

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2022/1334
Date: 28 August 2023



20 February 2023
Our Ref: 23BRT0823

69 Shore Street Pty Ltd
C/- Murray Bell Planning Co
Level 16, 344 Queen Street
Brisbane QLD 4000

Attention: Mr. Brock Acworth

Dear Brock,

RE: 67 and 69 Shore Street East, Cleveland – Multiple Dwelling Residential Development – Transport Engineering Assessment (EDQ Reference: DEV2022/1334)

1 Introduction

TTM has been commissioned by 69 Shore Street Pty Ltd to undertake a transport engineering assessment for a multiple dwelling residential development to be located at 67 & 69 Shore Street East, Cleveland. This assessment is in response to Items 8 and 14 (Parking and Transport Engineering Report (TER)) of the Department of State Development, Infrastructure, Local Government and Planning's request for information letter dated 28 November 2022.

Economic Development Queensland (EDQ) RFI Items relating to the proposed development and our traffic engineering assessment in response is detailed below.

Item 8 - Parking

The proposal requires the provision of an additional visitor parking space (noting that the Redlands Shire Scheme requires 1 visitor space per 4 units. Only 2 spaces have been provided onsite). Amend to include additional visitor space.

Item 14 – Traffic Engineering Report (TER)

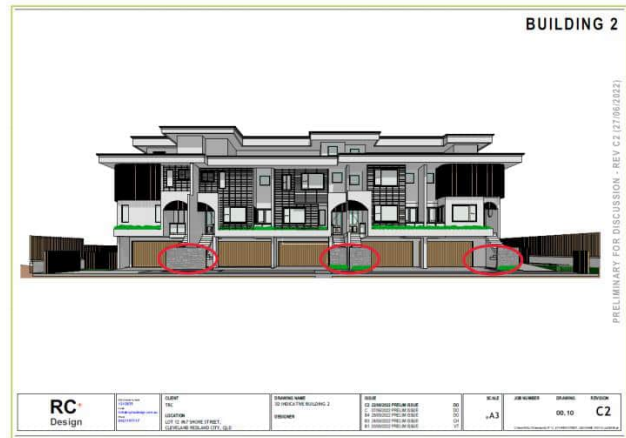
Submit a Traffic Engineering Report (TER), certified by a suitably qualified RPEQ, to demonstrate the following:

- a) Compliance against the development scheme;*
- b) Provision of End of Trip (EoT) facilities pursuant to MP4.1, including their location and details of what is provided;*

- c) Adequate sight distance and queuing provisions at the driveway;
- d) A fully dimensioned scale plan, including gradients, for the access and carparking areas;
- e) The 6.3m wide aisle width includes delineated footpath. Ensure the driveway aisle width is 5.8m in accordance with AS2890;
- f) The delineated footpath appears to encroach into the aisle between Unit 3 and 5, please see the below snapshot 1;
- g) Units 4 - 8 staircases appear to encroach into the entry of the garages, please see the below snapshot 2;
- h) Reverse movement to and from Building 2 parking spaces at each end of the building would collide with the structural column / entrance stair, please refer to snapshot 2. Amendment required to design to address this matter.



Snapshot 1



Snapshot 2

TTM's Response

This assessment addresses the transport-related items for the proposed development.

This assessment addresses the likely implications of the proposed development with consideration to the following:

- Background and existing/current operations;
- Proposed development;
- Site access location and design;
- Car parking requirements, provision, and layout;
- Manoeuvring and Internal circulation;

- Pedestrian and cyclist access and connectivity;
- Servicing and refuse vehicle collection arrangements; and
- Traffic generation and impacts on the surrounding road network.

This assessment will accompany a response to the further issues letter to be submitted to Economic Development Queensland.

1.1 Background and Existing Transport Conditions

Based on our correspondence, the provided plans and other associated documentation, it is understood that:

- The subject site is described as Lots 12 and 13 on C14563 as per Redland City Council's (Council) City Plan 2018;
- The site has frontage to Shore street East to the north with the Shore Street East/Cross Street unsignalised intersection located approximately 66m to the northeast of the site and the Shore Street East/Wharf Street unsignalised intersection located approximately 160m to the southwest of the site;
- Shore Street East, Cross Street, Wharf Street and North Street in the vicinity of the subject site are classified as Local Street according to Council's Road Centrelines overlay;
- Shore Street East, Cross Street, and Wharf Street have no posted speed limits. Hence, Queensland default speed limit of 50km/h for urban areas applies. However, North Street has a 60km/h posted speed limit past the site;
- Shore Street East is a two-way roadway with a 6.0m (approx.) wide carriageway, with no centre linemarking and kerbside parking allowed on both sides of the roadway. Shore Street East near the site has kerb & channel on the northern side of the roadway but not the southern side;
- There are no public transport (bus) stops on Shore Street East. The closest bus stop to the subject site is located on North Street, west of the North Street/Passage Street/Sommersea Drive Roundabout approximately 520m walking distance (west) to the site. One route (275) services the bus stop, travelling between Thornlands and Brisbane CBD - four (4) bus services during the AM (6:00am-7:30am) – outbound and PM (5:30pm – 7:00pm) – inbound. There are also bus stops on Middle Street and Passage Street within 800m walking distance (southwest) of the subject site. These stops are serviced by route 275 as well as routes 258 and 274. Route 258 travels between Toondah Harbour and Cleveland with services every hour between 5:30am and 7:00pm Monday to Friday and between 6:30am and 7:00pm on weekends. Route 274 travels between Victoria Point and Cleveland with services every hour between 7:00am and 6:00pm Monday to Friday and between 8:00am and 6:00pm on Saturday;
- Cleveland train station is located approximately 1.75km west of the subject site (as the crow flies). The station is serviced by six (6) routes with services every 15mins during peak periods.
 - CLSH – Cleveland via Brisbane City to Shorncliffe;

- BRCL – Brisbane City to Cleveland;
 - CLBR – Cleveland to Brisbane City;
 - SHCL – Shorncliffe via Brisbane City to Cleveland;
 - CLDB – Cleveland via Brisbane City to Doomben; and
 - DBCL – Doomben to Cleveland.
- While Shore Street East is not classified as a cycle route in both Council’s City Plan and the SEQ Principal Cycle Network, Wharf Street in the vicinity of the subject site is classified as a ‘Principal Route’ in SEQ Principal Cycle Network Plan (PCNP). Further, North street and Wharf Street are classified as Cycleways in Council’s Cycleway Connections Overlay.

2 Proposed Development

The proposal is for a multi-dwelling development comprising of 10 units across three (3) buildings. All units are proposed to be 3-bed units with multi-purpose rooms. All units with the exception of units 7 and 8 have double garages with units 7 and 8 both having 3-car garages.

Architectural plans of the proposed development prepared by RC design are included in Attachment A of this letter. The location and extent of the subject site in relation to the surrounding road network are illustrated in Figure 2-1.



Figure 2-1: Subject Site in relation to the surrounding road network

(Source: Nearmap, 2022)

2.1 Site Access Location and Design

The subject site fronts Short Street East to the north and proposes a single vehicular access off Shore Street East. The proposed access will be used by both residents, visitors, and servicing vehicles of the site.

The access is proposed to consist of a 5.1m wide driveway to accommodate all turn movements in/out of the site. The proposed driveway connects all three buildings. The proposed accesses have been reviewed against the relevant requirements of AS2890.1:2004 and Council's Planning Scheme Policy 2 – Infrastructure Works and summarised below:

- Driveway Width: As per the requirements of AS2890.1: 2004, a driveway width of 3.0m to 5.5m is required for a two-way driveway for the development. This has been estimated based on the proposed use of the development, frontage road type and parking supply:
 - The development is considered a Class 1 parking facility, which is considered appropriate for the proposed uses (multiple dwelling residential development); and
 - The development access is defined as a Class 1 access facility, which is considered appropriate as it is proposed off a local road with between 25 to 100 car parking spaces.
- Access Driveway Location: The access driveway is located at a minimum separation of 6 metres from kerb tangent point of the adjacent minor intersections and as such is outside the prohibited locations of an intersection as shown on *AS2890.1:2004 Section 3.2.3 Figure 3-1 Prohibited Access Locations of Access Driveway*.
- Driveway grade: *AS2890.1:2004 Section 3.3: Gradients of Access Driveways* identifies the maximum gradients between the edge of frontage road and the property boundary and for at least the first 6m into the car park to be 1 in 20 (5%). The proposed development access driveway provides a 1 in 20 (5%) grade for the first 6m in the site in accordance with A2890.1:2004 requirement.
- Sight Line Requirements: Australian Standards outlines appropriate sight distances for cars at non-domestic development access points. These align with the Minimum Gap Sight Distance (MGSD) requirements within Section 3 of the Austroads Guide to Road Design Part 4A. The following sight distance requirements for non-domestic driveways have been identified based on the frontage road speed:
 - 50km/h
 - Desirable 5 second gap = 69m; and
 - Minimum SSD = 45m.

The proposed access to Shore Street East have a clear visibility to the adjacent intersections and provide satisfactory visibility to both approaches. Hence, the proposed access is considered satisfactory as there are no significant constraints to the sight lines from both approaches.

- Pedestrian sight line triangles of 2.5m length by 2.0m width have been provided at the property boundary in accordance with *Figure 3.3 Minimum Sight Lines for Pedestrian Safety* included in AS2890.1:2009 to ensure adequate visibility between vehicles exiting the driveway and pedestrians within the vicinity of the access. Only low-level landscaping is permitted in this area. The development's pedestrian sight line provision is illustrated in Figure 2-2 below.

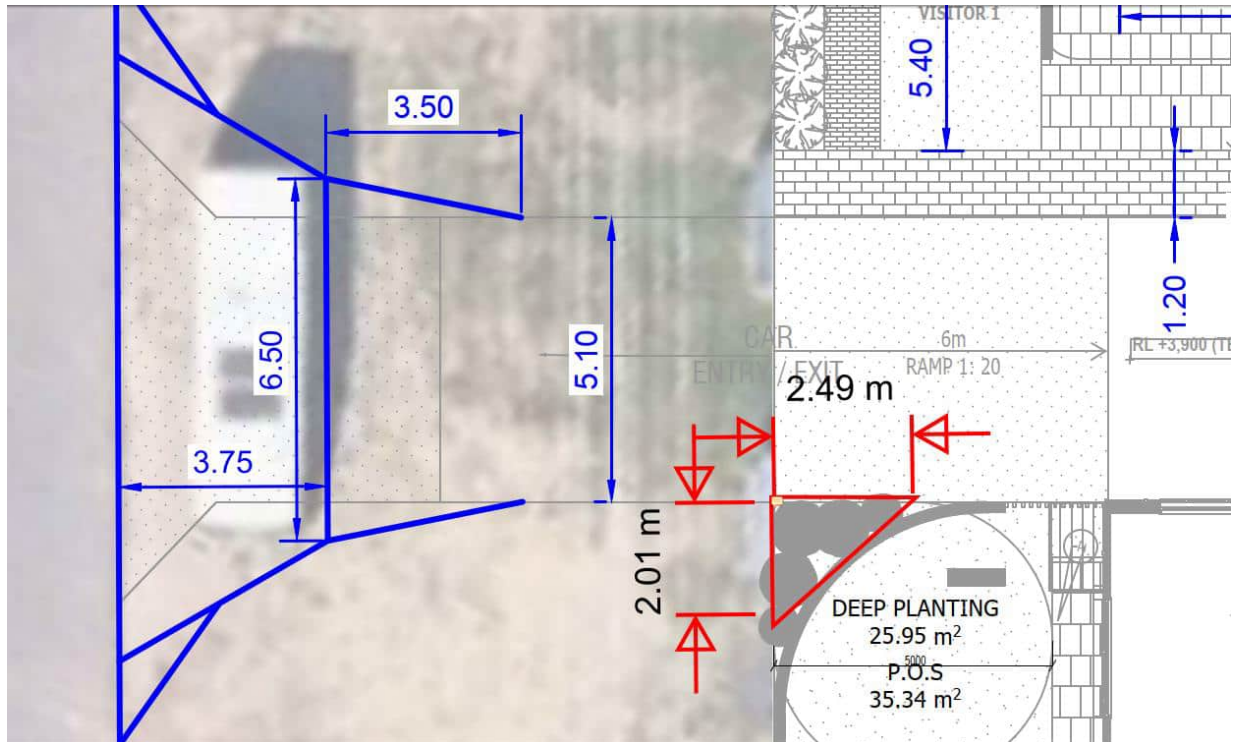


Figure 2-2: Pedestrian Sight Line Triangle at Site Property Boundary

The driveway crossover has been designed as a 5.1m wide driveway generally in accordance with Council's standard drawing R-RCC-2. Further, it is recommended that the proposed crossover be modified to a 6.50m wide crossover as illustrated in TTM Figure 1 to allow for two-way passing of large cars as well as satisfactory ingress/egress of the check service vehicle to minimise impacts along Shore Street East.

Noting the above, the proposed access arrangements are considered to generally comply with the AS2890.1:2004 design requirements and is considered appropriate for the site operations and expected to operate both safely and efficiently.

2.1.1 Individual Unit Access

All garages will gain access off the shared driveway. Sufficient garage widths and manoeuvring / setback areas have been provided to allow for parking / garage access in accordance with relevant AS2890.1:2004. Table 2.2 provides a summary of an assessment of the proposed garage dimensions against AS2890.1:2004 requirements.

2.1.2 Queuing

AS2890.1:2004 Table 3.3 *Minimum Queueing Length at a Carpark with Control Point at Entrances* identify the queuing requirement for the proposed development inside the frontage property boundary. As per Council's AS2890.1:2004 Table 3.3, a queuing requirement of 2 vehicles is applicable for the development given the proposed car parking provision is 26 car parking spaces.

It is acknowledged that a queuing requirement of 2 spaces is not provided at the site access. However, this is not considered to be a significant operational issue for the development given the following:

- AS2890.1:2004 queuing requirement does not differentiate between low and high traffic generating uses where traffic volumes for a similar car parking supply can vary significantly. The proposed development is considered a very low traffic generator that would not require the same queueing requirements as a higher traffic generator such as a child care centre or retail use;
- The visitor and resident car parking spaces at the front of the site would have low turn-over rates;
- There is approximately 10m length (>1 car length) within the existing wide verge between the Shore Street East carriageway and the property boundary that can temporarily be utilised for queuing if required; and
- The proposed development's access driveway is off a local road so, in the unlikely event of a queue, the impacts of a queue on the local street would be manageable and would not pose a significant risk on the operations and safety of the transport network.

As such, the proposed queuing provision is considered appropriate given that Shore St E is a local road, the low trip generation potential of the proposed development, the low turnover rate of the visitor and resident spaces at the front of the site and the wider verge adequately being able to accommodate a short queue in the even a car is entering while a vehicle is manoeuvring to/from Visitor 1 or the garage of Unit 1.

2.2 Car Parking Provision

Council's Transport, servicing, access, and parking code *Table 9.3.5.3.2 – Minimum on-site vehicle parking requirements* outlines the car parking rates for the proposed development. Table 2.1 overleaf summarises the car parking requirements for the proposed residential use, along with the requirements for visitors.

Table 2.1: Council's Parking Code Car Parking Requirement

Proposed Use		Council's Parking Code Requirement	
Configuration	Units	Minimum Car Parking Rate	Requirements
3-bedroom units	10	2 spaces per unit with 2 bedrooms or more	20
Visitor Parking	10	1 visitor space per 4 units (tandem parking is not acceptable)	2.5 (rounded to 3)
Total Residential Component Parking			23

Based on the rates outlined in Council's Transport, servicing, access, and parking code, a minimum supply of 23 spaces, including 3 visitor spaces is required for the proposed development.

As illustrated in the proposed development plan, the development includes a provision of 24 car parking spaces (22 resident spaces and 2 dedicated visitor spaces). This proposed supply is provided via 8 x double garages, 2 x 3-car garages and 2 visitor car parking spaces. Additional visitor spaces are also available in front of some townhouses, similar to the visitor space shown in front of TH8.

The development's car parking provision is considered satisfactory as a performance outcome given the following:

- Council's requirement for visitor car parking is 2.5 spaces (rounded to 3 spaces). As such, the proposed development's provision of two (2) dedicated spaces does not constitute a significant shortfall (i.e., just 0.5 of a space) and is not expected to create significant overly parking issues on Short Street E;
- Two (2) of the ten (10) townhouses (TH7 and 8) provide sufficient space in the front of their garages to satisfactorily accommodate a minimum of one (1) additional 90° visitor parking (5.4m parking bay length plus 5.8m aisle width) each. If these townhouses with visitor parking allowance are removed from the calculation, then the requirement for visitor car parking based on eight (8) townhouses at a rate of 1 visitor space per 4 units is 2 visitor spaces which is consistent with the development's dedicated visitor car parking provision.

