

31 October 2025

#eta1000029

Place PM

Faraway House, 21 Franklin Street

Adelaide SA 50000

Attention: Mr Lewis Coulls

## CARMELITE PRECINCT STAGE 2 TRAFFIC AND PARKING REVIEW

Dear Lewis,

I refer to the proposed development located at Glen Osmond Road and Spence Avenue in Myrtle Bank for a proposed development of the next stage (Stage 2) of the Carmelite Precinct, incorporating Independent Living Units/Apartments, refurbishment of the existing Archbishops residence to become a new community centre for use by residents and car parking areas. As requested, this letter provides the findings of a traffic and parking assessment for the proposed development.

### SUBJECT SITE

The subject site is located within the existing Carmelite site at 380 Glen Osmond Road, Myrtle Bank and 1 Spence Avenue Myrtle Bank. The site is shown in Figure 1 below.

Figure 1: Subject Site and Environs



(source: Place PM [Oct 2023])

## EXISTING SITUATION

Glen Osmond Road is an arterial road managed by the Department of Infrastructure and Transport (DIT). There are formalised footpaths within the verge and formalised full time bicycle lanes operating on both sides of the road. It comprises a dual carriageway with multi lanes in each direction. Glen Osmond Road carries approximately 26,800 vehicles per day (DIT, 2024) at the intersection of Glen Osmond Road/Cross Road/Portrush Road/Mt Barker Road and has a posted speed limit of 60km/h.

Cross Road is an arterial road managed by DIT. It comprises a dual carriageway with multi lanes in each direction. There are formalised footpaths within the verge and formalised full time bicycle lanes operating on both sides of the road. Cross Road carries approximately 35,600 vehicles per day (DIT, 2024) at the intersection of Glen Osmond Road/Cross Road/Portrush Road/Mt Barker Road and has a posted speed limit of 60km/h.

Spence Avenue is a local road managed by the City of Unley. There are formalised footpaths on both sides within the verge and comprises a single carriageway with one lane in each direction. On street parking is permitted on both sides of the road without time restrictions. Based on traffic surveys undertaken for Spence Avenue on 9 August 2023, Spence Avenue has a daily traffic volume of approximately 400 vehicles per day.

## PROPOSED DEVELOPMENT

The proposed development will comprise:

- 46 independent living units across two building apartments comprising of:
  - 9x 2 bedroom plus study
  - 7x 3 bedroom
  - 28x 3 bedroom plus study
  - 2x 4 bedroom penthouse
- Community Centre building, comprising of;
  - Ancillary lounge
  - Ancillary reading room/library/AV audio room
  - Ancillary office
  - Ancillary cinema/fine dining
  - Ancillary community kitchen
  - 95sq.m Function/Auditorium (Multipurpose Room)
- New circulating roadways which link to existing internal roads of the site
- A total of 94 resident parking spaces, 18 visitor spaces, 2 parallel drop of spaces (114 spaces) plus 18 spaces within the road widening area are provided across the subject site for the various uses.
- 4 community bus parking spaces

The proposed development layout is as shown in Figure 2.

Figure 2: Proposed Development Layout



(source: Walter Brooke [October 2025])

## PARKING

A review of parking for the proposed development against the Planning and Design Code as referenced in *Table 1 - General Off-Street Car Parking Requirements* in *Part 4 - General Development Policies - Transport, Access and Parking* is shown in Table 1.

Table 1: Parking Requirements

| Use                         | Size   | P&D Code Requirement    | Parking Spaces Required |
|-----------------------------|--------|-------------------------|-------------------------|
| Dwelling with 1 or 2 bdr    | 9      | 1 space per dwelling    | 9                       |
| Dwelling with 3 bdr or more | 37     | 2 spaces per dwelling   | 74                      |
| Visitor Parking             | 46     | 0.2 spaces per dwelling | 9                       |
| Multipurpose Room           | 95sq.m | 10 spaces per 100sq.m   | 10                      |
| <b>TOTAL</b>                |        |                         | <b>102 spaces</b>       |

Based on the above, the assessment has identified a parking requirement for 102 car parking spaces. Across the site, there is proposed to be a total of 94 resident parking spaces, 18 visitor spaces, 2 parallel drop off spaces plus 18 spaces within the road widening area are provided across the subject site for the various uses (totalling 132 spaces or 114 spaces if we excluded counting the spaces within the road widening area), meeting the requirements of Table 1 above.

Accordingly, the proposed development will be provided with parking which will satisfy the parking requirements of the development.

## CAR PARK LAYOUT

The parking layout has been designed in accordance with Australian Standard/New Zealand Standard for Off Street Car parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2022). Key features of the car park design include:

- 90 degree parking spaces for visitors have been provided with a width of 2.5m and a length of 5.4m or 4.8m (with 600mm overhang) and set within a 5.8m wide aisles.
- Parallel parking spaces have been provided with a width of 3.5m and a length of 12m, to accommodate vehicles up to a 7.7m 25 seat minibus.
- Parking spaces for people with disabilities and associated shared area have been provided in accordance with the AS/NZS2890:6:2022 in the front car park.
- The 4 community bus parking spaces will be 3.5m wide by 7.7 long with a 12.1m wide parking aisle
- The circulating roadways will generally be two way.
- A waste enclosure is provided to the west of the apartment buildings within the western car park adjacent to Spence Avenue.

## TRAFFIC ASSESSMENT

Traffic generation estimates for the proposed development have been sourced from the Transport for New South Wales 'Guide to Transport Impact Assessment' published in 2024 (v1.1). Estimates of peak hour and daily traffic volumes resulting from the proposed land use floor areas are set out in Table 2.

Table 2: Traffic Generation Estimates

| Use                        | Size         | Shared Use | Traffic Generation Rate           |                                    | Traffic Generation |                  |
|----------------------------|--------------|------------|-----------------------------------|------------------------------------|--------------------|------------------|
|                            |              |            | Peak Hour                         | Daily                              | Peak Hour          | Daily            |
| <b>Retirement Facility</b> | 46 Dwellings | 0%         | 0.17 trips per dwelling           | 1.8 trips per dwelling             | 8                  | 83               |
| <b>Multipurpose Room</b>   | 95sq.m       | 50%        | 10 trips per 100sq.m <sup>A</sup> | 100 trips per 100sq.m <sup>B</sup> | 5                  | 48               |
| <b>TOTAL</b>               |              |            |                                   |                                    | <b>13 trips</b>    | <b>131 trips</b> |

A - SA Planning and Design Parking rate has been adopted as the Traffic Generation rate, assumed 1 trip per parking space in an hour  
 B - Peak to daily ratio of 10% applied

Table 2 indicates that if the peak periods for all the uses were to coincide, the proposed development would generate 13 vehicles per hour and 131 vehicles per day.

For the purposes of this assessment, all traffic associated with the multipurpose room is anticipated to occur via Glen Osmond Road access points, while the traffic associated with the Independent Living Units will occur via both Spence Avenue and Glen Osmond Road. This is based on the provision of boom gates internal to the site.

Due to the nature of the various uses proposed across the site, the following directional splits have been assumed:

### Retirement Facility

- AM Peak – 20% inbound, 80% outbound
- PM Peak – 70% inbound, 30% outbound

### Multipurpose Room\*

- AM Peak – 80% inbound, 20% outbound
- PM Peak – 80% inbound, 20% outbound

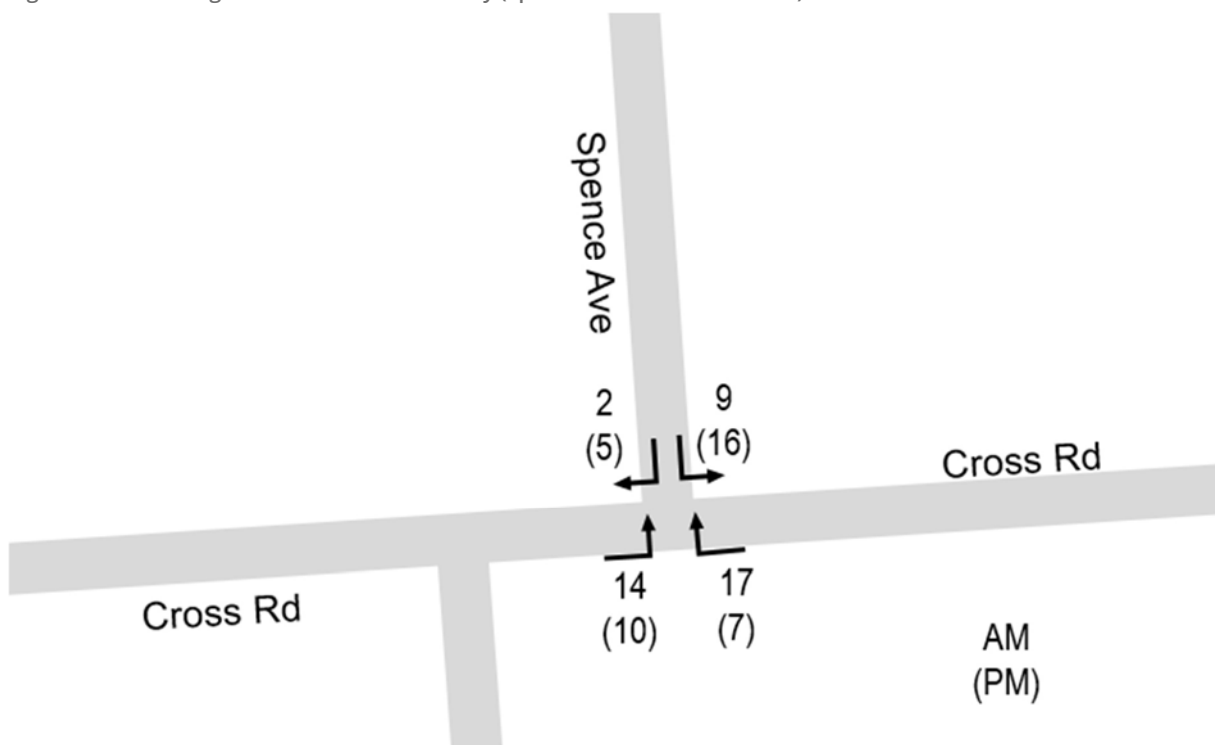
\*assuming staff/visitors arriving for function during peak period

Figure 3: Anticipated Traffic Distributions



Traffic surveys were undertaken on Wednesday 9 August 2023 at 7:30-8:30am and 5:00-6:00pm to record a snapshot of peak period operation of the existing Spence Avenue intersection. Figure 4 below describes the number of movements surveyed.

Figure 4: Existing Traffic Movements Survey (Spence Avenue / Cross Road)



Based on the above, Figure 5 below indicates the proposed increase to traffic volumes for the peak hours associated with the development.

Figure 5: Forecast Traffic Movements



A SIDRA Intersection analysis has been undertaken for the Spence Avenue intersection point based on the assumptions outlined above.

