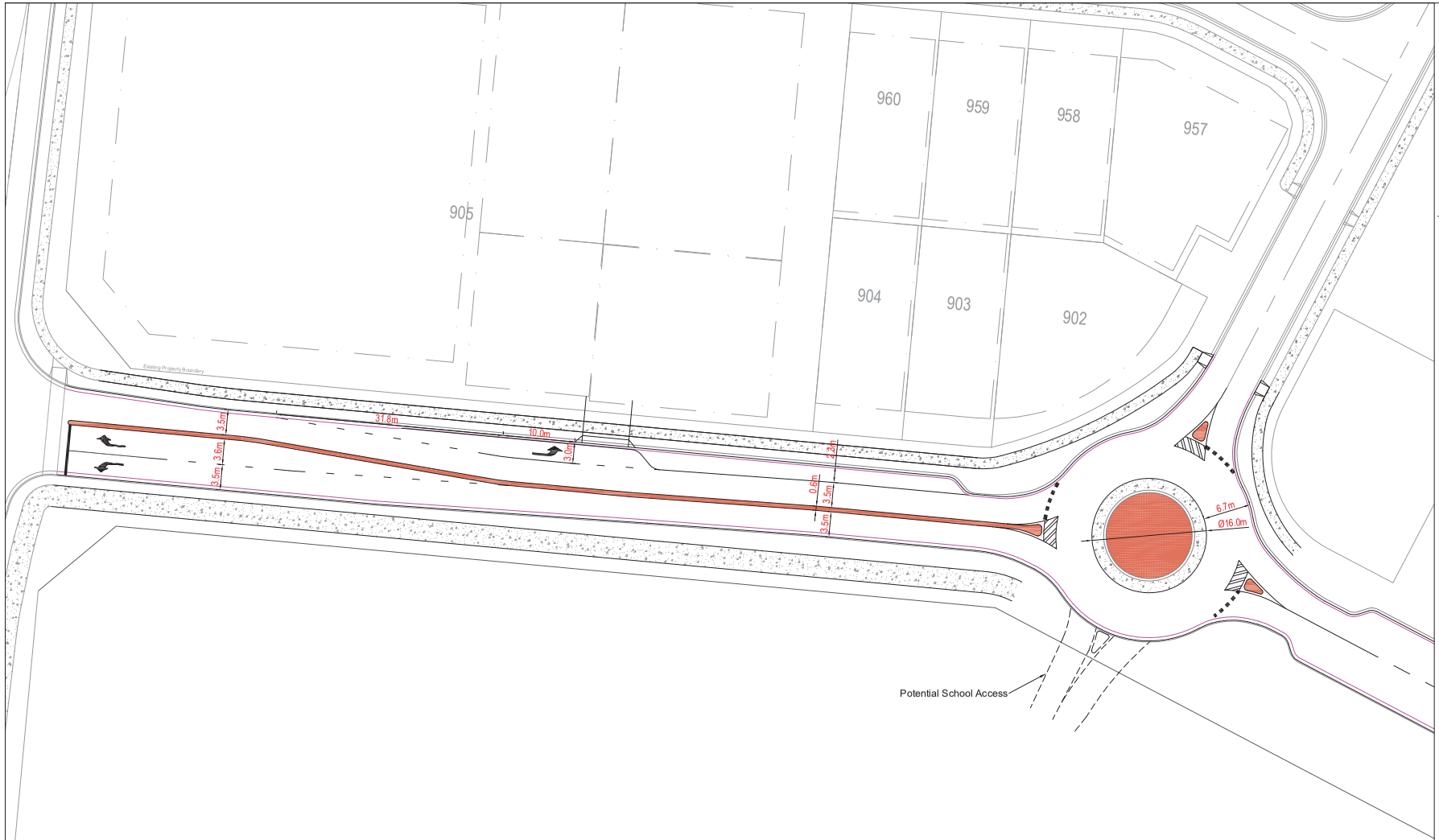
Title: Concept Plan
Flagstone City Stage 2D & 5I
Overview

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	1	001



NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

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REVISIONS			
Issue	Revisions/Descriptions	Drawn	Date
001	Stage 2D & 5I Concept Plan	A.P	20.11.20