Noting the above, the proposed car parking provision is considered generally compliant with Council's requirement and fit for purpose for the development.

2.3 Carpark Layout

An assessment of the car park layout and dimensions has been completed against the relevant design criteria within Australian Standards (AS) 2890.1:2004 *Off-street car parking*. An assessment of the internal layout dimensions is summarised in Table 2.2.

Table 2.2: Car Parking Dimension / Layout Assessment

Design Element		AS2890.1:2004 Requirements	Proposed Layout	Compliance
Fully enclosed garages (Double Garage)	Internal Garage Dimension	5.4m length x 5.4m width	5.75m length (min) x 5.65m width (minimum)	Compliant
	Door Opening	4.8m to 6.0m	5.01m (minimum)	Compliant
	Apron Width	5.6m to 7.0m	> 7.1m (includes circulating aisle, footpath, and setback)	Compliant
Fully enclosed garages (3-car Garages)	Internal Garage Dimension	5.4m length x 5.4m width plus tandem length of 10.8m and width of 2.7m	5.75m length (min) x 5.65m width (minimum) plus tandem of 10.76m and width of 2.89m	Generally Compliant
	Door Opening	4.8m	5.01m (minimum)	Compliant
	Apron Width	5.6m to 7.0m	>11.1m (includes circulating aisle, footpath, and setback)	Compliant
Visitor Parking Spaces (medium term parking)	Dimensions	5.4m length x 2.5m (min) width	5.4m length x 2.5m width	Compliant
	Aisle Width	5.8m	6.3m (minimum)	Compliant
Parking Envelope Clearance	Envelope	AS2890.1 envelope	AS2890.1 envelope	Compliant
	Adjacent Walls	Additional 0.3m against walls	Additional 0.3m against walls	Compliant

Based on the dimension and layout assessment summarised within Table 2.2, the proposed development parking layout complies with the requirements of AS2890.1:2009 and is considered satisfactory for the scale / type of parking (including turnover).

2.3.1 Manoeuvring

A swept path assessment has been completed illustrating that:

- Two large cars (B99) can adequately and simultaneously access the site in a forward gear. The manoeuvring of a B99 Large Car has been selected to illustrate the worst-case design car scenario for the car parking area. As shown, sufficient area has been provided to allow for these vehicles to adequately navigate the site and allow for two-way movement;
- The manoeuvring of a 4.91m (B85) Medium Car within the car parking area and accessing the more constrained spaces/garages are illustrated within Attachment B. As shown, sufficient area has been provided to allow for these vehicles to adequately enter and exit the car garages;

- It is noted that the pedestrian door opening within the garages for TH7 and 8 encroach on the trapped tandem car parking space. As such, it is recommended that the pedestrian door be modified to open inward or to converted to a pocked/sliding door.

2.4 Bicycle Parking Provision

Council's Transport, servicing, access, and parking code and Council's Planning Scheme Policy 2 – Infrastructure Works does not specify a bicycle parking or end-of-trip facilities requirement for the proposed development use. However, as referenced in EDQ's RFI, Queensland Development Code MP4.1 P12 recommends that:

“End-of-trip facilities are provided for employees or occupants, in a building or onsite within a reasonable walking distance, and include:

(a) adequate bicycle parking and storage facilities; and

(b) adequate provision for securing belongings; and

(c) change rooms that include adequate showers, sanitary compartments, wash basins and mirrors.”

As such, it is recommended that secure bicycle parking spaces/storage area for residents are provided within the garages while visitor bicycle spaces can be provided along the frontage of each townhouse, preferably underneath the stairs. Sufficient area is available along the frontage of each townhouse to accommodate this provision. This provision is recommended to encourage active transport to/from the proposed development. This is considered appropriate given that majority of cyclists to/from the site will be residents of the proposed development.

2.5 Pedestrian Access

No public footpaths exist on either side of Shore Street East in the vicinity of the subject site. Notwithstanding, to ensure safe and equitable access from the Shore Street East to the site, it is proposed to provide an internal 1.2m wide pedestrian pathway along the northeast side of the driveway connecting all buildings to the road frontage. A smooth, even surface with grades no greater than 1:14 and crossfall less than 2.5% are recommended along the entire length of the pedestrian pathway. This will be addressed during the detailed design stage of the development.

It is acknowledged that the pedestrian pathway encroaches into the aisle between TH 3 and 5. However, this is not considered a significant issue given the following:

- The driveway is a relatively low speed environment and will operate similar to a shared zone with access shared between vehicles and pedestrians;
- The proposed pedestrian pathway marking is proposed to only provide visual cues and advise motorists of the presence of pedestrians and of the functionality of the driveway; and

- Motorists within the vicinity of TH 3 and 5 would be predominantly residents who are familiar with the shared zone type operation.

Noting the above, the proposed pedestrian provision is considered satisfactory and fit-for-purpose.

2.6 Servicing Arrangements and Refuse Collection

Council's Planning Scheme Policy 2 – Infrastructure Works Section 2.4.1.4 Table 3 Multiple dwelling bin servicing location identifies that for multiple dwellings with 10 or fewer dwellings where the frontage road is a minor road and wheelie bins are proposed, the bin servicing is via kerbside collection. As such, the development will utilise kerb-side refuse collection in line with Council's requirement. The proposed bin storage area for the townhouses will consist of a combination of individual and combined bin storage locations within the site to facilitate storage and transfer to the kerbside on collection days as follows:

- TH 4, 5 and 6 use a shared bin storage enclosure collection pad on the eastern corner of the internal driveway between Building 1 and Building 3. This location was dictated by the layout of the site to ensure bin storage is located away from vehicle manoeuvring areas and without impact to amenity for any of the townhouses. The bins will be moved from the storage to the kerbside to facilitate collection using the main internal driveway and pedestrian pathway. The shared bin storage will be capable of accommodating six (6) wheelie bins (i.e., one standard 240L bin and one recycled 240L bin for each TH); and
- All other townhouses will provide individual bin storage enclosures with mobile bin collection points proposed along each townhouse frontage or at proposed storage locations/enclosures. Each TH storage enclosure will be capable of accommodating a minimum of two wheelie bins (i.e., one standard 240L bin and one recycled 240L bin for each TH). Bins will be moved from storage locations to the Shore Street East kerbside on collection day using the internal driveway and marked pedestrian pathway.

Architectural plan illustrating the proposed bin storages for each TH is included in Attachment A.

In relation to servicing (loading and unloading) requirements, *Council's Planning Scheme Policy 2 – Infrastructure Works Section 3.9.1 Table 13 Service vehicle for residential uses* identifies a 6.4m small rigid vehicle (SRV) design service for a multiple dwelling development vehicle manoeuvring requirement where waste collection is from the kerbside. Nonetheless, additional checks have been completed for a Large Rigid Vehicle (LRV), equivalent to an Austroads Heavy Rigid Vehicle (12.5m HRV) to assess the site for occasional servicing (e.g., furniture delivery).

As such, a manoeuvring assessment has been completed based on a 12.5m HRV, and 6.4m SRV as derived from AS/NZS 2890.2:2018 *Parking facilities Part 2 – Off-street Commercial Vehicle Facilities* and Austroads design vehicles.

Swept path diagrams illustrating the manoeuvring requirement of a 12.5m HRV and 6.4m SRV manoeuvring through the site are included as TTM Figures 2 to 5 included in Attachment B. As illustrated in the attached figures, satisfactory manoeuvring of the design service vehicle is achievable.

Further, the following design outcomes are also noted in relation to servicing:

- 12.5m HRV can access the site either via a forward in/reverse out or reverse in/forward out arrangement, which is considered satisfactory for a “check” vehicle; and
- 6.4m SRV can enter and exit the development in a forward direction / gear.

Overall, the vehicular servicing arrangements for the proposed development are considered satisfactory.

2.7 Traffic Generation

RTA’s (now Transport for NSW) Guide to Traffic Generating Developments¹ suggests that medium density residential dwelling including larger units and townhouses (two or more bedrooms) generates 0.50 to 0.65 vph per dwelling during the weekday peak period and 5.0 - 6.5 vehicles per day (vpd) on a weekday. This equates to no more than 7 vph to or from the development during the AM and PM peak hour periods and 65 vpd over a weekday.

This traffic volume is considered very low in traffic engineering terms, and in conjunction with a forward-in /forward-out access arrangement as well as traffic being transferred onto Shore Street (East), local road with residential traffic generation, is not expected to have any significant impact on the safety or operation (efficiency, functionality, convenience, or capacity) of the surrounding road network.

¹ Guide to Traffic Generating Developments”, RTA, 2002

3 Summary

This advice has addressed the traffic-related items associated with the proposed multiple dwelling residential development to be located at 67 & 69 Shore Street East, Cleveland.

The proposal is for a multi-dwelling development comprising of 10 units across three (3) buildings. All units are proposed to be 3-bed units with multi-purpose rooms. All units with the exception of units 7 and 8 have double garages with units 7 and 8 both having 3-car garages.

Architectural plans of the proposed development prepared by RC design are included in Attachment A of this letter.

This assessment responds to the traffic engineering items raised in the Department of State Development, Infrastructure, Local Government and Planning's request for information letter dated 28 November 2022 relating to parking and the completion of a transport engineering assessment.

As detailed herein, the proposed development demonstrates general compliance and acceptable outcomes when assessed against the Council's Transport, servicing, access, and parking code, AS2890.1:2004 and Council's Planning Scheme Policy 2 – Infrastructure Works.

Noting the above, there are no traffic engineering reasons to preclude the proposed development given:

- The subject site fronts Short Street East to the north and proposes a single vehicular access off Shore Street East for residents, visitors, and servicing vehicles of the site. The access is proposed to consist of a 5.1m wide driveway to accommodate all turn movements in/out of the site and designed generally in accordance with Council's standard drawing R-RCC-2. Further, it is recommended that the proposed crossover be modified to a 6.50m wide crossover as illustrated in TTM Figure 1 to allow for two-way passing of large cars as well as satisfactory ingress/egress of the check service vehicle to minimise impacts along Shore Street East.
- The proposed car parking provision is considered generally compliant with Council's requirement and fit for purpose for the development;
- The proposed car parking layout of the development complies with the requirements of AS2890.1:2004 and is considered satisfactory for the scale / type of parking (including turnover).
- Council's Transport, servicing, access, and parking code and Council's Planning Scheme Policy 2 – Infrastructure Works does not specify a bicycle parking or end-of-trip facilities requirement for the proposed development use. However, as referenced in EDQ's RFI, Queensland Development Code MP4.1 P12 recommends End-of-trip facilities are provided for occupants, in a building or onsite within a reasonable walking distance. As such, it is recommended that secure bicycle parking spaces/storage area for residents are provided within the garages while visitor bicycle spaces can be provided along the frontage of each townhouse, preferably underneath the stairs. Sufficient area is available along the

frontage of each townhouse to accommodate this provision. This provision is recommended to encourage active transport to/from the proposed development. This is considered appropriate given that majority of cyclists to/from the site will be residents of the proposed development.

- The development will utilise kerb-side refuse collection in line with Council's requirement. The proposed bin storage area for the townhouses will consist of a combination of individual and combined bin storage locations within the site to facilitate storage and transfer to the kerbside on collection days.
- The internal layout provides sufficient manoeuvring area for the relevant design and check vehicles.
- The traffic likely to be generated from the proposed development is minimal and is not expected to have any significant impacts on the safety, efficiency, functionality, convenience of use or capacity of the surrounding road network.

Given the above, the proposed development is considered to have satisfactorily addressed satisfy Items 8 and 14 (Parking and Transport Engineering Report (TER)) of the Department of State Development, Infrastructure, Local Government and Planning's request for information letter dated 28 November 2022. This review provides information to support that the proposed development has addressed the RFI Items as follows:

- **RFI Item 8 – Visitor Car Parking:** The development includes a provision of 24 car parking spaces (22 resident spaces and 2 dedicated visitor spaces). This proposed supply is provided via 8 x double garages, 2 x 3-car garages and 2 visitor car parking spaces. Additional visitor spaces are also available in front of some of the townhouses, similar to the visitor space shown in front of TH8. The development's car parking provision is considered satisfactory as a performance outcome given the following:
 - Council's requirement for visitor car parking is 2.5 spaces (rounded to 3 spaces). As such, the proposed development's provision of two (2) dedicated spaces does not constitute a significant shortfall (i.e., just 0.5 of a space) and is not expected to create significant overly parking issues on Short Street E;
 - Two (2) of the ten (10) townhouses (TH7 and 8) provide sufficient space in the front of their garages to satisfactorily accommodate a minimum of one (1) additional 900 visitor parking (5.4m parking bay length plus 5.8m aisle width) each. If these townhouses with visitor parking allowance are removed from the calculation, then the requirement for visitor car parking based on eight (8) townhouses at a rate of 1 visitor space per 4 units is 2 visitor spaces which is consistent with the development's dedicated visitor car parking provision.

Noting the above, the proposed car parking provision is considered generally compliant with Council's requirement and fit for purpose for the development.

- **RFI Item 14 – TER Report:** This document encompasses a transport engineering report for the proposed development, signed by an RPEQ.
- **RFI Item 14 – End of Trip Facilities:** it is recommended that secure bicycle parking spaces/storage area for residents are provided within the garages while visitor bicycle spaces can be provided along the frontage

of each townhouse, preferably underneath the stairs. Sufficient area is available along the frontage of each townhouse to accommodate this provision. This provision is recommended to encourage active transport to/from the proposed development. This is considered appropriate given that majority of cyclists to/from the site will be residents of the proposed development.

- **RFI Item 14 – Sight Distance Requirement:** The proposed access to Shore Street East has clear visibility to the adjacent intersections and provide satisfactory visibility to/from both approaches. Hence, the proposed access is considered satisfactory as there are no significant constraints to the sight lines from both approaches. Further, to ensure satisfactory pedestrian sightlines are achieved, it is recommended that only low-level landscaping be provided on both sides of the driveway into the proposed development to ensure sufficient sightlines provided between exiting vehicles and pedestrians in the vicinity of the site access (refer to Figure 2-2 herein).
- **RFI Item 14 – Driveway Aisle** – The development provides a minimum of 6.3m aisle (5.1m dedicated driveway and 1.2m pedestrian pathway) width to facilitate access in/out of car parking spaces and garages that satisfy AS2890.1:2004.
- **RFI Item 14 – Delineated Footpath:** It is acknowledged that the pedestrian pathway encroaches into the aisle between TH 3 and 5. However, this is not considered a significant issue given the following:
 - The driveway is a relatively low speed environment and will operate similar to a shared zone with access shared between vehicles and pedestrians;
 - The proposed pedestrian pathway marking is proposed to only provide visual cues and advise motorists of the presence of pedestrians and of the functionality of the driveway; and
 - Motorists within the vicinity of TH 3 and 5 would be predominantly residents who are familiar with the shared zone type operation.

Noting the above, the proposed pedestrian provision is considered satisfactory and fit-for-purpose.

- **RFI Item 14 – Staircase Encroachment:** The architectural plans have been updated to reduce encroachment from the stairs and to ensure garages can still be accessed as demonstrated on the manoeuvring plans included in Attachment B.
- **RFI Item 14 – Manoeuvring:** The architectural plans have been updated to ensure unrestricted access into the garages and to remove collisions with structural elements and stairs. The manoeuvring of a 4.91m (B85) Medium Car within the car parking area and accessing visitors' spaces and garages are illustrated within Attachment B. As shown, sufficient area has been provided to allow for these vehicles to adequately enter and exit the car garages;

In summary, provided the recommendations of this report are adopted, there are no traffic engineering reasons to preclude approval of the proposed development.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Will Somerville'.

Will Somerville
RPEQ #14833
Senior Associate Director
[TTM Consulting Pty Ltd](#)

Enc.