It is noted that the SIDRA analysis indicates a large delay for right turn movements exiting Spence Avenue. SIDRA Intersection modelling has limitations when assessing unsignalised intersections with high opposing vehicle movements on the major approaches. The modelling undertaken is high level and has been undertaken to compare the relative impacts of the post development traffic volumes. The high level modelling is summarised in Table 3 and Attachment A.

Table 3: SIDRA Modelling Summary - Spence Avenue / Cross Road

| Road Leg       | Movement | Base Case Degree of Saturation | Post Dev Degree of Saturation | Post Dev Increase in Vehicle Queue (m) |
|----------------|----------|--------------------------------|-------------------------------|----------------------------------------|
| AM Peak        |          |                                |                               |                                        |
| Cross Road (W) | Left     | 0.395                          | 0.396                         | +0                                     |
|                | Straight | 0.395                          | 0.396                         | +0                                     |
| Cross Road (E) | Straight | 0.499                          | 0.499                         | +0                                     |
|                | Right    | 0.067                          | 0.071                         | +0                                     |
| Spence Avenue  | Left     | 0.688                          | 0.582                         | -1.5                                   |
|                | Right    | 0.688                          | 0.582                         | -1.5                                   |
| PM Peak        |          |                                |                               |                                        |
| Cross Road (W) | Left     | 0.464                          | 0.465                         | +0                                     |
|                | Straight | 0.464                          | 0.465                         | +0                                     |
| Cross Road (E) | Straight | 0.497                          | 0.497                         | +0                                     |
|                | Right    | 0.059                          | 0.073                         | +0.3                                   |
| Spence Avenue  | Left     | 0.585                          | 0.590                         | +0.2                                   |
|                | Right    | 0.585                          | 0.590                         | +0.2                                   |

The modelling of the right turn lane on Cross Road indicates an increase in vehicle queue of approximately 0.3m in the AM and PM peak period. This small increase in vehicle queue length would have minimal impact to the existing right turn lane present on Cross Road.

The SIDRA analysis has indicated that the intersection will continue to operate satisfactorily with the proposed development with minimal to no notable change to the intersection performance. Similarly, queue lengths and delays will have minor changes between existing and post development scenarios.

## ROAD WIDENING REQUIREMENTS

Discussions were undertaken with DIT staff regarding the Road Widening Requirements applicable to the subject site in 2023 and more recently in May 2025. The Road Widening Requirements are illustrated in Figure 6 and enclosed as Attachment B.

Figure 6: Future Road Widening Requirements



## ACCESS

The proposed development will connect with Glen Osmond Road and Spence Avenue for access to the residential apartments Archbishops Residence and car parking areas. The internal roundabout within the circulation roadway near the Glen Osmond Road ingress has been designed to accommodate vehicles up to a 6m Ambulance and 7.7m 25 seat minibus.

Waste collection vehicles will access the proposed loading/refuse storage site located towards the western car park adjacent to Spence Avenue with trucks entering and exiting via Spence Avenue.

Boom gate controlled access will also enable emergency vehicles/infrequent large vehicles to exit the site via Glen Osmond Road along the southern roadway.

The proposed internal roads associated with the community facility have been designed for simultaneous movements by light vehicles and access by vehicles up to a 7.7m 25 seat mini bus at the drop off area.

Fire access to the booster will be via the Glen Osmond Road Egress. The fire truck will be able to access the booster in a forward direction. Upon completion of service, the truck will be able to undertake a 3-point turn to then exit back out to Glen Osmond Road via the egress.

Turn path diagrams are enclosed for the relevant design vehicles to circulate through the proposed development in Attachment C.

## CONCLUSIONS

The traffic and parking assessment has found the following:

1. The proposed development will comprise of the next stage of development of the Carmelite Precinct, incorporating Independent Living Units/Apartments, Community Centre, and car parking areas.
2. The proposed development will provide parking to accommodate anticipated parking demands and of the proposal.
3. The proposed traffic generation by the proposed development will be approximately 13 vehicles per hour and 131 vehicles per day.
4. Once these trips have been distributed across the proposed access points, the anticipated traffic generation of the subject site is not anticipated to impact on the safety or function of the surrounding road network.
5. DIT future road widening requirements has been considered in this design.
6. Waste collection vehicles are proposed to access the proposed refuse storage via Spence Avenue.

Overall the proposed development will only have a very minor impact on traffic volumes on the adjacent road network.

Should further information be required, please contact the undersigned at your convenience.

Yours sincerely

**EMPIRICAL TRAFFIC ADVISORY**

A handwritten signature in black ink, appearing to read 'David Kwong', written in a cursive style.

David Kwong  
Director

encl.

Attachment A: SIDRA Modelling Outputs

Attachment B: DIT Future Road Widening Requirements

Attachment C: Turn Path Diagrams



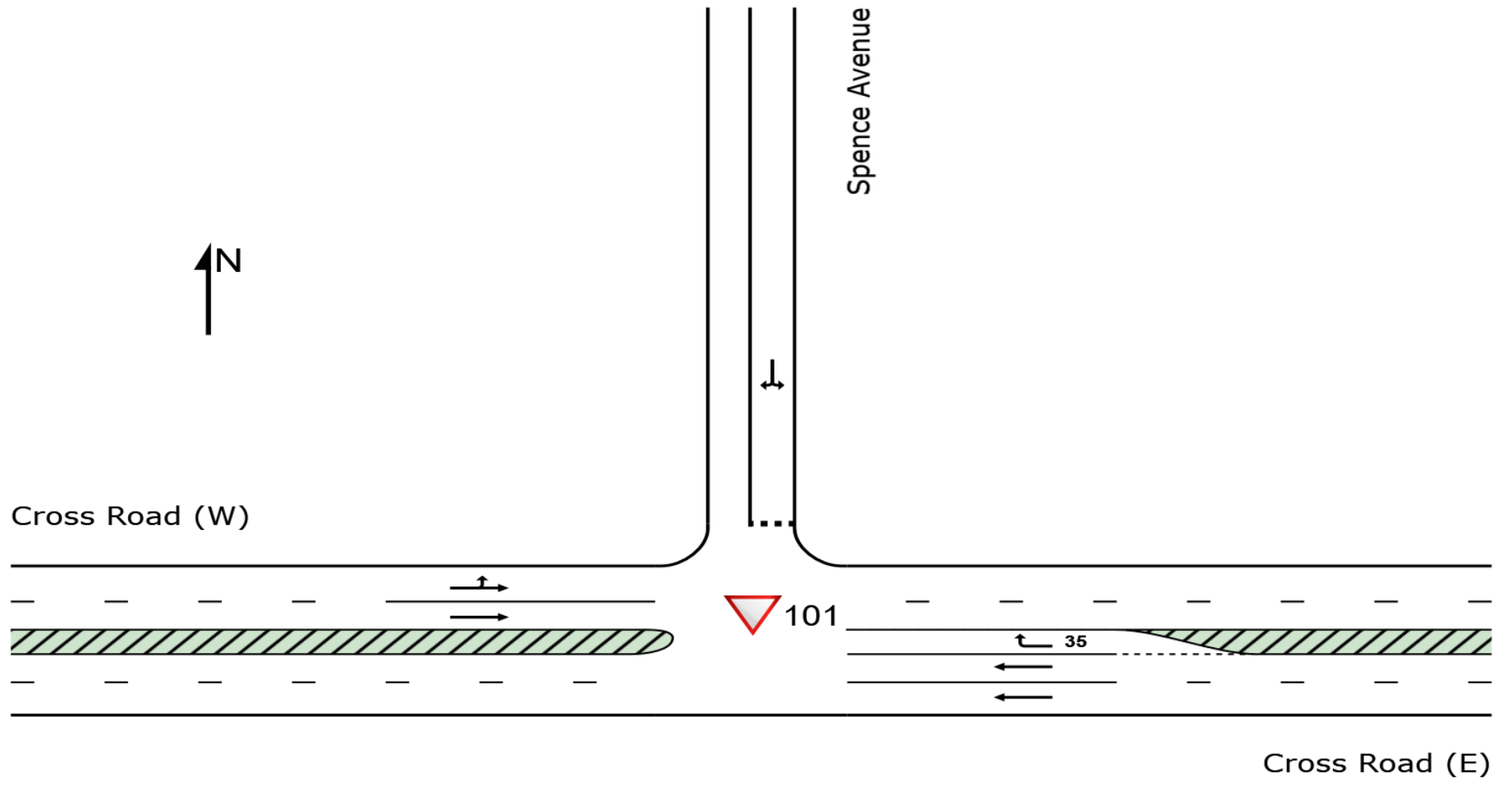
## ATTACHMENT A: SIDRA MODELLING OUTPUTS

# SITE LAYOUT

▽ Site: 101 [Spence Ave/Cross Road - Base Case - AM Peak (Site Folder: General)]

Base Case - AM Peak  
Site Category: (None)  
Give-Way (Two-Way)

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



# INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

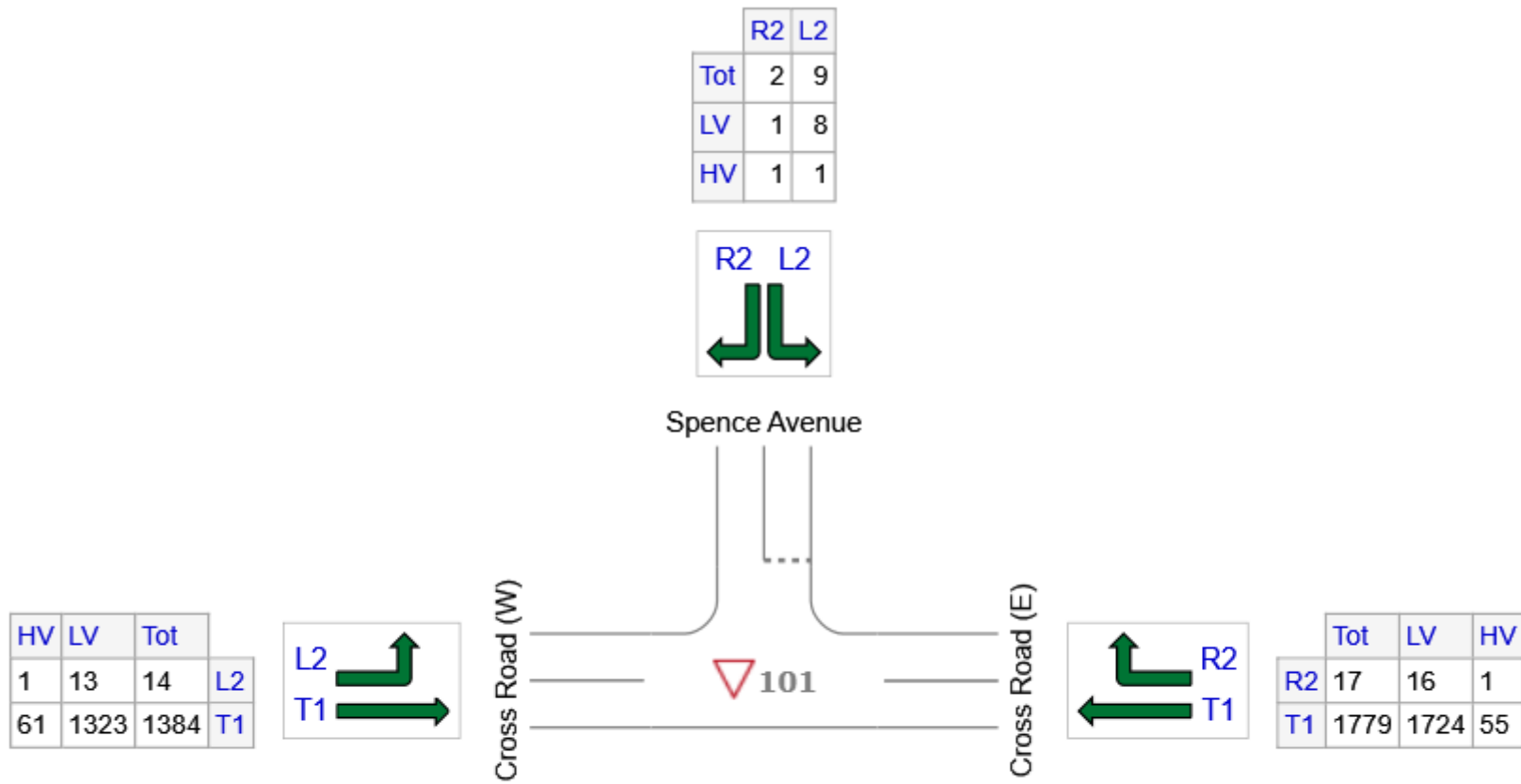
Site: 101 [Spence Ave/Cross Road - Base Case - AM Peak (Site Folder: General)]

