

19 October 2023

Our Ref: 22GCT0014_LT03A_FIR

Your Ref: COM/2023/16

Attention: Michael Zielski

Keylin Property Development & Investment

By Email

Dear Michael,

RE: 54 George Alexander Way, Coomera – Information Request

TTM Consulting has been engaged to provide traffic engineering services for the above-mentioned development. This letter is provided in response to Council's Further Information Request for the site, dated 11 October 2023. The letter responds to Item 1 and is addressed below.

Subdivision Engineering

Item 1 – Safe intersection sight distance

In support of the response to Information request, a Traffic impact assessment was prepared by from TTM by both Richard Jones and Joshua Smith. Officers note that within the provided information, there is a discrepancy with regard to the safe intersection sight distance requirements. The letter recommends 2 Watts-profile speed humps along Pioneer Street to reduce effective traffic speed to levels that produce an achievable Stopping Sight Distance (SSD) as stated by Richard. However, the response from Joshua doesn't demonstrate this requirement. The Applicant is requested to confirm if works are required to achieve SSD. Please note, Officers do not support Watt-s profile speed humps. Any speed hump required to meet the safety of vehicles must be a permanent type in accordance with the relevant Australian Standard.

To clarify any discrepancies inferred from TTM's recent response (Appendix A) to Council's original information request, please note the following:

- Safe Intersection Sight Distance (SISD) is not required as the updated design does not propose a new intersection.
- The vertical profile of the proposed road (Pioneer Street) means that Stopping Sight Distance (SSD) would not ordinarily be met.

- However, the provision of 2 speed humps as previously proposed would lower the effective vehicle speed to a point where the proposed road profile is not inhibitive of providing SSD.
- TTM's previous response (Appendix A) demonstrates this is the case as shown by Figure 4, where SSD sightlines along the profile of Pioneer Street are above road level when the speed hump is present.
- The only works required to achieve SSD will be provided as part of the road delivery: via the two Watts profile speed humps.

TTM request Council reconsider the acceptance of the Watts profile speed humps for this development as:

- They are a permanent fixture, not temporary.
- They are compliant with AS1742.13:2023, described by name, and their profile is specified (as referenced by Figure 2.2 of AS1742.13:2023) by Figure 8.3 of Austroads *Guide to Traffic Management Part 8: Local Street Management*. See below for excerpts.

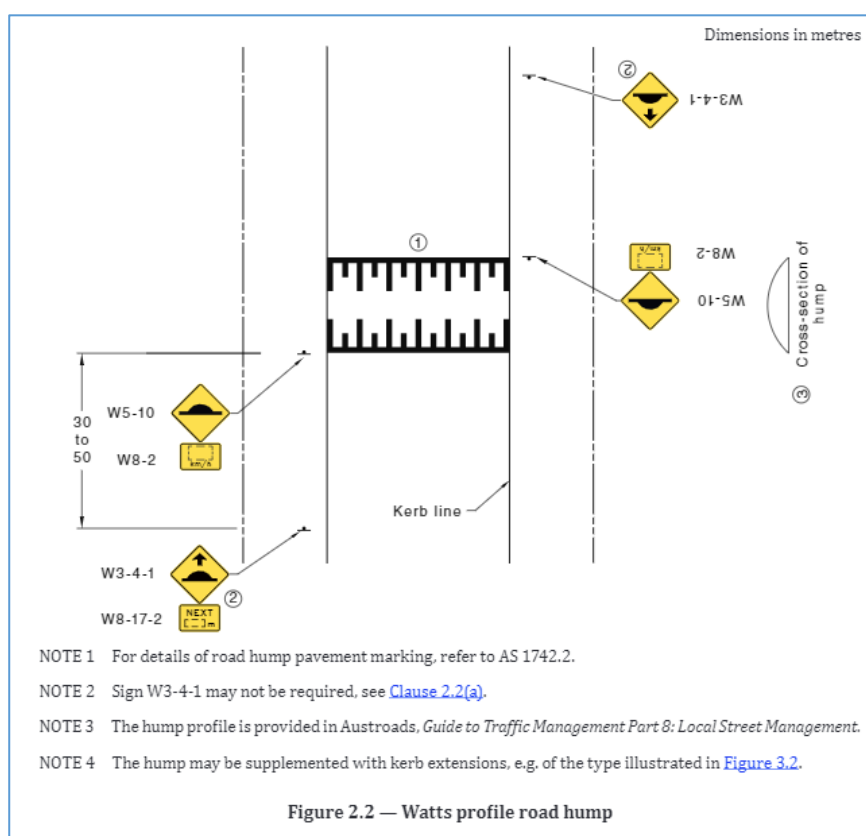
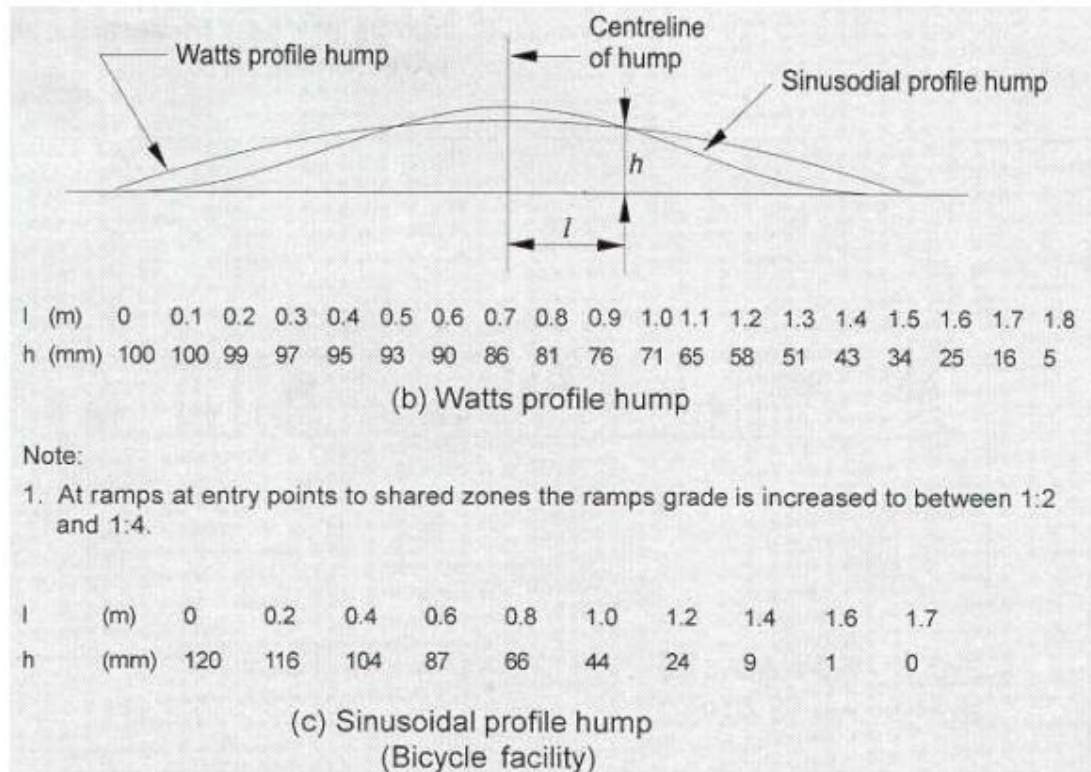


Figure 1: AS1742.13:2023 Watts Profile Specifications

Figure 8.3: Typical dimensions of the different profile road humps



Source: VicRoads (2014).

Figure 2: AGTM Part 8 Watts Profile Details

Conclusions

Based on the assessment contained within this letter, TTM see no traffic engineering reason why the relevant approvals should not be granted.

Yours sincerely,



Joshua Smith

Traffic Consultant

TTM Consulting Pty Ltd



Richard V Jones

Director



Attachment A – TTM Traffic Response to Information Request (August 2023)

30 August 2023

Our Ref: 22GCT0014_LT02A_IR

Your Ref: COM/2023/16

Attention: Michael Zielski

Keylin Property Development & Investment

By Email

Dear Michael,

RE: 54 George Alexander Way, Coomera – Information Request

TTM Consulting has been engaged to provide traffic engineering services for the above-mentioned development. This letter is provided in response to Council's Information Request for the site, dated 7 March 2023. The items to which this letter responds are 4, 6, 8, 18, and 22. Each item is addressed in turn below.

Transport Assessment

Item 4 – Narrow lots

Whilst the City Plan (Version 9) does not include an administrative definition for a narrow lot, Officers note that proposed Lot 5 includes a frontage width of 10 metres which is considered to demonstrate a narrow lot. All other allotments include a minimum frontage width of 12.5 metres. As per Performance outcome PO13 of the Reconfiguring a lot code, the Applicant is requested to demonstrate how the proposed 10 metre wide frontage of proposed Lot 5 provides space for public utilities and street trees as well as on-street parking. As per the plan titled 'Bulk earthworks cut and fill layout plan' prepared by Arcadis provided within the Engineering services report, the separation between the splays of the proposed VXO location of Lot 5 and Lot 6 only provides 6 metres which is not sufficient to accommodate on-street parking as per Performance outcome PO13. In demonstrating variation in dwelling form (PO13(a)), Officers will utilise the provided site plan in response to Item 3 above.

Note: Definitive location of on street infrastructure (gully pits, street trees, VXO's etc) must be identified for all lots and shown on submitted amended plans.

According to PO13, narrow lots should be distributed among larger lots to, among other outcomes, provide on-street parking. This is achieved as:

- The 3 narrow lots are distributed so that no narrow lot is adjacent to another narrow lot.
- Drawing 240-01, prepared by Arcadis, shows there are comfortably 12 on-street parking spaces within the subdivision for the 22 Lots. This is more than 1 visitor space for every 2 dwellings, which is considered to be an appropriate parking provision for the site.

Item 6 – Staged development plan

The proposed development seeks to establish a new road providing connection from Pioneer Street to the north and through to the adjacent site to the south. The Applicant has not demonstrated how a waste collection vehicle could sufficiently turn around after servicing proposed Lot 7 and 8. To address this, the Applicant is required to include a staging component to the development which would delay the delivery of proposed Lot 7 and 8 and the associated portion of road in front of these lots until such time as the road connection through to the southern lot is delivered as well as submit a swept path analysis to demonstrate the movement of a Gold Coast Waste Collection Vehicle within the proposed development. This may be achieved by including proposed Lot 7 and 8 within Stage 1a.

This Item is supplemented by Item 1 of Council’s Additional Information Request for the site dated 16 March 2023:

Demonstrate by submitting a swept path analysis complying with AS2890.2 and certified by an appropriately qualified RPEQ that a Waste Collection Vehicle (WCV) can adequately manoeuvre unimpeded through the development to each waste collection point. It must be demonstrated that the wheelie bins for each lot can be collected without the driver of the WCV having to exit the vehicle.

- Swept path analysis is to be generated by AutoTurn, AutoTrack or similar.*
- Plans must demonstrate vehicle specifications in accordance with the ‘City Plan Policy – Solid Waste Management’, including the kerb-to-kerb*
- Turning radius as nominated in Appendix C of SC6.15 City plan policy – solid waste management code*
- Manoeuvring clearances in accordance with AS2890.2 must be clearly depicted on drawings and demonstrate no obstructions exist for all waste servicing manoeuvres.*
- Reversing movements on-site are to be kept to a minimum and access to the development from the road is to comply with AS2890.2.*

The site layout has been updated. The development no longer proposes Pioneer and Mercy Street are connected by an intersection. As such, the development is to be delivered in 2 further stages.

Stage 2 will deliver Lots 1-7, 10-22, and 800-801. Here, to accommodate for servicing, Lots 8-9 are to provide a temporary turnaround until Stage 3.

Stage 3 will occur when 44 George Alexander Way is developed, and turnaround provisions or connections for service vehicles are available south of the site. Here, the temporary turnaround will be resumed and Lots 8-9 will be delivered.

TTM has conducted RPEQ-certified swept paths of a 9.8m Gold Coast side-loader Waste Collection Vehicle (WCV) that shows accommodation across all stages throughout the site (see Attachment C).

Note that while a corrective manoeuvre is required for a WCV at the turnaround of Mercy Street, the road design of a 9m turnaround radius is consistent with local roads, such as the termination of Olivia Close.

Item 8 – Design of off-street parking facilities

To assist in demonstrating compliance with Required outcome RO12 of the Transport code, the Applicant is requested to:

- a. Provide amended drawings showing garage dimensions and dimensions of car parking spaces on driveways in accordance with AS2890.1:2004. This is to ensure that sufficient space is provided for each car parking space;*
- b. Ensure that all car parking spaces are designed with a maximum gradient of 5% in accordance with section 2.4.6.1 of AS2890.1:2004. This needs to be annotated on the amended drawings;*
- c. Where car parking is proposed on the driveways fronting the garages, show a design that allows access to each car parking space if the other driveway space is occupied;*
- d. Where appropriate, show a vehicle swept path analysis generated using AutoTURN or similar specialised software package to demonstrate that a B85 vehicle can access the car parking space on Proposed Lots 11 and 17 when the other driveway space is occupied. A minimum clearance of 300mm must be shown around the vehicle at all times when manoeuvring to and from the car parking space;*
- e. The laundry cupboards have been located in the garages in close proximity to the garage car parking space. Officers question the functionality of these laundries as there is minimal space in front of the laundry cupboard to stand, load/unload laundry etc. Furthermore, it appears that the laundries have been designed with doors that swing outwards. It is therefore concluded that the use of the laundries would require residents to move their vehicle, noting that the space identified for the vehicle is 5.4 metres long, being the minimum required in accordance with AS2890.1:2004. The Applicant is therefore requested to relocate the laundries elsewhere within the dwelling, lengthen the garages to provide functional space in front of the laundry cupboards or amend the door type removing the requirement for doors to swing outwards.*
- a. Internal dimensions for all garages meet minimum AS2890.1 size requirements as shown within the development plans (Attachment B).
- b. Driveway grades are generally at 1.0%.

- c. House design Types 1 and 2 propose driveway parking spaces. Swept paths conducted by TTM (Attachment C) show access to each parking space is free of obstruction for these design types when other vehicles are present.
- d. Lots 11 and 17 were formerly corner lots. As the design of the development has changed there are now no corner lots. Considering the swept paths (Attachment C) to address Item 8C, further swept paths are not required for lots 11 and 17.
- e. The development plans have been amended to show that laundry doors within the garage are now folding doors. As they require much less space than a single-hinged door to swing outwards, there is more functional space in front of the laundry cupboards.