Appendix A

Architectural Plans



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03-8	BUILDING 2 ELEVATIONS
03-9	BUILDING 2 ELEVATIONS
03-10	BUILDING 3 ELEVATIONS
03-11	BUILDING 3 ELEVATIONS
03-12	SECTION 01
03-13	SECTION 02
03-14	SECTION 03
03-15	SECTION 04
03-16	SECTION 05

REV.	AMENDMENT	DATE
E2	BINS 07,08,10 RELOCATED	14/FEB/2023
	LANDSCAPINGS AMENDED	
	UNIT 09, 10 : INTERNAL STAIRS AMENDED	
	RESPOND TO TRAFFIC INPUTS	
	GARAGE UNIT 07, 08 AMENDED	
E1	FSL CHANGED TO BUILDING 1,2,3 (+200mm)	23/JAN/2023
D4	AHD LEVELS ON GROUND FLOOR, SECTIONS	18/JAN/2023
	TH 01 LAYOUTS AMENDED : 920 DOORS, 1.2m HALLWAYS	
	DIMENSIONS TO BIN STORAGE AREAS	
	VISITOR CARPARK TO UNIT 08	

#Project Name

LOT 12 #67 SHORE STREET EAST, CLEVELAND

REDLAND CITY, QLD

PROUDLY DEVELOPED BY :

TBC



REV E2 (2/14/2023)

RC+
Design

BSA License Number
1212835
Email
info@rcplusdesign.com.au
Phone
0421197117

CLIENT
TBC
LOCATION
LOT 12 #67 SHORE STREET EAST
CLEVELAND, REDLAND CITY, QLD

DRAWING NAME
SITE LOCATION
DESIGNER

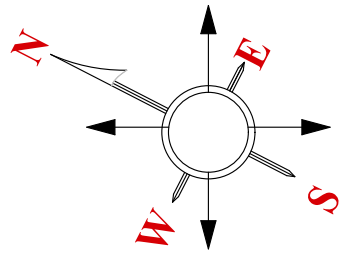
ISSUE
E2 14/FEB/2023 RESPOND TO INPUTS
D4 18/JAN/2023 RESPOND TO INPUTS
D3 17/JAN/2023 RESPOND TO INPUTS
D2 15/DEC/2022 RESPOND TO INPUTS

VT
VT
VT
VT

SCALE
@A3

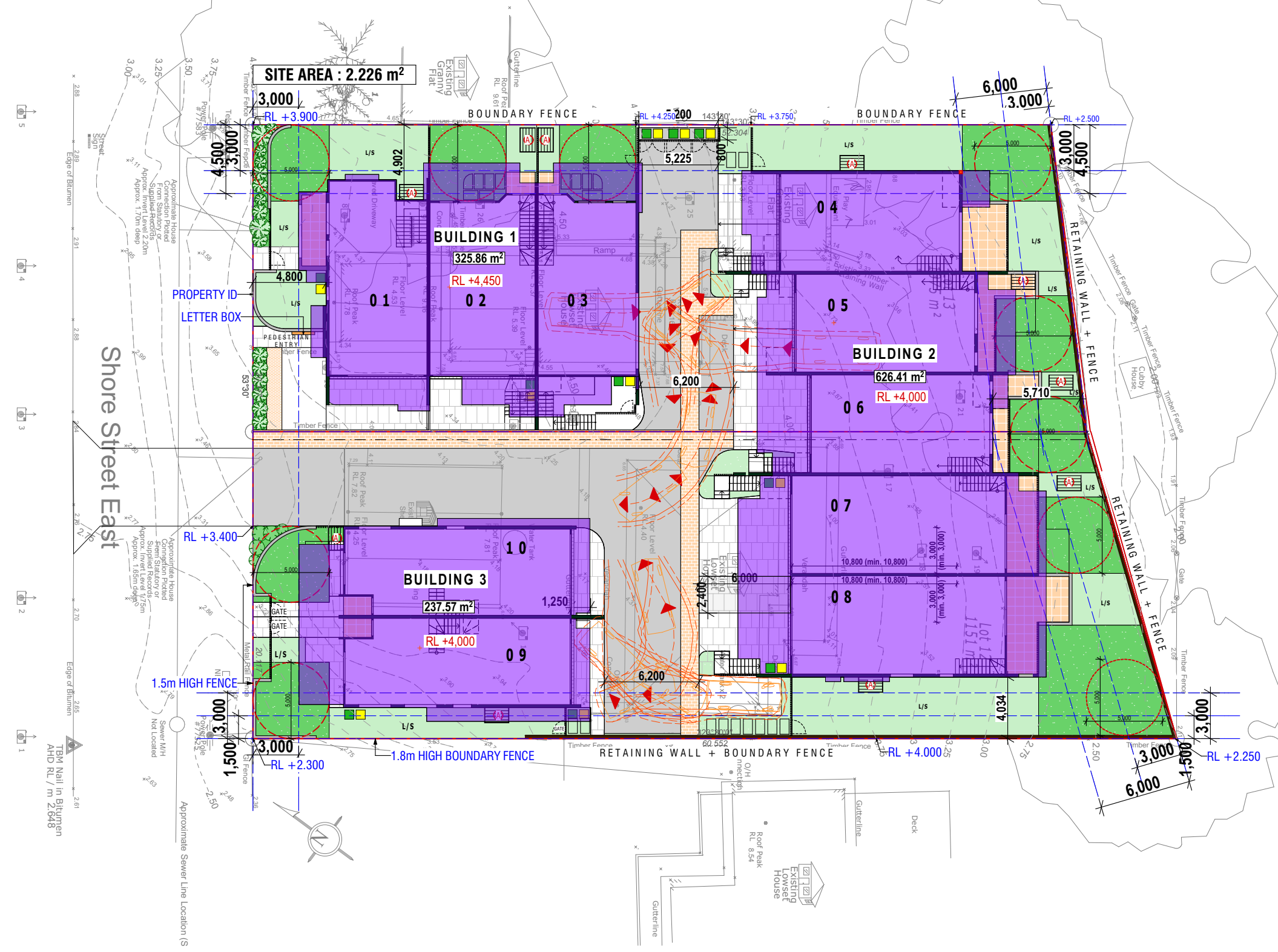
JOB NUMBER	DRAWING	REVISION
	01-1	E2

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2/14/2023 4:04 PM



SITE COVER CALCULATION
SITE AREA : 1.151+1.075 = 2.226 sqm
TOTAL SITE COVER REQUIRED :
TOTAL SITE COVER PROPOSED : 1.097,28 / 2.226 = 49.29%
includes :
porch, garage, alfresco, outermost wall projection (TBC)

 BUILDING ABOVE AREA



REV E2 (2/14/2023)

RC+
Design

BSA License Number
1212835
Email
info@rcplusdesign.com.au
Phone
0421197117

CLIENT
TBC
LOCATION
LOT 12 #67 SHORE STREET EAST
CLEVELAND, REDLAND CITY, QLD

DRAWING NAME
SITE PLAN
DESIGNER

ISSUE
E2 14/FEB/2023 RESPOND TO INPUTS
D4 18/JAN/2023 RESPOND TO INPUTS
D3 17/JAN/2023 RESPOND TO INPUTS
D2 15/DEC/2022 RESPOND TO INPUTS

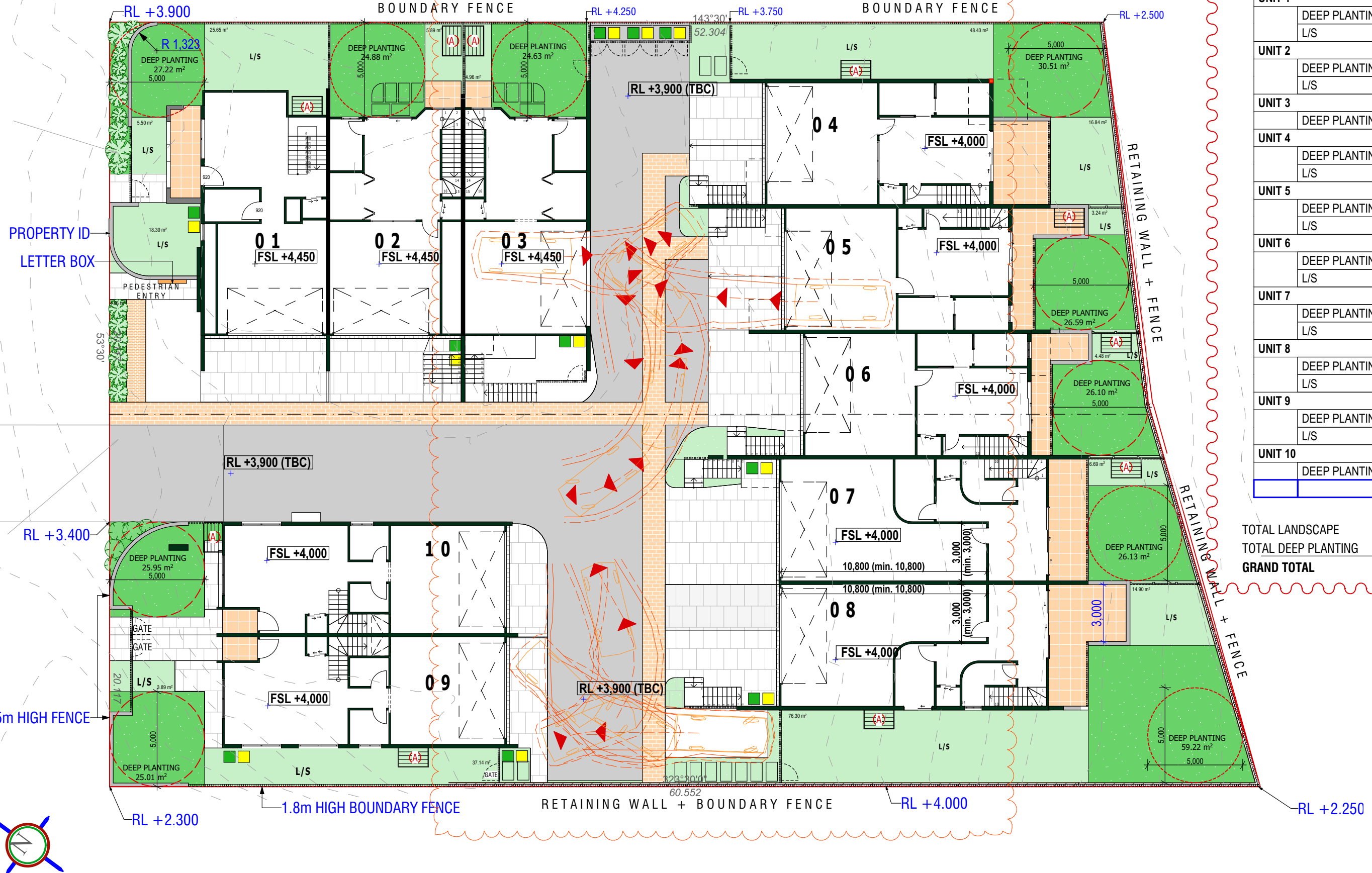
VT
VT
VT
VT

SCALE
1:300
@A3

JOB NUMBER	DRAWING	REVISION
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C:\Users\OroTub\Desktop\REV E2\LOT 12 #67 SHORE ST EAST, CLEVELAND_REV E2_VT20230214.pht 2/14/2023 1:40:04 PM		

SITE AREA : 2.226 m²

(A) : RETRACTABLE WALL MOUNTED CLOTHES LINES



LANDSCAPE CALCULATION

UNIT 1		
	DEEP PLANTING	27.22
	L/S	54.31
UNIT 2		
	DEEP PLANTING	24.88
	L/S	10.85
UNIT 3		
	DEEP PLANTING	24.63
UNIT 4		
	DEEP PLANTING	30.51
	L/S	65.27
UNIT 5		
	DEEP PLANTING	26.59
	L/S	3.24
UNIT 6		
	DEEP PLANTING	26.10
	L/S	4.48
UNIT 7		
	DEEP PLANTING	26.13
	L/S	6.69
UNIT 8		
	DEEP PLANTING	59.22
	L/S	91.20
UNIT 9		
	DEEP PLANTING	25.01
	L/S	41.03
UNIT 10		
	DEEP PLANTING	25.95
	L/S	573.31 m ²

TOTAL LANDSCAPE : 268,52 m² (12,06 %)
TOTAL DEEP PLANTING : 296,24 m² (13,30 %)
GRAND TOTAL : 564,76 m² (25,36 %)

REV E2 (2/14/2023)

RC+
Design

BSA License Number
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info@rcplusdesign.com.au
Phone
0421197117

CLIENT
TBC
LOCATION
LOT 12 #67 SHORE STREET EAST
CLEVELAND, REDLAND CITY, QLD

DRAWING NAME
LANDSCAPE PLAN
DESIGNER

ISSUE
E2 14/FEB/2023 RESPOND TO INPUTS
D4 18/JAN/2023 RESPOND TO INPUTS
D3 17/JAN/2023 RESPOND TO INPUTS
D2 15/DEC/2022 RESPOND TO INPUTS

VT
VT
VT
VT

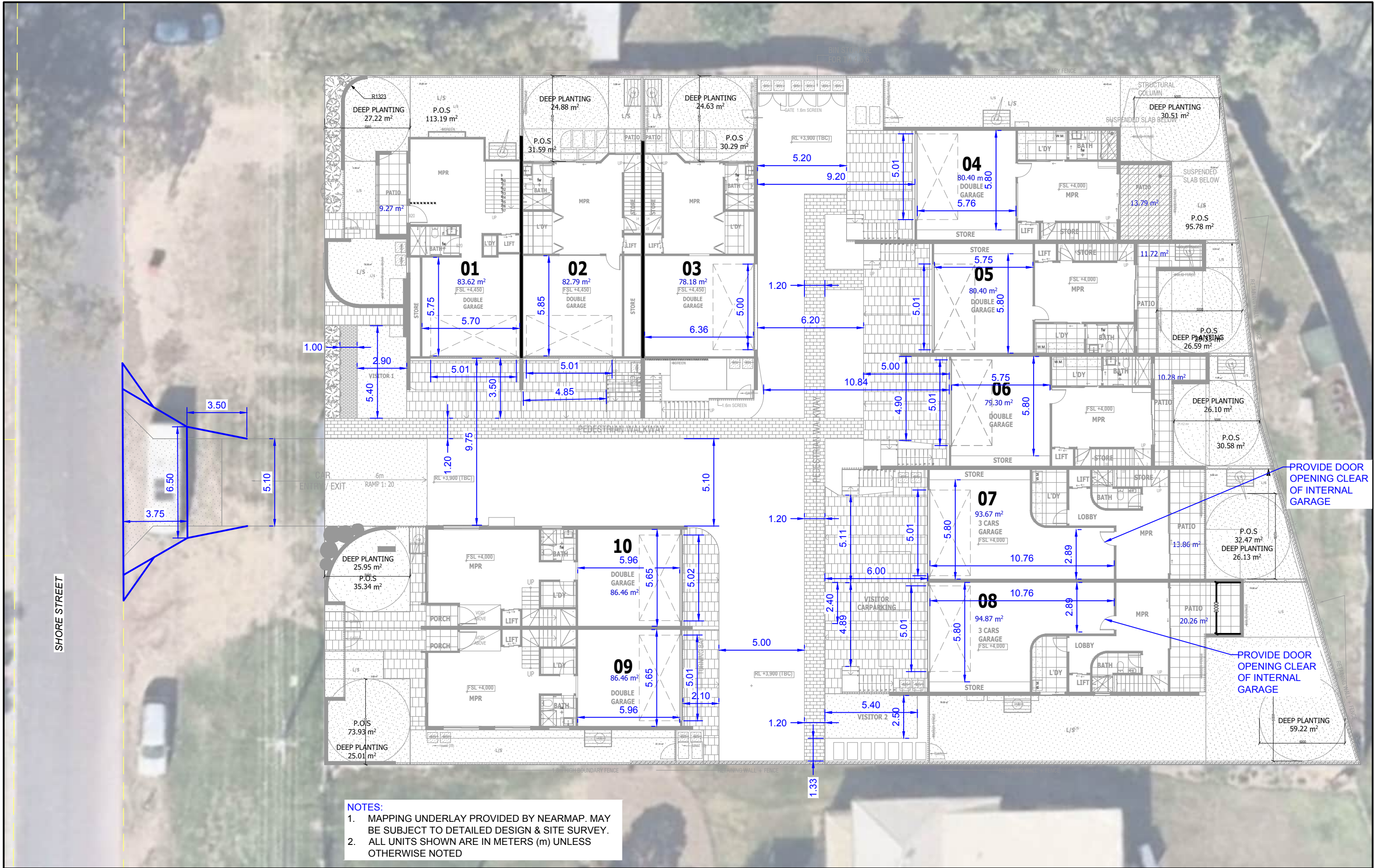
SCALE
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JOB NUMBER	DRAWING	REVISION
	01-4	E2

