TRAFFIC PLANNING CONSULTANTS LTD

PROPOSED RESIDENTIAL DEVELOPMENT
TRANSPORT ASSESSMENT

11-13 FLEET STREET, EDEN TERRACE

Project Information:

Client	11 Fleet Street Ltd (Shackleton Developments)
Job Number	220314
Title	Proposed Residential Development, 11-13 Fleet Street, Eden Terrace
Prepared By	Peter Kelly
Date	June 2022
Report Status	Final

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1.0 INTRODUCTION

This report examines and describes the traffic engineering effects of a proposed development at 11-13 Fleet Street, Eden Terrace. The site is zoned Business – Mixed Use under the Auckland Unitary Plan (AUP). The report describes the existing transport environment, proposed activity, AUP provisions and the traffic effects of the proposal.

The proposal consists of constructing a multi storey apartment building including 43 × one-bedroom dwellings, 14 × two-bedroom dwellings (57 dwellings total), an on-site laundromat for resident use, and 45 m^2 of office space. A total of ten vehicle parking spaces and 69 bicycle parking spaces will be provided via one vehicle crossing onto Fleet Street. **Figure 1** illustrates the subject site location and proposed access point.

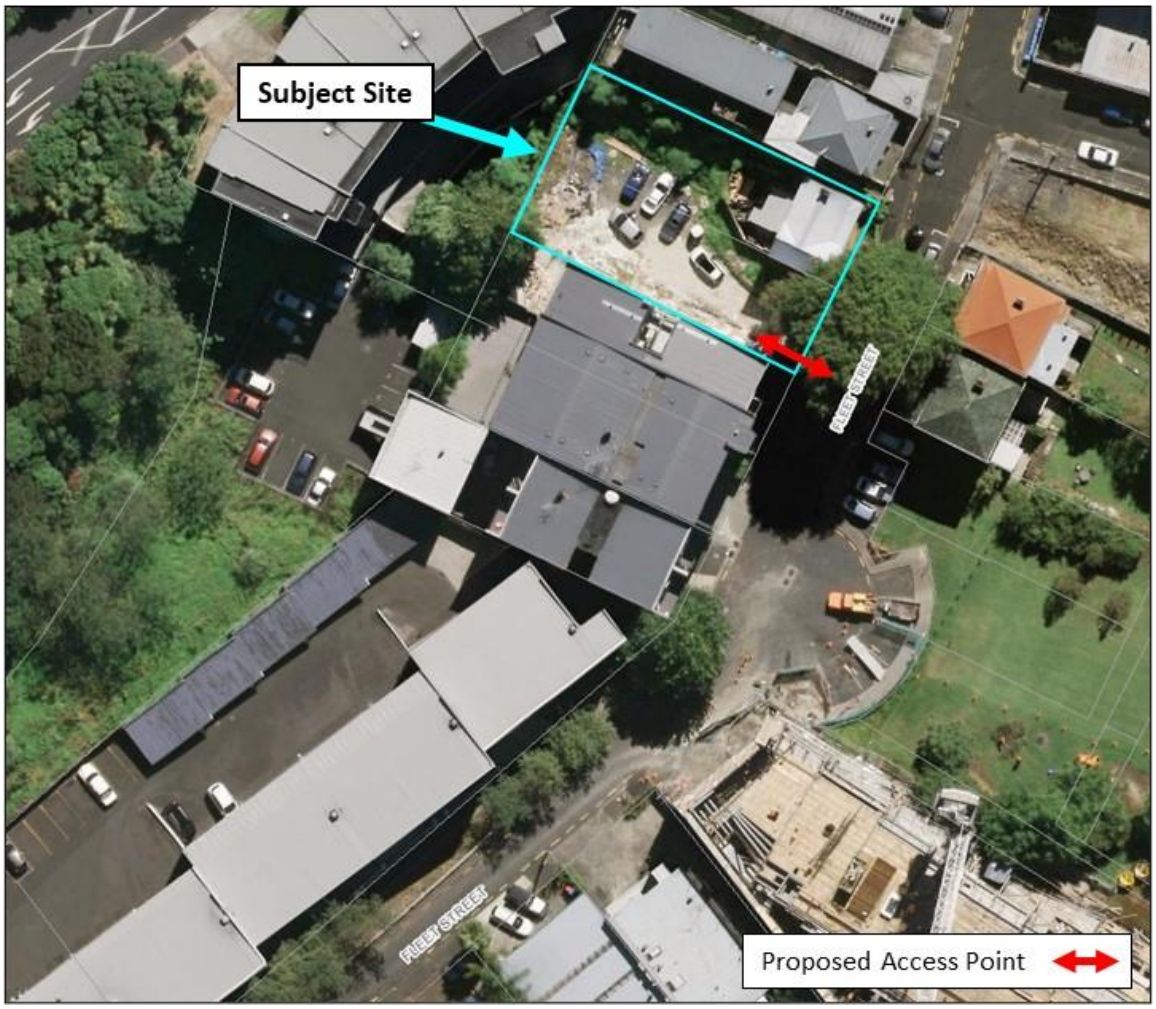


Figure 1: Site Location
Image Source: Auckland Council GeoMaps

2.0 EXISTING TRANSPORT ENVIRONMENT

2.1 Road Network

Fleet Street is a local road which runs from Charlotte Street in the south and terminates for vehicles in the north, with a pedestrian connection provided through to the northern section of Fleet Street. Near the subject site, Fleet Street has a carriageway width of some 9.0 metres, providing one traffic lane in each direction and on-street parking on both sides of the street (restricted near the intersection of Fleet Street and Melrose Road). Footpaths are available on both sides of the street.

There is no recent traffic count data along this section of Fleet Street and the scale of the development does not warrant new data to be collected. Based on the street's role within the wider road network and the development which it serves, Fleet Street is estimated to carry some 500 vehicles per day, with approximately 50 vehicles during peak hours.

2.2 Public Transport

Bus services are available on New North Road, 400 metres south of the site, for Routes 22N, 22R, 24B, and 24R. This route provide connection between:

- 22N: New Lynn, Avondale, New North Road, St Lukes, Kingsland, City
- 22R: Rosebank Rd, Avondale, New North Road, St Lukes, Kingsland, City
- 24B: New Lynn, Blockhouse Bay, Boundary Road, Sandringham Road, City
- 24R: New Lynn, Tiverton Road, Richardson Road, Owairaka, Sandringham Road, City

The routes are Connector Services and run on at least 30-minute headways.

The site is also located within 700 metres of the Mount Eden Rail Station along the Western Line. This station is currently closed and is expected to reopen late 2024. Which will coincide thereabouts with the opening of the proposed development.

Overall, the site has suitable access to public transport.

2.3 Crash History

A review of crash data for the five year+ period of January 2017 to present (2022 data subject to reporting delays) along Fleet Street between its cul-de-sac end and Charlotte Street found that no crashes have been reported during this timeframe.

With no reported crash history there is no evidence to suggest any inherent road safety issues with respect to property access along Fleet Street near the subject site.

3.0 PROPOSED DEVELOPMENT

The proposal consists of constructing a multi storey apartment building including 43 × one-bedroom dwellings, 14 × two-bedroom dwellings (57 dwellings total), an on-site laundromat for resident use, and 45 m^2 of office space. The general plan used for the basis of this assessment is shown in **Figure 2**.

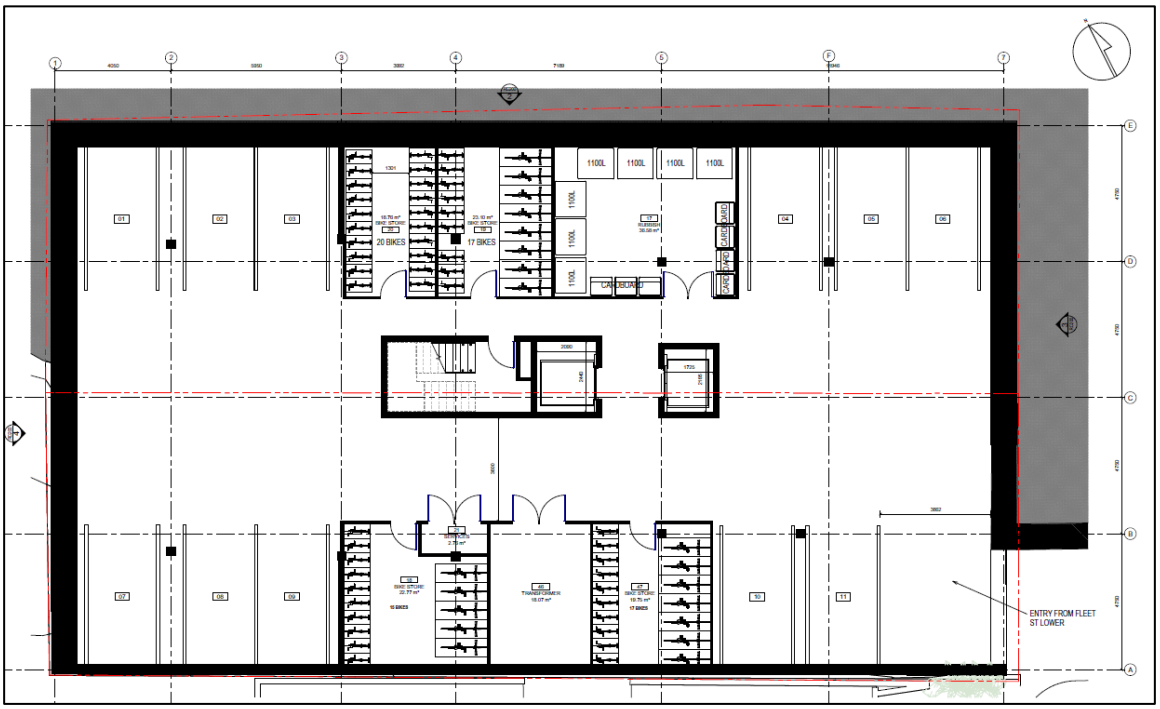


Figure 2: Proposed Site Plan
Image Source: PB&A Architects

3.1 Site Access

The existing site is not currently provided with a formal vehicle access due to the existing gradients along Fleet Street, an informal access was provided through the vehicle crossing/access serving No. 15 Fleet Street, however no legal provisions are in place for this access arrangement.