Base Case - AM Peak

Site Category: (None)

Give-Way (Two-Way)

Volume Display Method: Separate



|                   | All MCs | Light Vehicles (LV) | Heavy Vehicles (HV) |
|-------------------|---------|---------------------|---------------------|
| E: Cross Road (E) | 1796    | 1740                | 56                  |
| N: Spence Avenue  | 11      | 9                   | 2                   |
| W: Cross Road (W) | 1398    | 1336                | 62                  |
| Total             | 3205    | 3085                | 120                 |

# INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

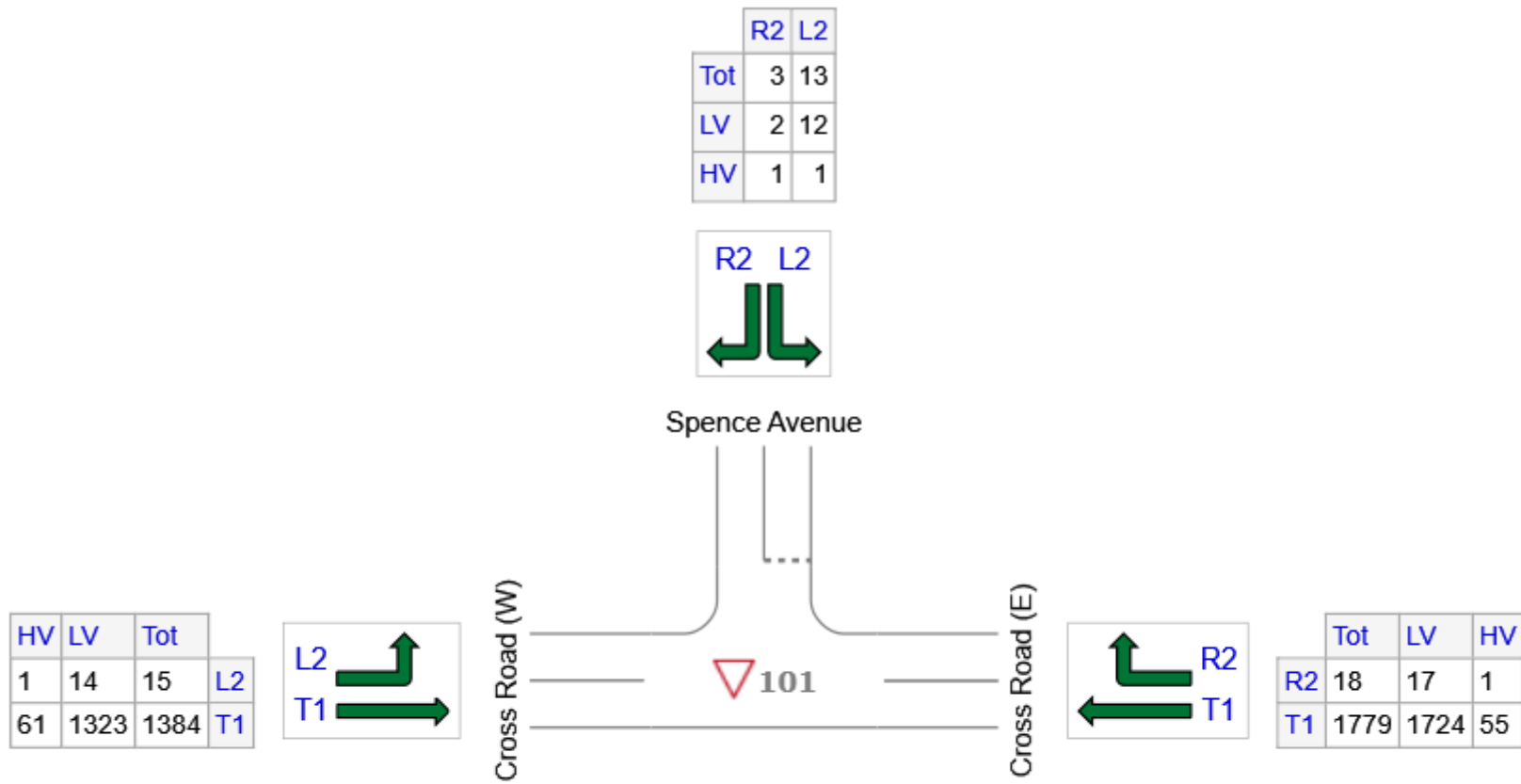
Site: 101 [Spence Ave/Cross Road - Post Dev - AM Peak (Site Folder: General)]

Base Case - AM Peak

Site Category: (None)

Give-Way (Two-Way)

Volume Display Method: Separate



|                   | All MCs | Light Vehicles (LV) | Heavy Vehicles (HV) |
|-------------------|---------|---------------------|---------------------|
| E: Cross Road (E) | 1797    | 1741                | 56                  |
| N: Spence Avenue  | 16      | 14                  | 2                   |
| W: Cross Road (W) | 1399    | 1337                | 62                  |
| Total             | 3212    | 3092                | 120                 |

# MOVEMENT SUMMARY

Site: 101 [Spence Ave/Cross Road - Post Dev - AM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Base Case - AM Peak  
 Site Category: (None)  
 Give-Way (Two-Way)

| Vehicle Movement Performance |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
|------------------------------|------|-----------|--------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|----------------|---------------------|-------------|
| Mov ID                       | Turn | Mov Class | Demand Flows |      | Arrival Flows |      | Deg. Satn | Aver. Delay | Level of Service | 95% Back Of Queue |        | Prop. Que | Eff. Stop Rate | Aver. No. of Cycles | Aver. Speed |
|                              |      |           | [ Total      | HV ] | [ Total       | HV ] |           |             |                  | [ Veh.            | Dist ] |           |                |                     |             |
|                              |      |           | veh/h        | %    | veh/h         | %    | v/c       | sec         |                  | veh               | m      |           |                |                     |             |
| East: Cross Road (E)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 5                            | T1   | All MCs   | 1873         | 3.1  | 1873          | 3.1  | 0.499     | 0.1         | LOS A            | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| 6                            | R2   | All MCs   | 19           | 5.6  | 19            | 5.6  | 0.071     | 18.4        | LOS C            | 0.2               | 1.3    | 0.84      | 0.93           | 0.84                | 41.3        |
| Approach                     |      |           | 1892         | 3.1  | 1892          | 3.1  | 0.499     | 0.3         | NA               | 0.2               | 1.3    | 0.01      | 0.01           | 0.01                | 59.3        |
| North: Spence Avenue         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 7                            | L2   | All MCs   | 14           | 7.7  | 14            | 7.7  | 0.582     | 25.6        | LOS D            | 1.3               | 10.5   | 0.98      | 1.01           | 1.04                | 24.9        |
| 9                            | R2   | All MCs   | 3            | 33.3 | 3             | 33.3 | 0.582     | 224.2       | LOS F            | 1.3               | 10.5   | 0.98      | 1.01           | 1.04                | 28.6        |
| Approach                     |      |           | 17           | 12.5 | 17            | 12.5 | 0.582     | 62.9        | LOS F            | 1.3               | 10.5   | 0.98      | 1.01           | 1.04                | 25.6        |
| West: Cross Road (W)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 10                           | L2   | All MCs   | 16           | 6.7  | 16            | 6.7  | 0.396     | 5.7         | LOS A            | 0.0               | 0.0    | 0.00      | 0.01           | 0.00                | 56.8        |
| 11                           | T1   | All MCs   | 1457         | 4.4  | 1457          | 4.4  | 0.396     | 0.1         | LOS A            | 0.0               | 0.0    | 0.00      | 0.01           | 0.00                | 59.7        |
| Approach                     |      |           | 1473         | 4.4  | 1473          | 4.4  | 0.396     | 0.2         | NA               | 0.0               | 0.0    | 0.00      | 0.01           | 0.00                | 59.6        |
| All Vehicles                 |      |           | 3381         | 3.7  | 3381          | 3.7  | 0.582     | 0.6         | NA               | 1.3               | 10.5   | 0.01      | 0.01           | 0.01                | 59.0        |

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.