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Appendix B

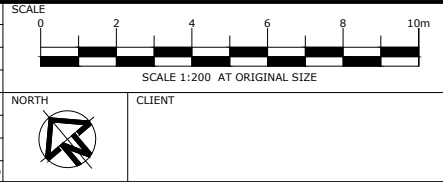
TTM Figures



NOTES:

1. MAPPING UNDERLAY PROVIDED BY NEARMAP. MAY BE SUBJECT TO DETAILED DESIGN & SITE SURVEY.
2. ALL UNITS SHOWN ARE IN METERS (m) UNLESS OTHERWISE NOTED

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	16-02-23	REVISED ARCHITECTURAL LAYOUT	DSF	AA	WKS
A	13-02-23	ORIGINAL ISSUE	DSF	AA	WKS



TTM CONSULTING PTY LTD

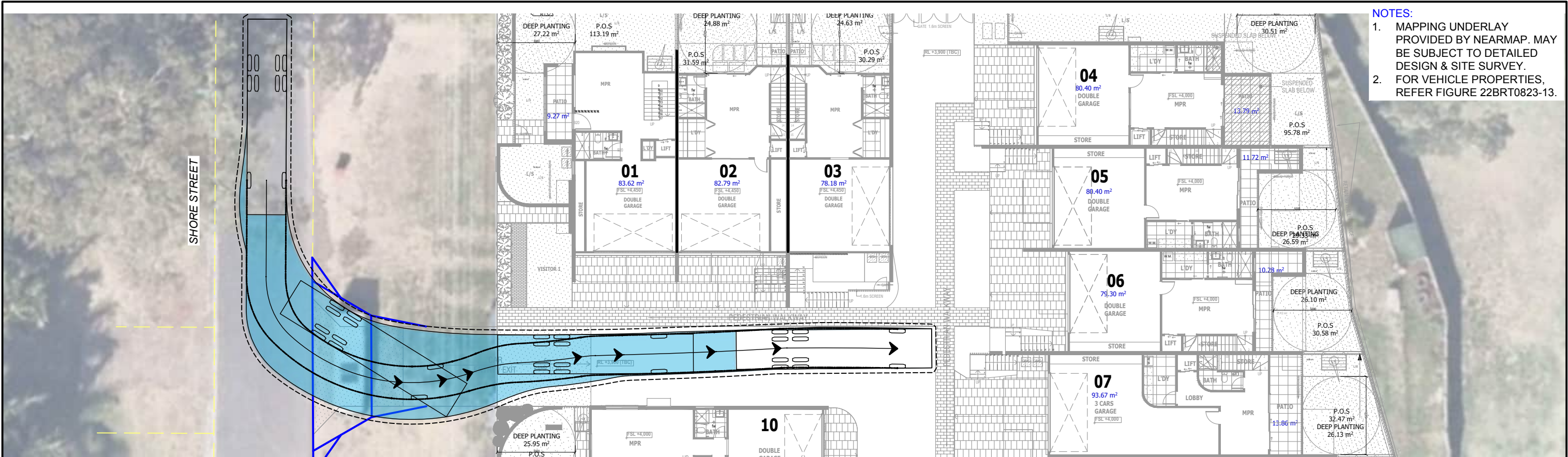
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003

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

PROJECT
67 & 69 SHORE STREET EAST, CLEVELAND

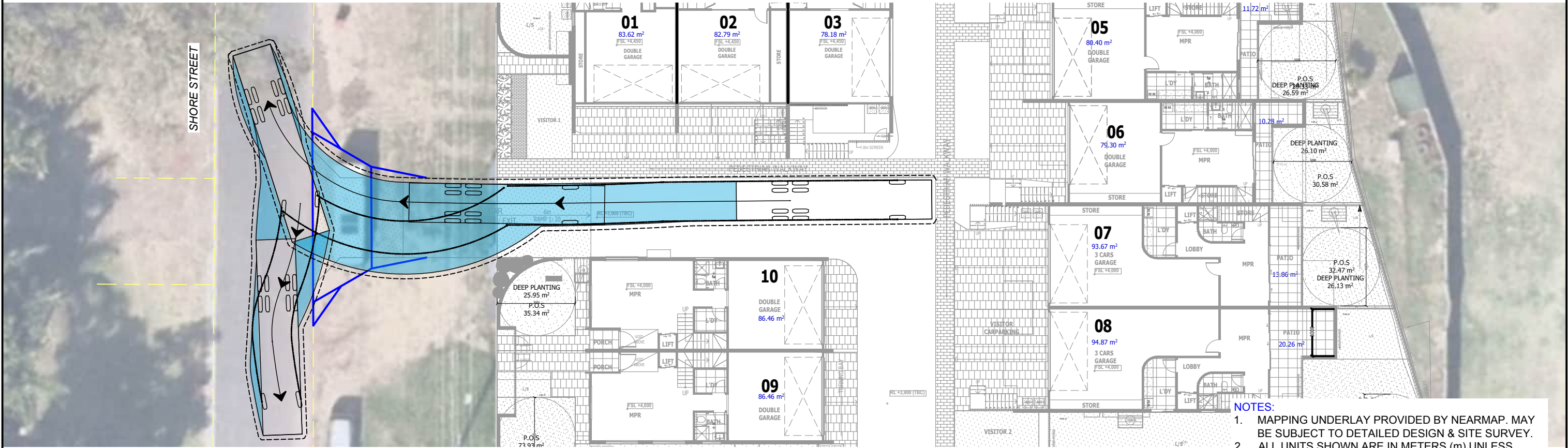
DRAWING TITLE
LAYOUT REVIEW
DIMENSIONS AND PROPOSED MODIFICATIONS FOR SITE LAYOUT

PROJECT NUMBER	ORIGINAL SIZE
22BRT00823	A3
DRAWING NUMBER	REVISION
22BRT0823-01	B
DATE	SHEET
16 Feb 2023	1 OF 1



INGRESS MANOEUVRE

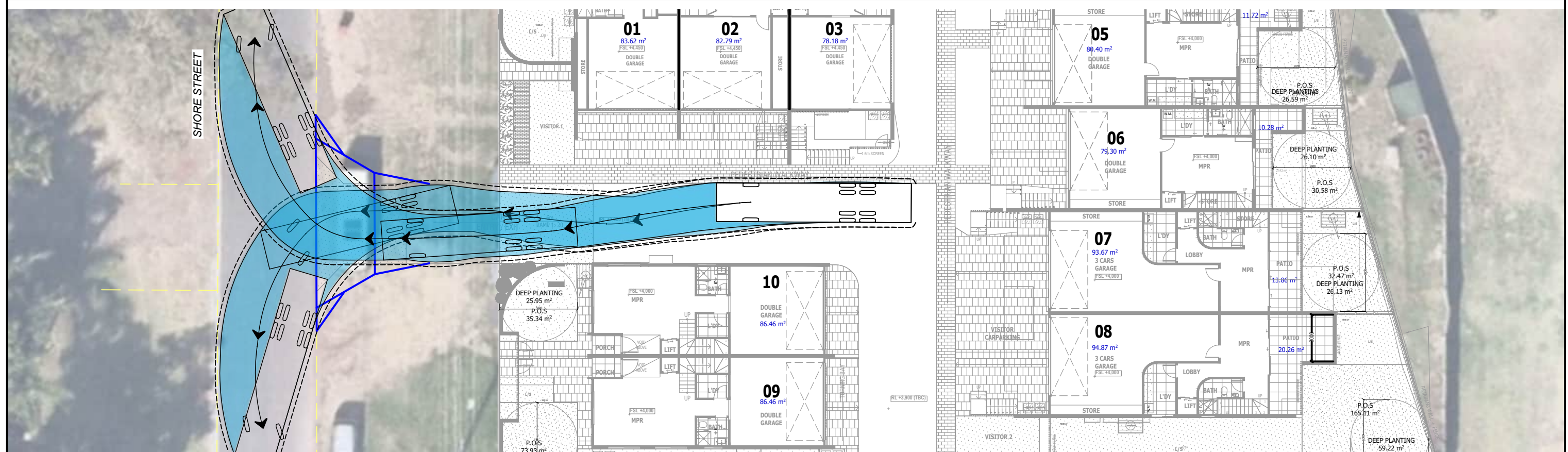
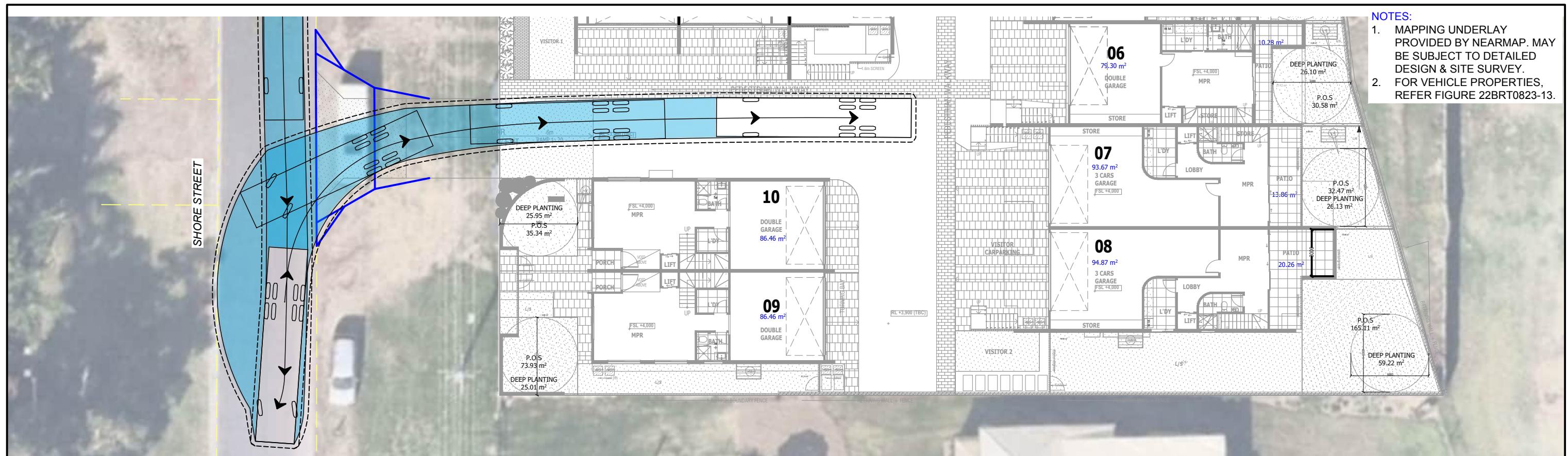
- NOTES:
1. MAPPING UNDERLAY PROVIDED BY NEARMAP. MAY BE SUBJECT TO DETAILED DESIGN & SITE SURVEY.
 2. FOR VEHICLE PROPERTIES, REFER FIGURE 22BRT0823-13.

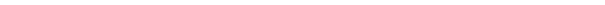


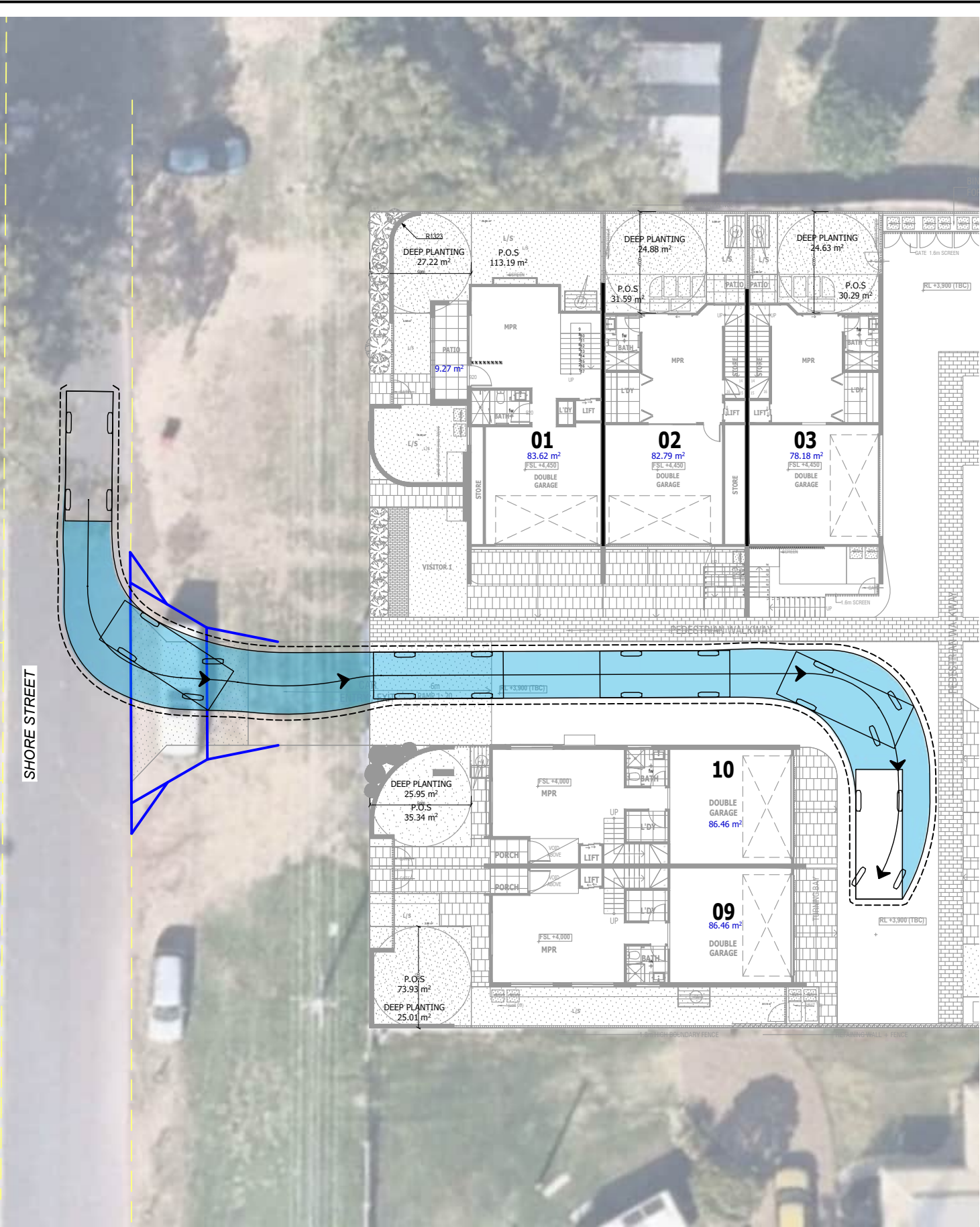
EGRESS MANOEUVRE

- NOTES:
1. MAPPING UNDERLAY PROVIDED BY NEARMAP. MAY BE SUBJECT TO DETAILED DESIGN & SITE SURVEY.
 2. ALL UNITS SHOWN ARE IN METERS (m) UNLESS OTHERWISE NOTED