Due to the steep gradients within the Fleet Street legal road corridor, a vehicle access has been provided as close to the southern boundary of the site as possible, along with retaining within the road reserve to allow for vehicle access to/from the site. As part of the retaining structure to facilitate vehicle access to the site, the pedestrian path along the western side of Fleet Street (where no vehicle carriageway is provided) will be removed and a new pedestrian stairway will be provided with better widths, treads, and surfacing compared to the existing provisions.

The vehicle crossing for the site will have a formed width of 4.0 metres, serving 10 parking spaces. Under the AUP, vehicle crossings serving 10 parking spaces have a permitted width of 5.5-6.0 metres. Therefore, the vehicle crossing width does not comply with this standard. Assessment on the effect of this non-compliance is included later within this report.

The vehicle crossing will be formed to be combined with the adjacent vehicle crossing serving No. 15 Fleet Street. The combined vehicle crossing will have a width of 8.2 metres. Under the AUP, combined vehicle crossings are permitted a maximum width of 6.0 metres. Therefore, the combined vehicle crossing width does not comply with this standard. Assessment on the effect of this non-compliance is included later within this report.

Within the site, the access will have a minimum formed width of 3.6 metres, widening to 8.0 metres. where providing manoeuvring from parking and allowing for passing. The access widths, comply with the E27 access width standards.

The access will be formed with a gradient no steeper than 1 in 20 (5.0%), with a similar/shallower platform gradient. Under the AUP standards, residential vehicle accesses are permitted a maximum gradient of 1 in 5 (20%) and require a vehicle platform four metres in length on a gradient of 1 in 20 (5%). Therefore, the proposed vehicle access gradients comply with this standard.

Pedestrian Access

Pedestrian access to the building will be provided via a separate pedestrian path connecting the public footpath along the sloped and non-carriageway section of Fleet Street. As part of this pedestrian access, the public footpath/staircase will be upgraded to provide safer pedestrian movement through this section of Fleet Street, by increasing the width of the staircase, the tread of the steps and the surfacing.

Overall, the site provides suitable pedestrian access and will increase the pedestrian amenity within the surrounding area.

3.2 Sight Distance

In respect of sight distance, the appropriate standard to use is the Land Transport Safety Authority publication "Guidelines for Visibility at Driveways". There are two components to the sight distance measurement, the first being the sight distance requirement and the second being the lines of clear sight. The sight distance/lines of clear sight required is dependent upon the traffic generation of the proposal, the 85th percentile speed of vehicles on the frontage road, and the classification of the frontage road.

For this location, the access is forecast to accommodate less than 200 vehicle trips per day, therefore classifying the driveway as low volume. The 85th percentile speed is forecast to be no greater than 30 km/h, due to the location within the cul-de-sac head. As Fleet Street is a local road, a sight distance of 30 metres is required.

Sight distances at the vehicle crossing were confirmed to extend at least 30 metres along Fleet Street, as well as fully towards adjacent vehicle crossings.

Overall, the proposed access point provides a suitable level of sight distance.

3.3 Parking Design

Vehicle Parking

The proposal will provide a total of ten parking spaces. Of these spaces, eight will be used for an electric vehicle fleet, available for resident's use via a booking system. Vehicles within the site will be charged using solar renewable energy installations on the building. The two other parking spaces will be provided for users of the commercial tenancy.

Within the Business – Mixed Use zone, there is no minimum or maximum parking requirement. The site therefore complies with this standard.

The parking spaces will be at least 2.5 metres wide and 5.0 metres deep and will have a manoeuvring depth of at least 7.5 metres, complying with AUP standards. Vehicles entering/exiting the site will be able to do so in a forward direction. Vehicle tracking diagrams are included in Attachment 1.

Parking spaces will be formed on a relatively flat gradient not exceeding 1 in 50 (2.0%) with similar/shallower manoeuvring area gradients. Within the AUP parking spaces are permitted to have a maximum gradient of 1 in 20 (5.0%) and manoeuvring areas are permitted a maximum gradient of 1 in 8 (12.5%). Therefore, the parking gradients comply with the AUP standards.

Bicycle Parking

With 57 dwellings proposed for the site, there is a requirement to provide 57 secure bicycle parking spaces and three visitor parking spaces. Additionally, the provision of 45 m^2 of office space within the site does not require any dedicated bicycle parking as it is less than 200 m^2.

Within the ground-floor parking level of the site, space for 69 secure bicycle parks for use by residents and visitors (visitors will need to be let in by a resident). As such, the proposal is considered to comply with the AUP standard.

3.4 Refuse Collection and Deliveries

The development will have a residential dwelling GFA of some 2,950 m^2, plus additional ancillary circulation and amenity space, with the total GFA being less than 5,000 m^2. Under the AUP standard, residential activities smaller than 5,000 m^2 are not required to provide a dedicated loading space.

The site will be serviced predominantly on-street by private refuse collection on a regular basis, and to a lesser extent by larger trucks shifting furniture to and from the residential dwellings or performing deliveries. A private refuse truck will stop temporarily along Fleet Street with the contractor collecting bins from the site and delivering to the truck, then returning.

Trucks and delivery vehicles serving the site will be able to utilise the on-street parking along Fleet Street, which is subject to P120 restrictions and is anticipated to turn-over with relative frequency. Should no parking be available, delivery vehicles will need to temporarily stop within the site vehicle access or within the cul-de-sac head to complete the delivery. As there is a low volume of vehicle movements within this area, the operation can be completed safely with less than minor effects.

4.0 AUCKLAND UNITARY PLAN STANDARDS

Section E27 of the Auckland Unitary Plan (Operative in Part) sets out the development standards relating to transport. **Table 2** lists the relevant standards that apply to this development and comments on compliance. Where there is non-compliance, further assessment has been undertaken against the criteria set out in the AUP.

Table 2: Transport Development Controls

Standard	Requirement/Details	Comment
E27.6.1 Traffic Generation	Sets the threshold for when resource consent as a restricted discretionary activity is required.	This development has 57 dwellings proposed – **does not apply**
E27.6.2 (1) Number of Parking Spaces	Defines the maximum number of parking spaces for new developments.	10 parking spaces will be provided where there is no parking minimum or maximum – **complies**
E27.6.2 (6) Bicycle Parking	Defines the number of bicycle parks required for new residential and commercial developments.	There are 57 dwellings proposed, and 69 secure bicycle parking spaces are provided for residents and visitors – **complies**
E27.6.2 (7) End Trip Facilities	End trip facilities to be provided for any office, education of hospital facilities.	The proposal is for residential buildings – **does not apply**
E27.6.2 (8) Number of Loading Spaces	Outlines the minimum loading space requirements for new developments.	The proposed GFA is under 5,000 m² – **does not apply**
E27.6.3.1 (1) Size and Location of Parking Spaces	Defines the size, use and location of parking spaces.	All spaces are located within the same site, will not be used for any other purposes, and will be available at all times – **complies** Parking spaces will be at least 2.5 metres wide, 5.0 metres deep, and have at least 7.5 metres of manoeuvring depth – **complies**
E27.6.3.2 Size and Location of Loading Spaces	Defines the size, use and location of loading spaces	No loading spaces will be provided – **does not apply**
E27.6.3.3 Access and Manoeuvring for Parking	Defines the requirements for design vehicles, driveways, manoeuvring area and stacked parking allowances.	All parking spaces will accommodate B85 vehicle tracking – **complies**
E27.6.3.4 Reverse Manoeuvring	Defines the conditions in which reversing manoeuvring is prohibited to and from a site.	Vehicles will be able to enter and exit the site in a forward direction – **complies**
E27.6.3.5 Vertical Clearance	Defines the minimum overhead clearance for vehicles to pass safely under overhead structures.	The ground floor parking area will maintain a vertical clearance of at least 2.5 metres – **complies**

Standard	Requirement/Details	Comment
E27.6.3.6 Formations and Gradients	Defines the formation and gradients for all parking spaces and manoeuvring areas.	All parking areas will be formed, drained, and with all-weather surfaces – **complies** Parking spaces for the site will have gradients no steeper than 1 in 50 (2.0%) – **complies** Manoeuvring areas will have gradients no steeper than 1 in 50 (2.0%) – **complies**
E27.6.3.7 Lighting	Defines where lighting within access and parking areas is required.	The development has 10 parking spaces and suitable lighting will be provided in the carpark area – **complies**
E27.6.4.1 Vehicle Access Restrictions	Defines the acceptable locations of access points in relation to strategic roads and intersections.	Fleet Street is a local road – **does not apply** The vehicle crossing is located more than 10 metres from any intersection – **does not apply**
E27.6.4.2 Width and Number of Vehicle Crossings	Defines the maximum number of vehicle crossings, proximity to others and permitted widths.	One vehicle crossing is proposed for the site – **complies** The vehicle crossing will have a width of 4.0 metres, serving 10 parking spaces – **does not comply** The vehicle crossing will be combined with the adjacent vehicle crossing have a combined width of 8.2 metres – **does not comply**
E27.6.4.3 Width of Vehicle Access and Queuing	Defines the standards for vehicle access widths for on-site parking and pedestrian movements.	The vehicle access will have a minimum width of 3.5 metres, widening to 7.5 metres, where providing manoeuvring from parking – **complies**
E27.6.4.4 Gradient of Vehicle Access	Defines the gradients of circulating aisles for vehicle movements.	All gradients within vehicle circulating areas will be no steeper than 1 in 50 (2.0%) – **complies** The access is designed with a gradient no steeper than 1 in 20 (5.0%) for 4 metres, where adjoining the road boundary – **complies**
E27.6.5 Design/Location of Pedestrian and Cycle Facilities	Defines the requirements for off-road and pedestrian and cycle facilities.	The pedestrian facilities on site are considered to meet the requirements of this standard – **complies**