Scale @ A3: 0 5 10 15 20 25 1:500

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

Title: Concept Plan
Flagstone City Stage 2D & 5I
Road 1 & Roundabout Design

Design	Drawn	Checked
A.P	A.P	B.N

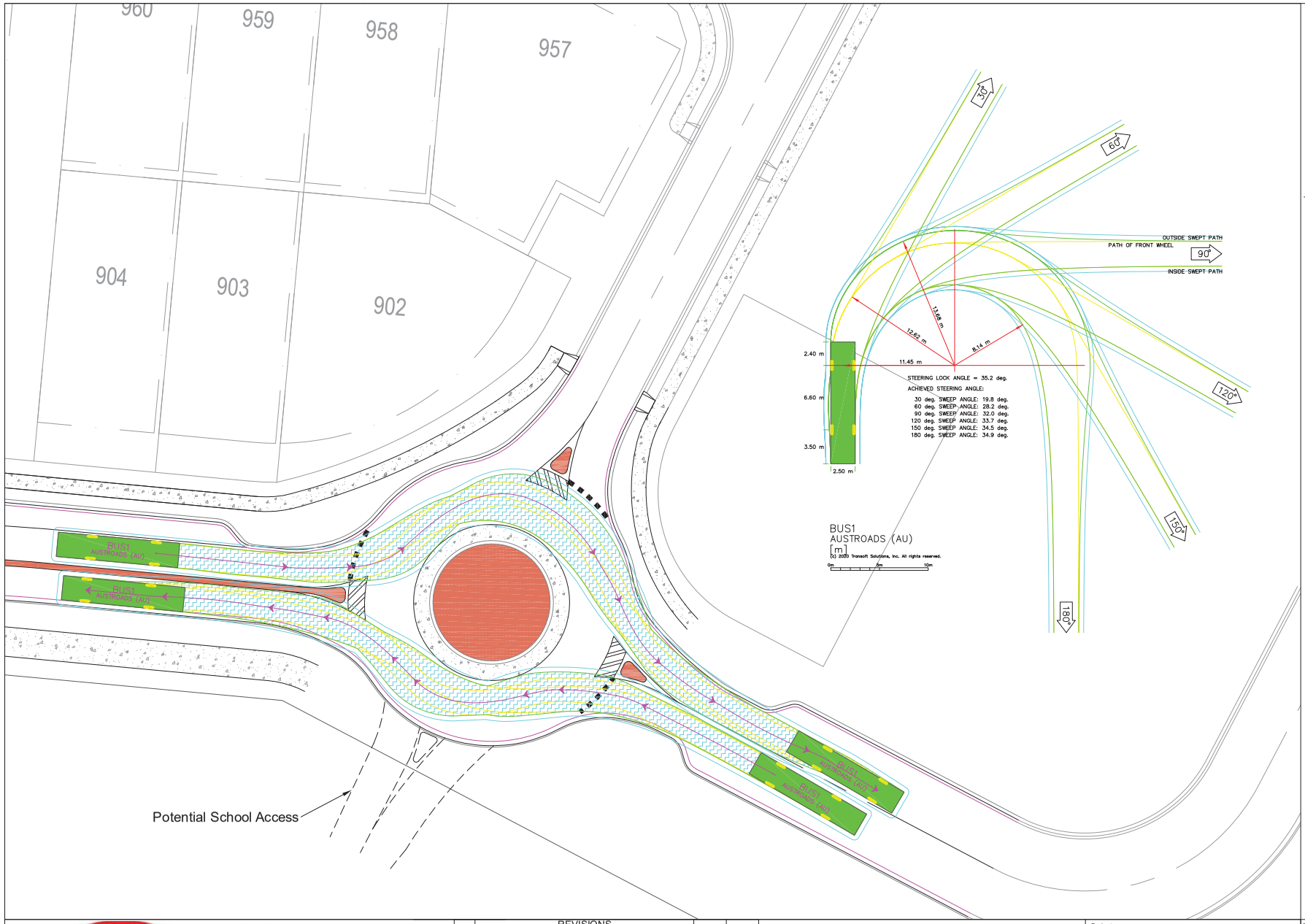
CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	2	001

Attachment C

Swept Path Diagrams



NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

WARNING!