Item 18 – Safe Intersection Sight Distance (SISD)

Proposed Longitudinal Section for Pioneer Street and Mercy Street shows that Chainage 72.054 will be a crest section of proposed extension of Pioneer Street within the site. Proposed intersection of Pioneer Street and Mercy Street (adjacent to proposed Lot 12) will be a sag section of proposed extension of Pioneer Street. Separation between proposed crest section and proposed intersection is 47.99m. However, the submitted Traffic Engineering Report does not include information of Safe Intersection Safe Distance for proposed intersection. Hence, the application package does not comply with AO15 (a) of the Reconfiguring a lot code.

In order to comply with Acceptable outcome AO15 (a) and Performance outcome PO15 of the Reconfiguring a lot code, the Applicant is requested to submit an amended Traffic Engineering Report including:

- a. Information of Safe Intersection Sight Distance in accordance with the requirements of section 3.2.2 of Guide to Road Design Part 4A – Unsignalised and Signalised Intersections Austroads (published 2021); and
- b. Design speed should be 50km/h.

It should be noted that if the location of the proposed intersection cannot achieve the requirements of the SISD, then the Applicant is required to submit an alternative road layout for extension of Mercy Street which is reflected on amended proposal plan to reflect any changes.

The development design has been amended so that no new intersection is now proposed. As such, no Safe Intersection Sight Distances are required. However, TTM have reviewed the grades of the proposed roads to determine if Stopping Sight Distance (SSD) has been achieved as per section 5.3 of Austroads' Guide to Road Design (GRD) Part 3. See Drawing 220-02 of Attachment A for the longitudinal sections of the proposed roads.

SSD is calculated as per the following equation:

$$SSD = \frac{R_T V}{3.6} + \frac{V^2}{254(d + 0.01a)}$$

1

where

- R_T = reaction time (sec)
- V = operating speed (km/h)
- d = coefficient of deceleration (longitudinal friction factor)
- a = longitudinal grade (% , + for upgrades and – for downgrades)

Figure 1: SSD Equation 1 (Austroads GRD - Part 3)

Variables are substituted as follows:

- The reaction time is to be 1.5 seconds within a low-speed urban area as per Table 5.2 of Austroads GRD Part 3.
- The operating speed is taken to be the design speed (50km/h), or the 85th percentile.
- The coefficient of deceleration is 0.36 as per Table 5.3 of Austroads GRD Part 3.
- The longitudinal grade is taken to be -5.03% which is the downhill movement along the steepest grade of either road. As such, the SSD calculation is considered a conservative value.

The SSD is calculated as 52.61m.

Figure 2 and Figure 3 shows that Mercy Street maintains appropriate SSD at the worst grades, while Pioneer Street does not naturally achieve the required SSD.

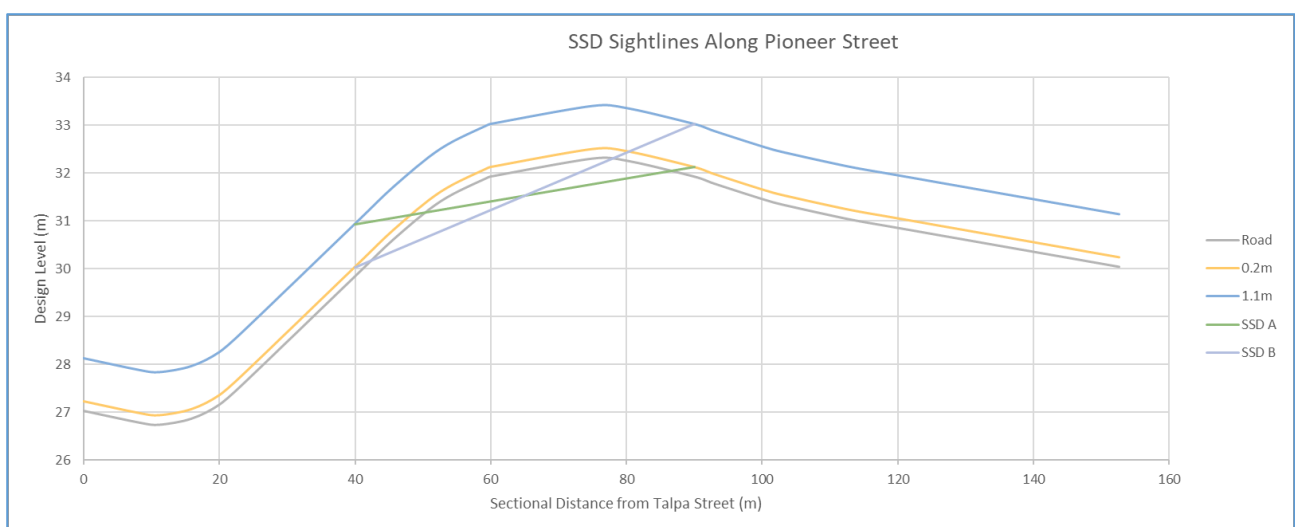


Figure 2: Pioneer Street SSD



Figure 3: Mercy Street SSD

Pioneer Street doesn't meet SSD due to the constraints imposed by the Council approved north-adjacent connecting stub road, southern site levels, and overland water catchment flows preventing much further modification of road levels at the crest. Appendix E contains details the extent of the former conditions, which TTM consider sufficient grounds for applying traffic calming measures on a new road.

Speed Humps

The development proposes 2 Watts-profile speed humps be provided along Pioneer Street to reduce effective traffic speeds to levels that produce an achievable SSD. Austroads' *Guide to Traffic Management Par 8: Local Street Management* states that road humps produce a 45% reduction in speed at treatments, and a 21% reduction at midpoints. This equates to conservative effective speeds of 30kph at treatments, and 40kph between speed humps. This corresponds to SSDs of 23.93m and 37m, respectively.

Figure 4 shows that based on the placement of the speed hump near the northern boundary of the site, near the apex of the crest SSD is met, providing vision to the speed hump, and of the road beyond from the speed hump, from either direction. Signage on approach to either speed hump will encourage vehicles meet the expected speed reduction.



Figure 4: Pioneer Street northern speed hump SSD Assessment

SSD has not been tested at the southern speed hump as the grades are much more favourable.

Item 22 – Access to George Alexander Way

As per the Decision notice for the approved Variation request at 66 George Alexander Way, Coomera (adjacent site to the north) (MCU/2018/10), Condition 4 identifies that access to George Alexander Way is limited to a single access point for Lot 95, 96 and 97 on RP187418. This includes the subject site. As such, all future access to George Alexander Way from the balance lot (proposed lot 900) will need to be facilitated through the adjacent site to the north. At this stage, the City is unsure as to when the road upgrades to George Alexander Way will be delivered.

As a result of the restricted access, all traffic associated with the proposed Reconfiguration of a lot requires future residents to travel along Pioneer Street and Mercy Street to the north to achieve access to Talpa Street and ultimately to connect through to Finnegan Way.

As per Performance outcome PO2 of the General development provisions code, the Applicant is required to submit a Traffic impact assessment to demonstrate the potential impact additional traffic generated by the proposed development may have on the existing road network.

The details associated with the Traffic impact assessment can be further discussed.

TTM has amended the original traffic engineering report (February 2023) to specify the traffic impact assessment of Seagreen Drive / Finnegan Way Intersection. See Attachment D for the amended traffic report.

Conclusions

Based on the assessment contained within this letter, TTM see no traffic engineering reason why the relevant approvals should not be granted.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'J. Smith'.

Joshua Smith
Traffic Consultant

TTM Consulting Pty Ltd

Attachment A – Civil Engineering Development Plans



Attachment B – Development Plans

DUAL-OCCUPANCY DWELLINGS

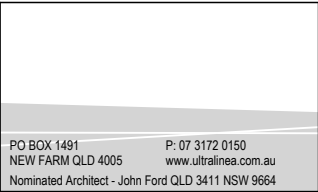
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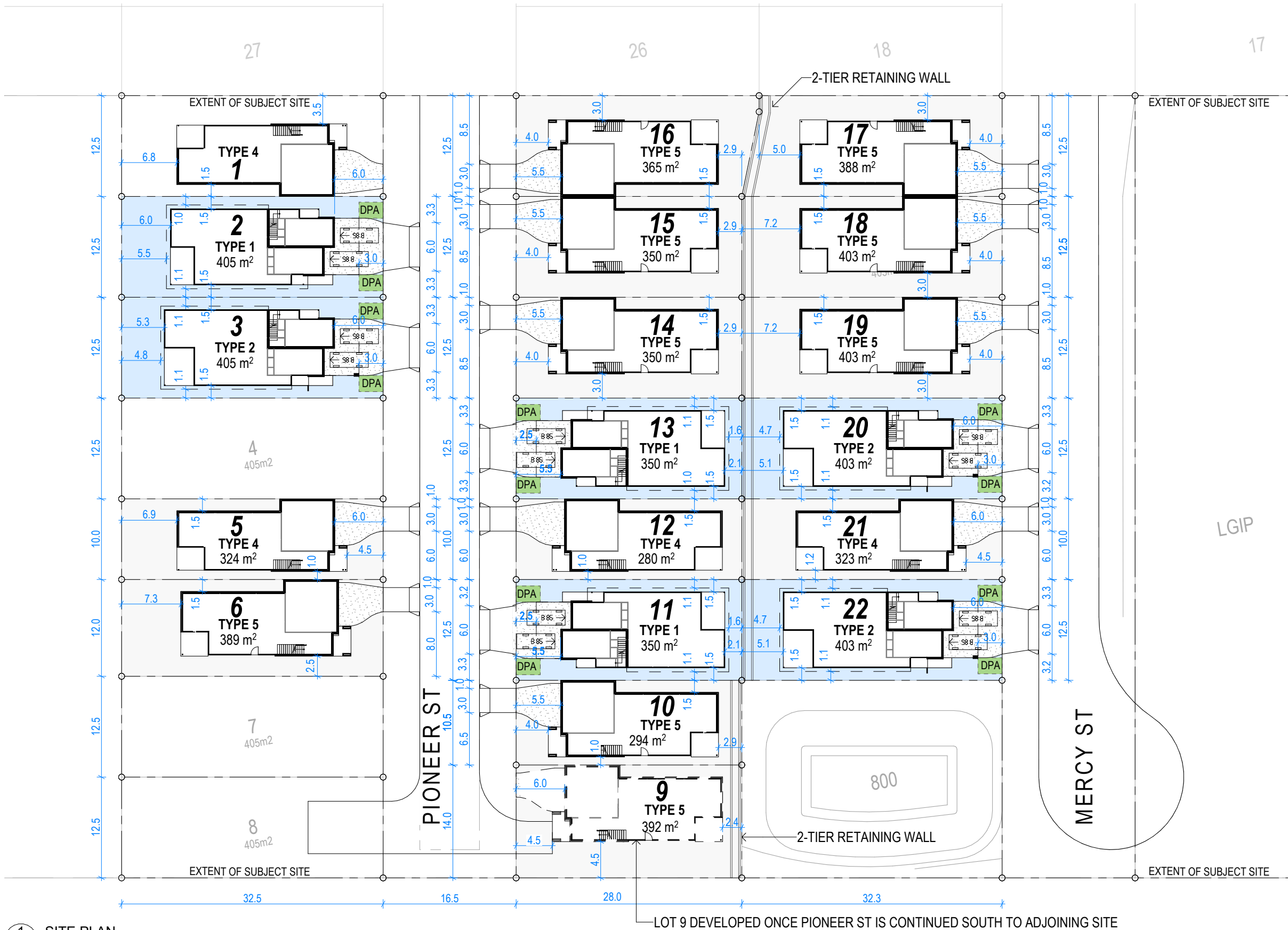


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	04	TYPE 2 GROUND FLOOR PLAN
	05	TYPE 2 LEVEL 1 FLOOR PLAN
	08	TYPE 4 GROUND FLOOR PLAN
	09	TYPE 4 LEVEL 1 FLOOR PLAN
	10	TYPE 5 GROUND FLOOR PLAN
	11	TYPE 5 LEVEL 1 FLOOR PLAN
	12	ELEVATIONS TYPE 1 OPTION A
	13	ELEVATIONS TYPE 1 OPTION B
	14	ELEVATIONS TYPE 2
	16	ELEVATIONS TYPE 4
	17	ELEVATIONS TYPE 5
	18	PERSPECTIVE TYPE 1 OPTION A
	19	PERSPECTIVE TYPE 1 OPTION B
	20	PERSPECTIVE TYPE 2
	22	PERSPECTIVE TYPE 4
	23	PERSPECTIVE TYPE 5



1 CONTEXT PLAN
1:5000





SITE COVER (MAX 60%)

LOT	LOT AREA	SITE COVER	% SITE COVER
LOT 2	405 m ²	207 m ²	51 %
LOT 3	405 m ²	214 m ²	53 %
LOT 5	324 m ²	164 m ²	51 %
LOT 6	389 m ²	174 m ²	44 %
LOT 9	392m ²	174 m ²	59 %
LOT 10	294m ²	174 m ²	59 %
LOT 11	350 m ²	207 m ²	59 %
LOT 12	280 m ²	164 m ²	59 %
LOT 13	350 m ²	207 m ²	59 %
LOT 14	350 m ²	174 m ²	50 %
LOT 15	350 m ²	174 m ²	50 %
LOT 16	365 m ²	174 m ²	48 %
LOT 17	388 m ²	174 m ²	45 %
LOT 18	403 m ²	174 m ²	43 %
LOT 19	403 m ²	174 m ²	43 %
LOT 20	403 m ²	214 m ²	53 %
LOT 21	323 m ²	164 m ²	51 %
LOT 22	403 m ²	214 m ²	53 %