5.0 AUCKLAND UNITARY PLAN ASSESSMENT CRITERIA

Section E27.8.2 of the AUP sets out the assessment criteria when there is non-compliance against a development standard. For this proposal, the following standard requires resource consent:

- E27.6.4.2 – Width and Number of Vehicle Crossings (Criteria 8)

8. Any activity or development which infringes the standards for design of parking and loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3, and E27.6.4.4:

(a) effects on the safe and efficient operation of the adjacent transport network having regard to:

(i) the effect of the modification on visibility and safe sight distances;

(ii) existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring;

(iii) existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan; or

(iv) existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways.

(b) effects on pedestrian amenity or the amenity of the streetscape, having regard to:

(i) the effect of additional crossings or crossings which exceed the maximum width; or

(ii) effects on pedestrian amenity and the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone.

(c) the practicality and adequacy of parking, loading and access arrangements having regard to:

(i) site limitations, the configuration of buildings and activities, user requirements and operational requirements;

(ii) the ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to:

- *comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly;*
- *accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes;*
  - *the desirability of separating truck movements accessing a site from customer vehicle movements;*
  - *the extent to which reduced manoeuvring and parking space dimensions can be accommodated because the parking will be used by regular users familiar with the layout, rather than by casual users;*

(iv) any use of mechanical parking installation such as car stackers or turntables does not result in queuing beyond the site boundary; or

(v) any stacked parking is allocated and managed in such a way that it does not compromise the operation and use of the parking area.

5.1 Assessment of E27.6.4.2 – Width and Number of Vehicle Crossings

The first reason for consent under this standard relates to width of the vehicle crossing provided for the site. The site's vehicle crossing will be formed with a width of 4.0 metres, where serving ten parking spaces, where a width of 5.5-6.0 metres is permitted. The following points are made in support of the proposal:

- The width of the vehicle crossing has been provided in response to the steep topography within the Fleet Street road reserve. Providing a compliant vehicle crossing width would increase the required heights of retaining walls within the road reserve as well as have larger impacts onto the root zone of the adjacent street tree.
- With ten residential parking spaces served by the site (peak hour trip generation of approximately 5-6 vehicles per hour), there is a reduced potential for two vehicles to utilise the vehicle crossing at the same time, such that a one-way access can operate efficiently and safely.
- Should two vehicles meet at the vehicle crossing, space is available at the terminus end of Fleet Street or within the site, for a vehicle to temporarily queue in order to allow the other vehicle to pass. This operation, due to the location of where is occurs will have no significant effects onto other road users from either an operational or safety perspective.
- Due to the vehicle crossing's location near the corner of the building and the likely positioning of structural elements, vehicles must navigate through a bend at the entrance to the site to access parking. The 4.0-metre-wide vehicle crossing has been provided to facilitate vehicle movement and the required clearance envelopes for vehicles entering/exiting the site.
- The vehicle crossing will have good inter-visibility with the footpath allowing drivers to see pedestrians and give-way as needed.

For these reasons the proposed vehicle crossing width is forecast to have less than minor effects onto the surrounding road environment.

The second reason for consent under this standard relates to width of the combined vehicle crossing for the subject site and No. 15 Fleet Street. The combined vehicle crossing will have a width of 8.2 metres, where a maximum combined width of 6.0 metres is permitted. The following points are made in support of the proposal:

- The neighbouring vehicle crossing has a width of approximately 4.0 metres and is separated from the boundary by 0.2 metres.
- With the width of adjacent crossings and the configuration of the site frontage, there is no opportunity to provide a vehicle crossing for the subject site which complies with maximum combined width standard.
- Under the New Zealand Road Code, drivers are to give-way to pedestrians along the footpath when entering/exiting private accesses.
- The two vehicle crossings will both have good inter-visibility with the footpath, allowing for drivers to stop for pedestrians as required.
- Parking within the subject site has been configured to allow for forward in, forward out vehicle movements.

- With garage doors for each access, vehicles when entering/exiting either site are expected to do so at low speeds, such that drivers will have no difficulty in stopping for pedestrians if needed.
- Due to the configuration of Fleet Street and the surrounding buildings pedestrians are more likely to utilise the eastern side of Fleet Street when following desire lines, thereby not passing across the site's frontage.

For these reasons the proposed combined vehicle crossing width will have less than minor effects and is acceptable.

6.0 CONCLUSION

Based on the assessment described in this report, the following conclusions can be made in respect of the proposal to establish 57 dwellings at 11-13 Fleet Street in Eden Terrace:

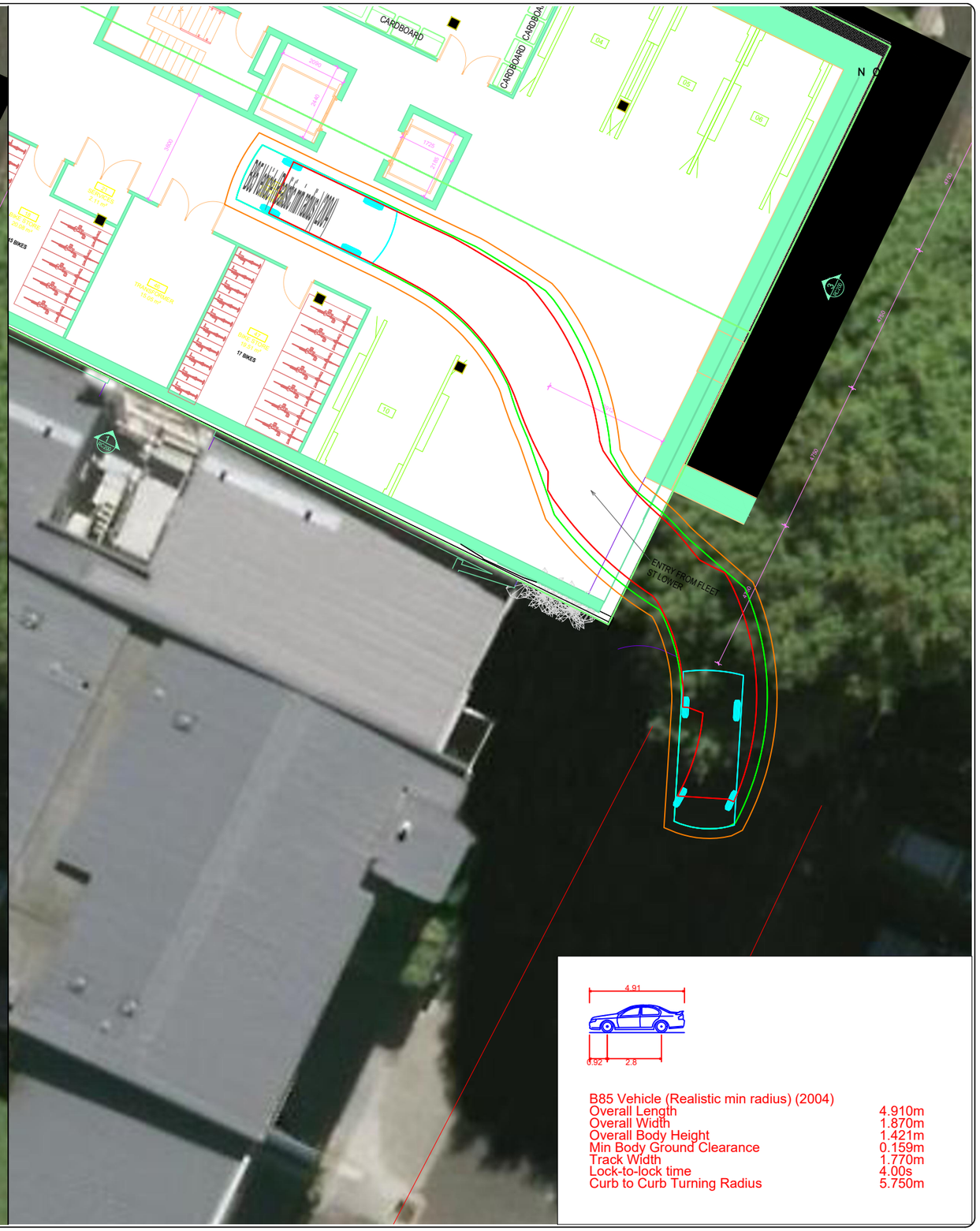
- A review of the transport standards has identified two items which requires consent under the following standard of Section E27 of the Auckland Unitary Plan.
  - E27.6.4.3 – Width and Number of Vehicle Crossings
    - The vehicle crossing for the site will be formed with a width of 4.0 metres, where a width of 5.5-6.0 metres is permitted.
    - The vehicle crossing for the site will be combined with the adjacent vehicle crossings having a width of 8.2 metres, where a width of 6.0 metres is permitted.
- Vehicle and pedestrian access to the site is designed to a suitable standard such that the proposal will not have less than minor effects on the surrounding road network, or to the safety of pedestrians and vehicles using the site.