BEWARE OF UNDERGROUND SERVICES

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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Swept Path Assessment	A.P	20.11.20

Scale @ A3: 0 4 8 12 16 20 — 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

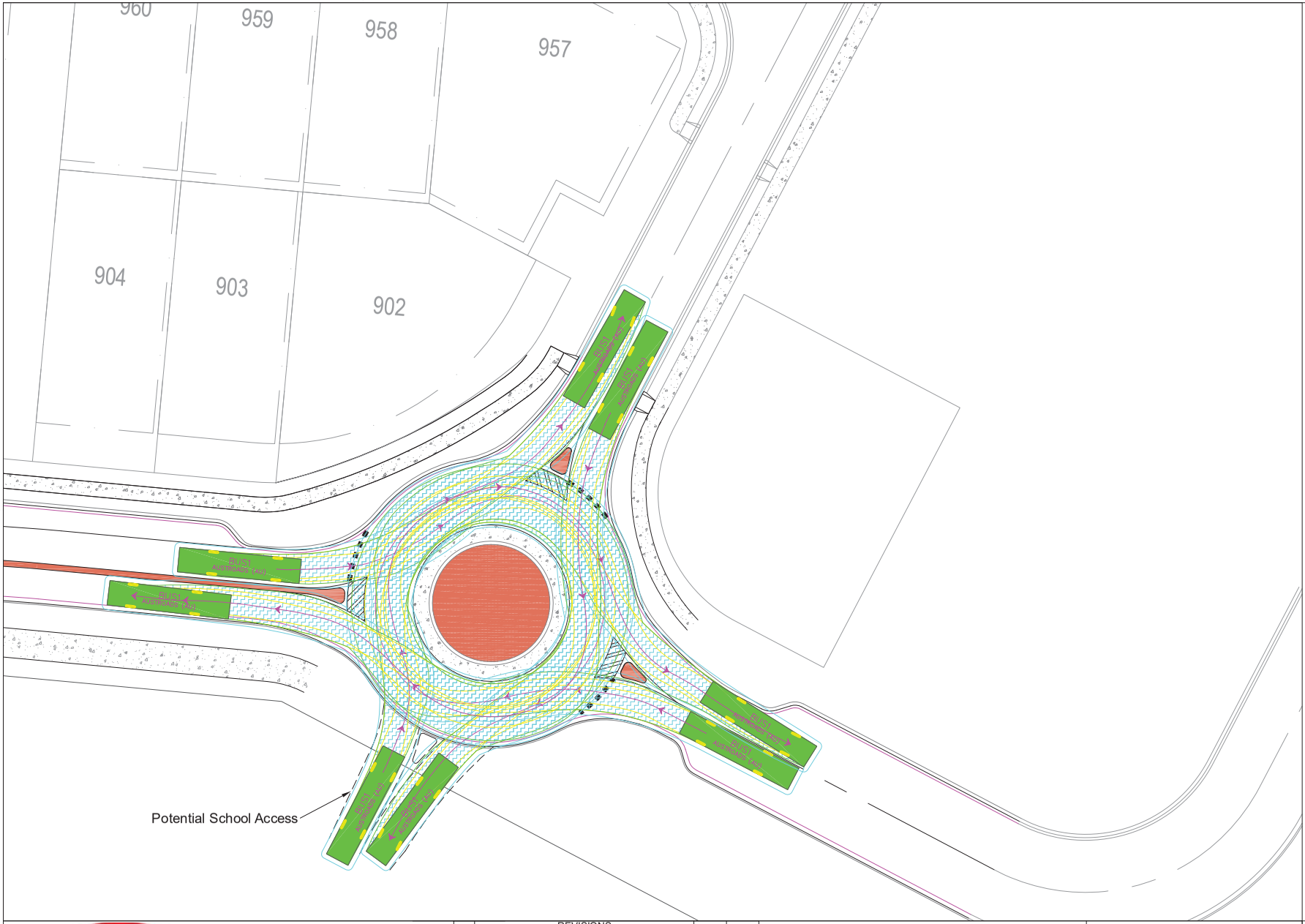
Title: Swept Path Assessment 12.5m Bus Through Movements

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	1	001



NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

WARNING!