LEGEND

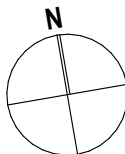
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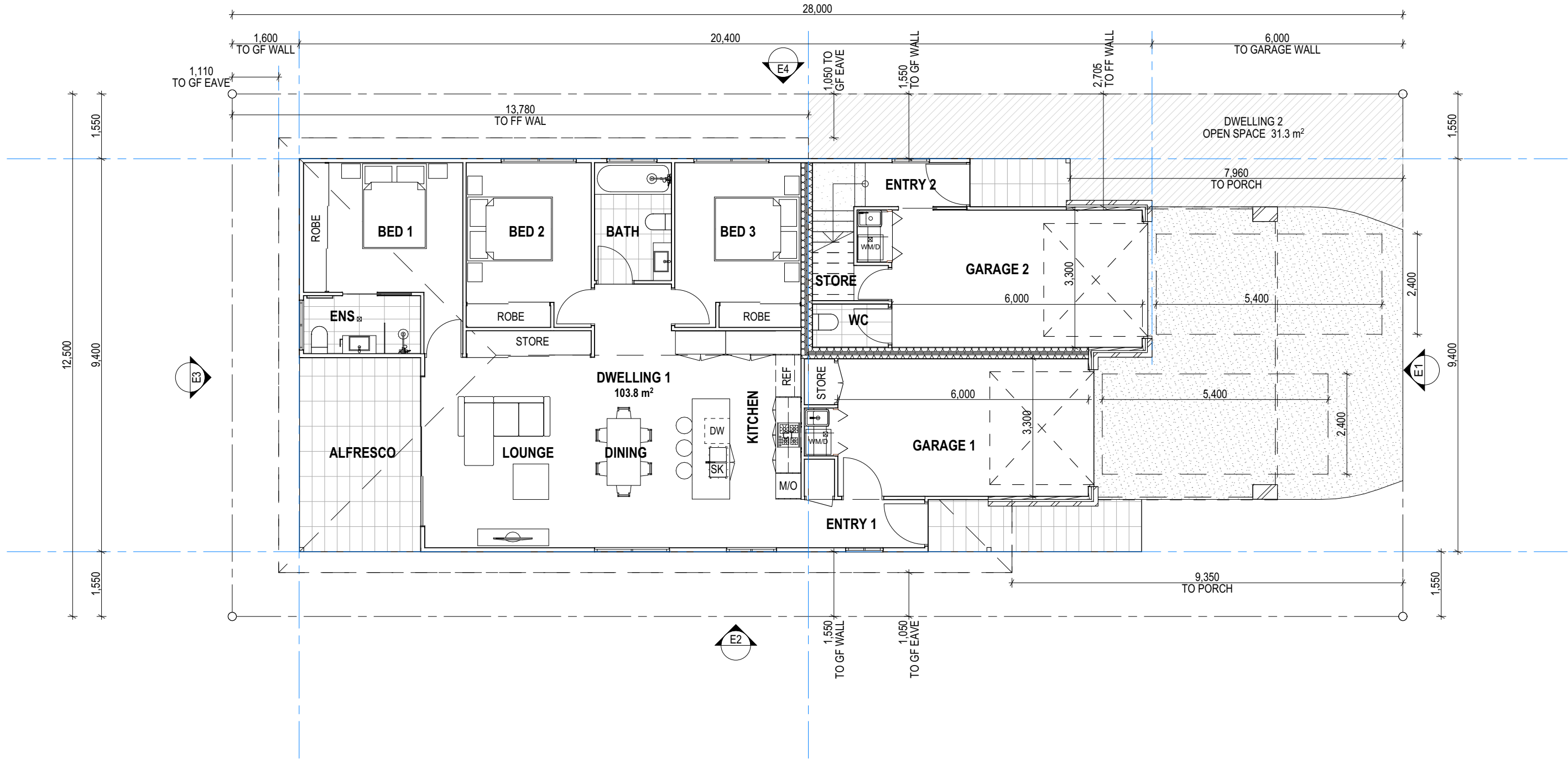
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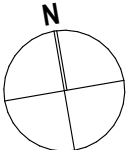
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PORCH 2	3



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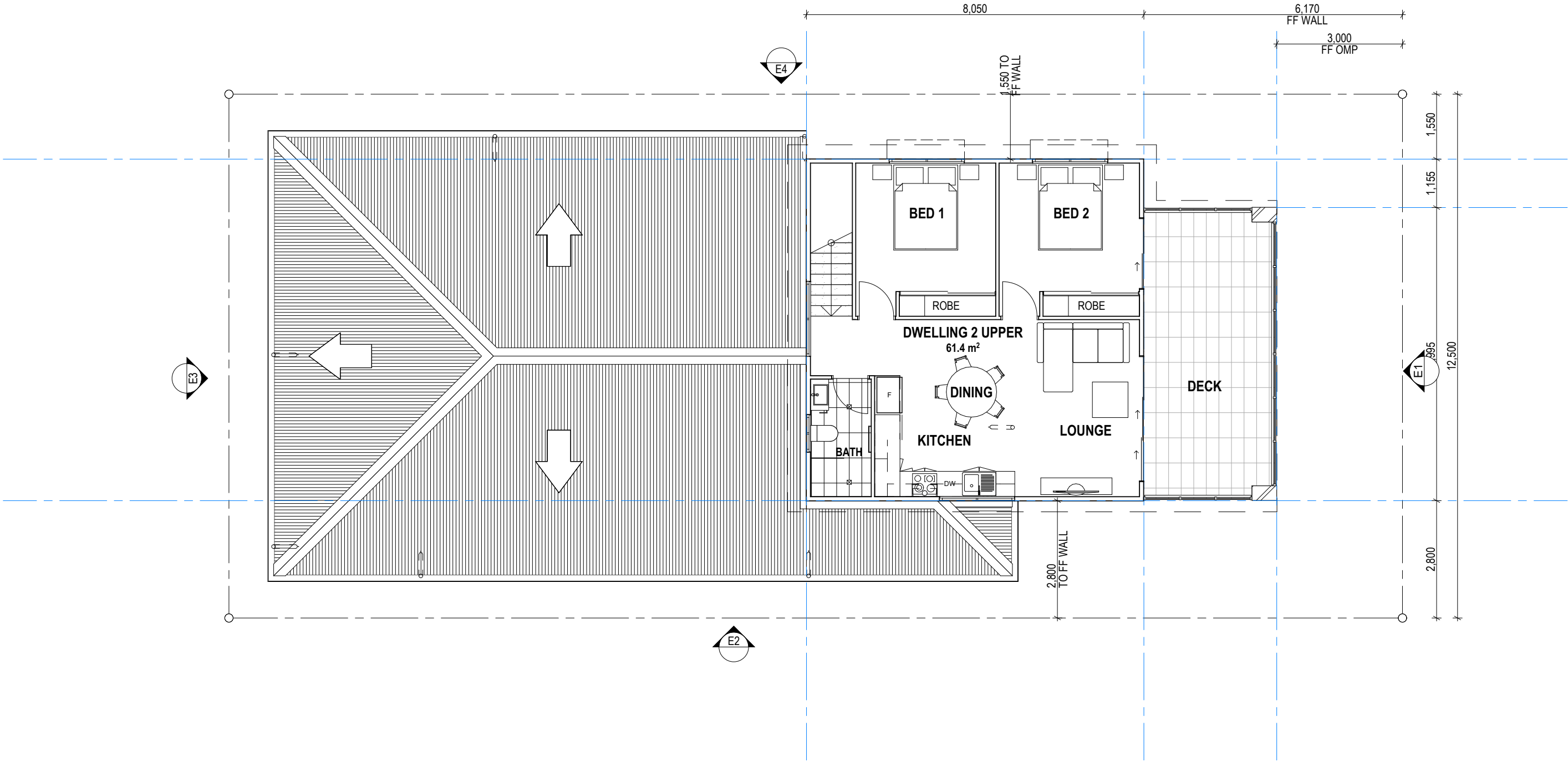
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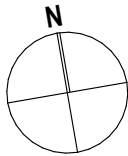
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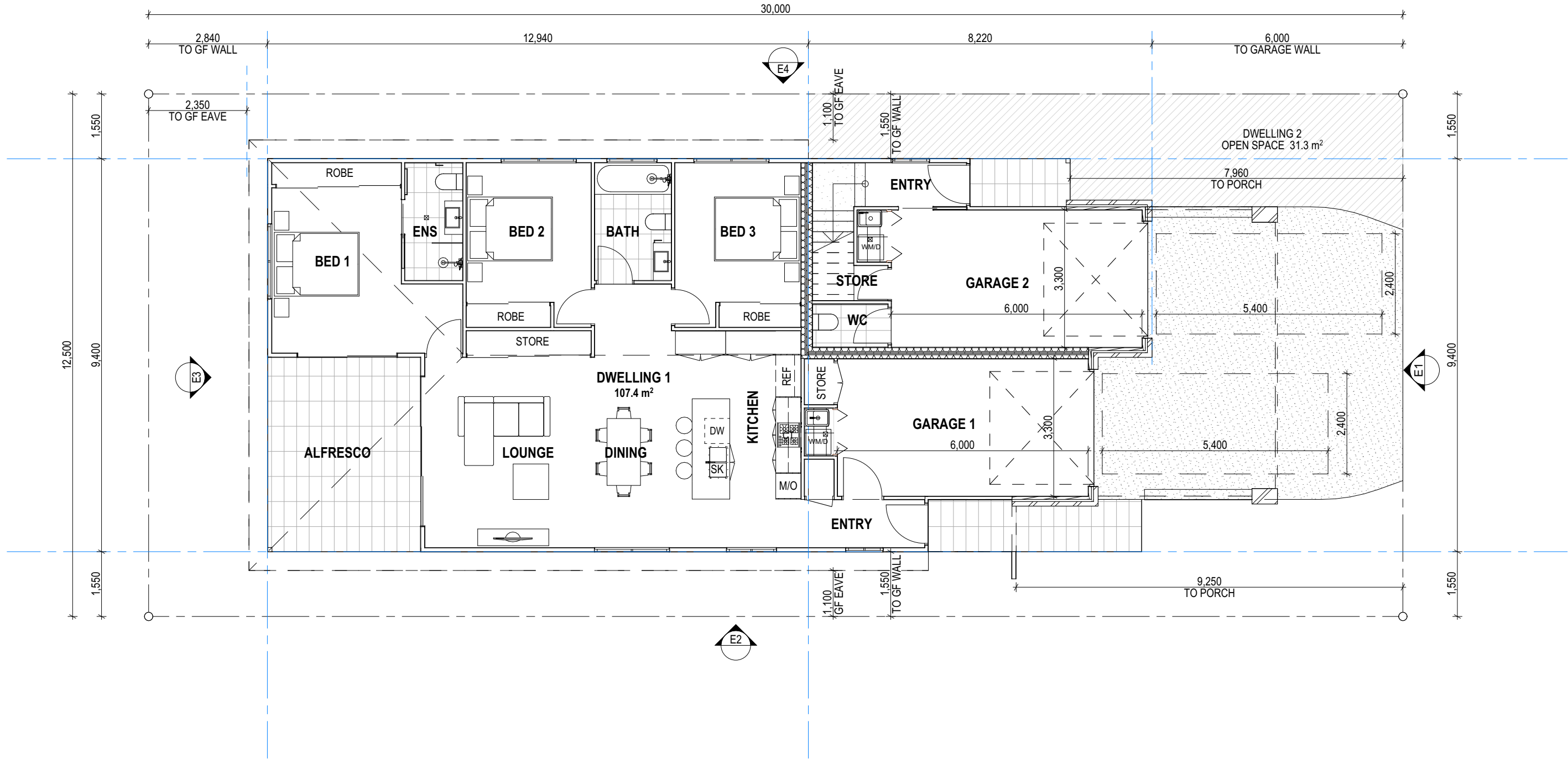
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PORCH 2	3