Overall, it is considered that the traffic engineering effects of the proposal can be accommodated on the road network without compromising its function, capacity, or safety.

Prepared by,

Peter Kelly
Senior Transportation Engineer

ATTACHMENT 1:
VEHICLE TRACKING DIAGRAMS



B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m

Rev	Revisions	By	Date

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Project Title: Proposed Development
11 - 13 Fleet Street, Eden Terrace

Sheet Title: Vehicle Tracking - 85th Percentile Vehicle

Designed	CE	Drawn	CE	Project No - (Sheet No)	Scales 1:150 (A3)
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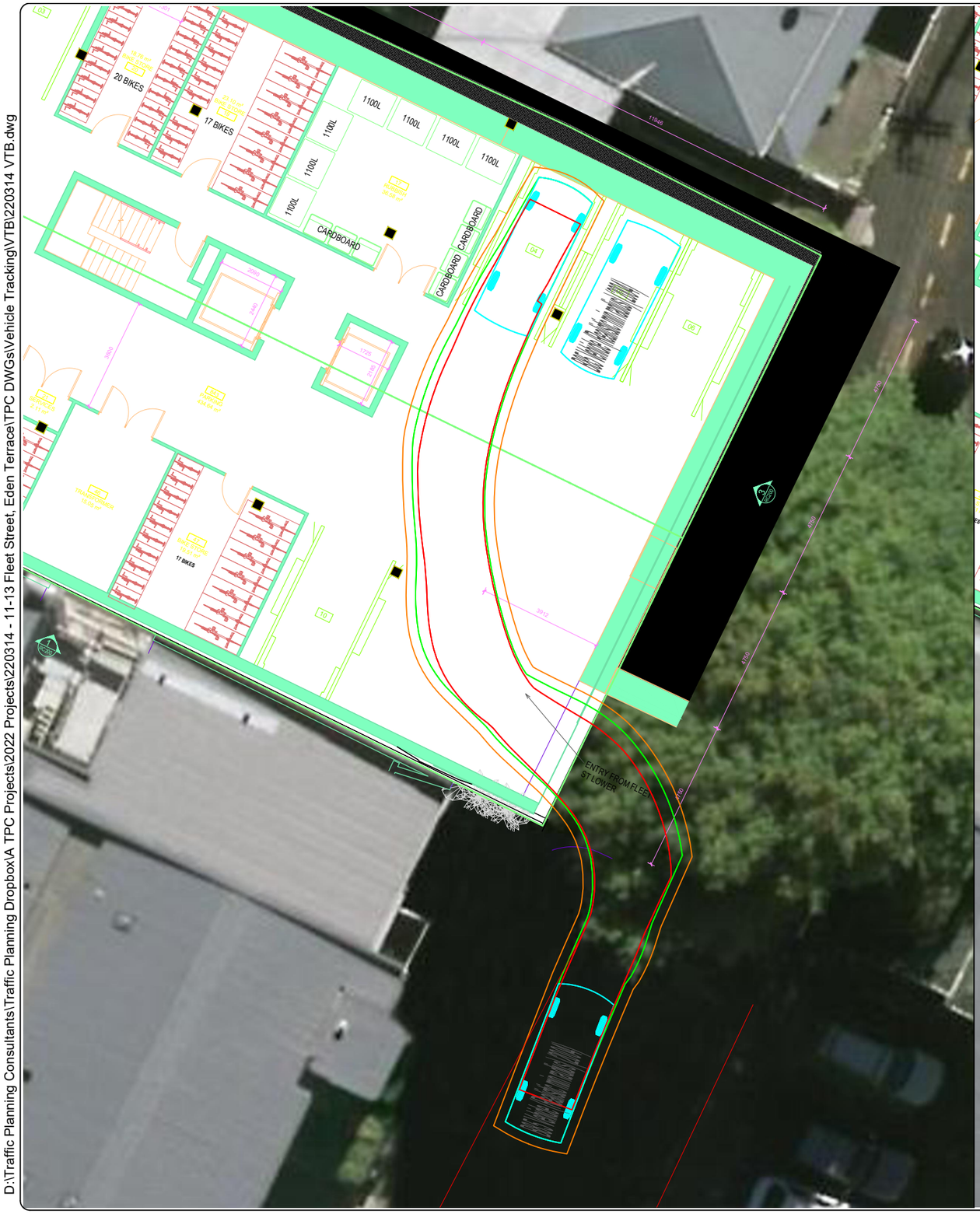