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

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P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Swept Path Assessment	A.P	20.11.20

Scale @ A3 — 0 4 8 12 16 20 — 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

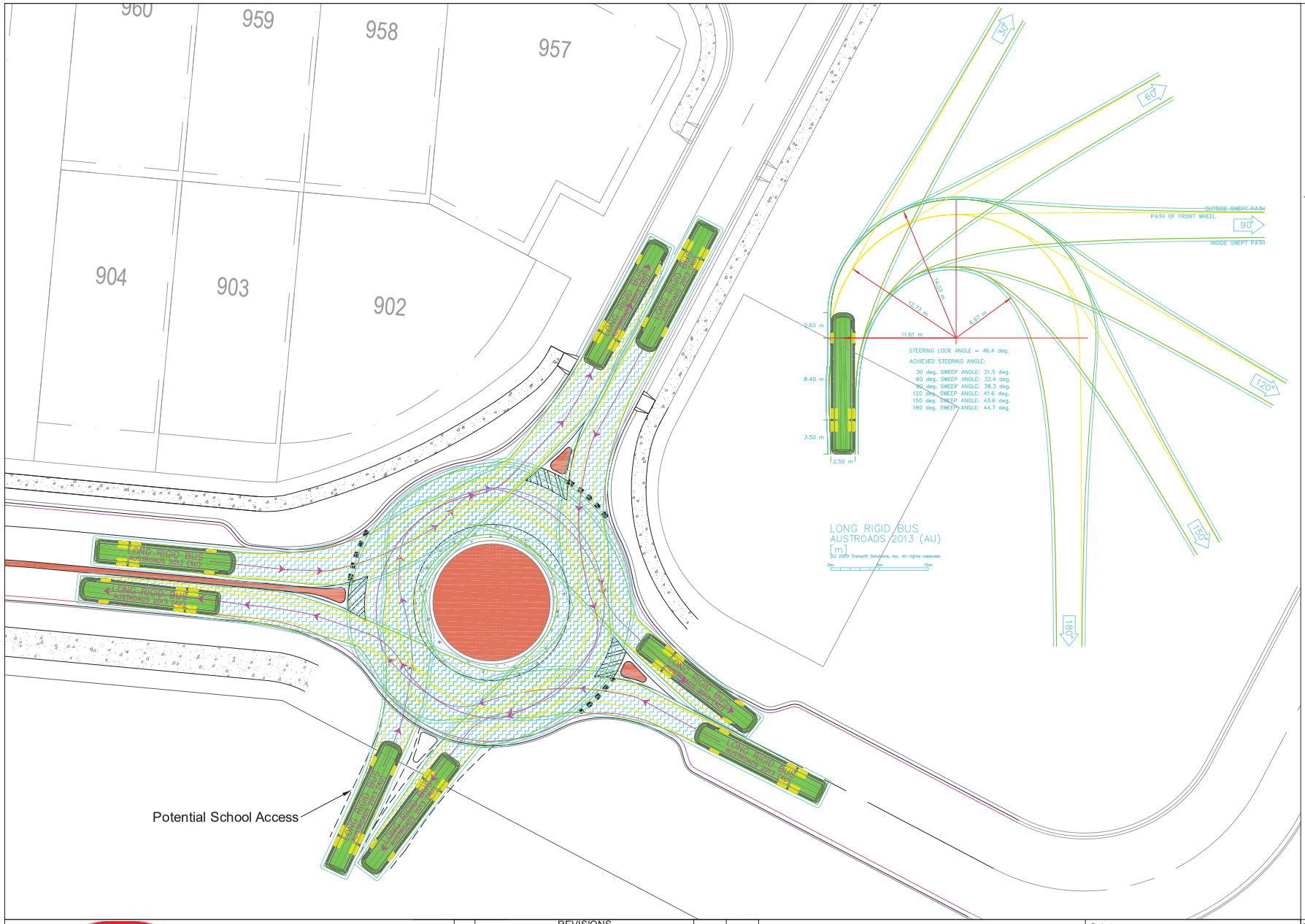
Title: Swept Path Assessment
12.5m Bus Turning Movements

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	2	001



NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Swept Path Assessment	A.P	20.11.20

Scale @ A3: 0 4 8 12 16 20 — 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

Title: Swept Path Assessment
14.5m Coach Turning Movements

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	3	001

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Sight Distance Assessment	A.P	20.11.20

Scale @ A3: 0 4 8 12 16 20 — 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date