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# INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

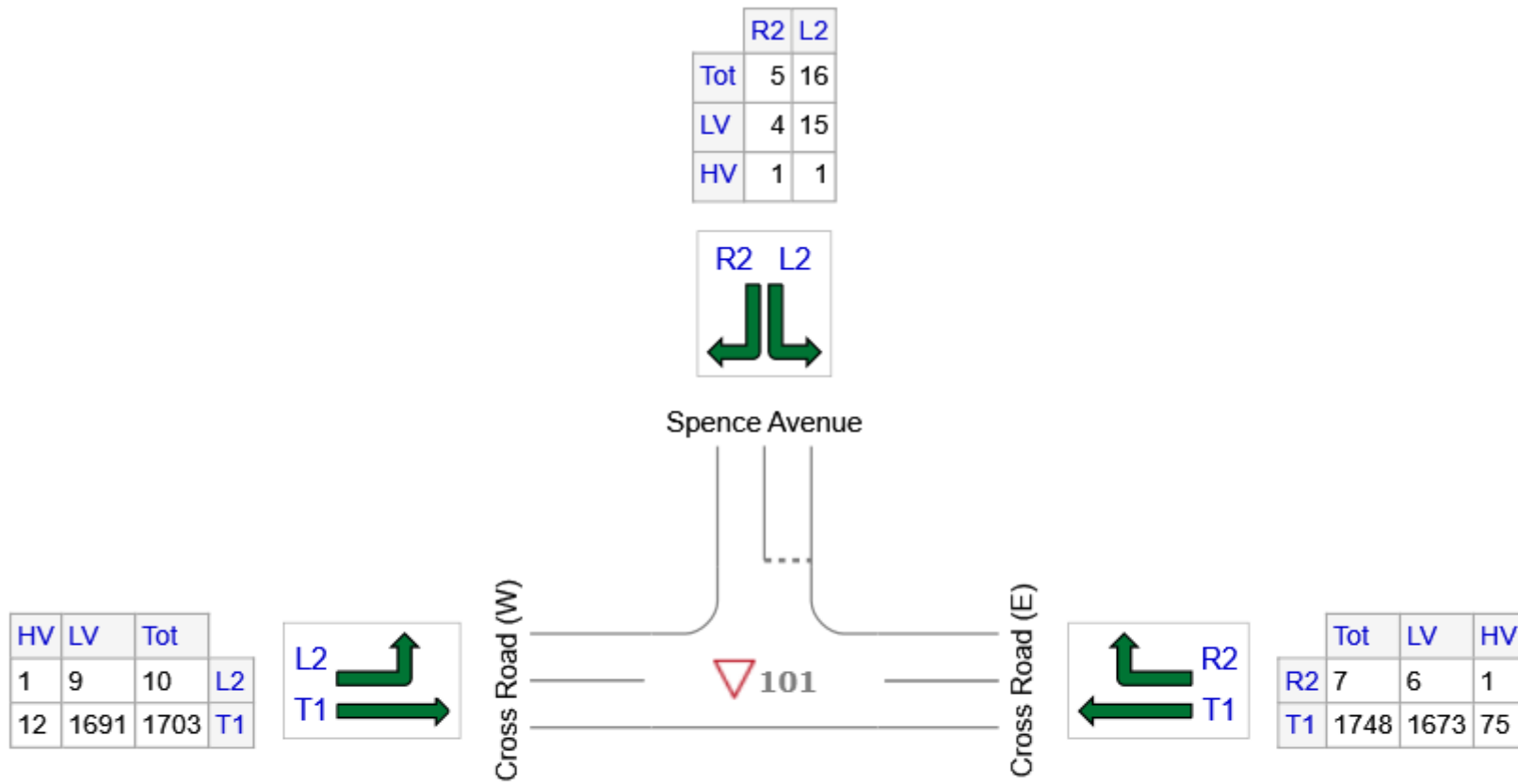
Site: 101 [Spence Ave/Cross Road - Base Case - PM Peak (Site Folder: General)]

Base Case - PM Peak

Site Category: (None)

Give-Way (Two-Way)

Volume Display Method: Separate



|                   | All MCs | Light Vehicles (LV) | Heavy Vehicles (HV) |
|-------------------|---------|---------------------|---------------------|
| E: Cross Road (E) | 1755    | 1679                | 76                  |
| N: Spence Avenue  | 21      | 19                  | 2                   |
| W: Cross Road (W) | 1713    | 1700                | 13                  |
| Total             | 3489    | 3398                | 91                  |

# MOVEMENT SUMMARY

Site: 101 [Spence Ave/Cross Road - Base Case - PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Base Case - PM Peak  
 Site Category: (None)  
 Give-Way (Two-Way)

| Vehicle Movement Performance |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
|------------------------------|------|-----------|--------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|----------------|---------------------|-------------|
| Mov ID                       | Turn | Mov Class | Demand Flows |      | Arrival Flows |      | Deg. Satn | Aver. Delay | Level of Service | 95% Back Of Queue |        | Prop. Que | Eff. Stop Rate | Aver. No. of Cycles | Aver. Speed |
|                              |      |           | [ Total      | HV ] | [ Total       | HV ] |           |             |                  | [ Veh.            | Dist ] |           |                |                     |             |
|                              |      |           | veh/h        | %    | veh/h         | %    | v/c       | sec         |                  | veh               | m      |           |                |                     |             |
| East: Cross Road (E)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 5                            | T1   | All MCs   | 1840         | 4.3  | 1840          | 4.3  | 0.497     | 0.1         | LOS A            | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| 6                            | R2   | All MCs   | 7            | 14.3 | 7             | 14.3 | 0.059     | 32.8        | LOS D            | 0.1               | 0.9    | 0.91      | 0.96           | 0.91                | 33.9        |
| Approach                     |      |           | 1847         | 4.3  | 1847          | 4.3  | 0.497     | 0.2         | NA               | 0.1               | 0.9    | 0.00      | 0.00           | 0.00                | 59.4        |
| North: Spence Avenue         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 7                            | L2   | All MCs   | 17           | 6.3  | 17            | 6.3  | 0.585     | 38.6        | LOS E            | 1.7               | 13.3   | 0.98      | 1.02           | 1.10                | 22.3        |
| 9                            | R2   | All MCs   | 5            | 20.0 | 5             | 20.0 | 0.585     | 197.5       | LOS F            | 1.7               | 13.3   | 0.98      | 1.02           | 1.10                | 25.9        |
| Approach                     |      |           | 22           | 9.5  | 22            | 9.5  | 0.585     | 76.4        | LOS F            | 1.7               | 13.3   | 0.98      | 1.02           | 1.10                | 23.2        |
| West: Cross Road (W)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 10                           | L2   | All MCs   | 11           | 10.0 | 11            | 10.0 | 0.464     | 5.8         | LOS A            | 0.0               | 0.0    | 0.00      | 0.01           | 0.00                | 56.7        |
| 11                           | T1   | All MCs   | 1793         | 0.7  | 1793          | 0.7  | 0.464     | 0.2         | LOS A            | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| Approach                     |      |           | 1803         | 0.8  | 1803          | 0.8  | 0.464     | 0.2         | NA               | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| All Vehicles                 |      |           | 3673         | 2.6  | 3673          | 2.6  | 0.585     | 0.7         | NA               | 1.7               | 13.3   | 0.01      | 0.01           | 0.01                | 58.9        |

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.

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# INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

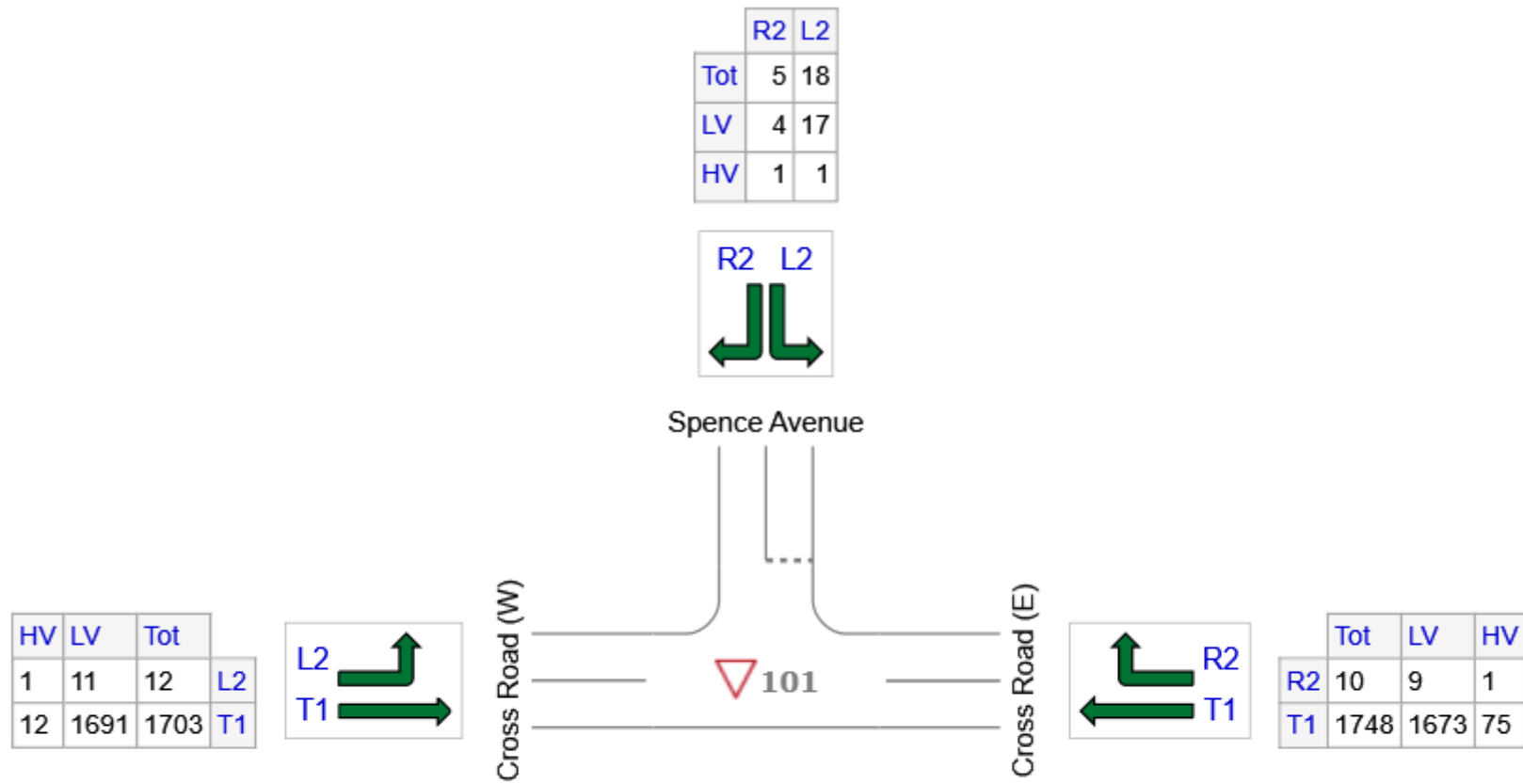
Site: 101 [Spence Ave/Cross Road - Post Dev - PM Peak (Site Folder: General)]

Base Case - PM Peak

Site Category: (None)

Give-Way (Two-Way)

Volume Display Method: Separate



|                   | All MCs | Light Vehicles (LV) | Heavy Vehicles (HV) |
|-------------------|---------|---------------------|---------------------|
| E: Cross Road (E) | 1758    | 1682                | 76                  |
| N: Spence Avenue  | 23      | 21                  | 2                   |
| W: Cross Road (W) | 1715    | 1702                | 13                  |
| Total             | 3496    | 3405                | 91                  |