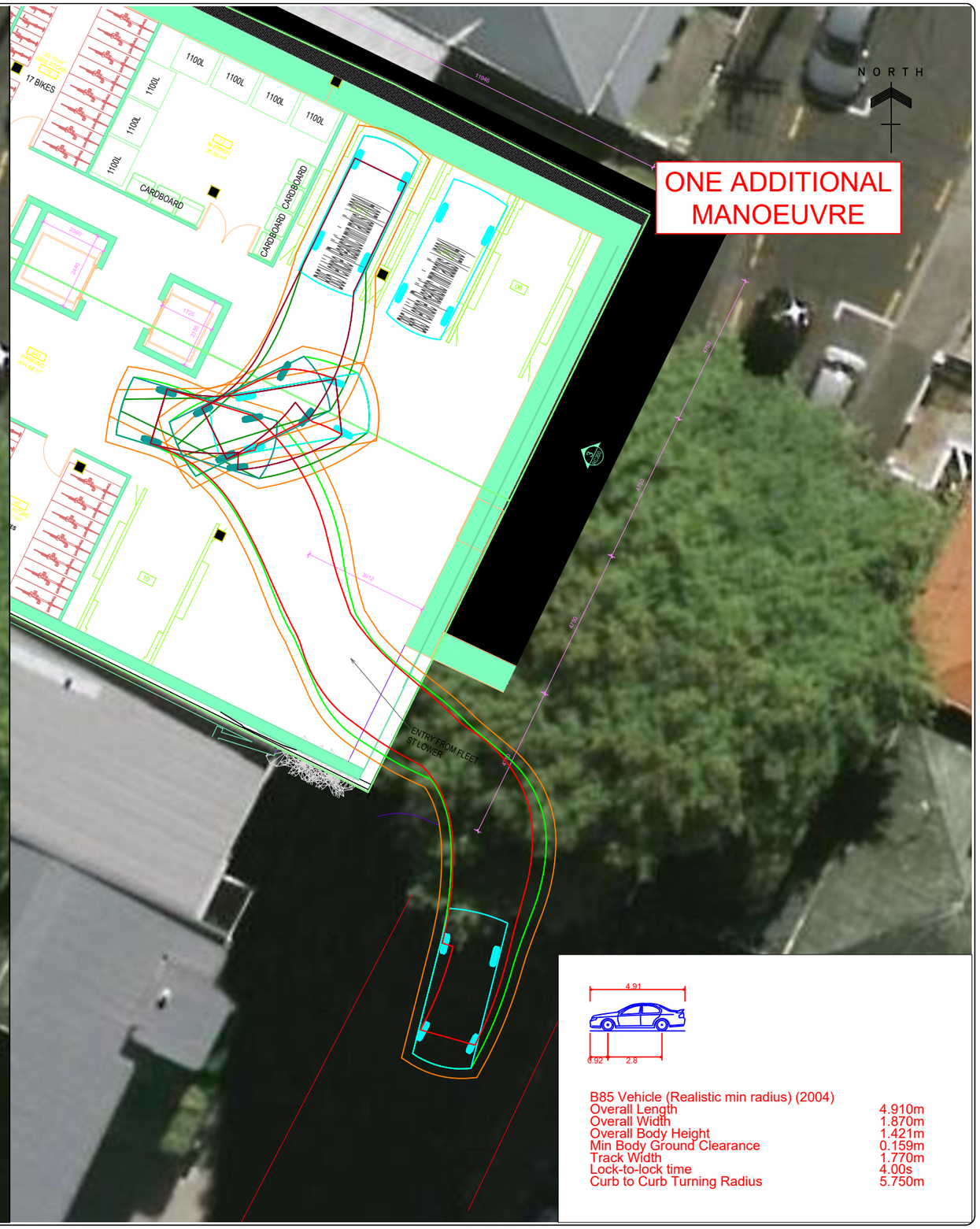

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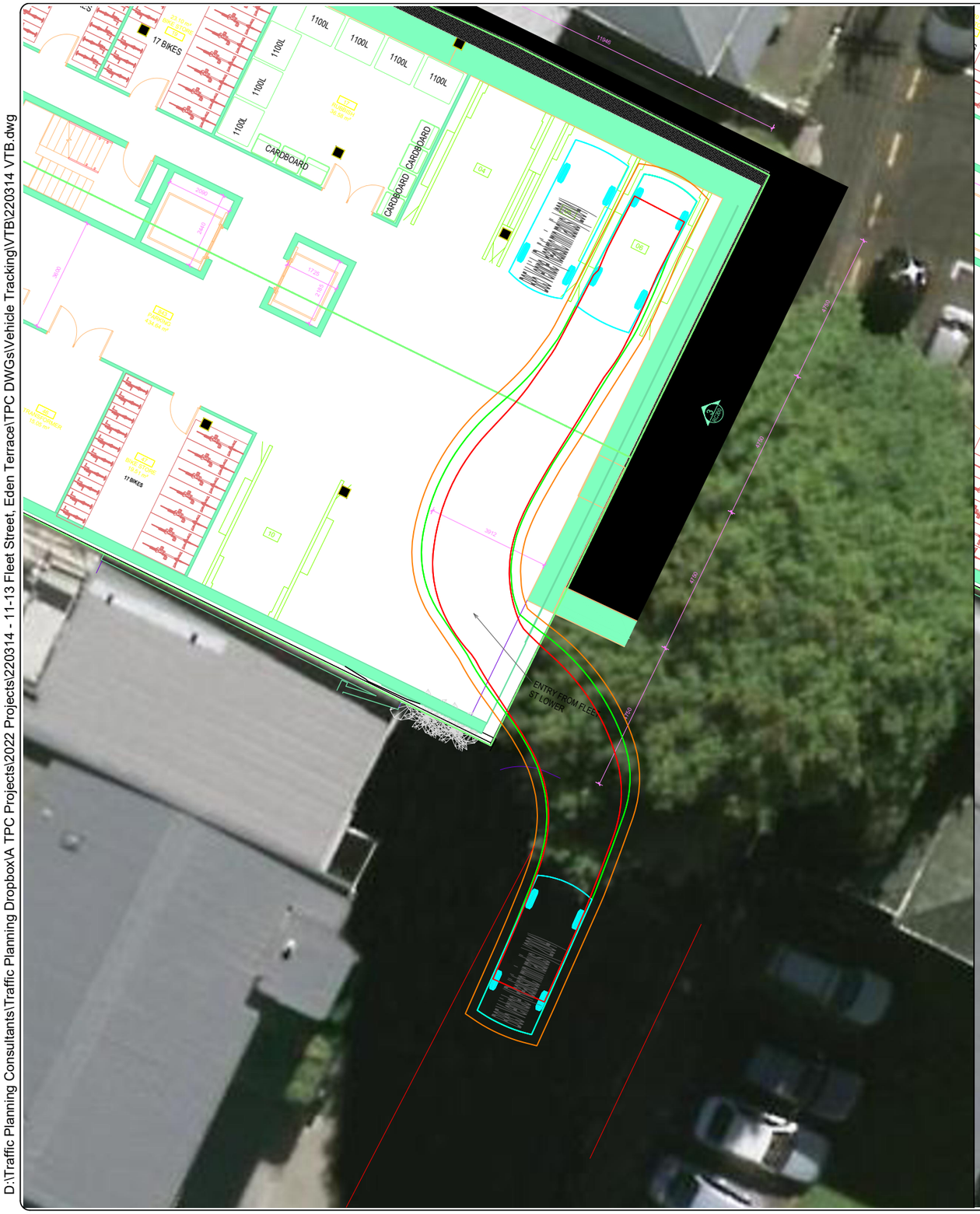

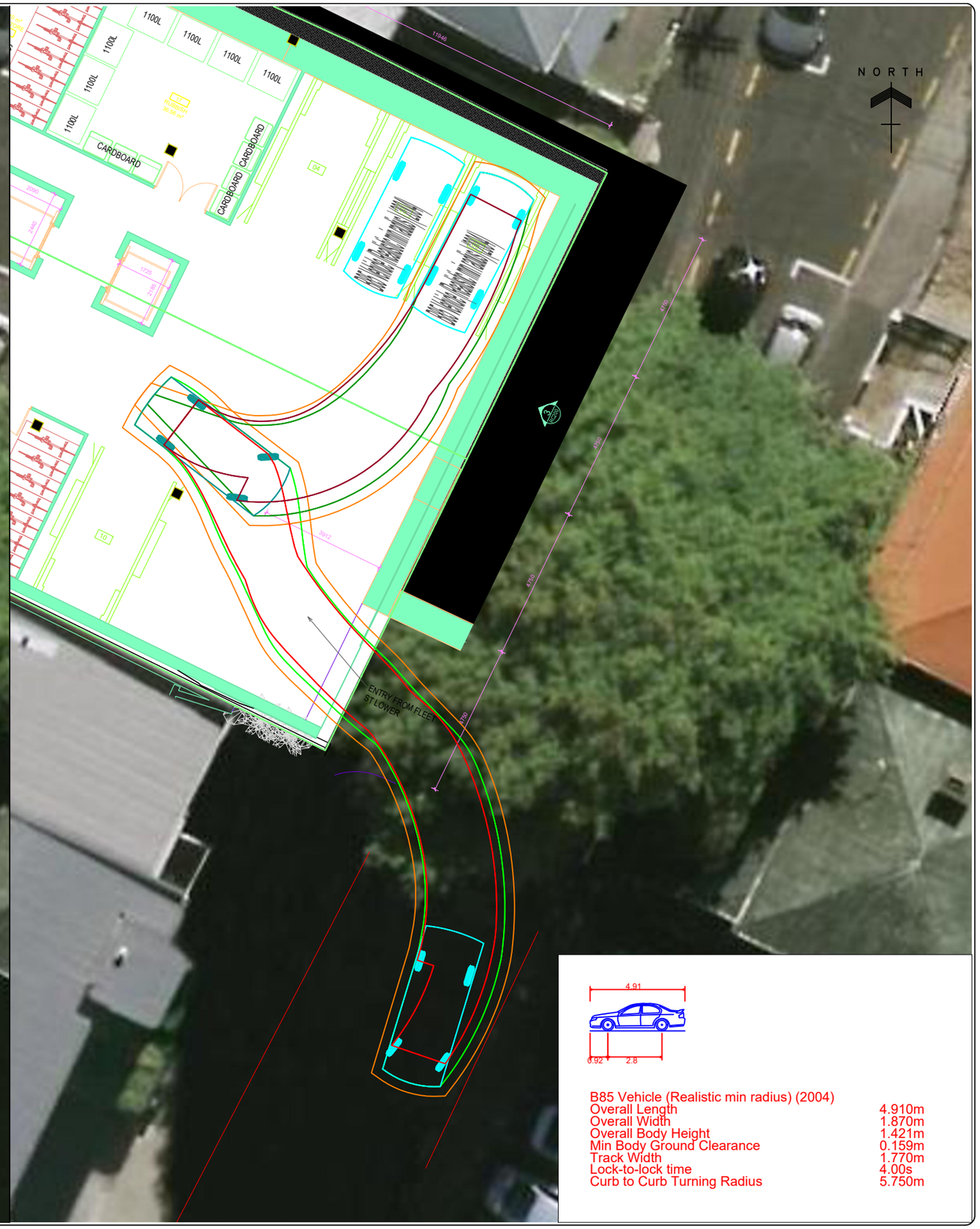

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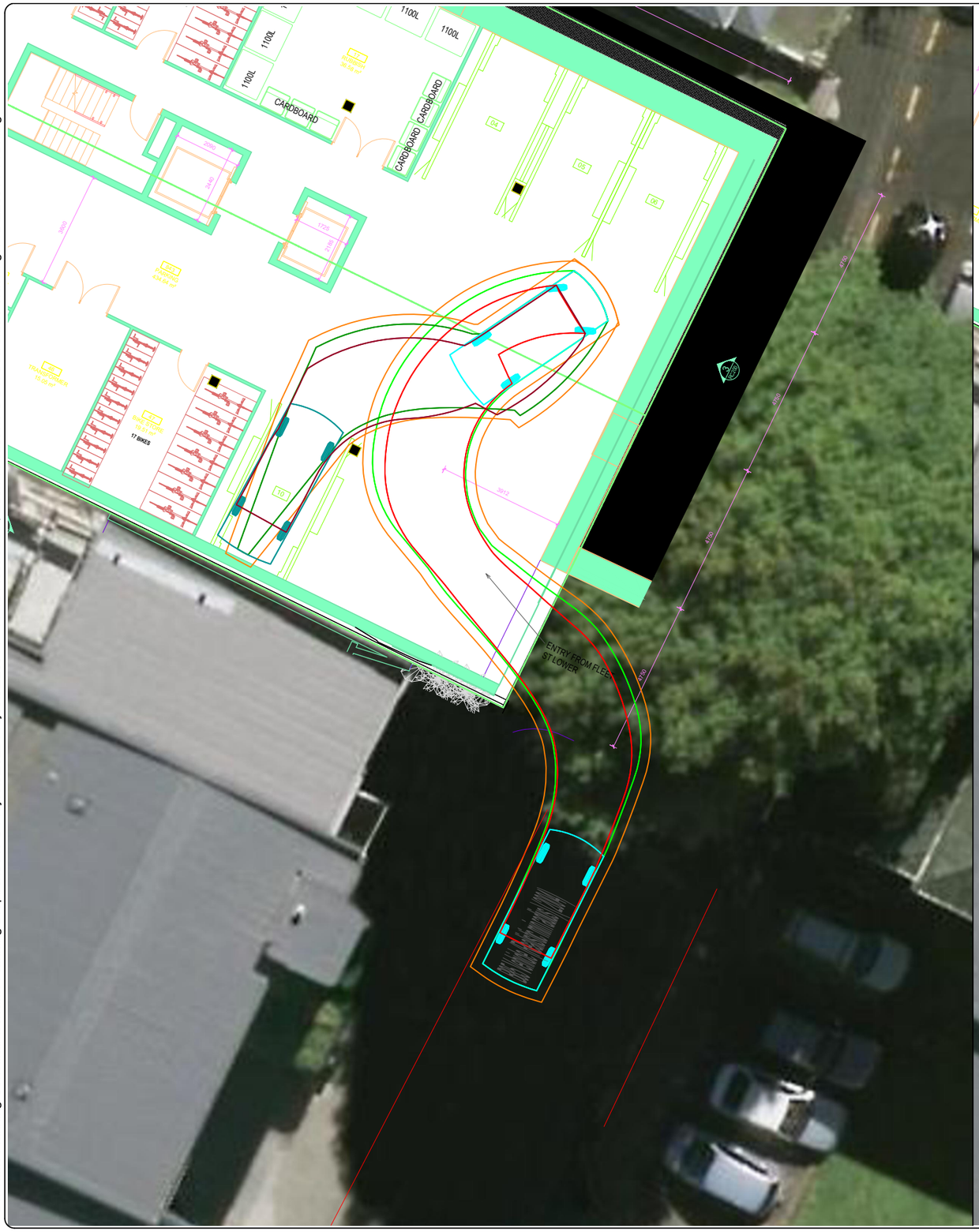