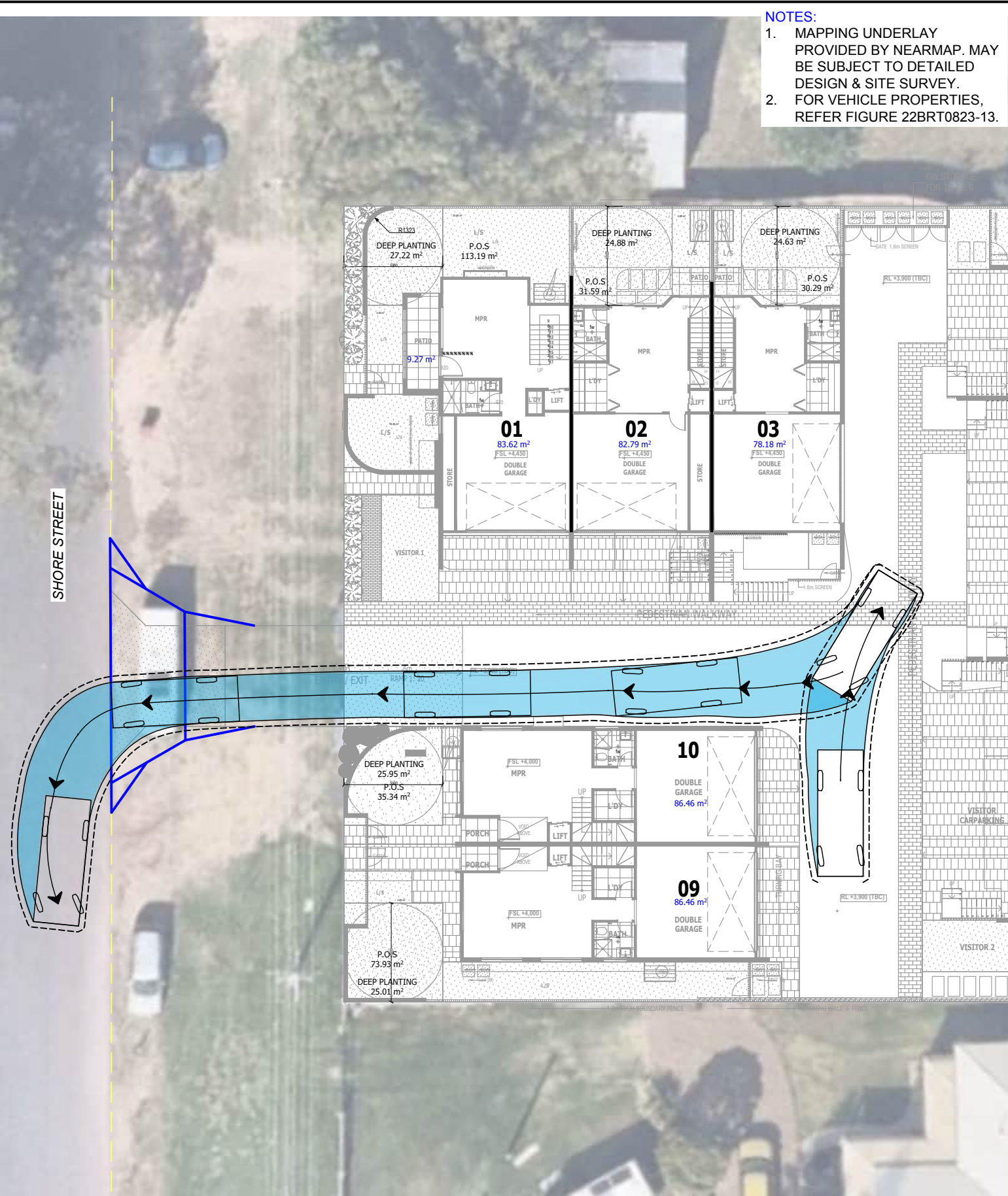
						SCALE 02.557.51012.5m SCALE 1:250 AT ORIGINAL SIZE						PROJECT 67 & 69 SHORE STREET EAST, CLEVELAND			PROJECT NUMBER 22BRT00823			ORIGINAL SIZE A3		
						NORTH			CLIENT ttm TTM CONSULTING PTY LTD ABN 65 010 868 621 LEVEL 8, 369 Ann Street, BRISBANE QLD 4000 P.O. BOX 12015, BRISBANE QLD 4003 T: (07) 3327 9500 F: (07) 3327 9501 E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au			DRAWING TITLE SWEPT PATH ANALYSIS - FORWARDS SITE ACCESS 12.5m (AS2890.2:2018) HEAVY RIGID VEHICLE MANOEUVRING			DRAWING NUMBER 22BRT0823-02			REVISION B		
												DATE 16 Feb 2023			SHEET 1 OF 1					
B 16-02-23 REVISED ARCHITECTURAL LAYOUT DSF AA WKS																				
A 13-02-23 ORIGINAL ISSUE DSF AA WKS																				
REV. DATE AMENDMENT DESCRIPTION			DRAWN CHECKED APPROVED																	



						 SCALE 1:250 AT ORIGINAL SIZE		 NORTH		 CLIENT		PROJECT 67 & 69 SHORE STREET EAST, CLEVELAND		PROJECT NUMBER 22BRT00823	ORIGINAL SIZE A3
												DRAWING TITLE SWEPT PATH ANALYSIS - REVERSE SITE ACCESS 12.5m (AS2890.2:2018) HEAVY RIGID VEHICLE MANOEUVRING		DRAWING NUMBER 22BRT0823-03	REVISION B
B	16-02-23	REVISED ARCHITECTURAL LAYOUT	DSF	AA	WKS							DATE	SHEET		
A	13-02-23	ORIGINAL ISSUE	DSF	AA	WKS							16 Feb 2023	1 OF 1		
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED										



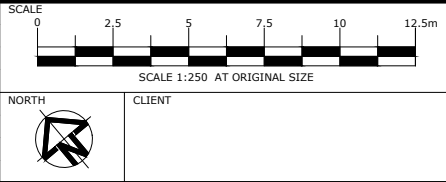
INGRESS MANOEUVRE



EGRESS MANOEUVRE

- NOTES:
1. MAPPING UNDERLAY PROVIDED BY NEARMAP. MAY BE SUBJECT TO DETAILED DESIGN & SITE SURVEY.
 2. FOR VEHICLE PROPERTIES, REFER FIGURE 22BRT0823-13.

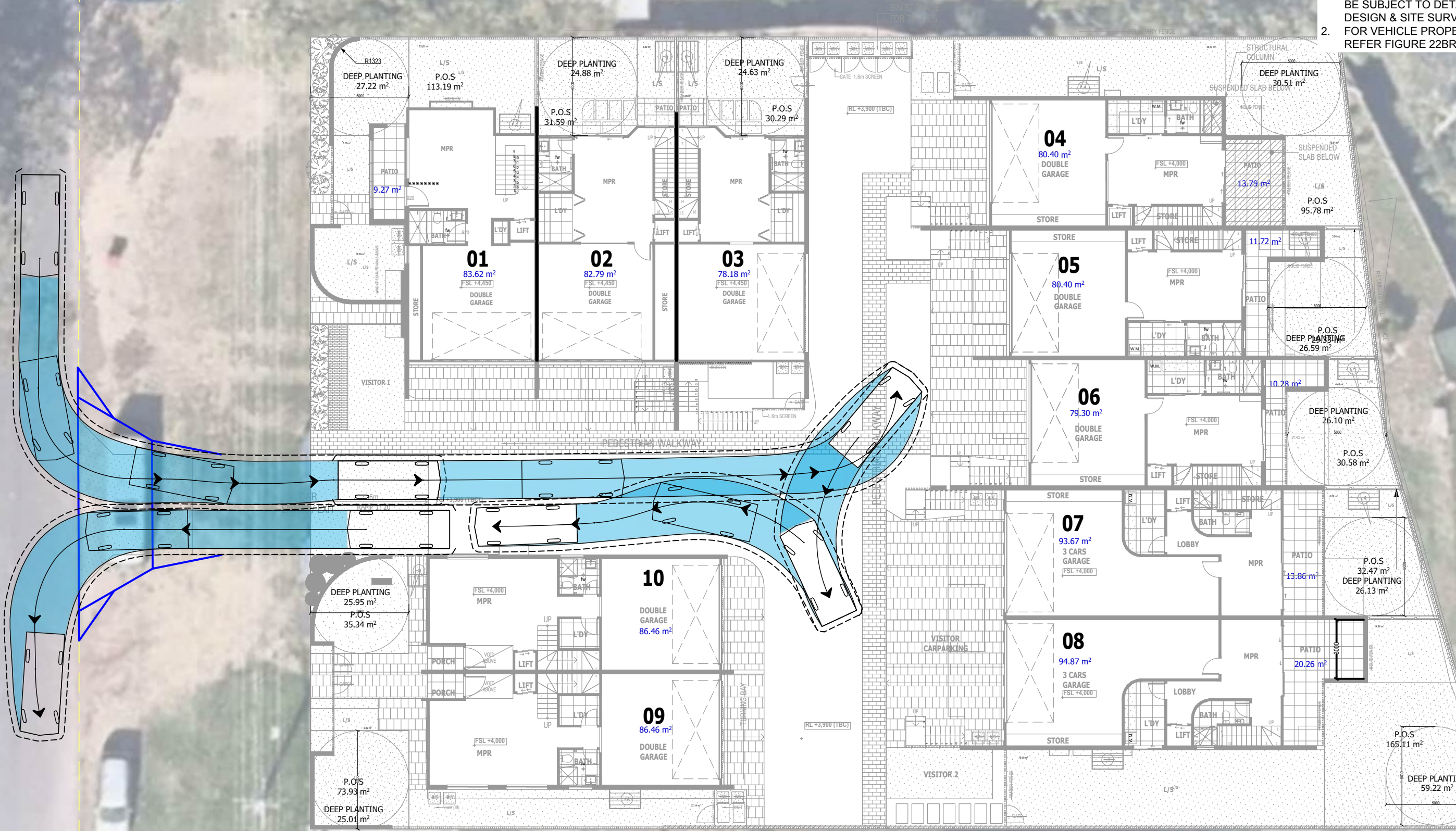
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
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A	13-02-23	ORIGINAL ISSUE	TO	AA	WKS



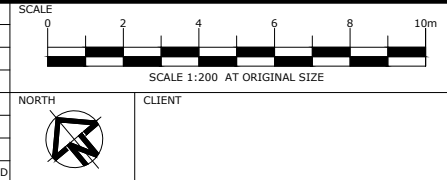
TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT	67 & 69 SHORE STREET EAST, CLEVELAND	PROJECT NUMBER	22BRT00823	ORIGINAL SIZE	A3
DRAWING TITLE	SWEPT PATH ANALYSIS - SITE TURNAROUND 6.4m (AS2890.3:2018) SMALL RIGID VEHICLE	DRAWING NUMBER	22BRT0823-04	REVISION	B
		DATE	16 Feb 2023	SHEET	1 OF 1

- NOTES:
1. MAPPING UNDERLAY PROVIDED BY NEARMAP. MAY BE SUBJECT TO DETAILED DESIGN & SITE SURVEY.
 2. FOR VEHICLE PROPERTIES, REFER FIGURE 22BRT0823-13.



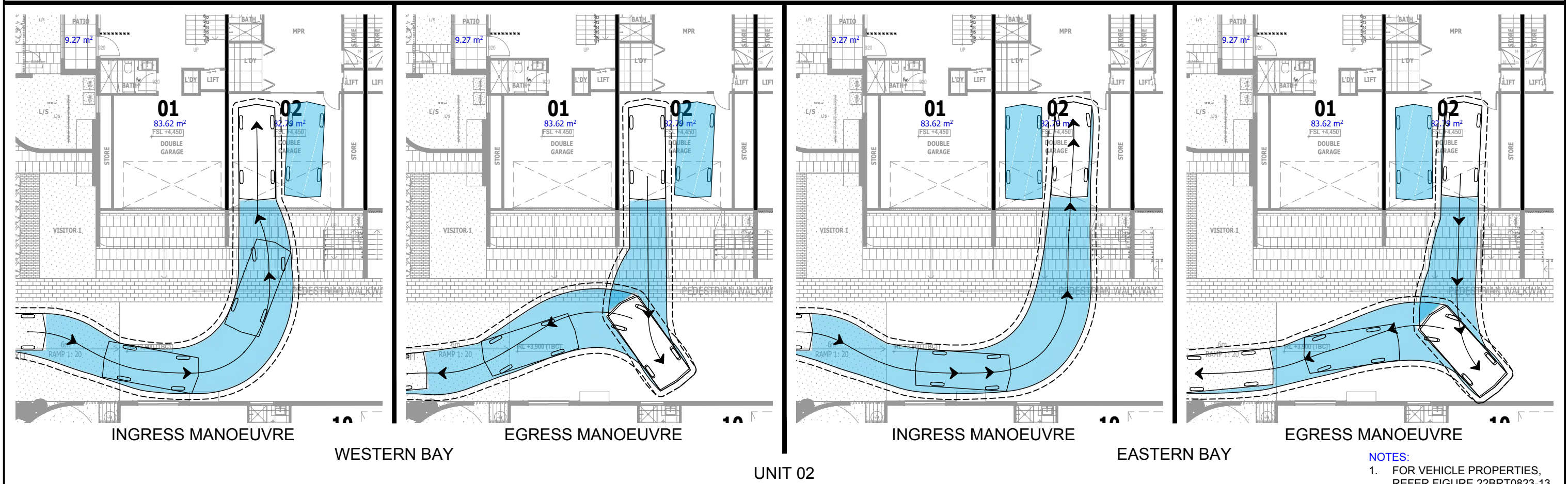
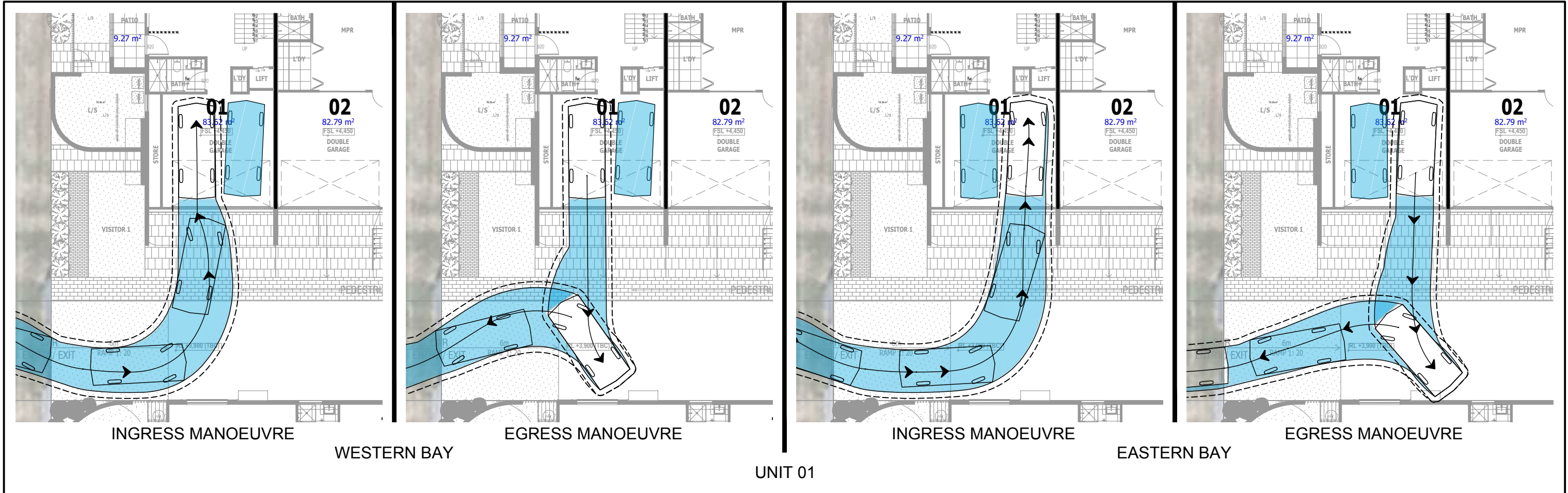
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	16-02-23	REVISED ARCHITECTURAL LAYOUT	DSF	AA	WKS
A	13-02-23	ORIGINAL ISSUE	DSF	AA	WKS



TTM CONSULTING PTY LTD
ABN 65 010 868 621
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E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