# MOVEMENT SUMMARY

Site: 101 [Spence Ave/Cross Road - Post Dev - PM Peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Base Case - PM Peak  
 Site Category: (None)  
 Give-Way (Two-Way)

| Vehicle Movement Performance |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
|------------------------------|------|-----------|--------------|------|---------------|------|-----------|-------------|------------------|-------------------|--------|-----------|----------------|---------------------|-------------|
| Mov ID                       | Turn | Mov Class | Demand Flows |      | Arrival Flows |      | Deg. Satn | Aver. Delay | Level of Service | 95% Back Of Queue |        | Prop. Que | Eff. Stop Rate | Aver. No. of Cycles | Aver. Speed |
|                              |      |           | [ Total      | HV ] | [ Total       | HV ] |           |             |                  | [ Veh.            | Dist ] |           |                |                     |             |
|                              |      |           | veh/h        | %    | veh/h         | %    | v/c       | sec         |                  | veh               | m      |           |                |                     |             |
| East: Cross Road (E)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 5                            | T1   | All MCs   | 1840         | 4.3  | 1840          | 4.3  | 0.497     | 0.1         | LOS A            | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| 6                            | R2   | All MCs   | 11           | 10.0 | 11            | 10.0 | 0.073     | 29.5        | LOS D            | 0.2               | 1.2    | 0.90      | 0.96           | 0.90                | 35.4        |
| Approach                     |      |           | 1851         | 4.3  | 1851          | 4.3  | 0.497     | 0.3         | NA               | 0.2               | 1.2    | 0.01      | 0.01           | 0.01                | 59.4        |
| North: Spence Avenue         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 7                            | L2   | All MCs   | 19           | 5.6  | 19            | 5.6  | 0.590     | 36.6        | LOS E            | 1.8               | 13.5   | 0.98      | 1.03           | 1.11                | 23.2        |
| 9                            | R2   | All MCs   | 5            | 20.0 | 5             | 20.0 | 0.590     | 196.9       | LOS F            | 1.8               | 13.5   | 0.98      | 1.03           | 1.11                | 26.9        |
| Approach                     |      |           | 24           | 8.7  | 24            | 8.7  | 0.590     | 71.4        | LOS F            | 1.8               | 13.5   | 0.98      | 1.03           | 1.11                | 24.1        |
| West: Cross Road (W)         |      |           |              |      |               |      |           |             |                  |                   |        |           |                |                     |             |
| 10                           | L2   | All MCs   | 13           | 8.3  | 13            | 8.3  | 0.465     | 5.8         | LOS A            | 0.0               | 0.0    | 0.00      | 0.01           | 0.00                | 56.7        |
| 11                           | T1   | All MCs   | 1793         | 0.7  | 1793          | 0.7  | 0.465     | 0.2         | LOS A            | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| Approach                     |      |           | 1805         | 0.8  | 1805          | 0.8  | 0.465     | 0.2         | NA               | 0.0               | 0.0    | 0.00      | 0.00           | 0.00                | 59.6        |
| All Vehicles                 |      |           | 3680         | 2.6  | 3680          | 2.6  | 0.590     | 0.7         | NA               | 1.8               | 13.5   | 0.01      | 0.01           | 0.01                | 58.9        |

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

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Project: C:\Users\TimothyJones\Empirical Traffic Advisory\ETA - Documents\Projects\1000029\_carmelite\_s2\Model\251029\_1000029\_Spence.sip9

## ATTACHMENT B: DIT FUTURE ROAD WIDENING REQUIREMENTS

## David Kwong

---

**From:** Hryciuk, Marc (DIT) <Marc.Hryciuk@sa.gov.au>  
**Sent:** Wednesday, 28 May 2025 4:23 PM  
**To:** David Kwong  
**Subject:** RE: Carmelite

OFFICIAL

Hi David,

Have done the rounds of stakeholders for this one and there has been no change to the most recent details provided to date.

Kind regards,

**Marc Hryciuk**  
Manager  
Transport Assessment  
Transport Strategy and Planning  
Department for Infrastructure and Transport  
T 7133 1664 • E [Marc.Hryciuk@sa.gov.au](mailto:Marc.Hryciuk@sa.gov.au) – Please note new number  
PO Box 1533 Adelaide SA 5001 • DX 171 • [www.dit.sa.gov.au](http://www.dit.sa.gov.au)



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**From:** David Kwong <david.kwong@empiricaltraffic.com.au>  
**Sent:** Tuesday, 27 May 2025 2:14 PM  
**To:** Hryciuk, Marc (DIT) <Marc.Hryciuk@sa.gov.au>  
**Subject:** RE: Carmelite

OFFICIAL

Hi Marc,

Just wanting to follow up on this one please?

Thanks and regards  
David

**David Kwong**  
Director



**e** david.kwong@empiricaltraffic.com.au  
**t** 0477 110 770  
**a** PO Box 268 Glenside SA 5065

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---

**From:** David Kwong  
**Sent:** Friday, 16 May 2025 12:52 PM  
**To:** Hryciuk, Marc (DIT) <[Marc.Hryciuk@sa.gov.au](mailto:Marc.Hryciuk@sa.gov.au)>  
**Subject:** RE: Carmelite

Hi Marc,

Just confirming that there are no changes to the road widening per previous advice (attached)?

Regards  
David

**David Kwong**  
Director



**e** david.kwong@empiricaltraffic.com.au  
**t** 0477 110 770  
**a** PO Box 268 Glenside SA 5065

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---

**From:** David Kwong  
**Sent:** Wednesday, 30 April 2025 2:50 PM  
**To:** Hryciuk, Marc (DIT) <[Marc.Hryciuk@sa.gov.au](mailto:Marc.Hryciuk@sa.gov.au)>  
**Subject:** FW: Carmelite

Hi Marc,

Hope you had a good Easter Break.

I've just returned from leave and playing catch up with couple of things.

Carmelite is getting traction again with their Stage 2 phase for Planning and they have had some initial internal team meetings while I have been away.

One of the items they would like confirmed is whether or not the previous road widening advice provided by DIT late last year has materially remained unchanged? Could you please confirm? I've attached the previous pdf mark up which you provided to us for reference.

Thanks and regards  
David

**David Kwong**  
Director



Empirical  
Traffic  
Advisory

**e** david.kwong@empiricaltraffic.com.au  
**t** 0477 110 770  
**a** PO Box 268 Glenside SA 5065

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**From:** Hryciuk, Marc (DIT) <[Marc.Hryciuk@sa.gov.au](mailto:Marc.Hryciuk@sa.gov.au)>  
**Sent:** Friday, 10 November 2023 12:49 PM  
**To:** David Kwong <[david.kwong@empiricaltraffic.com.au](mailto:david.kwong@empiricaltraffic.com.au)>  
**Subject:** Carmelite

OFFICIAL

Hi David,

Please find the rough mark up attached for the Carmelite site. This adopts the maximum widening scenario from the planning studies discussed.

Kind regards,

**Marc Hryciuk**  
Manager  
Transport Assessment  
Transport Strategy and Planning  
Department for Infrastructure and Transport  
T 7133 1664 • E [Marc.Hryciuk@sa.gov.au](mailto:Marc.Hryciuk@sa.gov.au) – Please note new number  
PO Box 1533 Adelaide SA 5001 • DX 171 • [www.dit.sa.gov.au](http://www.dit.sa.gov.au)



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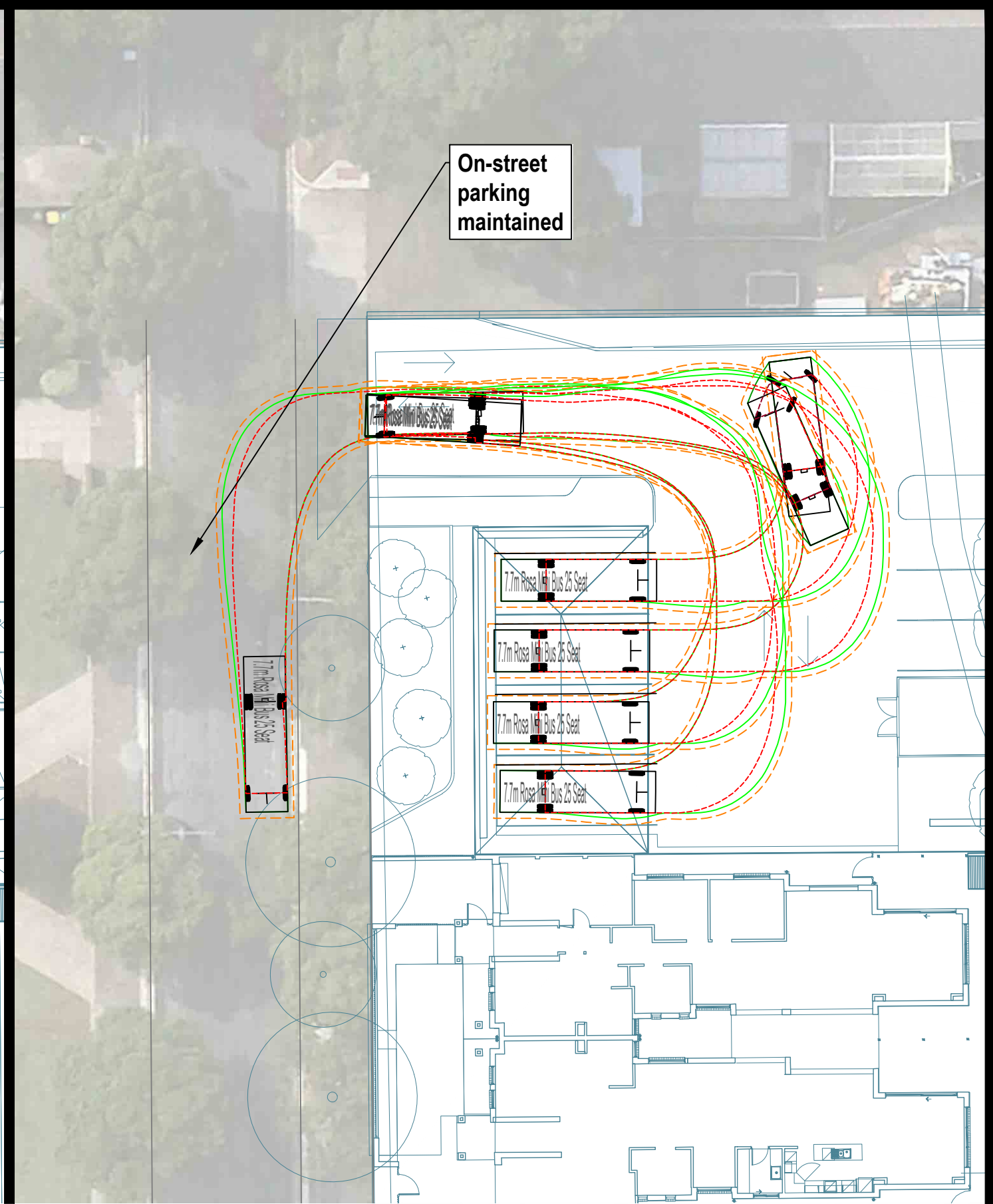
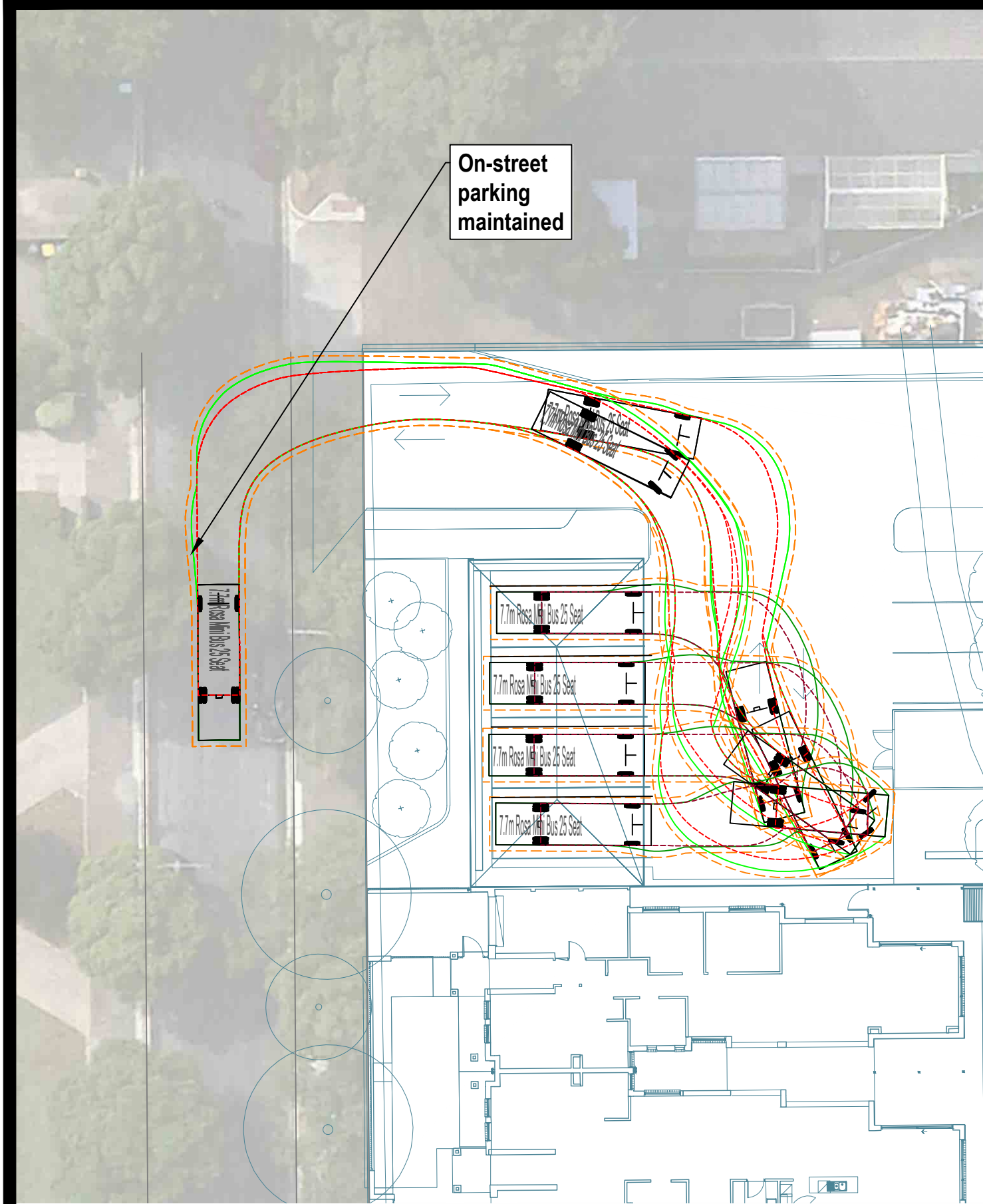
SCALE 1:1000  
0 10.0 20.0  
metres