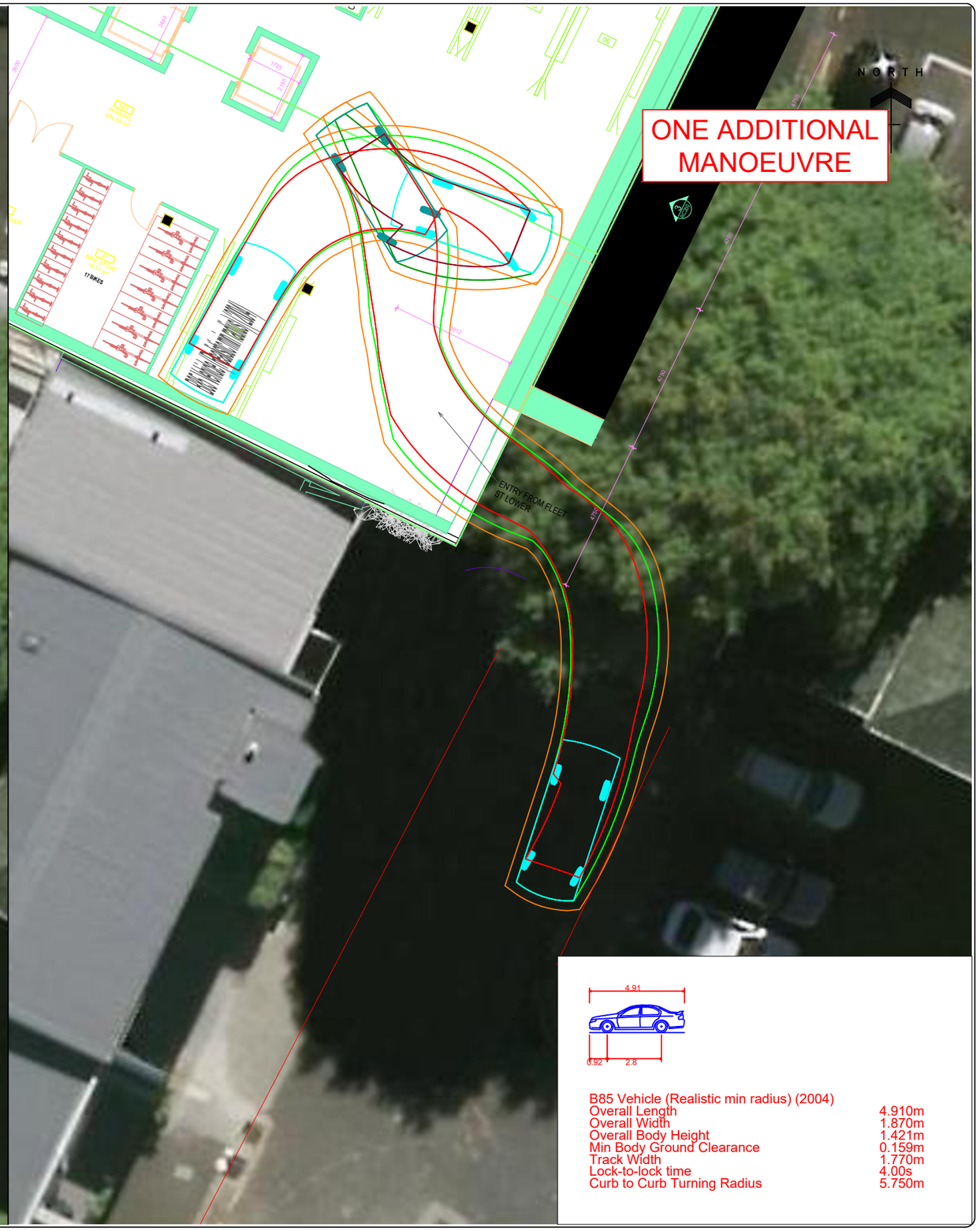

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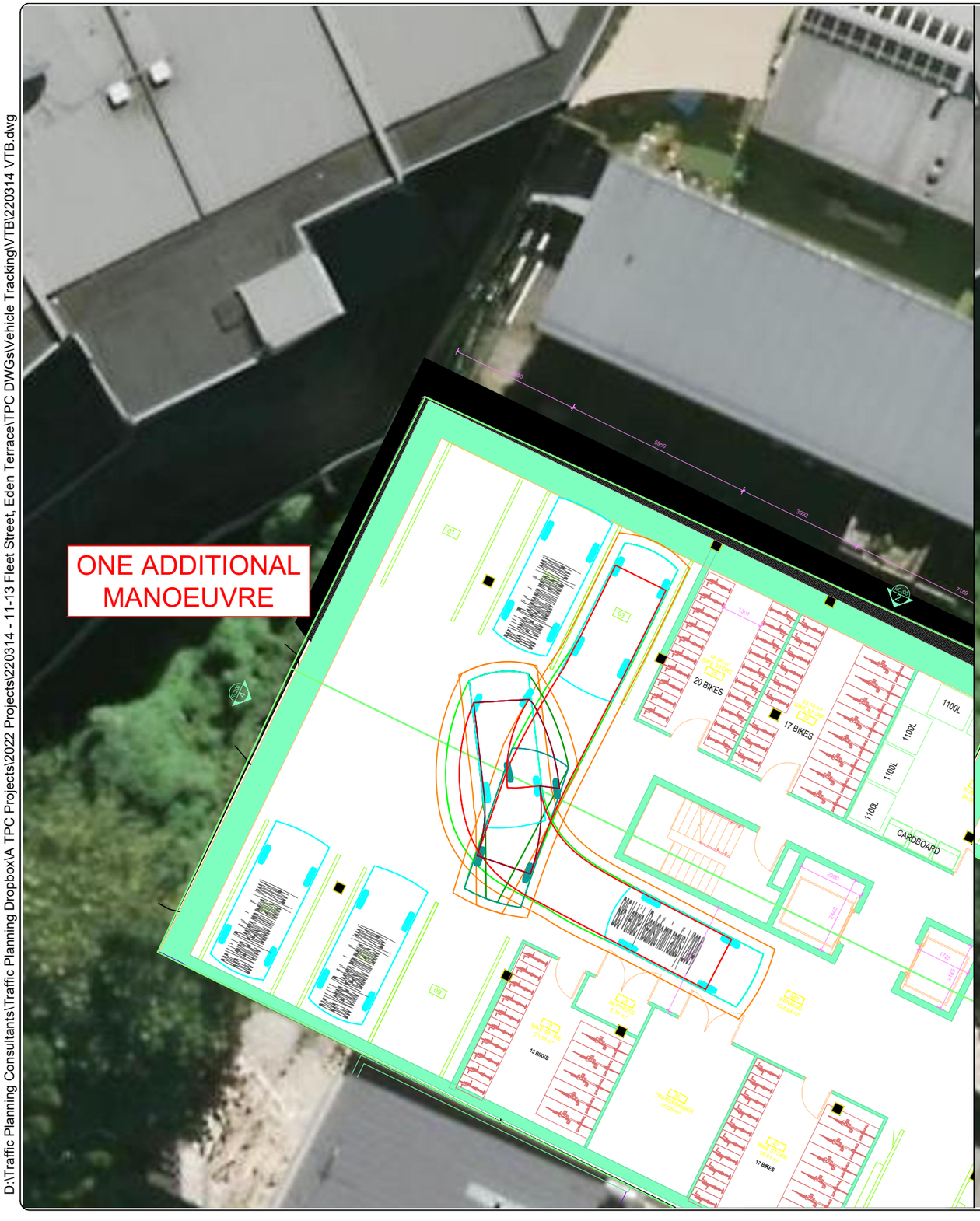
ONE ADDITIONAL MANOEUVRE



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Project Title: Proposed Development
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Sheet Title: Vehicle Tracking - 85th Percentile Vehicle
Forward In - Reverse Out

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Checked	PK	Approved	PK	220314 VTB - (5)	Date 27.06.22