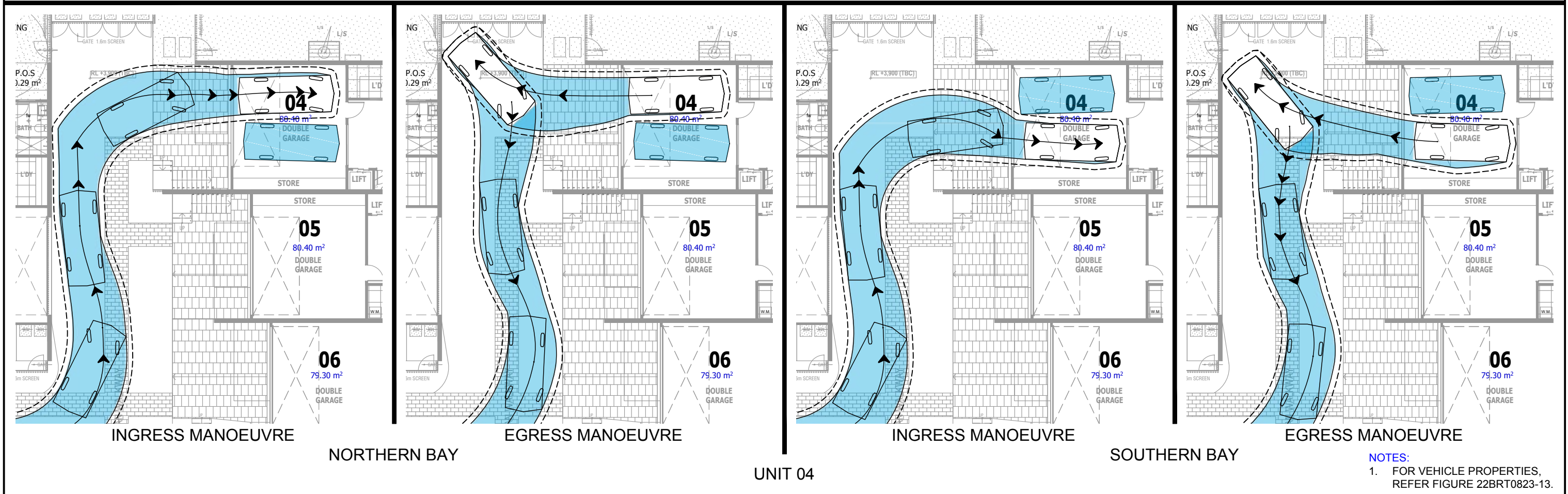
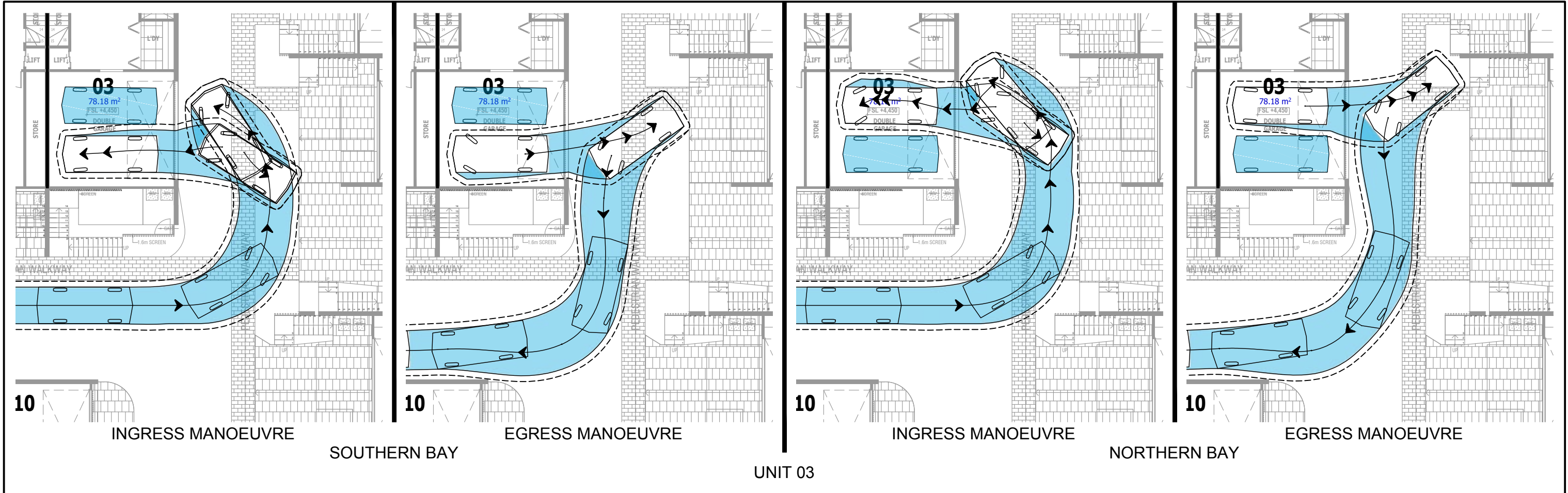
PROJECT
67 & 69 SHORE STREET EAST, CLEVELAND
DRAWING TITLE
SWEPT PATH ANALYSIS - SITE CIRCULATION
5.2m (B99) LARGE CAR

PROJECT NUMBER	22BRT00823	ORIGINAL SIZE	A3
DRAWING NUMBER	22BRT0823-05	REVISION	B
DATE	16 Feb 2023	SHEET	1 OF 1



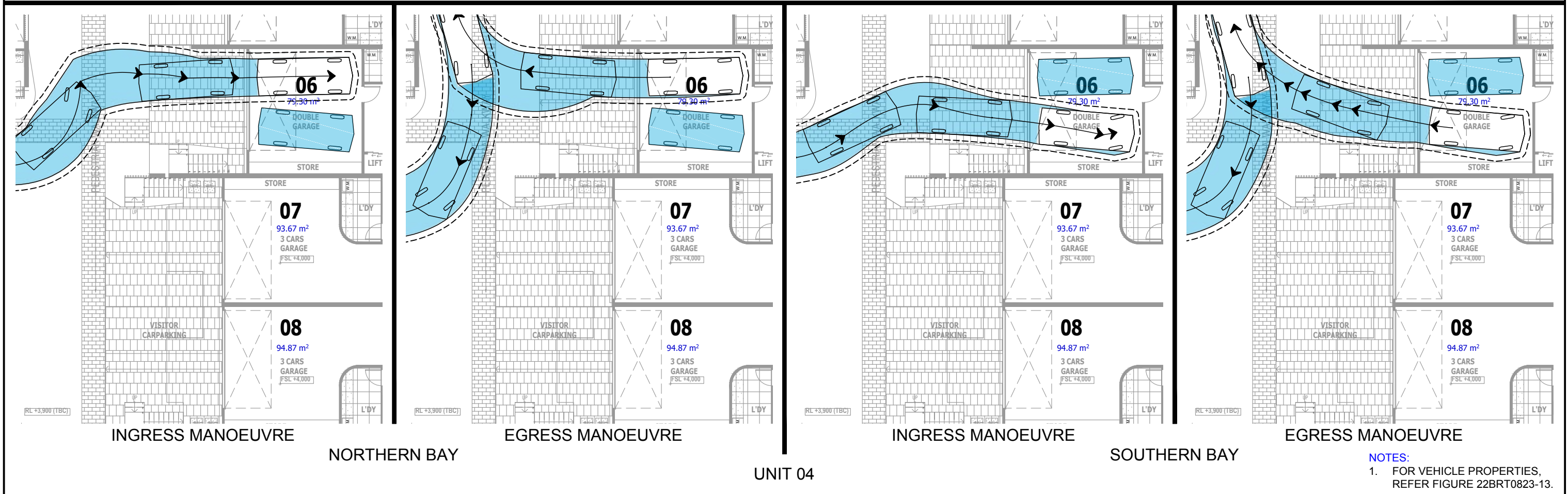
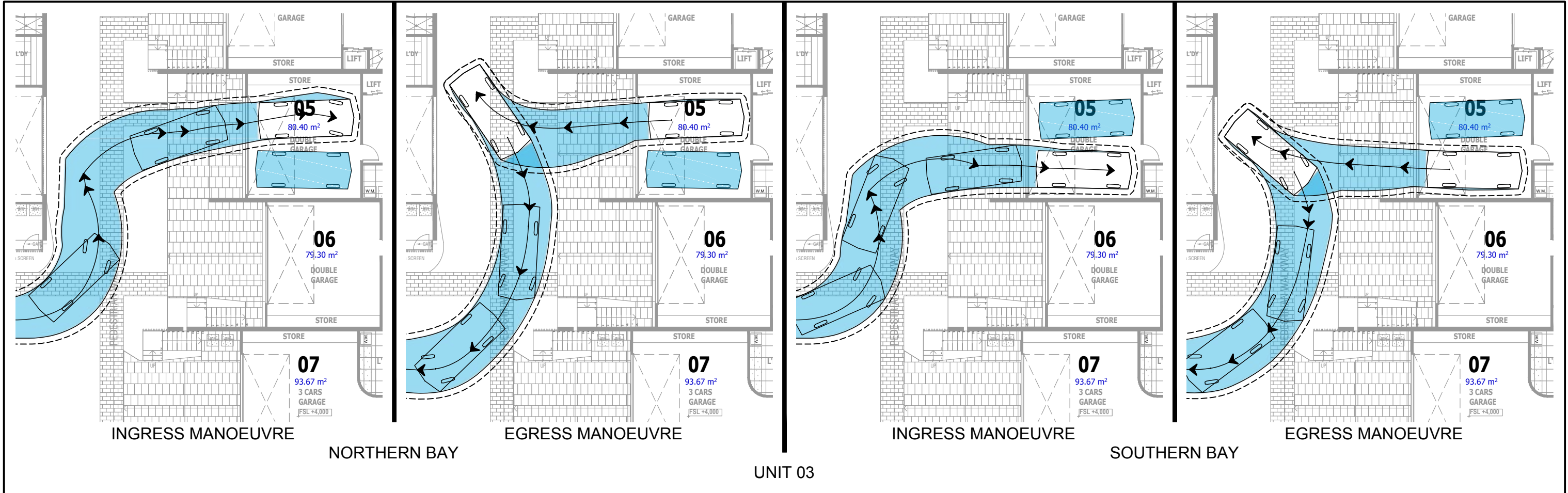
NOTES:
1. FOR VEHICLE PROPERTIES, REFER FIGURE 22BRT0823-13.

								 TTM CONSULTING PTY LTD ABN 65 010 868 621 LEVEL 8, 369 Ann Street, BRISBANE QLD 4000 P.O. BOX 12015, BRISBANE QLD 4003 T: (07) 3327 9500 F: (07) 3327 9501 E: ttmbis@ttmgroup.com.au W: www.ttmgroup.com.au		67 & 69 SHORE STREET EAST, CLEVELAND				PROJECT NUMBER 22BRT00823		ORIGINAL SIZE A3	
										SWEPT PATH ANALYSIS - UNIT 01 AND UNIT 02				DRAWING NUMBER 22BRT0823-06		REVISION B	
										4.91m (B85) MEDIUM CAR MANOEUVRE FOR ENCLOSED GARAGE				DATE 16 Feb 2023		SHEET 1 OF 1	
B		16-02-23		REVISED ARCHITECTURAL LAYOUT				DSF		AA		WKS					
A		13-02-23		ORIGINAL ISSUE				DSF		AA		WKS					
REV.		DATE		AMENDMENT DESCRIPTION				DRAWN		CHECKED		APPROVED					



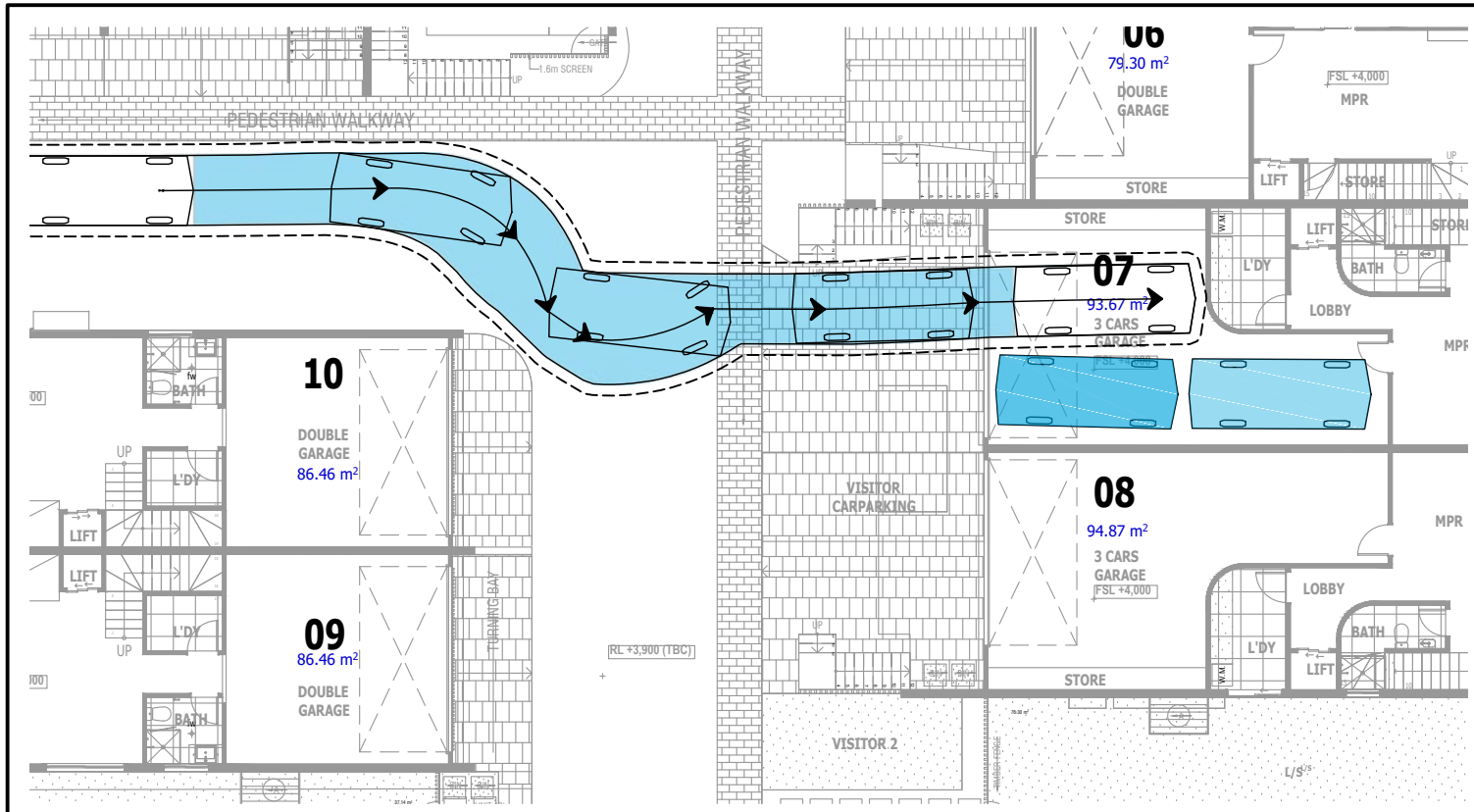
NOTES:
1. FOR VEHICLE PROPERTIES,
REFER FIGURE 22BRT0823-13.

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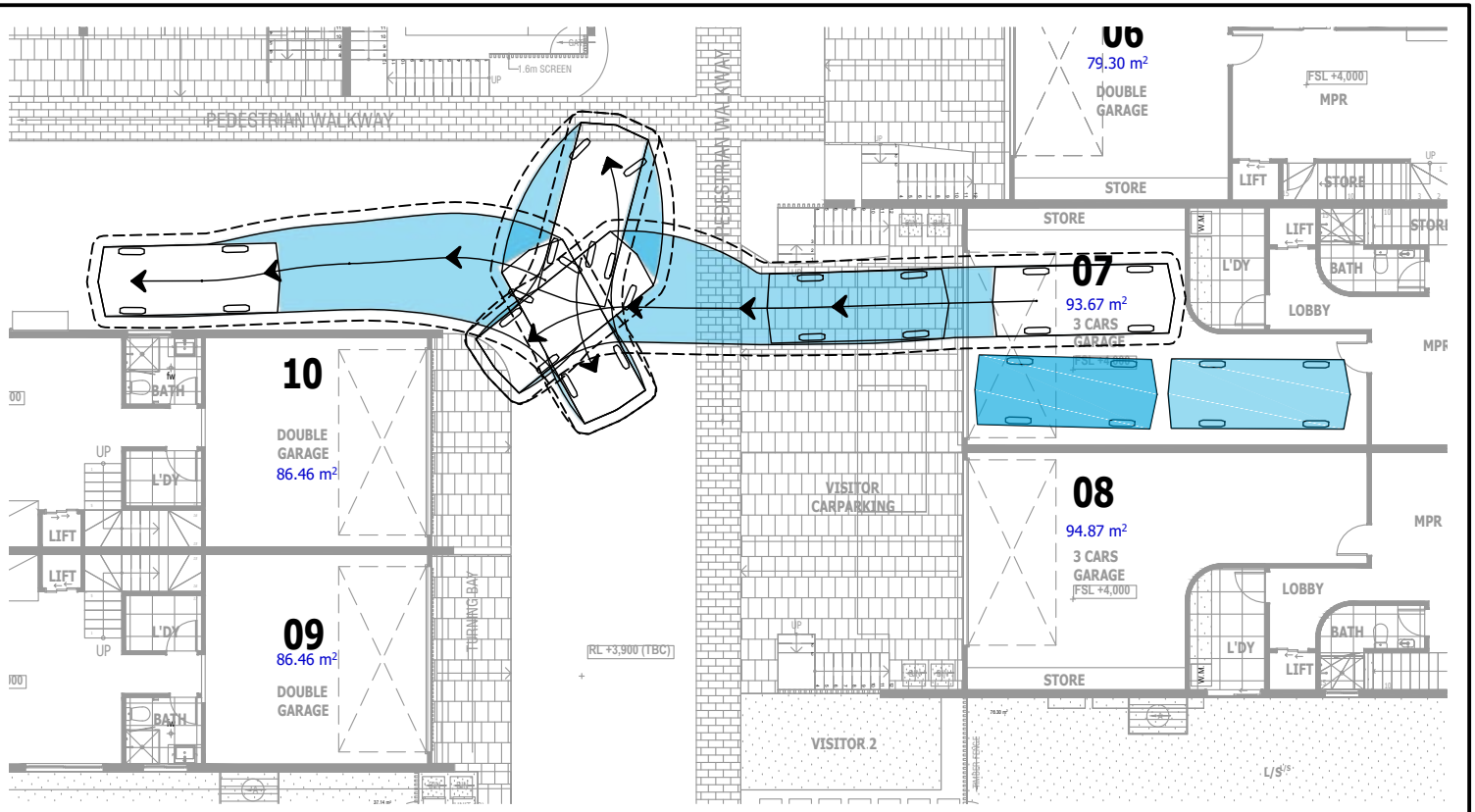


NOTES:
1. FOR VEHICLE PROPERTIES,
REFER FIGURE 22BRT0823-13.