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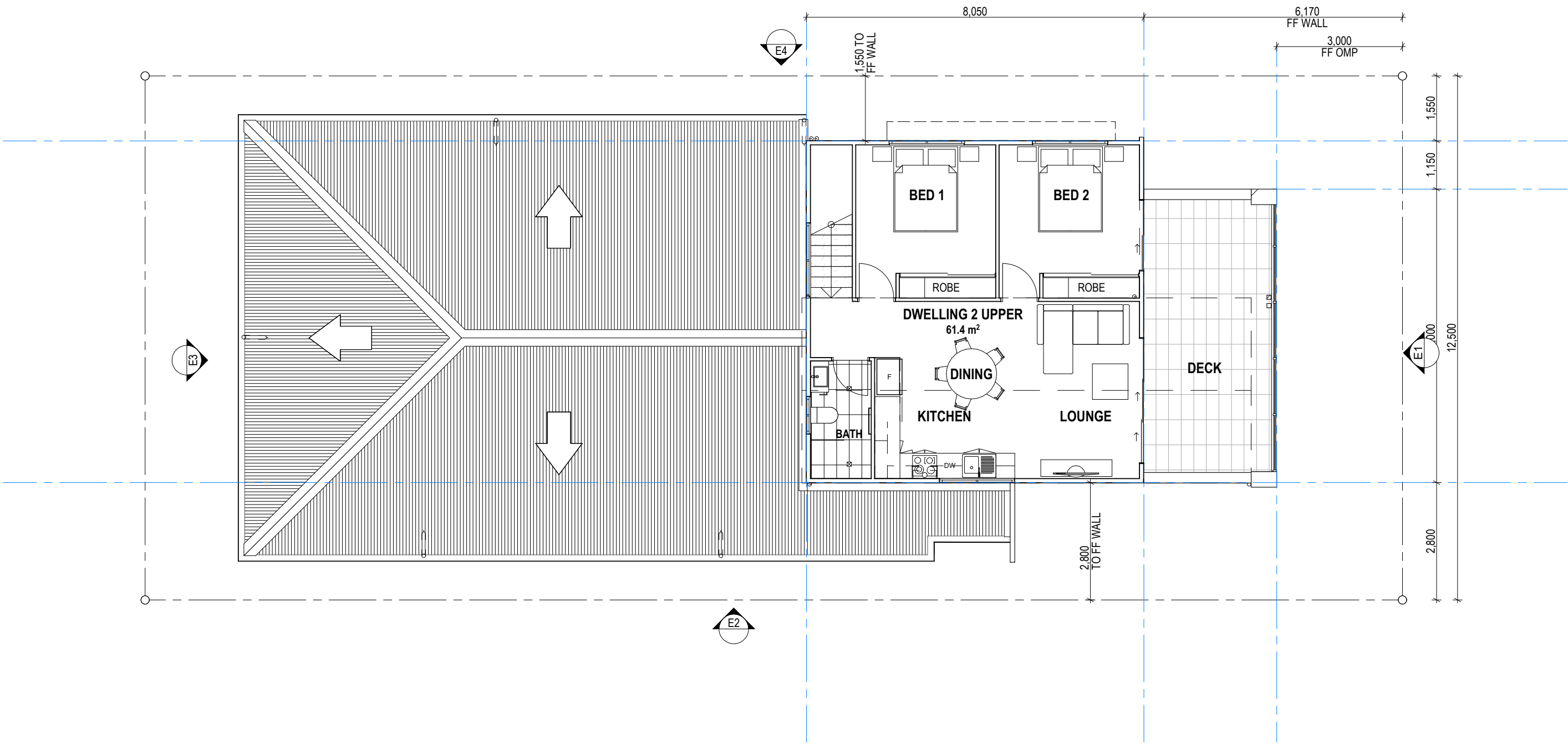
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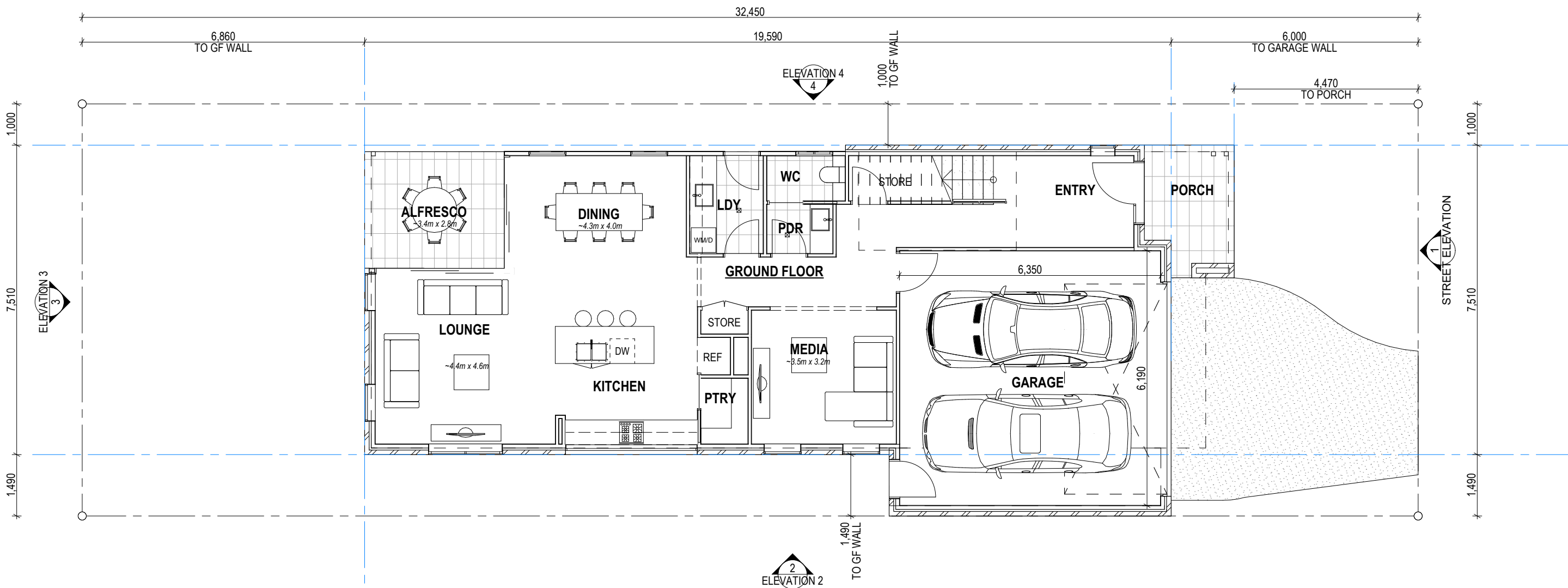
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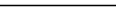
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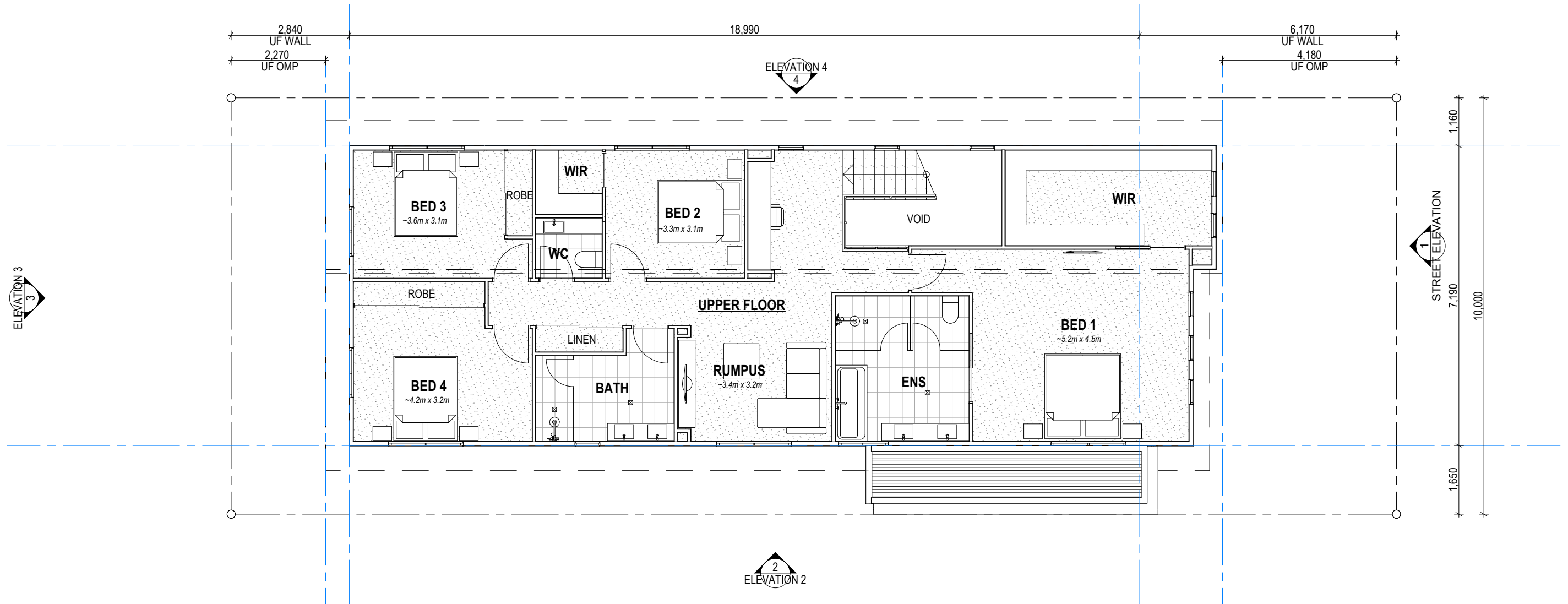
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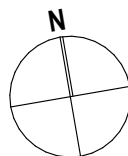


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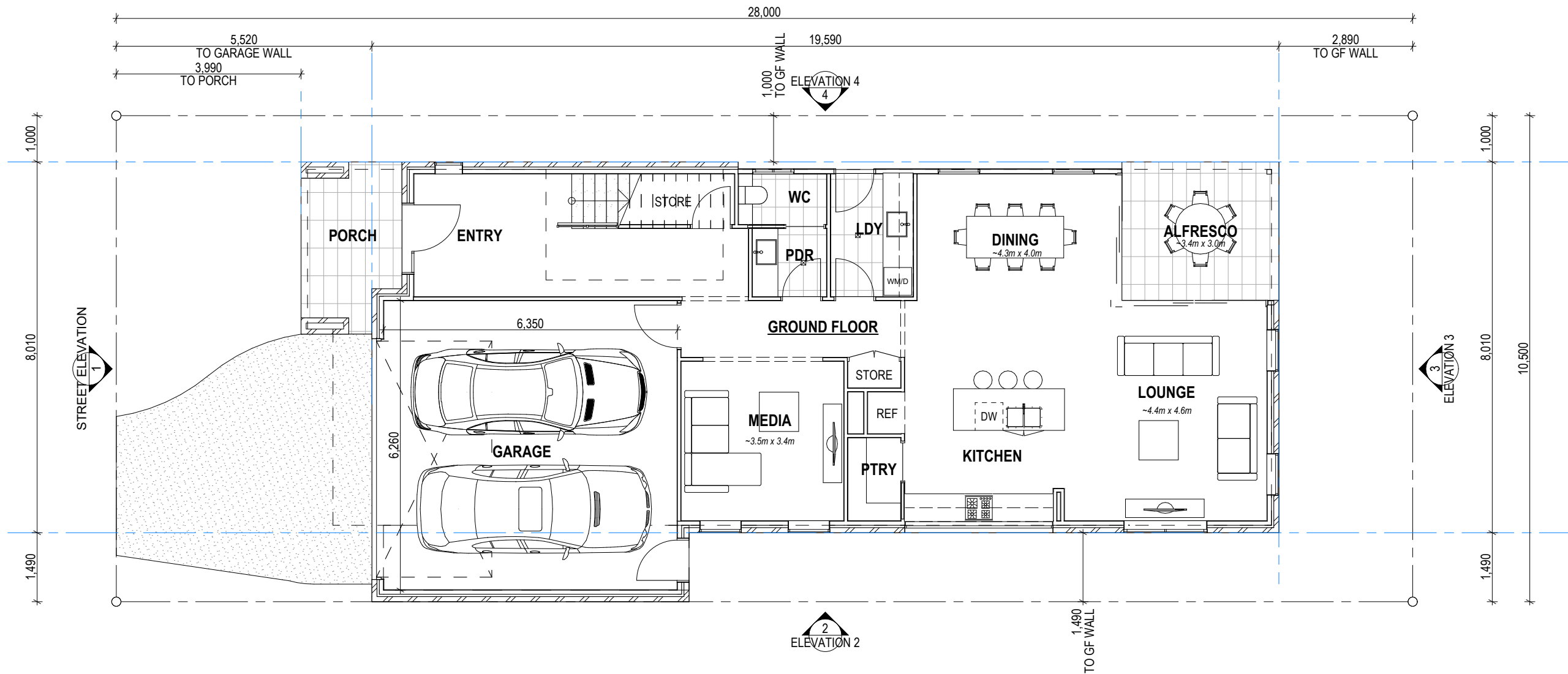


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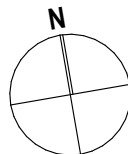


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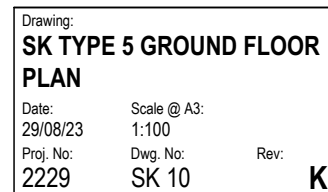
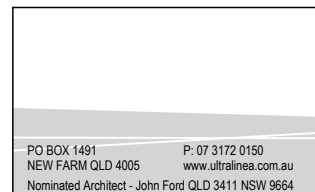
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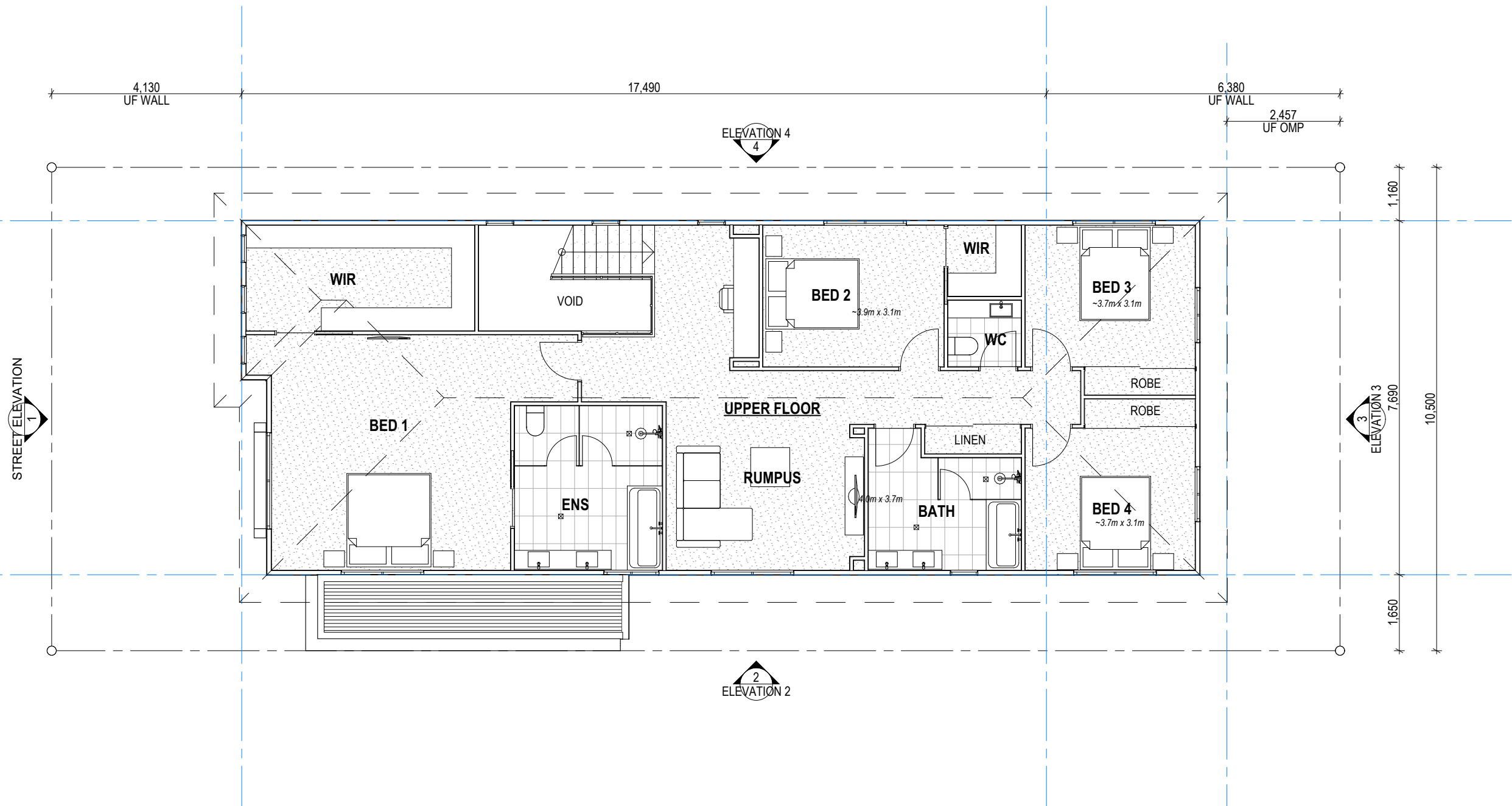
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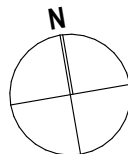