Project: Flagstone City

Title: Stage 2D & 5I Turn Around Swept Path

Design	Drawn	Checked
A.P	A.P	B.N

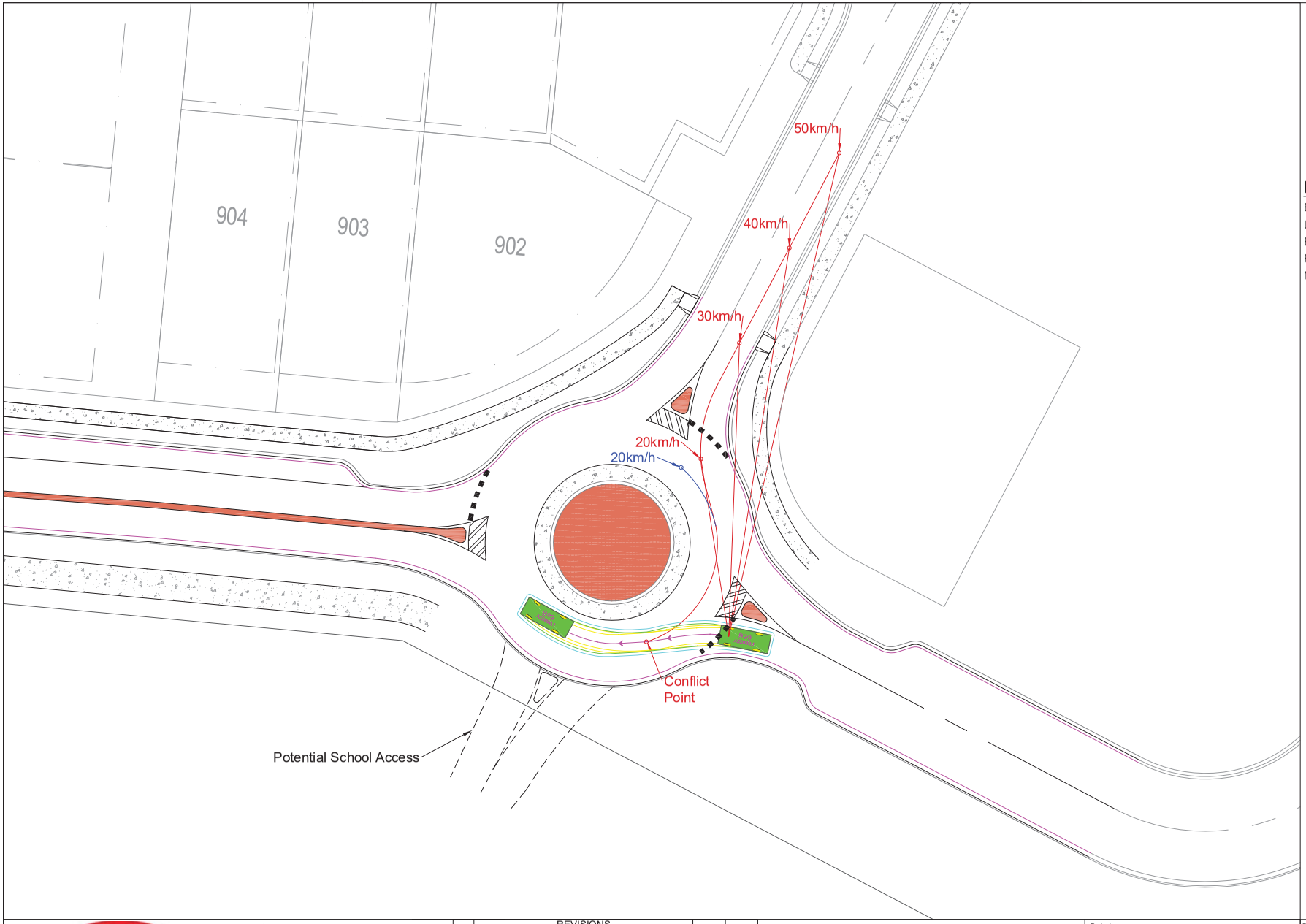
CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	4	001

Attachment D

Sight Distance Assessment



NORTH

Legend:

- By Others
- Line Marking / Front of Kerb
- Edge of Bitumem
- Raised Median
- Mountable Apron / Path

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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Sight Distance Assessment	A.P	20.11.20

Scale @ A3: 0 4 8 12 16 20 — 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