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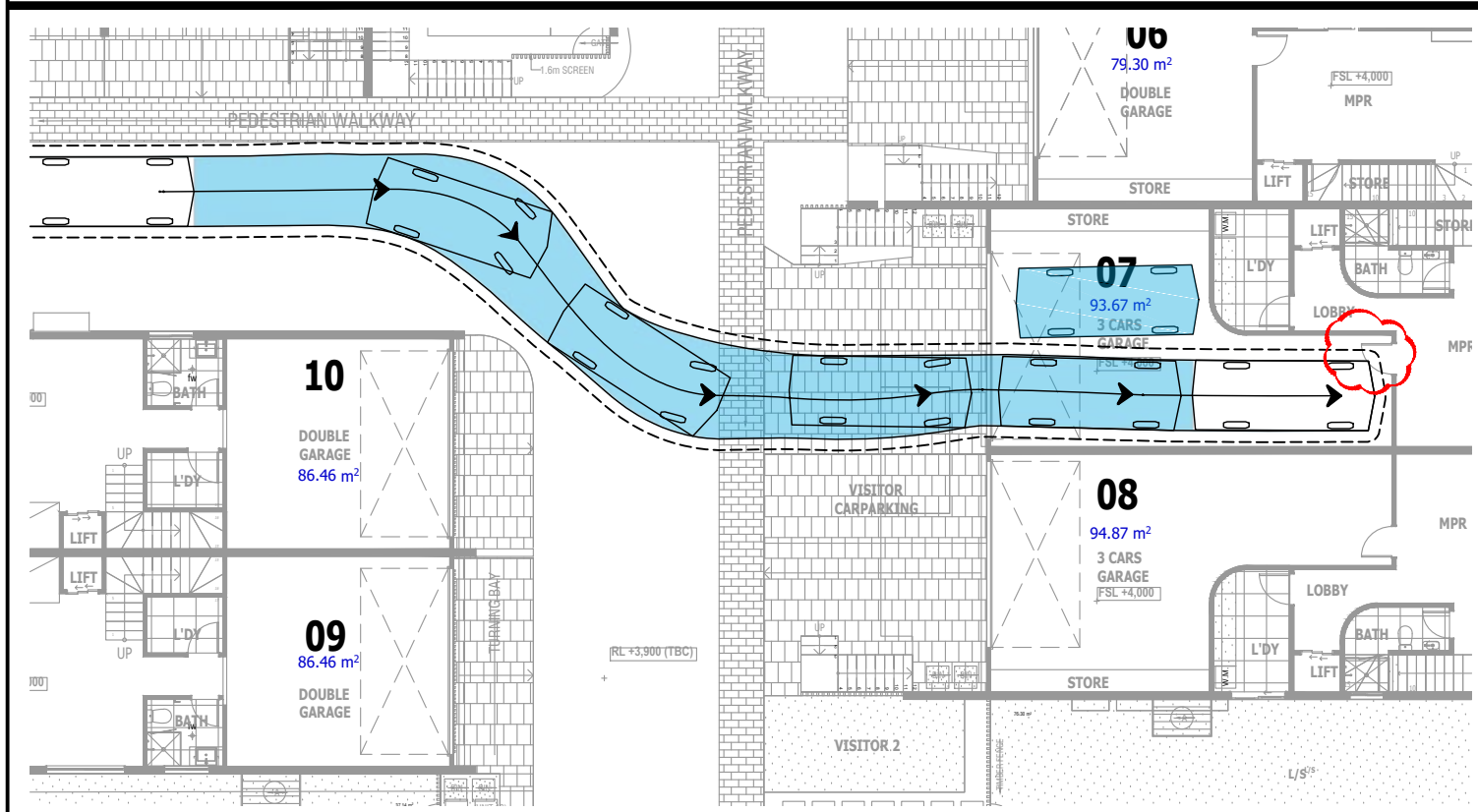


INGRESS MANOEUVRE

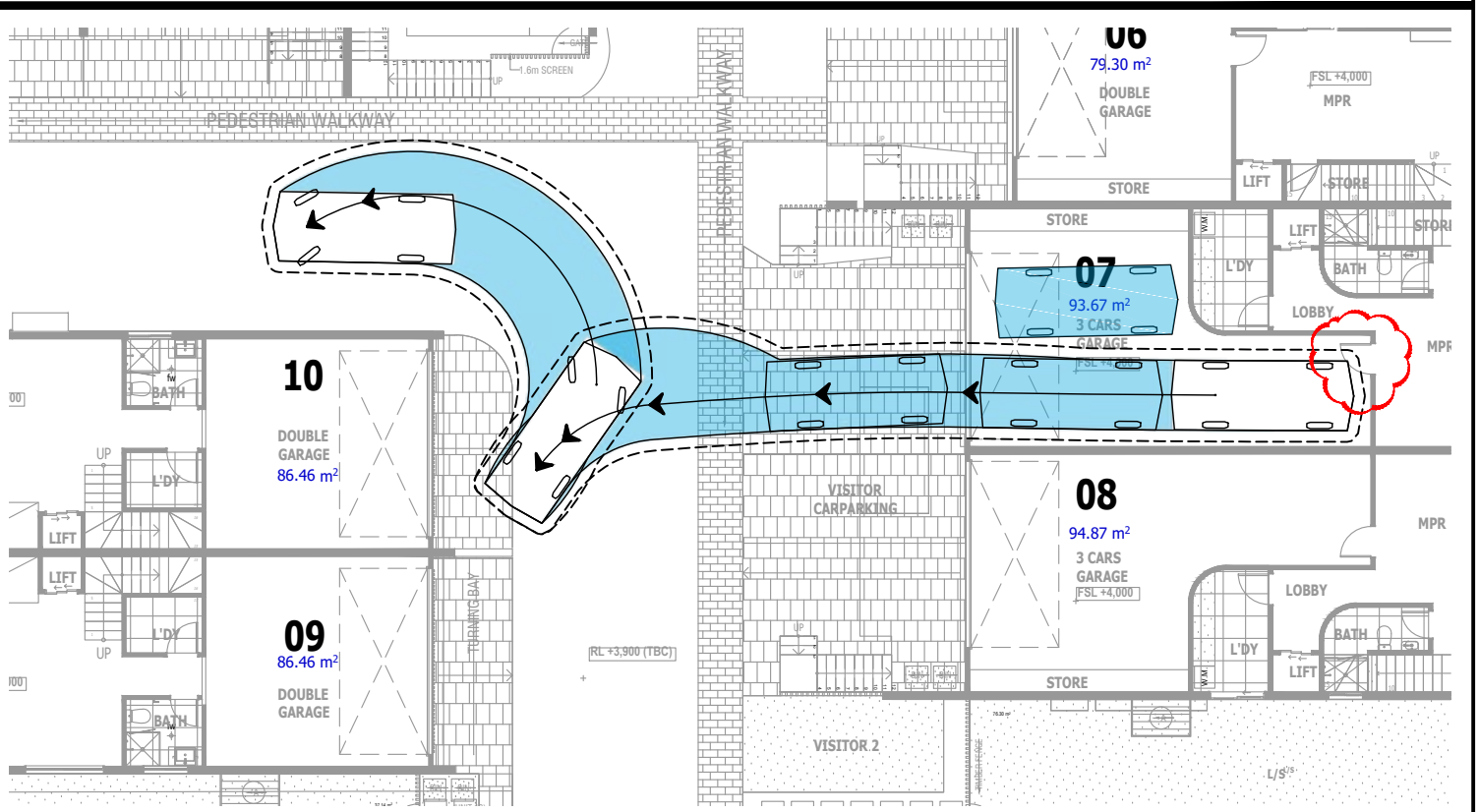


EGRESS MANOEUVRE

NORTHERN BAY



INGRESS MANOEUVRE

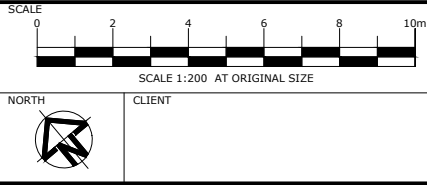


EGRESS MANOEUVRE

SOUTHERN BAY

NOTES:
1. FOR VEHICLE PROPERTIES,
REFER FIGURE 22BRT0823-13.

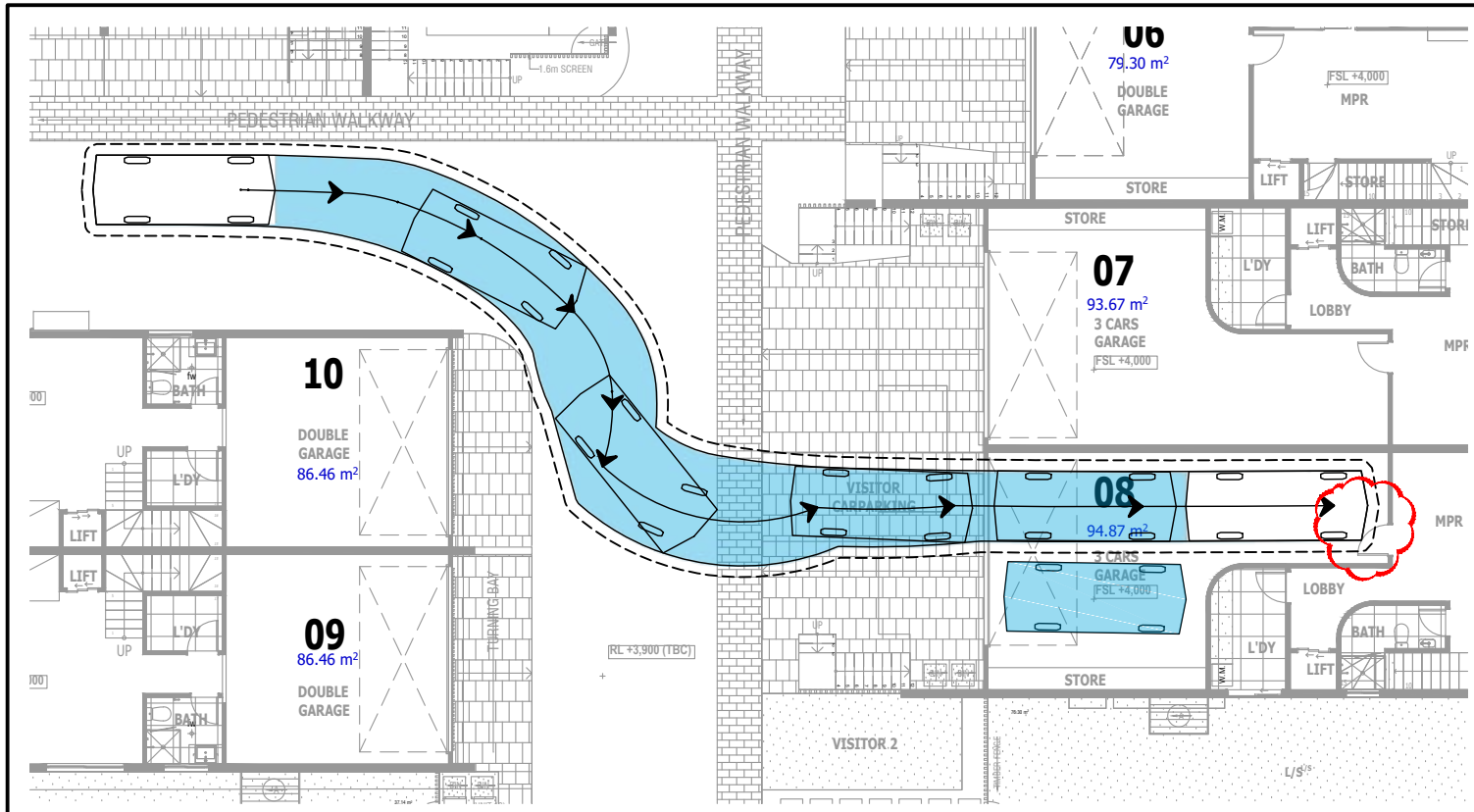
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	16-02-23	REVISED ARCHITECTURAL LAYOUT	DSF	AA	WKS
A	13-02-23	ORIGINAL ISSUE	DSF	AA	WKS



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

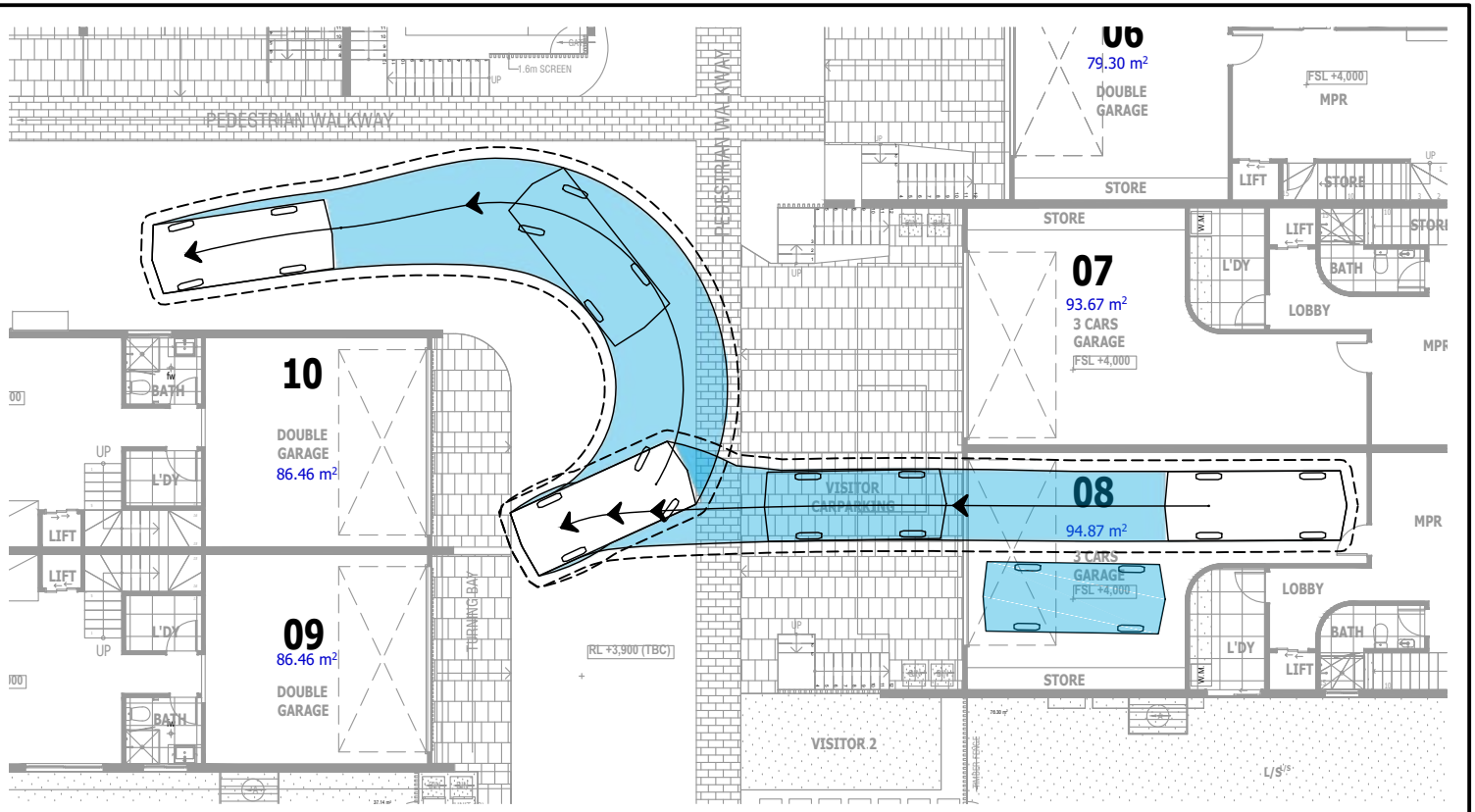
PROJECT
67 & 69 SHORE STREET EAST, CLEVELAND
DRAWING TITLE
SWEPT PATH ANALYSIS - UNIT 07
4.91m (B85) MEDIUM CAR MANOEUVRE FOR ENCLOSED GARAGE