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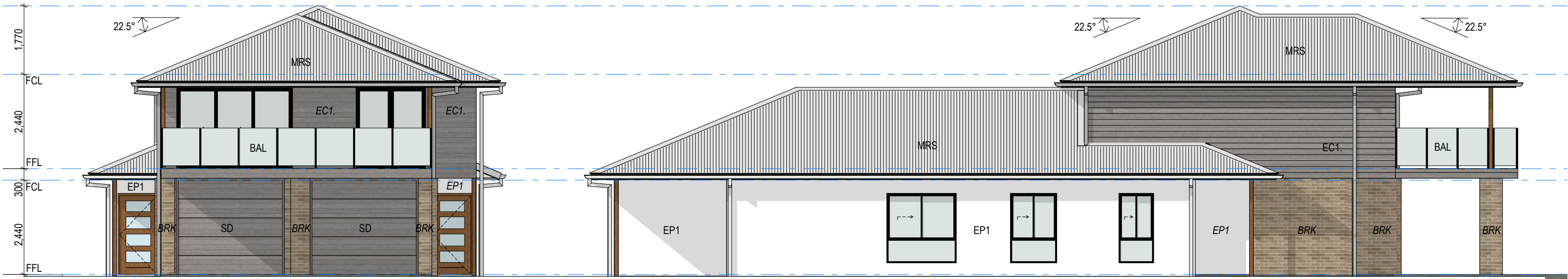
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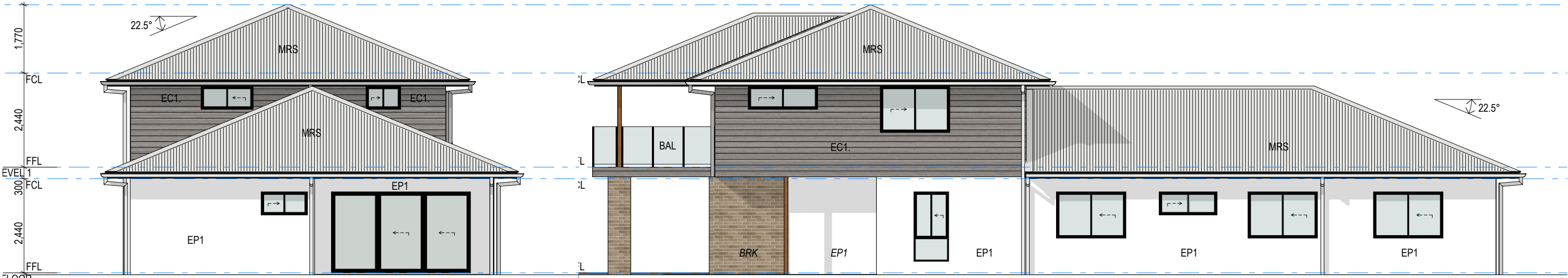
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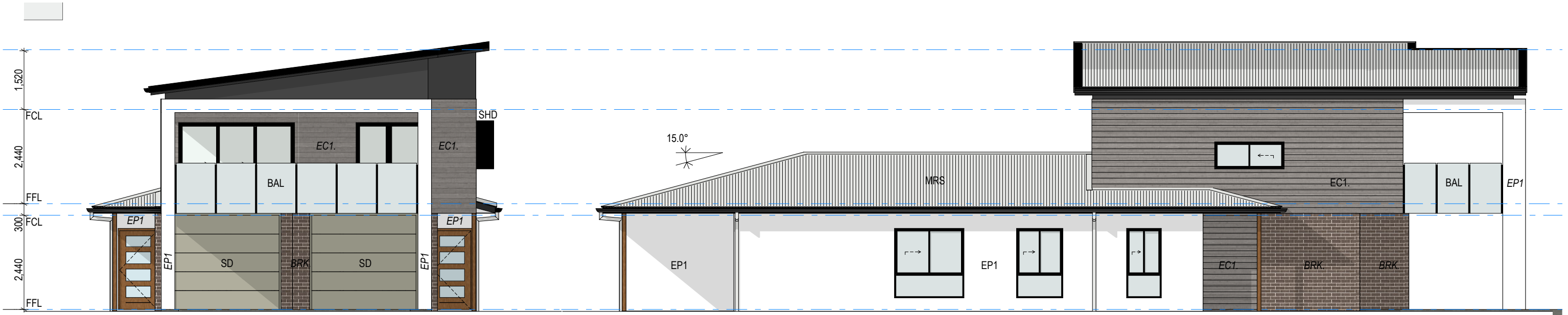


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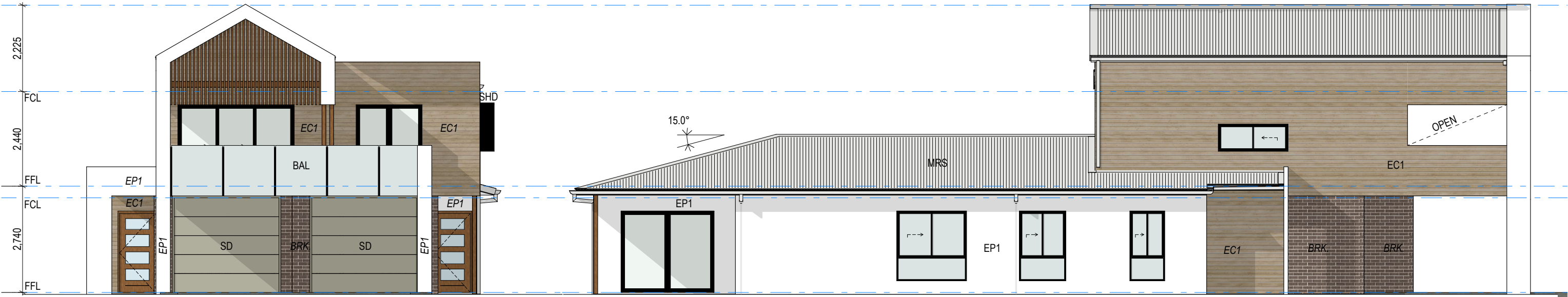


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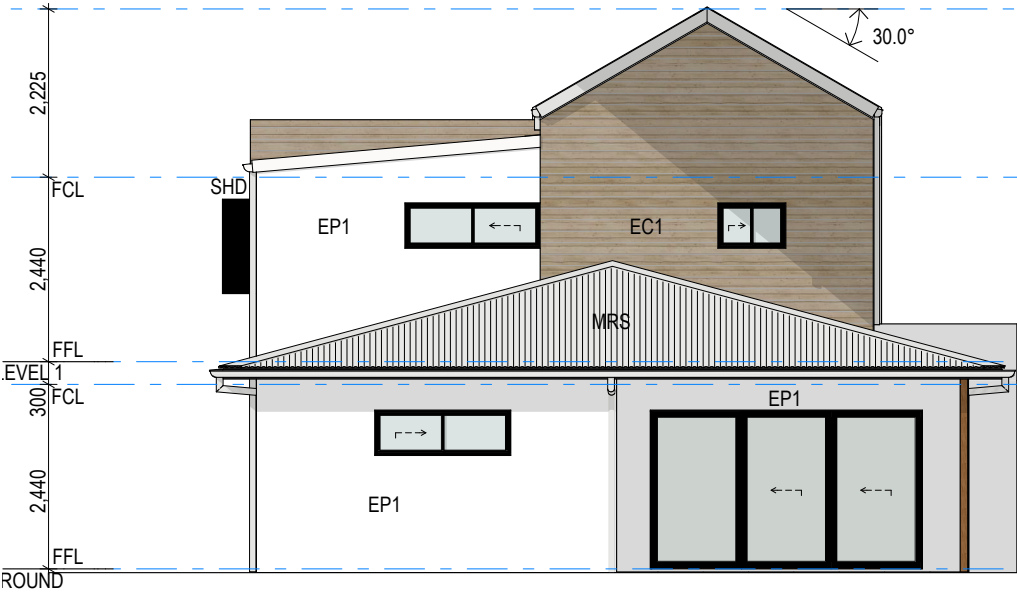
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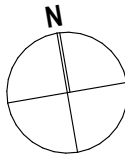


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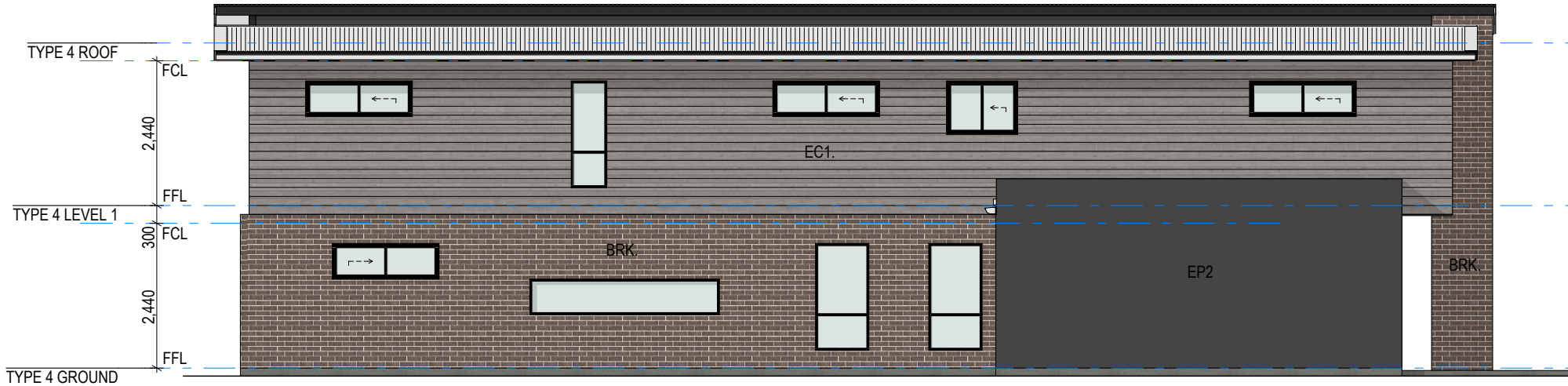
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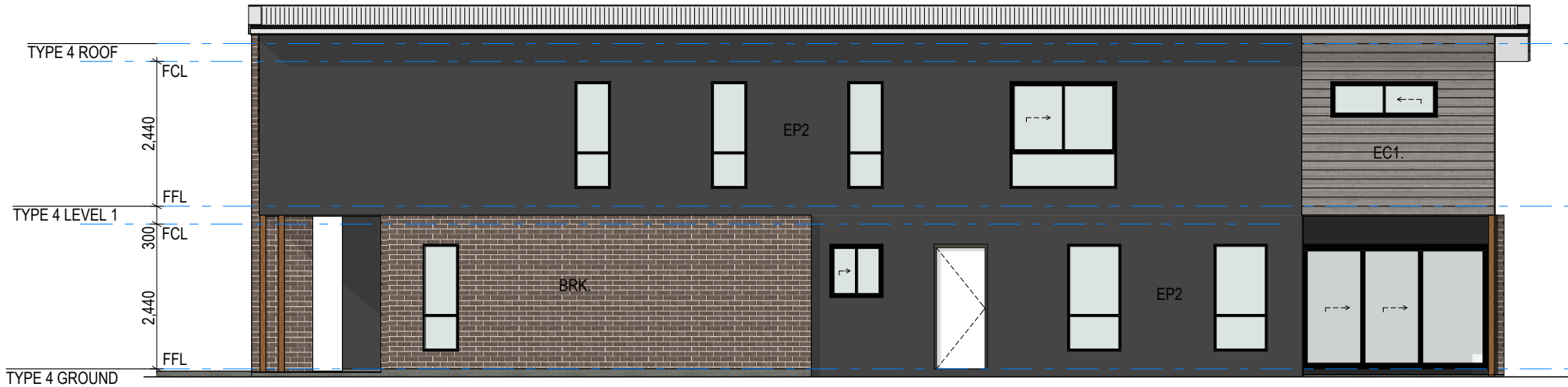
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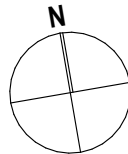


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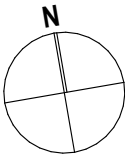
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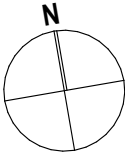
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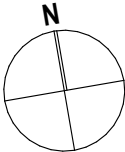


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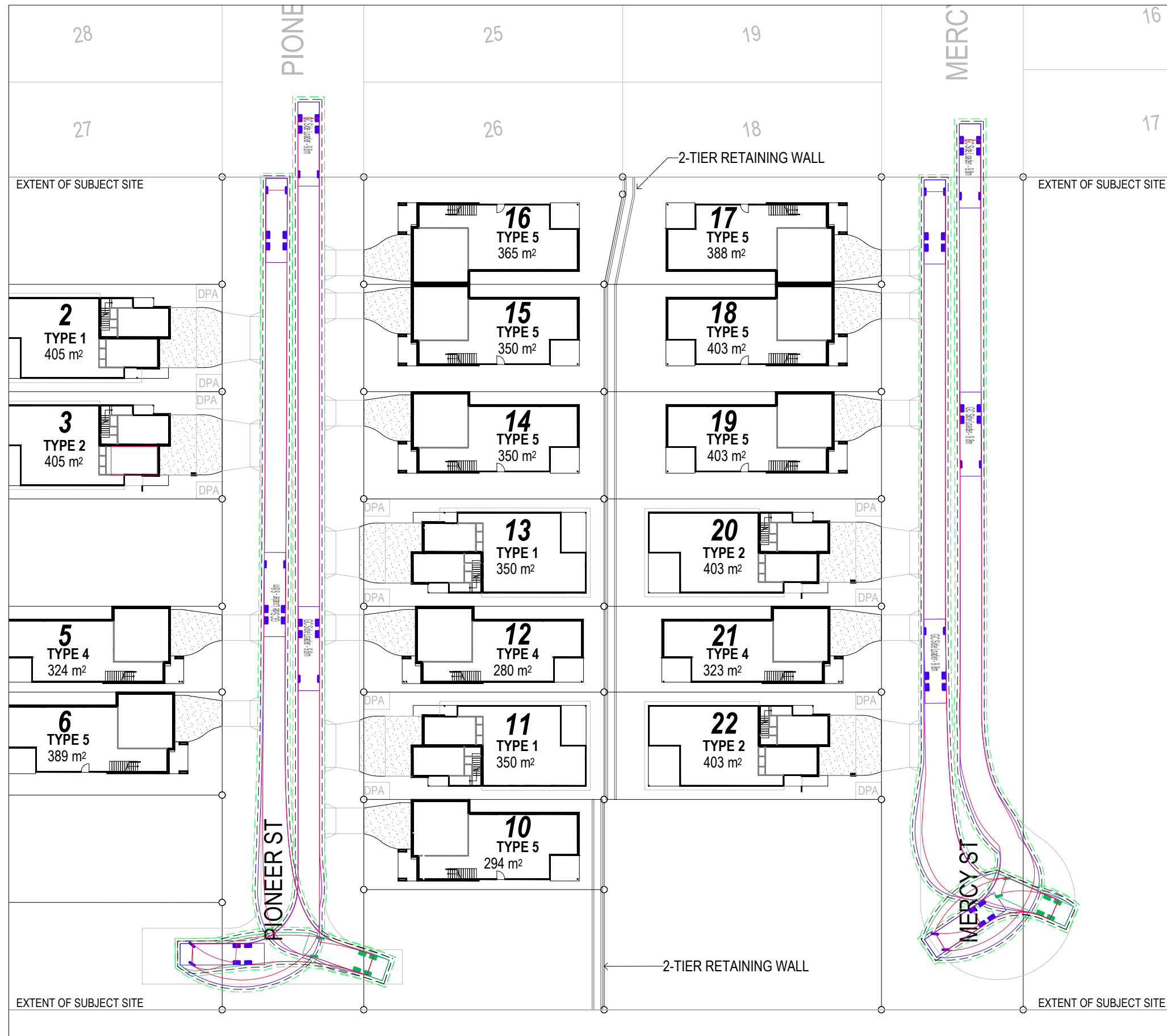
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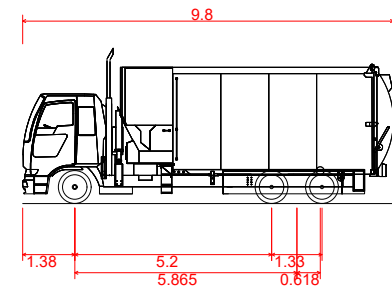