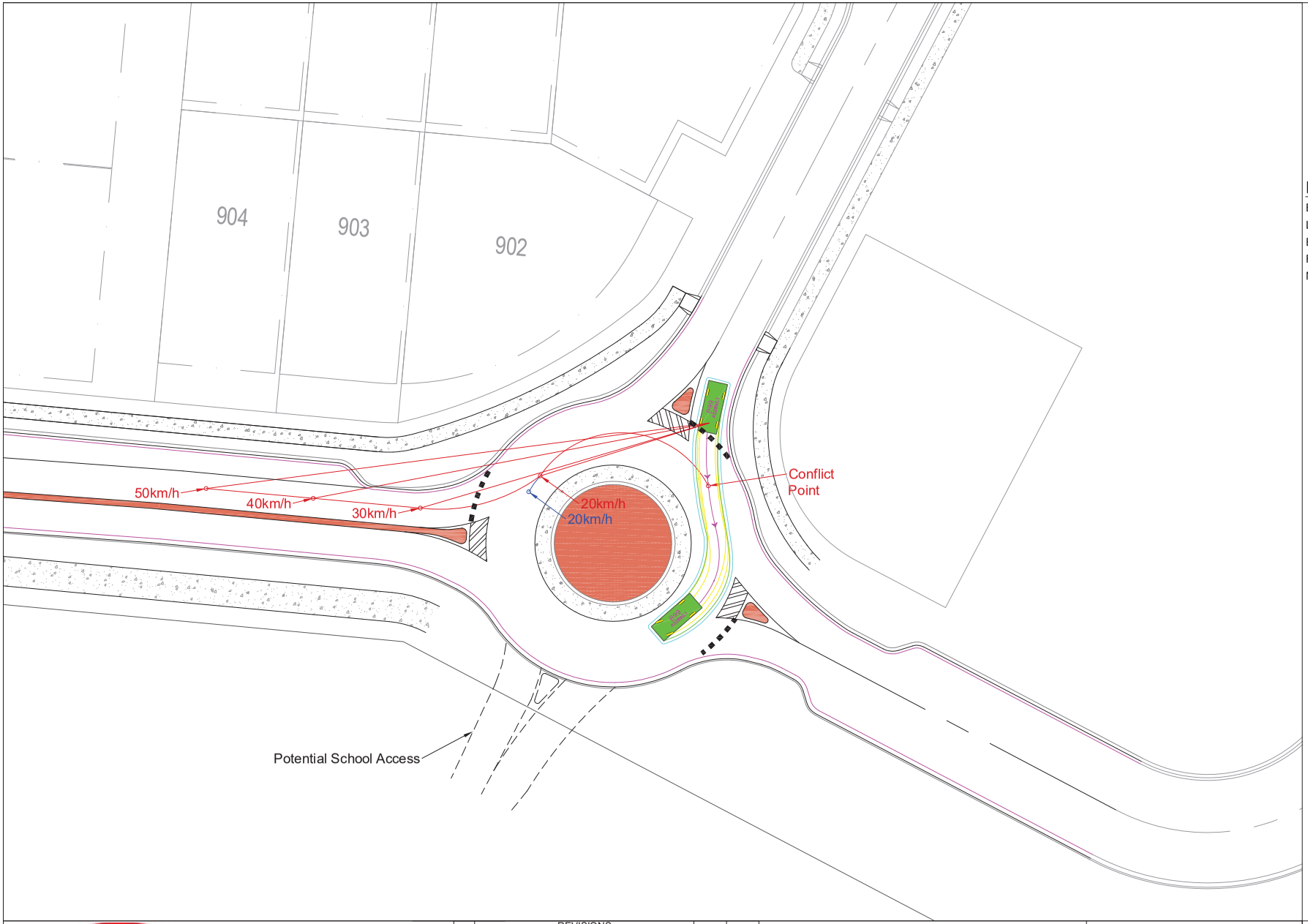
Title: Stage 2D Roundabout Criterion 2 Sight Distance (East)

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	1	001



NORTH

Legend:

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- Raised Median
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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Stage 2D Roundabout Sight Distance Assessment	A.P	20.11.20

Scale @ A3 0 4 8 12 16 20 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date
B.NEWMAN		22800	20.11.20

Project: Flagstone City

Title: Stage 2D Roundabout Criterion 2 Sight Distance (North)

Design	Drawn	Checked
A.P	A.P	B.N

CONCEPT ONLY

Date: 20.11.20

Project Number	Sheet Number	Issue
P2300	2	001