PROJECT NUMBER	22BRT00823	ORIGINAL SIZE	A3
DRAWING NUMBER	22BRT0823-09	REVISION	B
DATE	16 Feb 2023	SHEET	1 OF 1

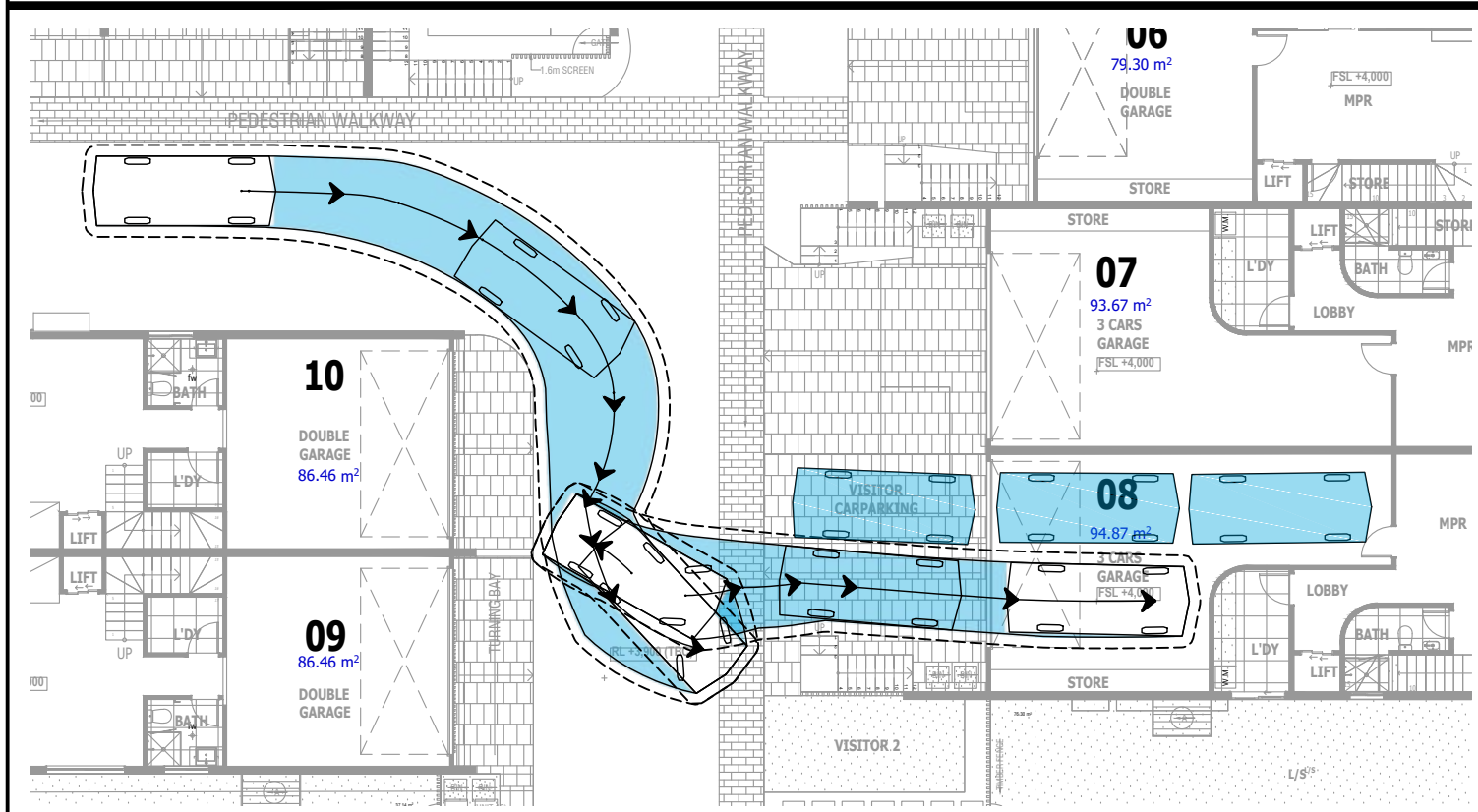


INGRESS MANOEUVRE

NORTHERN BAY

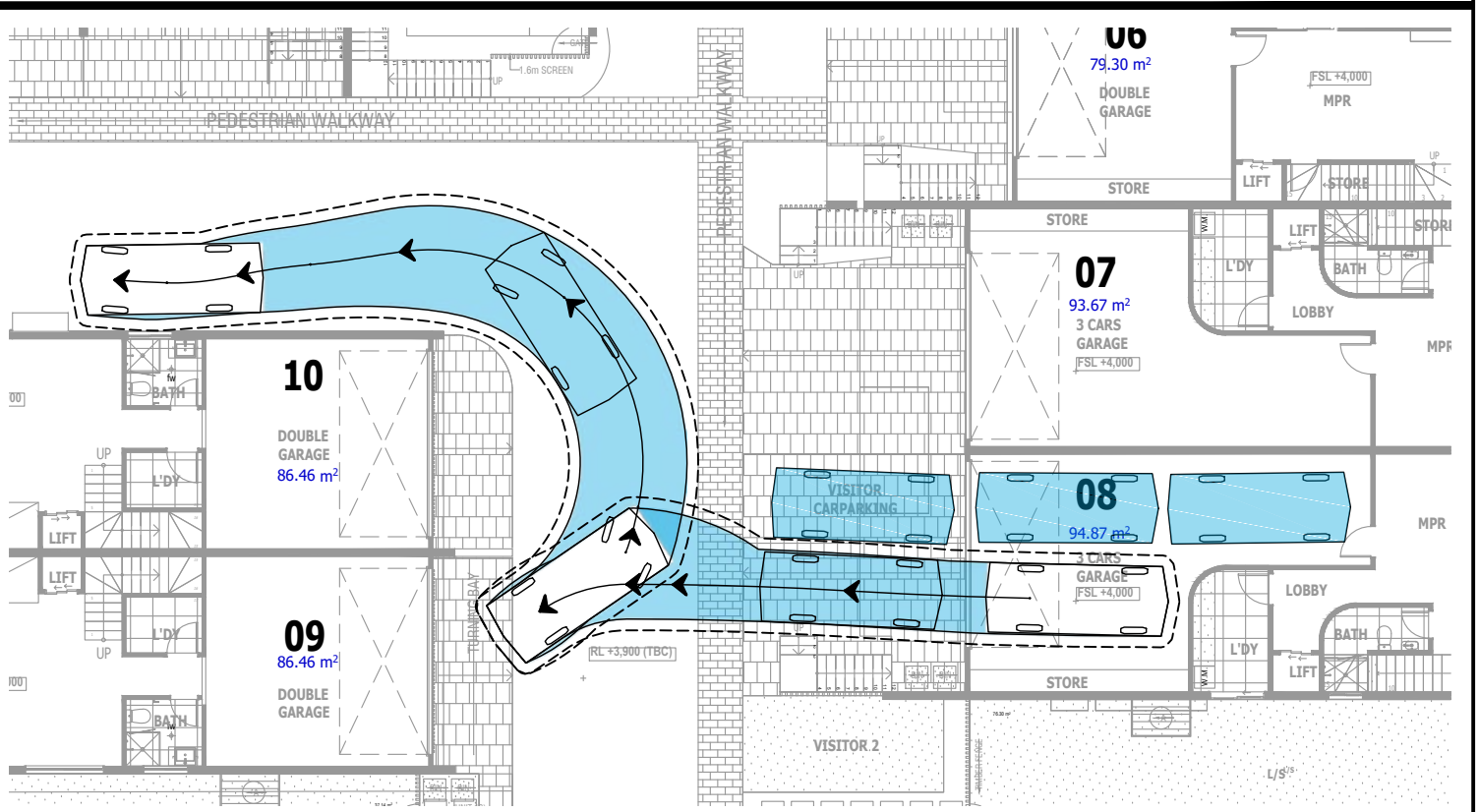


EGRESS MANOEUVRE



INGRESS MANOEUVRE

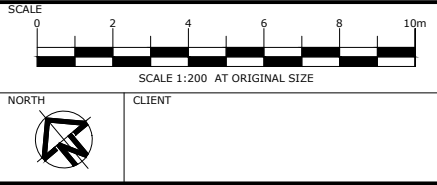
SOUTHERN BAY



EGRESS MANOEUVRE

NOTES:
1. FOR VEHICLE PROPERTIES,
REFER FIGURE 22BRT0823-13.

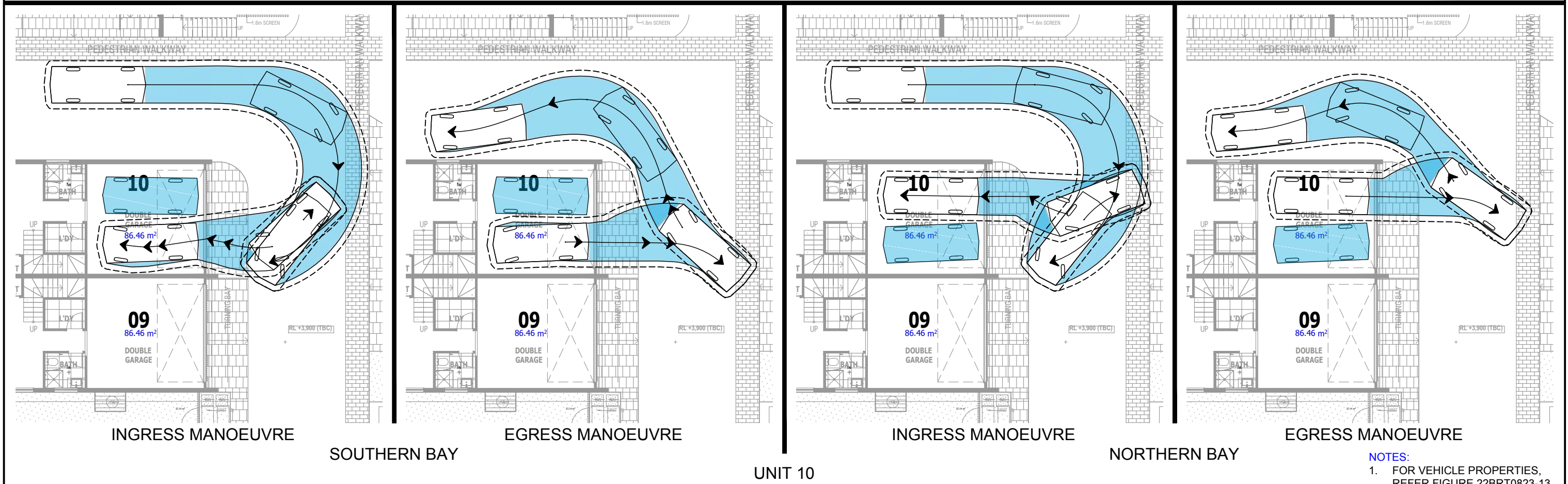
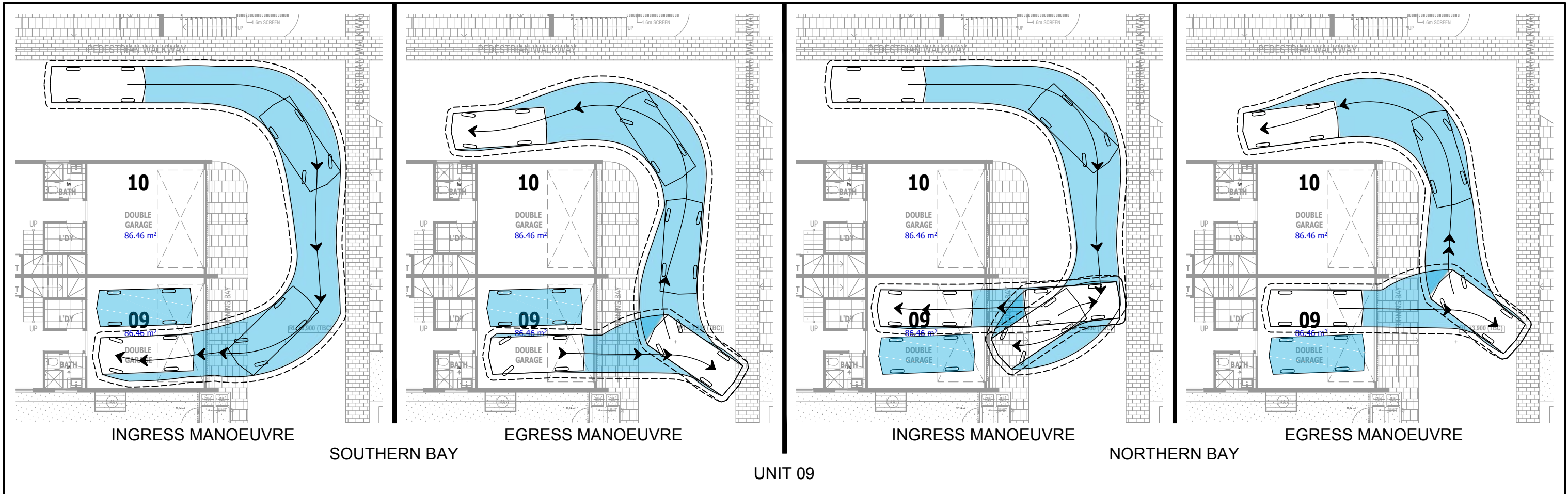
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	16-02-23	REVISED ARCHITECTURAL LAYOUT	DSF	AA	WKS
A	13-02-23	ORIGINAL ISSUE	DSF	AA	WKS



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

PROJECT
67 & 69 SHORE STREET EAST, CLEVELAND
DRAWING TITLE
SWEPT PATH ANALYSIS - UNIT 08
4.91m (B85) MEDIUM CAR MANOEUVRE FOR ENCLOSED GARAGE

PROJECT NUMBER	22BRT0823	ORIGINAL SIZE	A3
DRAWING NUMBER	22BRT0823-10	REVISION	B
DATE	16 Feb 2023	SHEET	1 OF 1



NOTES:
1. FOR VEHICLE PROPERTIES,
REFER FIGURE 22BRT0823-13.

				SCALE 0 2 4 6 8 10m SCALE 1:200 AT ORIGINAL SIZE			NORTH CLIENT		TTM CONSULTING PTY LTD ABN 65 010 868 621 LEVEL 8, 369 Ann Street, BRISBANE QLD 4000 P.O. BOX 12015, BRISBANE QLD 4003 T: (07) 3327 9500 F: (07) 3327 9501 E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au		PROJECT 67 & 69 SHORE STREET EAST, CLEVELAND		PROJECT NUMBER 22BRT00823		ORIGINAL SIZE A3	
									DRAWING TITLE SWEPT PATH ANALYSIS - UNIT 09 AND UNIT 10 4.91m (B85) MEDIUM CAR MANOEUVRE FOR ENCLOSED GARAGE				DRAWING NUMBER 22BRT0823-11		REVISION B	
													DATE 16 Feb 2023		SHEET 1 OF 1	
REV.	DATE	AMENDMENT DESCRIPTION			DRAWN	CHECKED	APPROVED									
B	16-02-23	REVISED ARCHITECTURAL LAYOUT			DSF	AA	WKS									
A	13-02-23	ORIGINAL ISSUE			DSF	AA	WKS									



12.5m (AS2890.2:2018) HEAVY RIGID VEHICLE



6.4m (AS2890.2:2018) SMALL RIGID VEHICLE



4.91m (B85) MEDIUM CAR



5.2m (B99) LARGE CAR

[illegible]