Attachment C – TTM Swept Paths

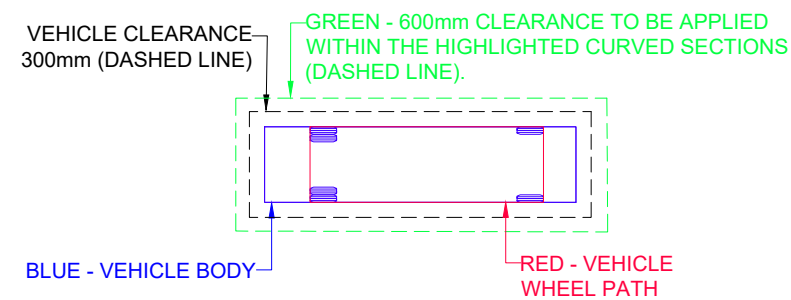


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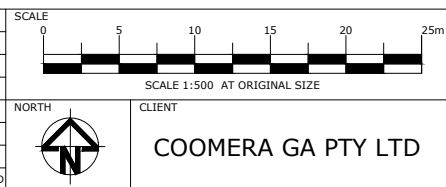
RJ Jones DIRECTOR
RICHARD JONES RPEQ 8943
APPROVED 28 Aug 2023



GC Side Loader - 9.8m	
Overall Length	9.800m
Overall Width	2.500m
Overall Body Height	4.100m
Min Body Ground Clearance	0.250m
Track Width	2.472m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	11.500m
Design Speed Forward	10.0km/h
Manoeuvring Speed Forward	5.0km/h



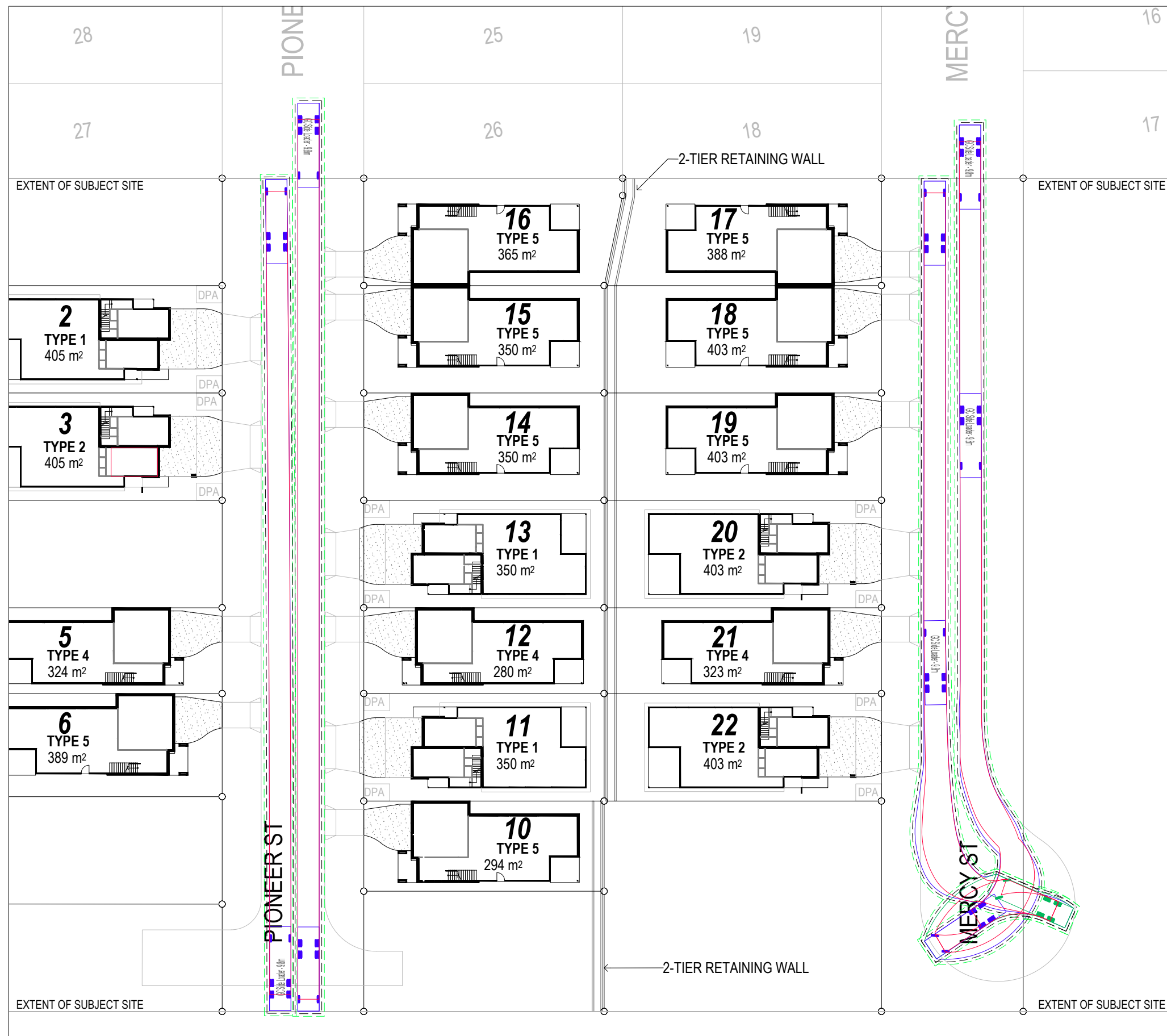
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B	03-02-23	AMENDED DESIGN	JS	IB	IB
A	08-11-22	ORIGINAL ISSUE	JS	RJ	RJ



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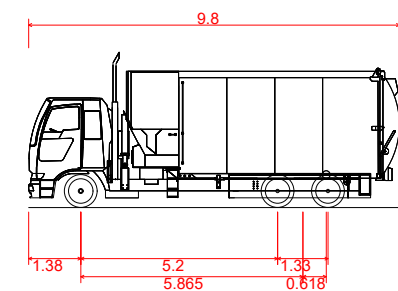
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DRAWING TITLE	REFUSE COLLECTION SWEEP PATH ANALYSIS STATIC COLLECTION PLAN (STAGE 2)

PROJECT NUMBER	22GCT0014	ORIGINAL SIZE	A3
DRAWING NUMBER	22GCT0014-01	REVISION	C
DATE	28 Aug 2023	SHEET	1 OF 1

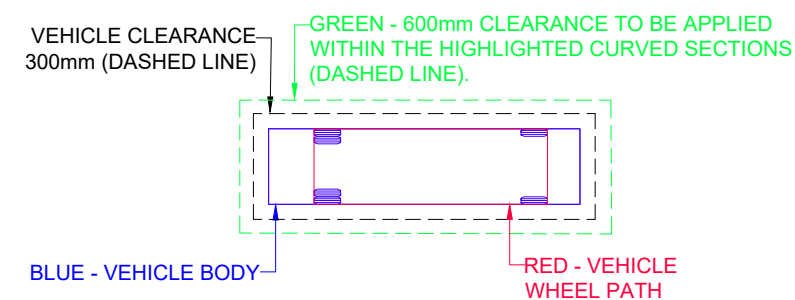


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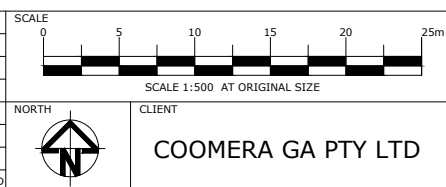
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RICHARD JONES RPEQ 8943
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GC Side Loader - 9.8m	
Overall Length	9.800m
Overall Width	2.500m
Overall Body Height	4.100m
Min Body Ground Clearance	0.250m
Track Width	2.472m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	11.500m
Design Speed Forward	10.0km/h
Manoeuvring Speed Forward	5.0km/h



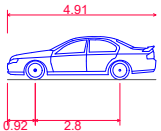
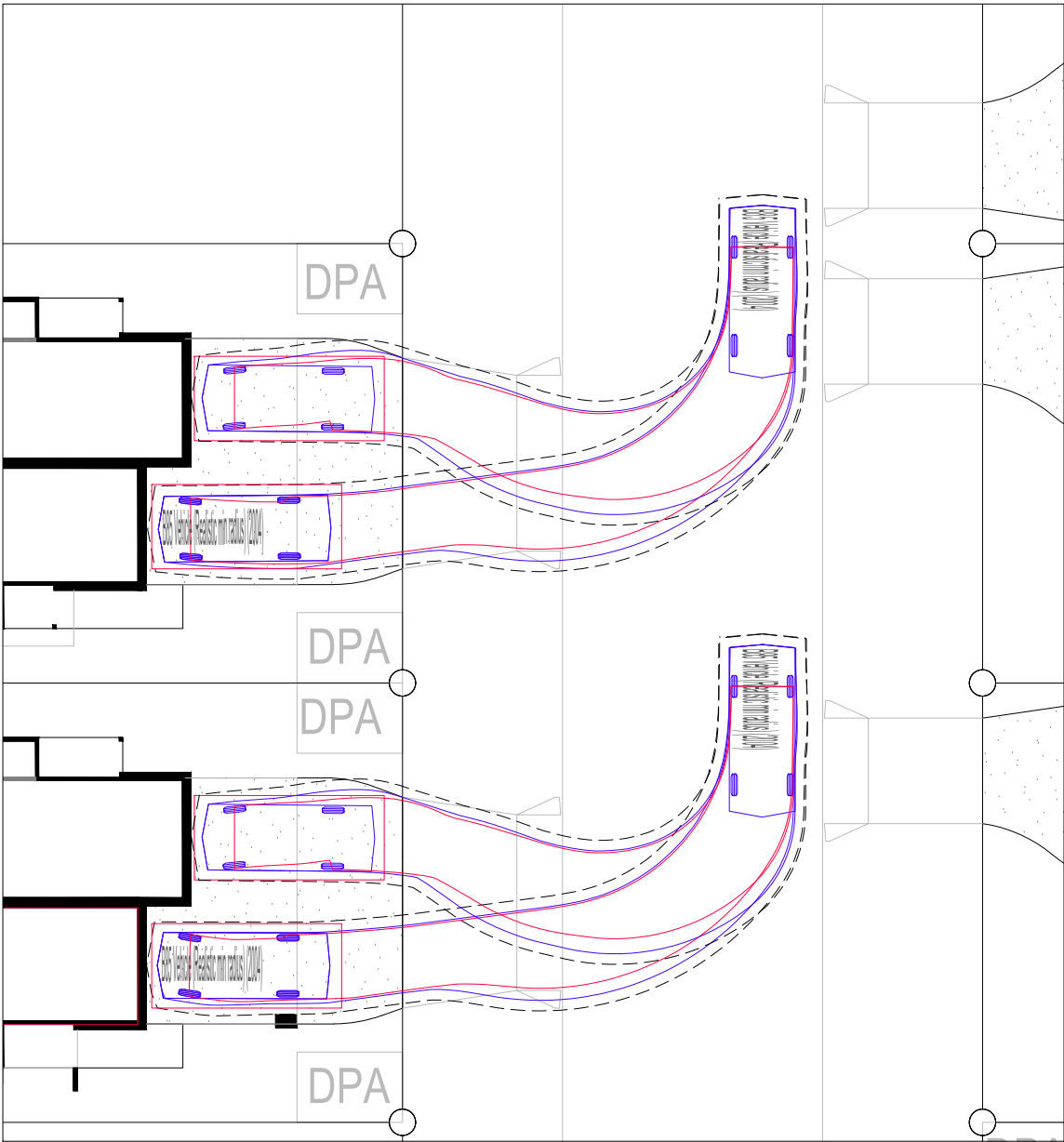
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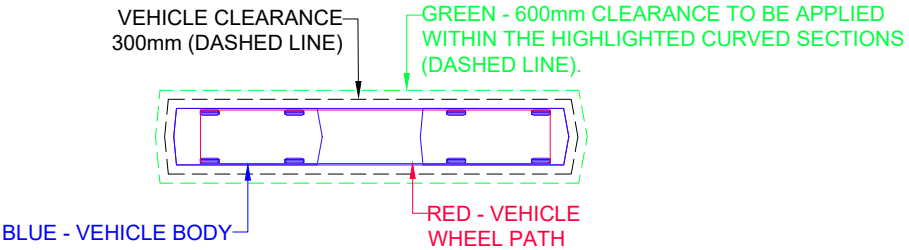
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PROJECT	54 GEORGE ALEXANDER WAY, COOMERA
DRAWING TITLE	REFUSE COLLECTION SWEEP PATH ANALYSIS CONNECTED COLLECTION PLAN (STAGE 3)

PROJECT NUMBER	22GCT0014	ORIGINAL SIZE	A3
DRAWING NUMBER	22GCT0014-02	REVISION	C
DATE	28 Aug 2023	SHEET	1 OF 1



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
Design Speed Forward 5.0km/h



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-08-23	ORIGINAL ISSUE	JS	RJ	RJ

SCALE
0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

NORTH
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PROJECT 54 GEORGE ALEXANDER WAY, COOMERA	PROJECT NUMBER 22GCT0014	ORIGINAL SIZE A3
DRAWING TITLE PARKING ACCESS SWEEP PATH ANALYSIS DRIVEWAY ACCESS FOR DESIGN TYPES 1-2	DRAWING NUMBER 22GCT0014-03	REVISION A
	DATE 28 Aug 2023	SHEET 1 OF 1



Attachment D – Amended Traffic Engineering Report



Traffic Engineering

Proposed Residential Subdivision

At 54 George Alexander Way, Coomera

On behalf of Coomera GA Pty Ltd



About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

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Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	J. Smith	R. Jones	DA Report (Rev A)	8/11/2022
2.	J. Smith	I. Blackburn	DA Report (Rev B)	3/02/2023
3.	J. Smith	R. Jones	Information Request Amendments (Rev C)	29/08/2023
4.				
5.				

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1 Introduction

1.1 Background

TTM Consulting Pty Ltd (TTM) has been engaged by Coomera GA Pty Ltd, to prepare a traffic impact assessment for a proposed residential subdivision at 54 George Alexander Way, Coomera. The site is located within the jurisdiction of the City of Gold Coast Council.