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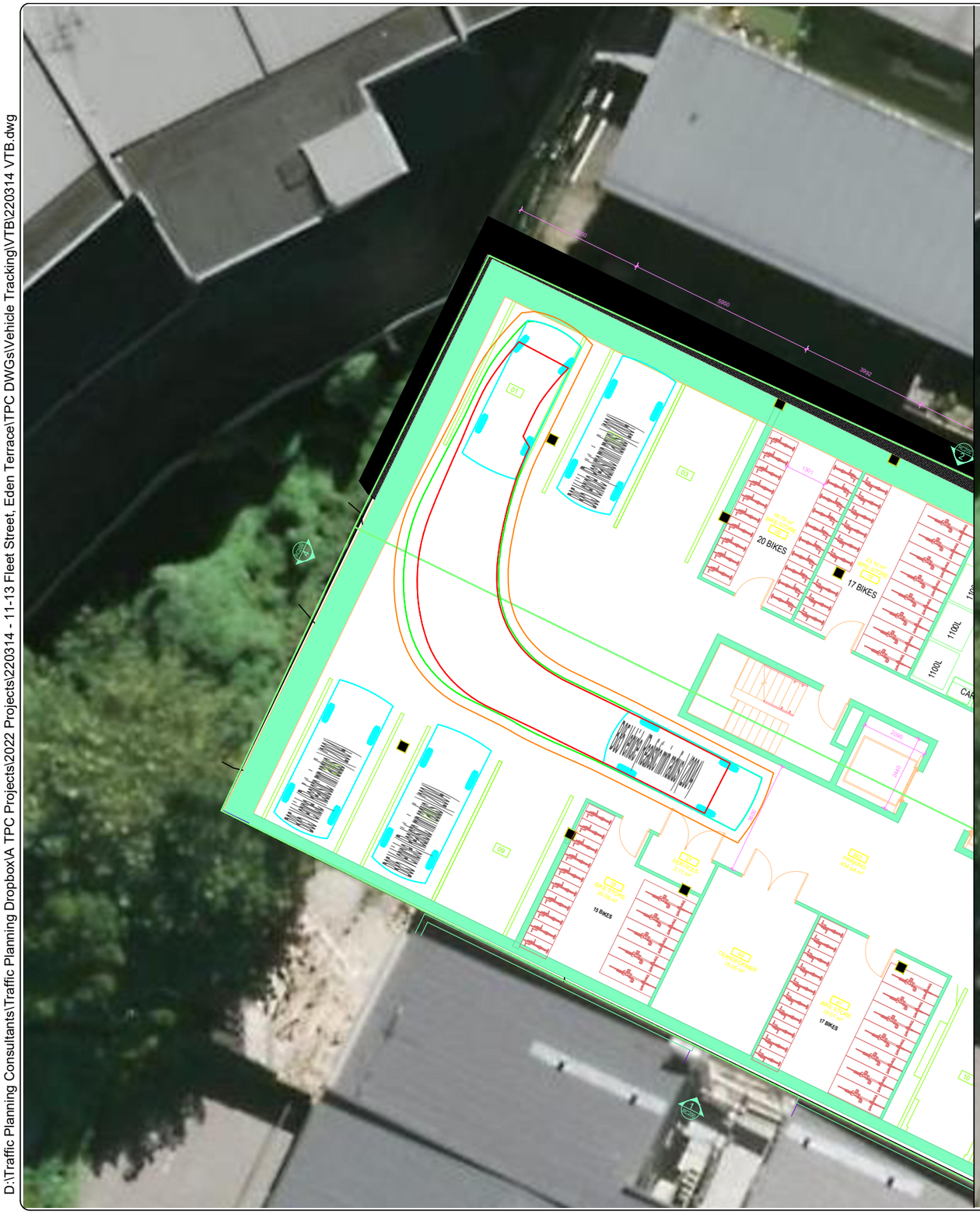

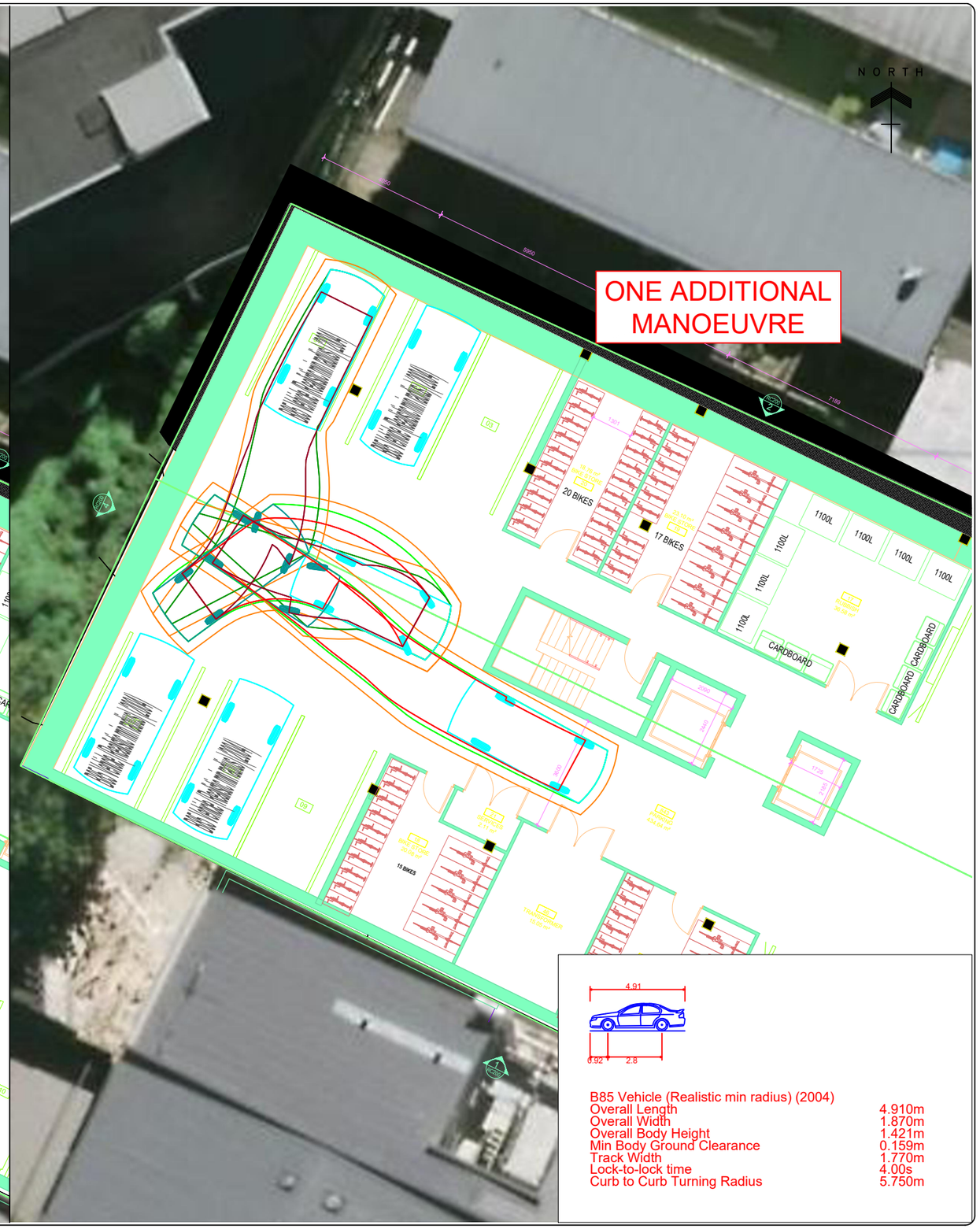

Rev	Revisions	By	Date

TPC TRAFFIC PLANNING CONSULTANTS LTD
Level 1, 400 Titirangi Rd, Titirangi, P.O Box 60-255, Auckland 0604
Phone: 09 817-2500 www.trafficplanning.co.nz

Project Title: Proposed Development
11 - 13 Fleet Street, Eden Terrace

Sheet Title: Vehicle Tracking - 85th Percentile Vehicle

Designed	CE	Drawn	CE	Project No - (Sheet No)	Scales 1:150 (A3)
Checked	PK	Approved	PK	220314 VTB - (6)	Date 27.06.22

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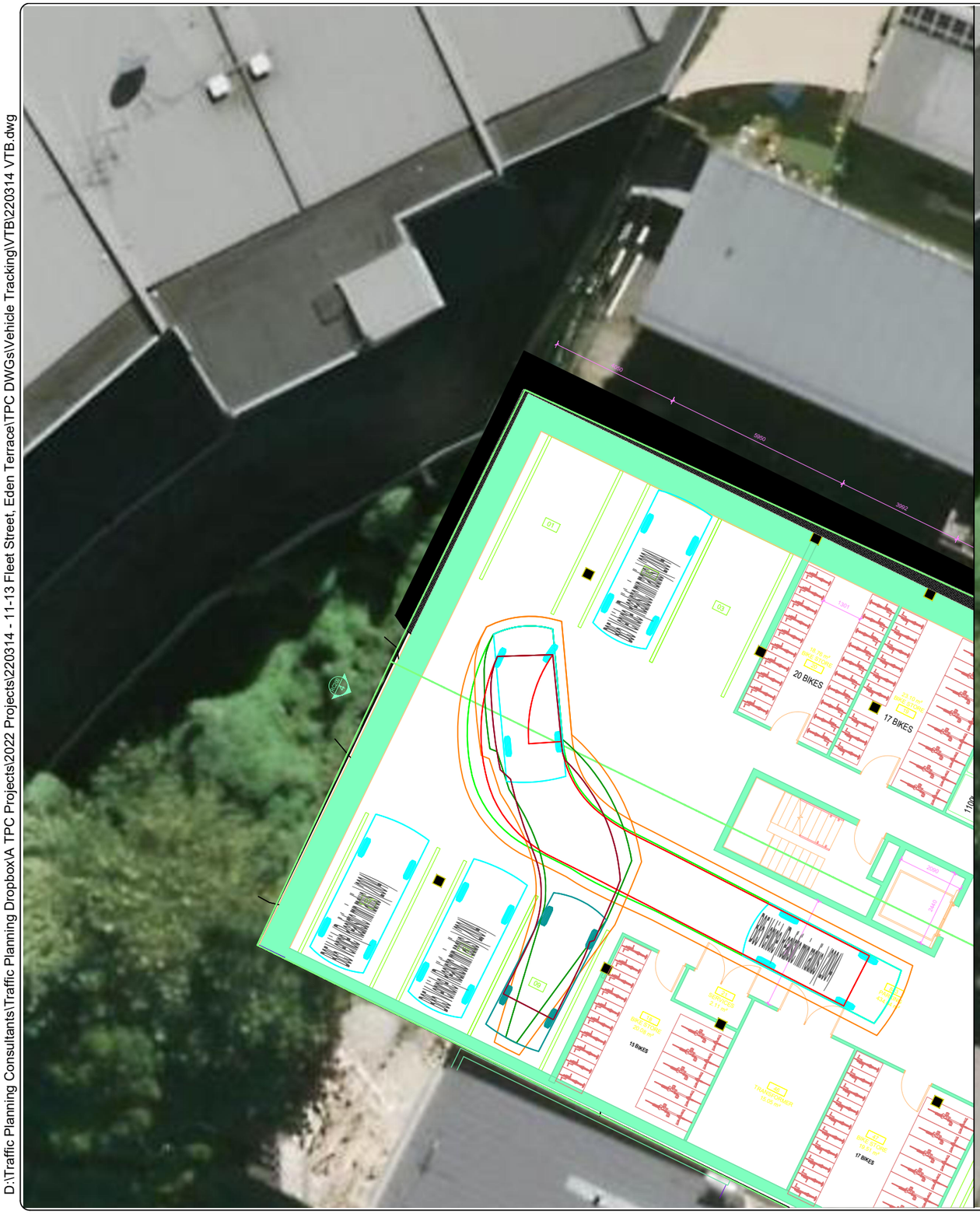