APPROVED: DK  
DATE: 23 June 2023  
FILENAME: 230623-1000029-01.DWG

**CARMELITE STAGE 2  
ROAD WIDENING REQUIREMENTS  
STAGE 1 AGREED ROAD WIDENING LINES  
CONCEPT PLAN**

DRAWING: 230623-1000029-01-LAND

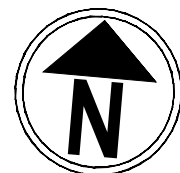
## ATTACHMENT C: TURN PATH DIAGRAMS



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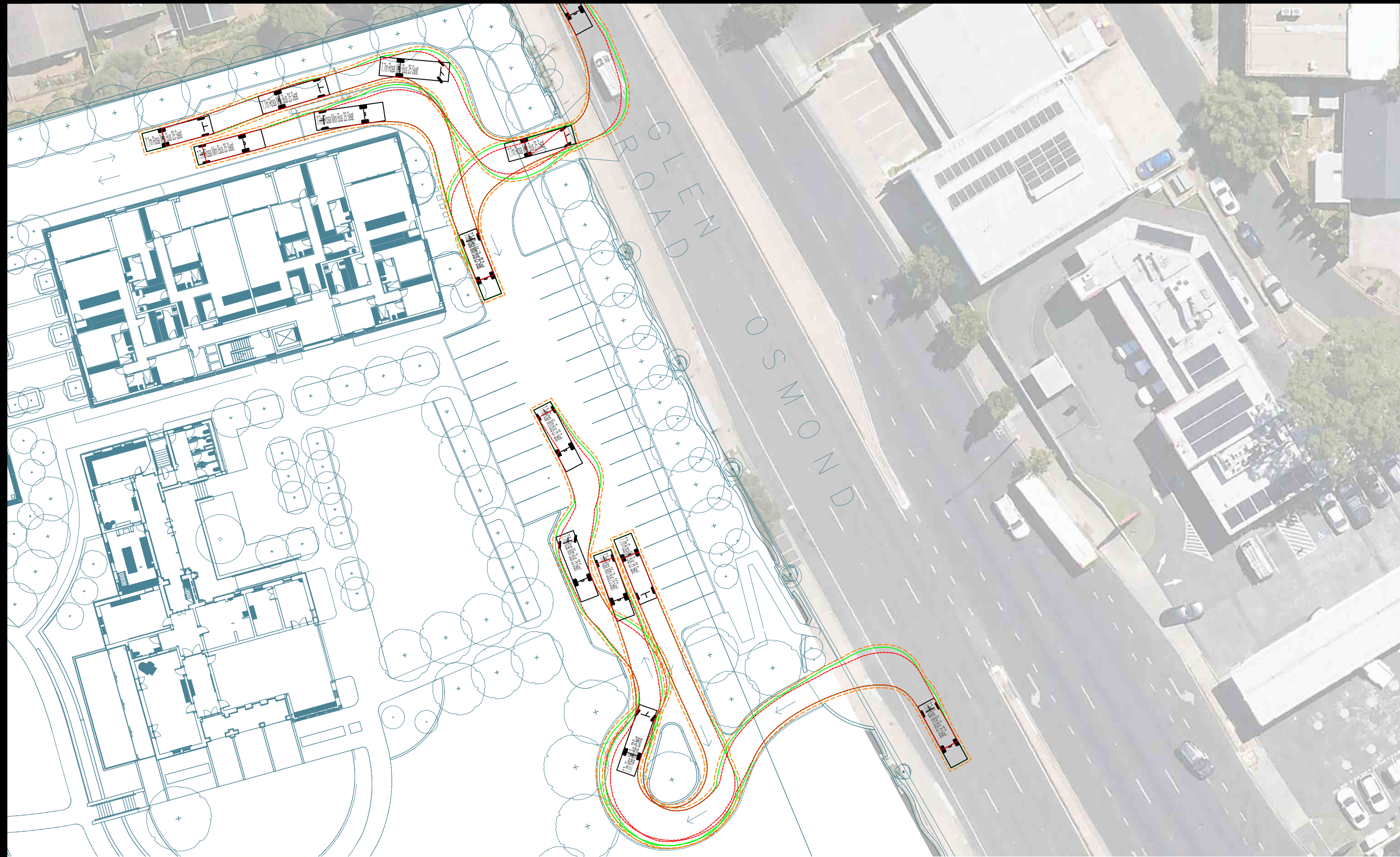


SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: **DK**  
DATE: **31 October 2025**  
FILENAME: **251031-1000029-10.DWG**

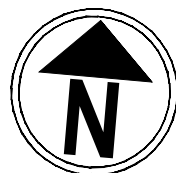
**Carmelite Stage 2  
Community Bus Parking Area  
7.7.m Community Bus Entry/Exit  
TURN PATH**

DRAWING: **251031-1000029-10-AT01**



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SCALE 1:400  
0 4.0 8.0  
metres

APPROVED: **DK**  
DATE: **31 October 2025**  
FILENAME: **251031-1000029-10.DWG**

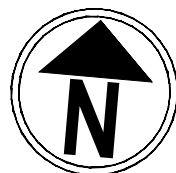
**Carmelite Stage 2  
Building Drop-off/Pick-up Area  
7.7.m Community Bus Site Access  
TURN PATH**