1.2 Scope

This report investigates the transport aspects associated with the proposed development. The scope of the transport aspects investigated includes:

- Parking supply required to cater for development demand
- Parking layout to provide efficient and safe internal manoeuvring
- Identification of likely traffic volumes and traffic distribution from the future development
- Identification of likely traffic impact of development on the public road network
- Access configuration to provide efficient and safe manoeuvring between the site and the public road network
- Internal road layout to provide efficient and safe internal manoeuvring for service vehicles
- Suitability of access and internal facilities to provide for pedestrian and cyclist operation
- Access to suitable level of public transport
- Internal road hierarchy to cater for lot access, vehicle design speeds and road user amenity requirements

To assess the proposed transport arrangements, the development plans have been assessed against the following guidelines and planning documents:

- City of Gold Coast Council's City Plan, specifically:
 - 9.4.13 – Transport Code
 - 9.4.5 – Driveways and Vehicular Crossings Code
- Australian Standard 2890
- Austroads Guidelines

1.3 Site Location

The subject site has a real property description of Lot 96 on RP187418 and is zoned as Medium density and High density residential according to the City Plan. The immediate surrounding area is also zoned for the same land uses. The site is currently bounded to the north by a construction site for a residential subdivision, to the south by a greenfield site, to the west by George Alexander Way, and to the east by residential housing.

The subject site is currently occupied by a single low-density residential dwelling, but is otherwise an undeveloped greenfield site. The site location is shown in Figure 1.1 and an aerial of the site is shown in Figure 1.2.



Figure 1.1: Site location



Figure 1.2: Site aerial view

1.4 Development Profile

This proposal consists of a residential estate whose land uses are summarised in Table 1.

Table 1: Development Dwelling Summary

Use	Qty
Residential Lot	22
Other Lots	2

The focus of this traffic report concerns the 24 residential lots. Undeveloped or designated bio-retention areas are not reviewed.

The development includes a 16.5m wide new private internal road reserve, including multiple connections to adjacent approved-under-construction and future roads. The site layout is shown in Figure 1.3 and attached (Appendix A).

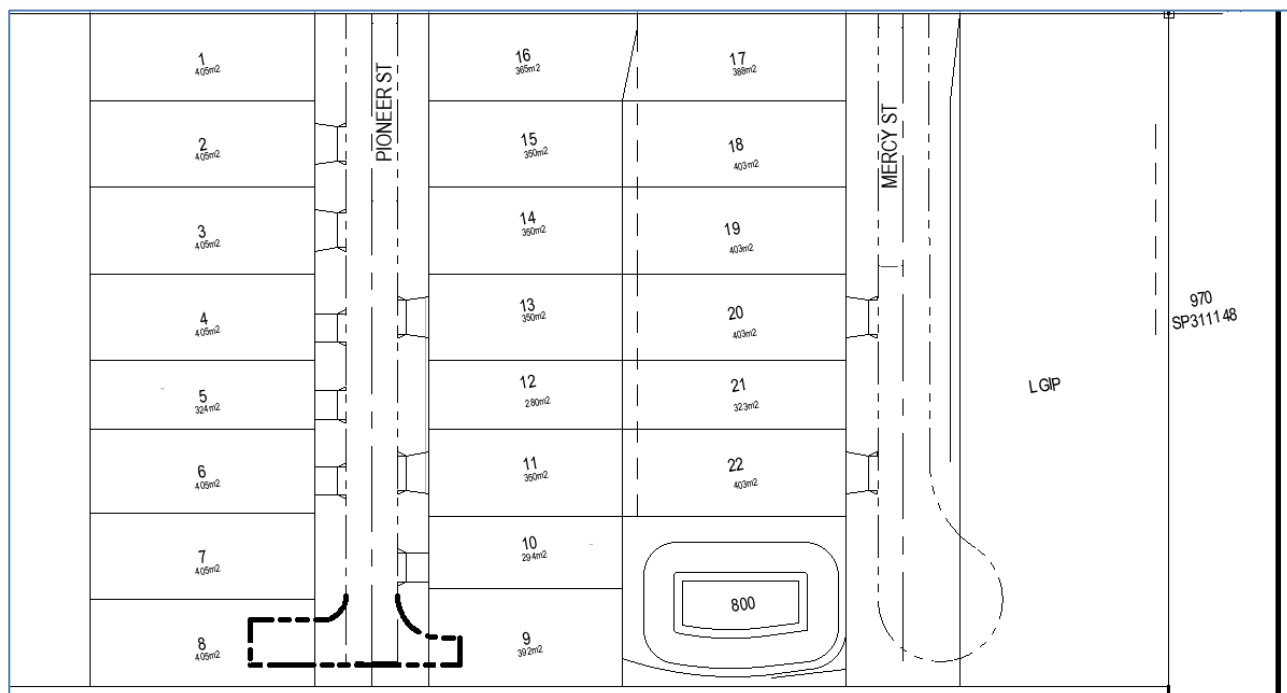


Figure 1.3: Proposed Site Layout

1.5 Access

It is proposed that the site is accessed via two public road extensions from the northern adjacent Lot. The proposed extensions are described as follows:

- Pioneer Street extension located along the northern boundary of the subject site. The characteristics of this connection include:
 - 16.5m wide road reserve at property boundary
 - Connecting to northern Lot
 - Two-way
- Mercy Street extension located along the eastern side of the northern boundary of the subject site. The characteristics of this connection include:
 - 16.5m wide road reserve at property boundary
 - Connecting to northern Lot
 - Two-way

2 Existing Transport Infrastructure

2.1 The Road Network

All roads in the immediate vicinity of the site are administered by the City of Gold Coast (Council). The hierarchy and characteristics of roads in the immediate vicinity of the site are shown below in Table 2. Some local streets are yet to finish construction.

Table 2: Local Road Hierarchy

Road	Speed Limit	Lanes	Classification	Road Authority
Pioneer Street	50kph	2 (undivided)	Local Road, Under Construction	Council
Mercy Street	50kph	2 (undivided)	Local Road, Under Construction	Council
Talpa Street	50kph	2 (undivided)	Local Road	Council
Seashell Avenue	50kph	2 (undivided)	Local Road	Council
Seagreen Drive	50kph	2 (undivided)	Local Road	Council
Finnegan Way	60kph	2 (undivided)	Distributor Road	Council
George Alexander Way	60kph	2 (undivided)	Local Road	Council
Foxwell Road	70kph	4 (divided)	Arterial Road	Council

Talpa Street has a 7.5m wide carriageway where it is to connect to Pioneer and Mercy Street, which are to have similar carriageways.

2.2 Road Planning

TTM have reviewed the upcoming planned works of the future road network in the vicinity of the subject site through Schedule 3.2-3 of Council's City Plan, and the Queensland Transport and Roads Investment Program.

TMR has identified an upgrade to the 'Park 'n' Ride' area of the Coomera heavy rail station 500m south of the site along Foxwell Road. Work is scheduled to be completed by December 2022, and involves an expansion to the existing parking area. The upgrade does not directly impact the site.

Council has specified 2 intersection upgrades within the general vicinity of the site:

- The Foxwell Road / George Alexander Way intersection with works scheduled to begin in 2021. This intersection upgrade is unlikely to impact the site as no road connections are proposed along George Alexander Way.
- The Foxwell Road / Finnegan Way intersection with works are scheduled to begin in 2026. As detailed information regarding this intersection upgrade is unavailable from TMR at the time of this report's publication, future planning will have to account for the upgraded intersection design.

3 Internal Road Arrangements

3.1 Internal Roads

The development proposes two 16.5m width road reserve extensions from the northern Lot, internal to the site,. The design of the roads is generally consistent with Council's standard drawings for a residential access street, standard drawing 02-001. Further detail is provided in Section 5.

3.2 Active Transport

3.2.1 Public Transport

The site is connected by bus to the greater Gold Coast. A pair of bus stops are located 370m walking distance east of the site along Finnegan Way. Both bus stops provide numerous services via Route 722, which provides consistent hourly services (6:40am-6:40pm) from Coomera heavy rail station through Coomera Rivers and Pimpama to the Ormeau heavy rail station.

Connections to the greater Gold Coast are available via public transport. Walkable access to public transport from the site is provided by direct routes and is to be traversable by paved pedestrian pathways. These routes are direct and have no barriers inhibiting use, though access to the southbound bus stop requires crossing Finnegan Way without the aid of a pedestrian crossing.

3.2.2 Pedestrian Access

The surrounding pedestrian network of the nearby local access streets do not include pedestrian pathways within the road reserve.

3.2.3 Cyclist Requirements

As shown by Figure 3.1, Gold Coast City's Cycling Guide shows that the nearest on-street bikeways are along Finnegan Way to the south and along Foxwell Road. Onsite cycling connections to this network will be provided via the shared use of the internal road through the site.

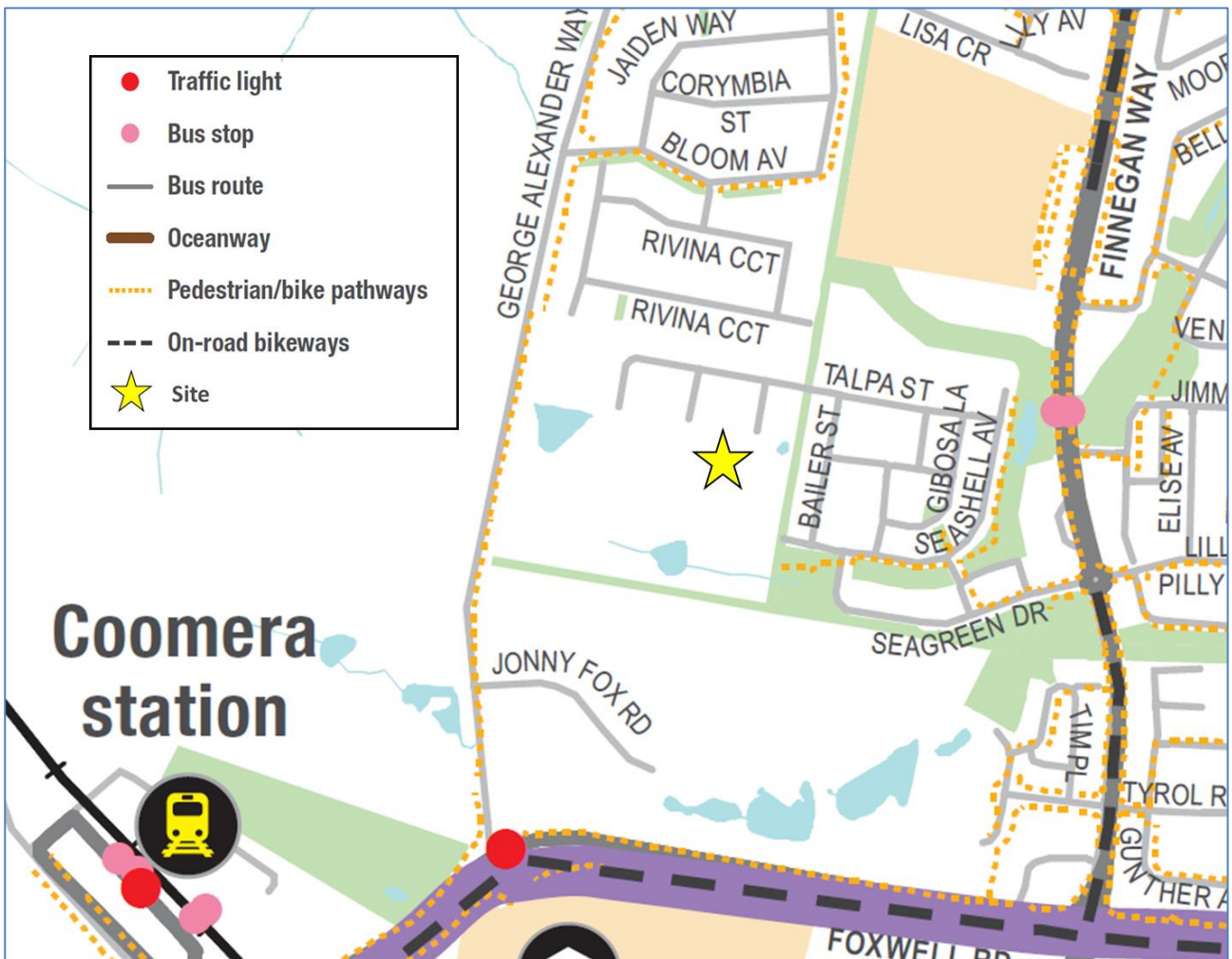


Figure 3.1: Local Cycling Networks

4 Car Parking Arrangements

4.1 Council Parking Supply Requirement

Council's parking requirements specify 2 car parking spaces are required per dwelling house or dual occupancy with 2 or more bedrooms. The exact design of each allotment has not yet been determined, though the car parking spaces have been designed in accordance with AS2890.1.

5 Internal Road Arrangements

It is proposed that the site is accessed via two new road extensions from Pioneer Street and Mercy Street. These extensions will become possible when Pioneer Street and Mercy Street are constructed. The proposed extensions are described as follows:

- Pioneer Street road extension:
 - 16.5m wide road reserve at northern property boundary
 - 16.5m wide road reserve at southern property boundary
 - Connecting to northern Lot
 - Future Connection opportunity to southern Lot.
 - Two-way
- Mercy Street road extension:
 - 16.5m wide road reserve at northern property boundary
 - 9m radius turnaround at round termination towards the southern boundary of the site.
 - Connecting to northern Lot
 - Two-way

The location of the proposed roads is shown in both Figure 1.3 and the attached development plans (Appendix A).

5.1 Proposed Access Arrangements and Their Adequacy

5.1.1 Pioneer Street Road Extension

Design

The proposed road extension from Pioneer Street would create a 16.5m wide road reserve as per Standard Drawing 02-001 of the Gold Coast City Plan's Standard Drawings for an urban residential access street. The 7.5m carriageway width can accommodate a limited range of service vehicles typical of the development's nature.

Sight Distance

The proposed road connection is horizontally aligned with the approved under-construction street, providing unobstructed sight distance for vehicles from the northern and southern boundary of the site.

5.1.2 Mercy Street Road Extension

Design

The proposed access arrangement from Mercy Street would create a 16.5m wide road reserve as per Standard Drawing 02-001 of the Gold Coast City Plan's Standard Drawings for an urban residential access street. The 7.5m carriageway width can accommodate a limited range of service vehicles typical of the development's nature.

The road terminates in a 9m radius turnaround towards the southern boundary of the site to facilitate 2-way movement and general servicing.