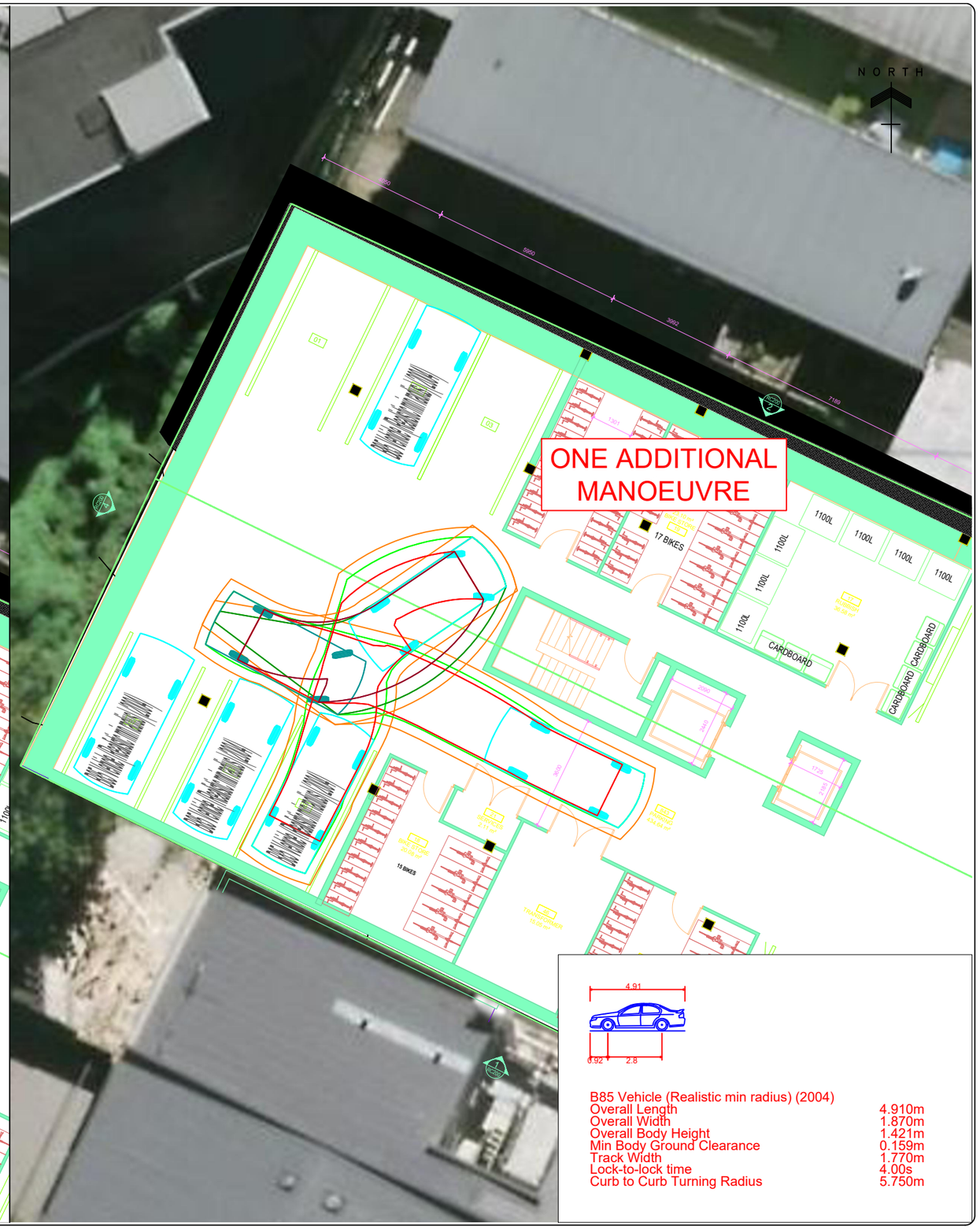

B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m

Rev	Revisions	By	Date

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11 - 13 Fleet Street, Eden Terrace

Sheet Title: Vehicle Tracking - 85th Percentile Vehicle

Designed	CE	Drawn	CE	Project No - (Sheet No)	Scales 1:150 (A3)
Checked	PK	Approved	PK	220314 VTB - (7)	Date 27.06.22

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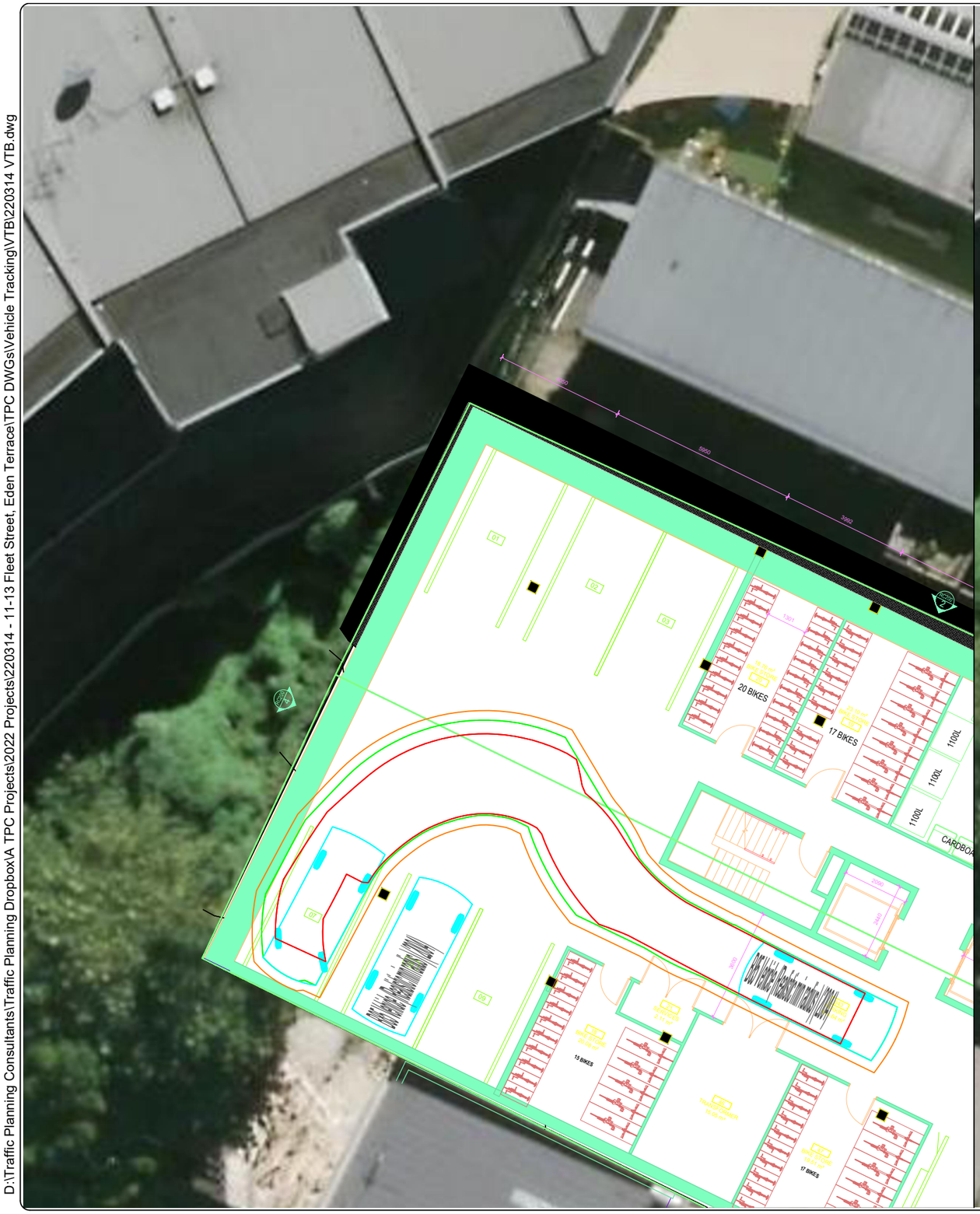

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Project Title: Proposed Development
11 - 13 Fleet Street, Eden Terrace

Sheet Title: Vehicle Tracking - 85th Percentile Vehicle

Designed	CE	Drawn	CE	Project No - (Sheet No)	220314 VTB - (8)
Checked	PK	Approved	PK	Scales	1:150 (A3)
				Date	27.06.22