DRAWING: **251031-1000029-10-AT02**



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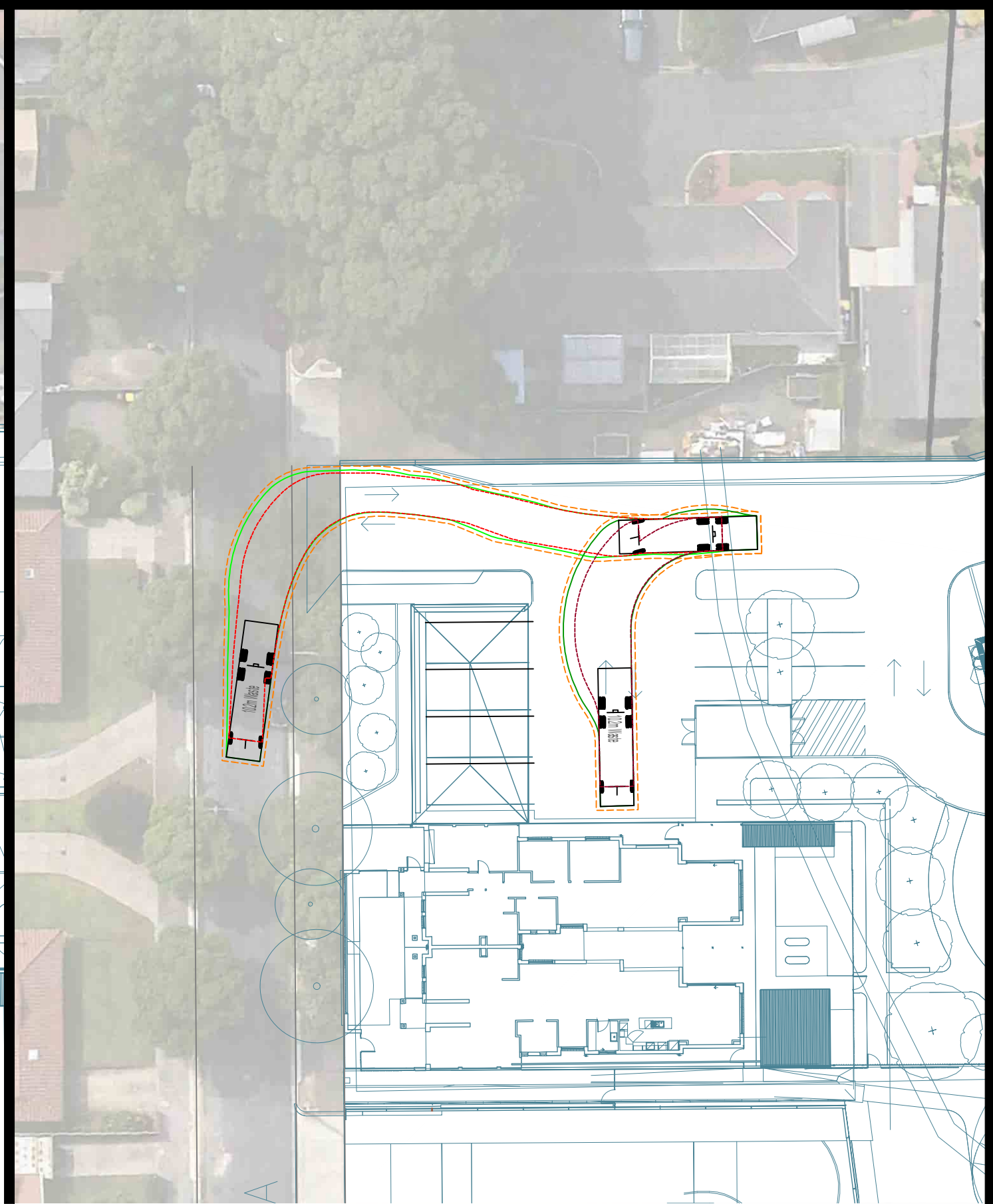
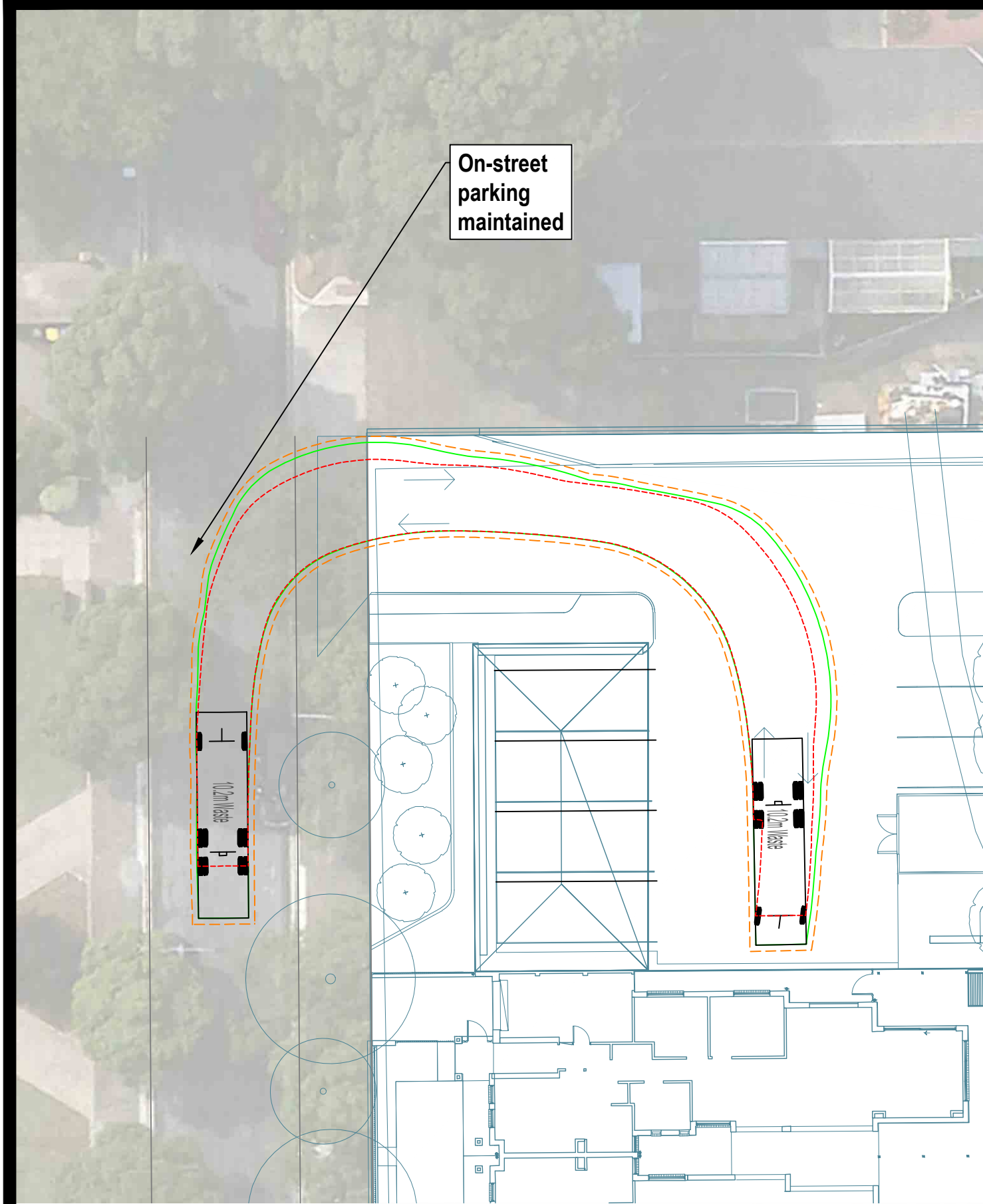


SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: DK  
DATE: 31 October 2025  
FILENAME: 251031-1000029-10.DWG

**Carmelite Stage 2  
Building Drop-off/Pick-up Area  
7.7.m Community Bus Indented Bay Access  
TURN PATH**

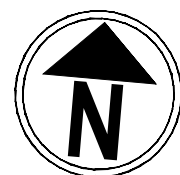
DRAWING: 251031-1000029-10-AT03



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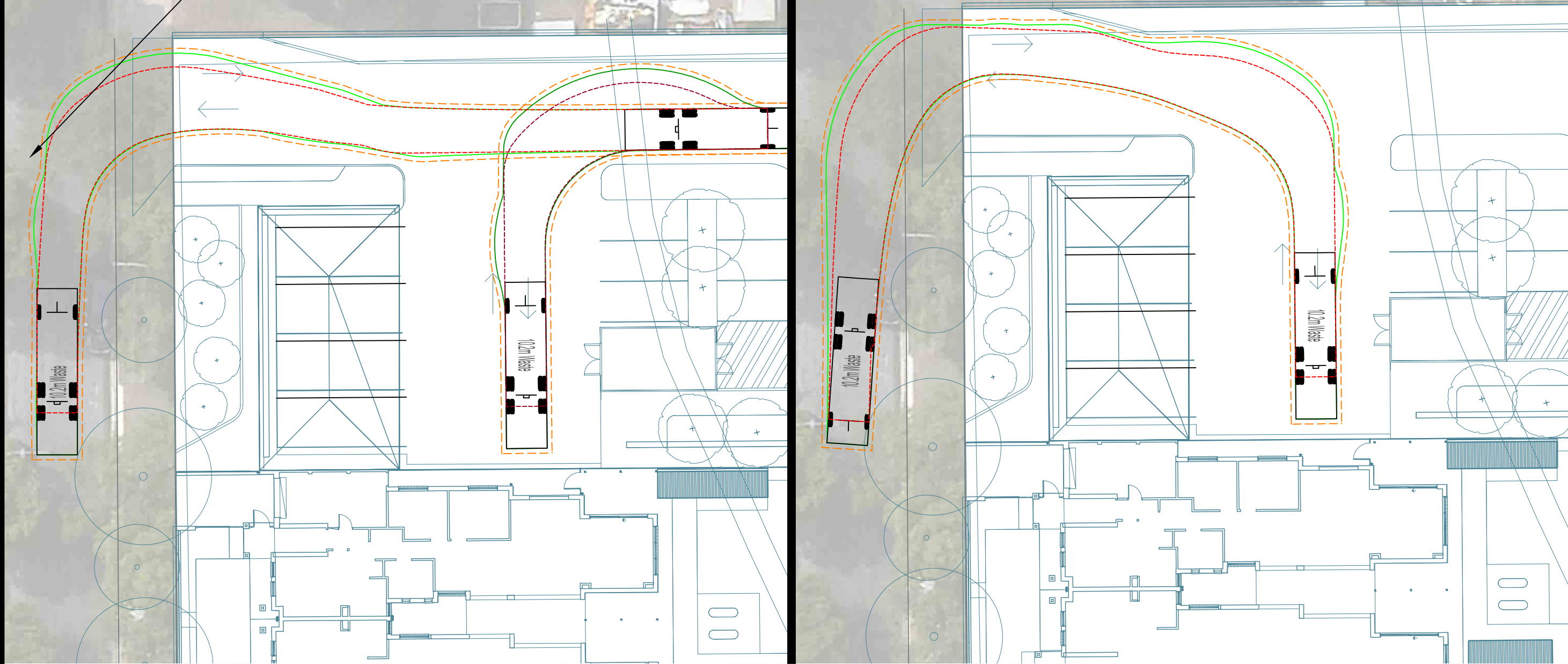
SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: **DK**  
DATE: **31 October 2025**  
FILENAME: **251031-1000029-10.DWG**

**Carmelite Stage 2  
Community Bus Parking Area  
10.2m Waste Vehicle Forward Entry/Reverse Exit  
TURN PATH**

DRAWING: **251031-1000029-10-AT04**

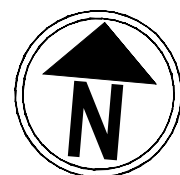
On-street parking maintained



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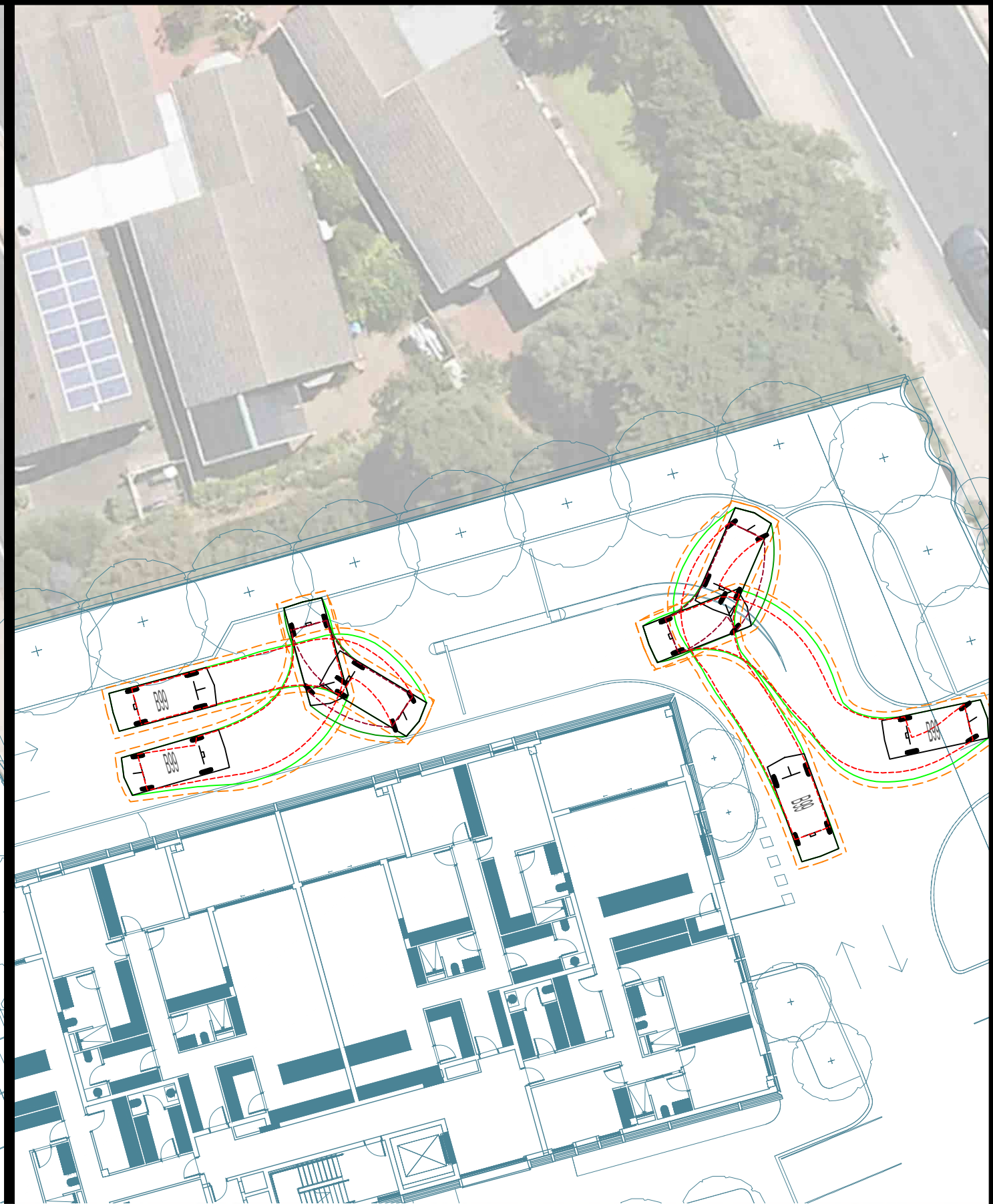
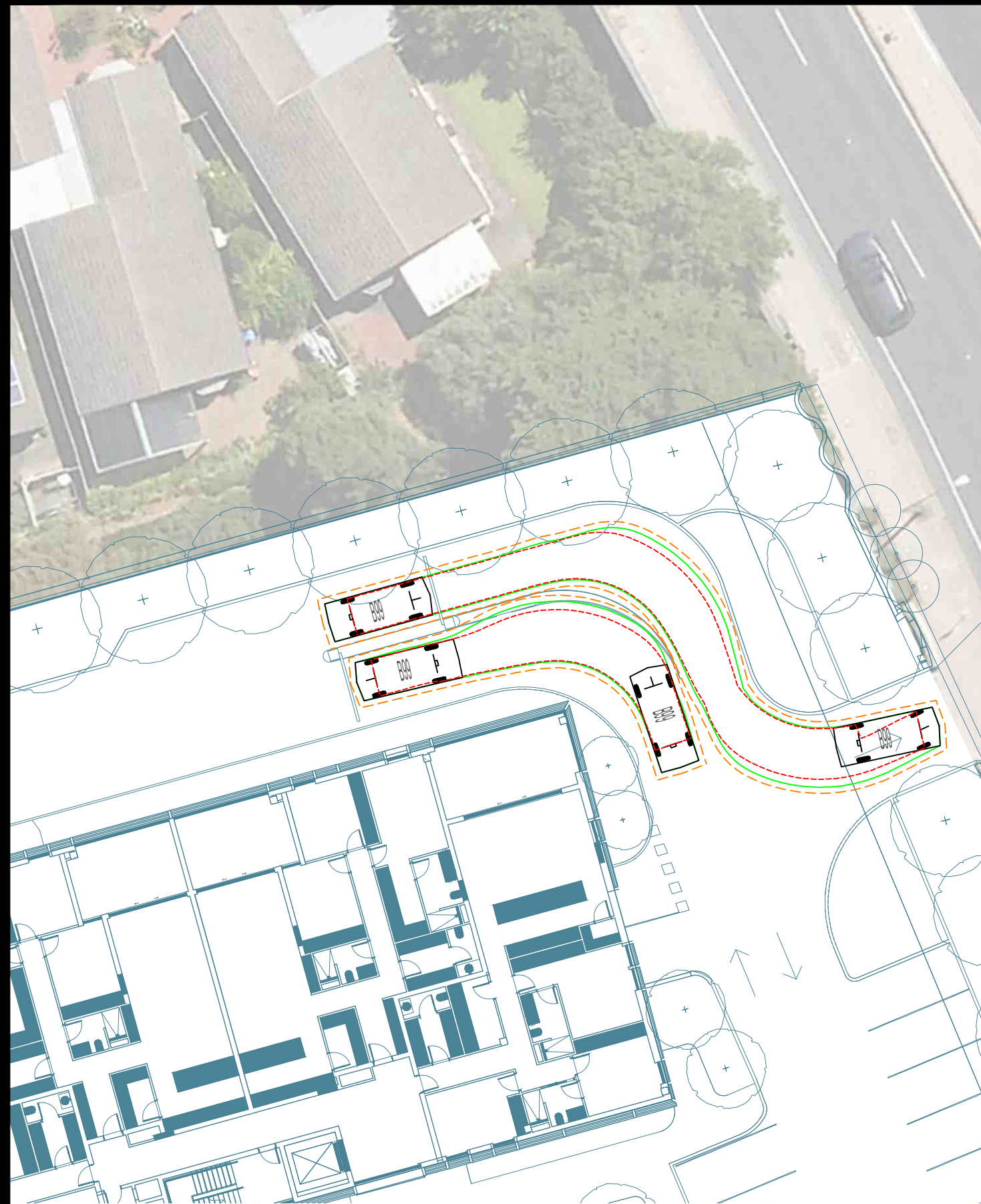


SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: DK  
DATE: 31 October 2025  
FILENAME: 251031-1000029-10.DWG

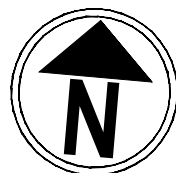
**Carmelite Stage 2  
Community Bus Parking Area  
10.2m Waste Vehicle Reverse Entry/Forward Exit  
TURN PATH**

DRAWING: 251031-1000029-10-AT05



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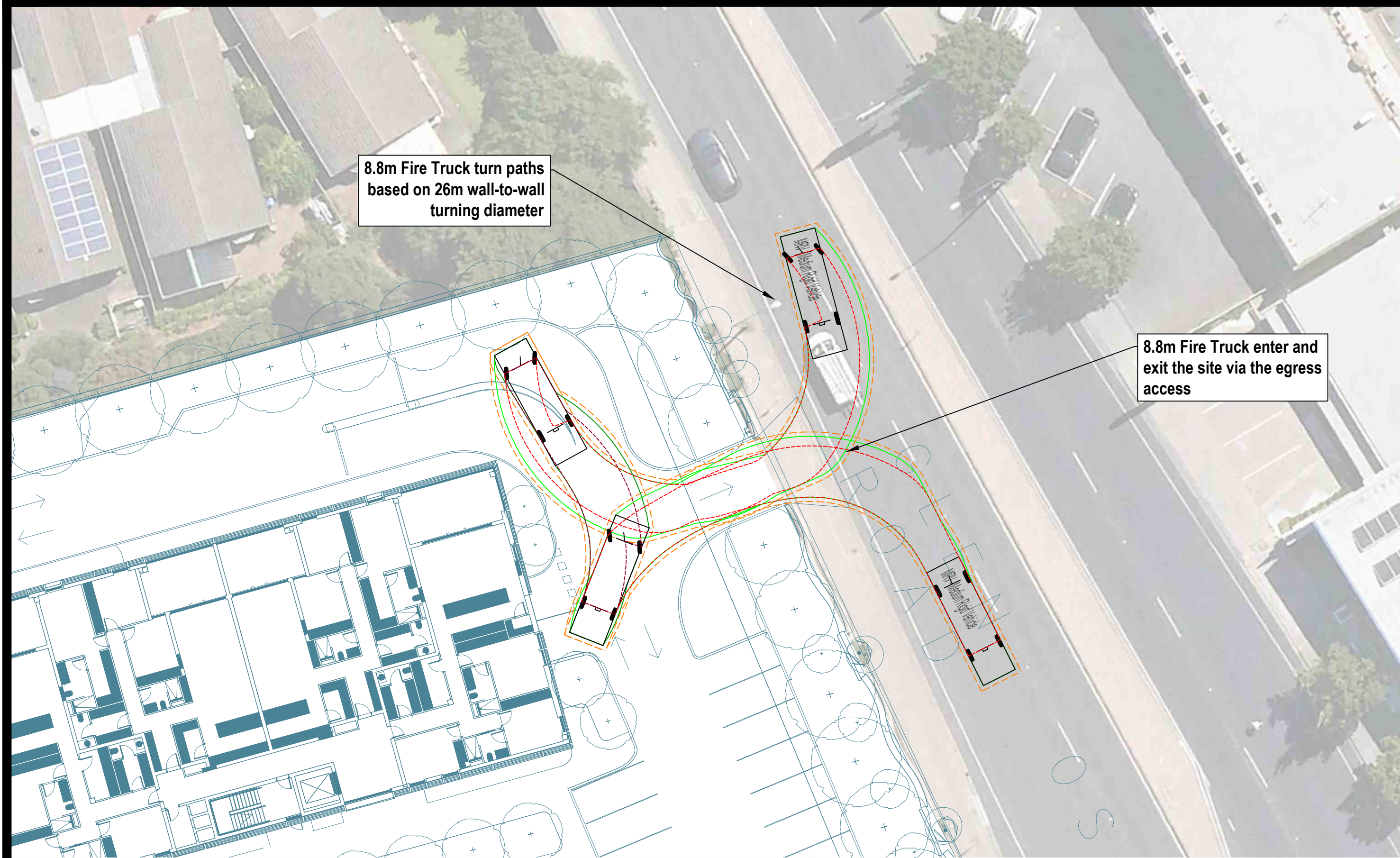


SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: DK  
DATE: 31 October 2025  
FILENAME: 251031-1000029-10.DWG

**Carmelite Stage 2  
Boom Gates - Light Vehicles  
B99 Access and Turn Around  
TURN PATH**

DRAWING: 251031-1000029-10-AT06

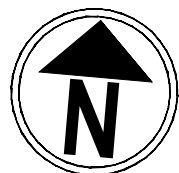


8.8m Fire Truck turn paths  
based on 26m wall-to-wall  
turning diameter

8.8m Fire Truck enter and  
exit the site via the egress  
access

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SCALE 1:250  
0 2.5 5.0  
metres

APPROVED: DK  
DATE: 31 October 2025  
FILENAME: 251031-1000029-10.DWG

**Carmelite Stage 2  
Site Egress  
8.8m Fire Truck Access  
TURN PATH**

DRAWING: 251031-1000029-10-AT07