Sight Distance

The proposed road connection is horizontally aligned with the approved under-construction street, providing unobstructed sight distance for vehicles from Talpa Street to the north.

6 Service Vehicle Arrangements

Ultimately, a 9.8m City of Gold Coast Council Side-Loader Waste Collection Vehicle (WCV) is able to access all refuse collection points, and enter and exit the subdivision roads in a forward direction. The proposed road layout allows the manoeuvring of these service vehicles and servicing of the lots throughout the subdivision.

TTM have prepared a swept path assessment (Appendix B) demonstrating that a Council WCV can navigate the site and service all lots' refuse collection requirements via wheelie bins.

It is noted that until a future road extension of Pioneer Street is constructed, providing access to 44 George Alexander Way or a similar turnaround opportunity, a temporary turnaround in Lots 8-9 will be required to facilitate WCV turnaround for servicing.

As provision for a 9.8m WCV is made, provision is implied for all smaller classes of service vehicle for the development, including a Medium Rigid Vehicle (MRV).

7 Road Network Performance

The existing site is an unoccupied greenfield and the proposed development is to include 25 residential lots allowing for various residential buildings as per Table 3.

7.1 Proposed Development Traffic Generation

The RTA 'Guide to Traffic Generation Developments' (2002) recommends using specific generation rates, for planning purposes, for different development types. Application of these rates to the proposed development, results in the estimate of development site traffic generation, as shown in Table 3.

A trip generation of 0.85 (maximum) peak hour trips per dwelling house has been used, which is based on the RTA's trip generation for regional low density residential dwellings.

Based on a standard dwelling house's peak hour trip generation rates, a rate of 1.7 trips per dual occupancy dwelling has been used.

Table 3: Proposed Development Daily Trip Generation Rates

Land Use	RTA Peak Hour Trip Rate	Extent	Peak Hour Trip Generation
Dwelling House	0.85 trips per dwelling house	16 townhouses	13.6
Dual Occupancy Houses	1.7 trips per dwelling house	6 townhouses	10.2
Total			24

Table 3 indicates the proposed development would generate a total of 24 peak hour vehicle trips. This equates to an additional vehicle every 2 minutes at the Seagreen Drive / Finnegan Way intersection. This is considered a negligible impact on the local road network, and as such, does not require further analysis or mitigative measures.

8 Summary and Conclusions

8.1 Development Summary

The proposal seeks an approval for a 25-lot residential subdivision.

The site is to be accessed via two road extensions from Pioneer Street and Mercy Street.

8.2 Internal Road Arrangements

The development proposes a two road extensions that meet Council requirements for road elements for residential access streets within the subdivision. The proposed active transport elements are generally suitable for the development.

8.3 Car Parking Arrangements

The car parking provision is to be accordance with the Council's requirements, according to Council's City Plan.

8.4 Impact on Surrounding Road Network

Assessment of the proposed development indicates that the development's impact on the future road network is minimal.

8.5 Service Vehicle Arrangements

Servicing for this development will be facilitated from the proposed new road network. A 10.2m long front lift RCV can manoeuvre throughout the new road network. Overall, the proposed service vehicle arrangements are considered adequate to meet the needs of the proposed development.

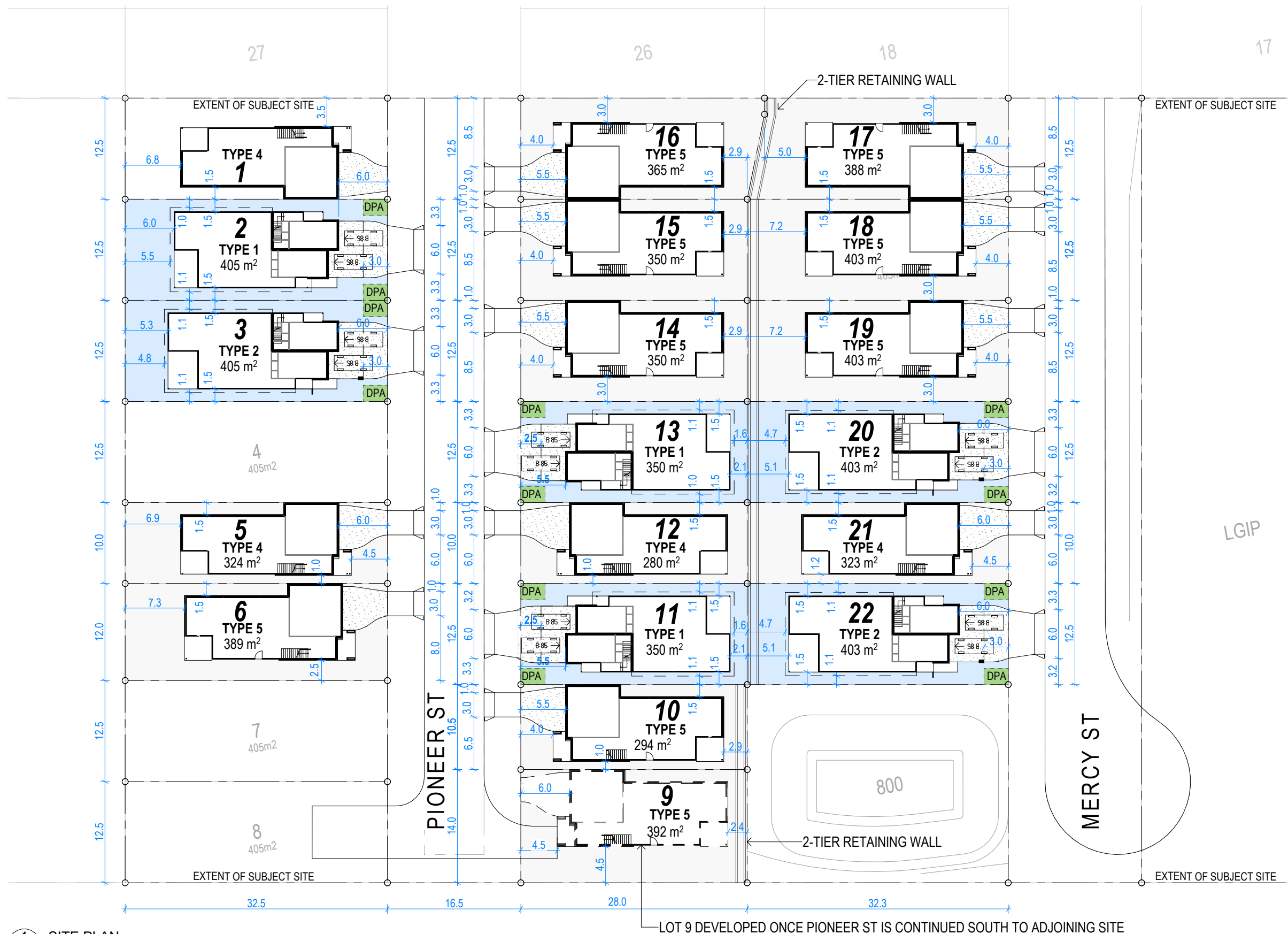
8.6 Conclusion

Based on the assessment contained within this report, TTM see no traffic engineering reason why the relevant approvals should not be granted.

Appendix A Proposed Site Plan

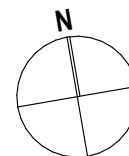
LOT	LOT AREA	SITE COVER	% SITE COVER
LOT 2	405 m ²	207 m ²	51 %
LOT 3	405 m ²	214 m ²	53 %
LOT 5	324 m ²	164 m ²	51 %
LOT 6	389 m ²	174 m ²	44 %
LOT 9	392m ²	174 m ²	59 %
LOT 10	294m ²	174 m ²	59 %
LOT 11	350 m ²	207 m ²	59 %
LOT 12	280 m ²	164 m ²	59 %
LOT 13	350 m ²	207 m ²	59 %
LOT 14	350 m ²	174 m ²	50 %
LOT 15	350 m ²	174 m ²	50 %
LOT 16	365 m ²	174 m ²	48 %
LOT 17	388 m ²	174 m ²	45 %
LOT 18	403 m ²	174 m ²	43 %
LOT 19	403 m ²	174 m ²	43 %
LOT 20	403 m ²	214 m ²	53 %
LOT 21	323 m ²	164 m ²	51 %
LOT 22	403 m ²	214 m ²	53 %

DPA DEEP PLANTING AREA MIN. 6m²



1 SITE PLAN
1:500

PRELIMINARY - NOT FOR
TENDER, NOT FOR
CONSTRUCTION



COOMERA GA PTY LTD
DUAL-OCCUPANCY DWELLINGS
54 GEORGE ALEXANDER WAY
COOMERA,QLD



PO BOX 1491
NEW FARM QLD 4005
Nominated Architect - John Ford QLD 3411 NSW 9664

Drawing:
SK SITE PLAN

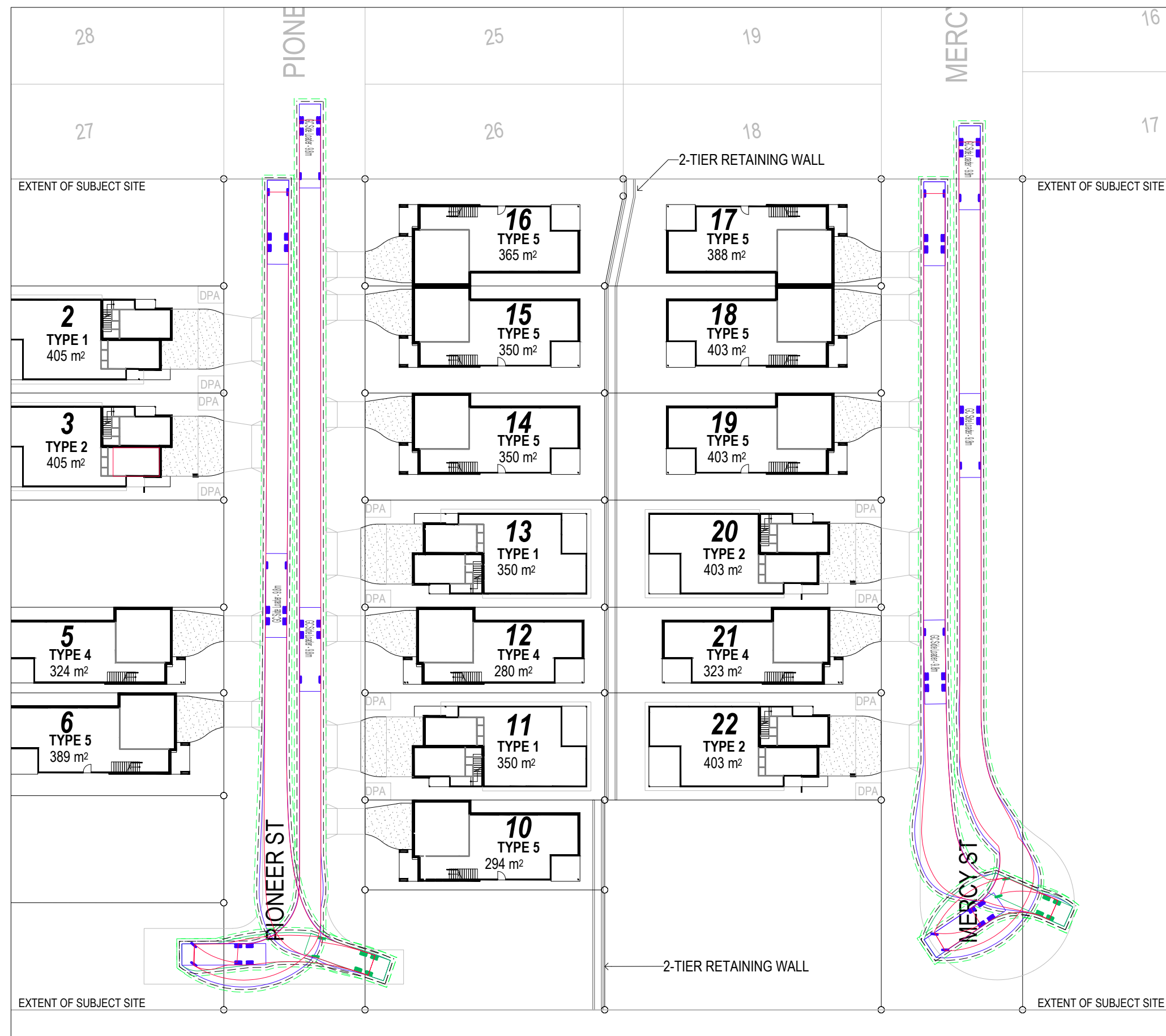
Date: 28/08/23 Scale @ A3: 1:500

Proj. No: 2229 Dwg. No: SK 01 Rev:

H

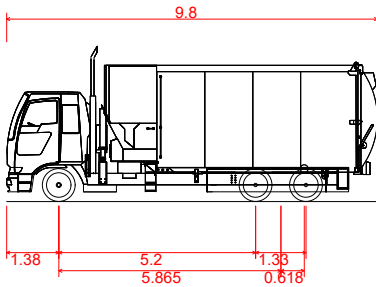
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Appendix B Service Vehicle Swept Paths

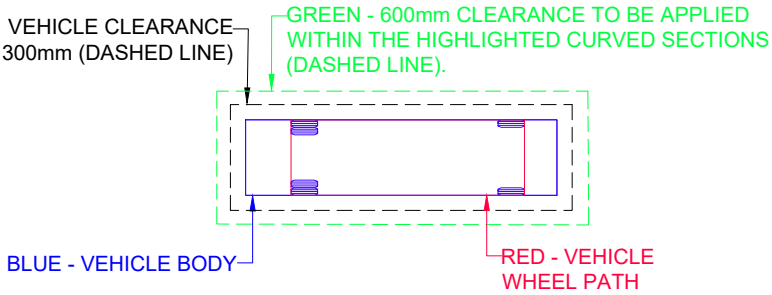


PLEASE NOTE: ROAD RESERVE
DETAILINGS AND MEASUREMENTS
ARE INDICATIVE ONLY, AND SUBJECT
TO FINAL DESIGN.

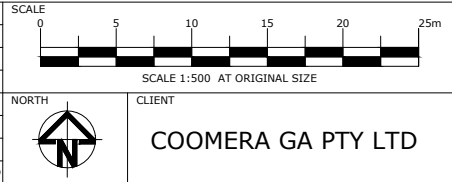
RJ Jones DIRECTOR
RICHARD JONES RPEQ 8943
APPROVED 28 Aug 2023



GC Side Loader - 9.8m	
Overall Length	9.800m
Overall Width	2.500m
Overall Body Height	4.100m
Min Body Ground Clearance	0.250m
Track Width	2.472m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	11.500m
Design Speed Forward	10.0km/h
Manoeuvring Speed Forward	5.0km/h



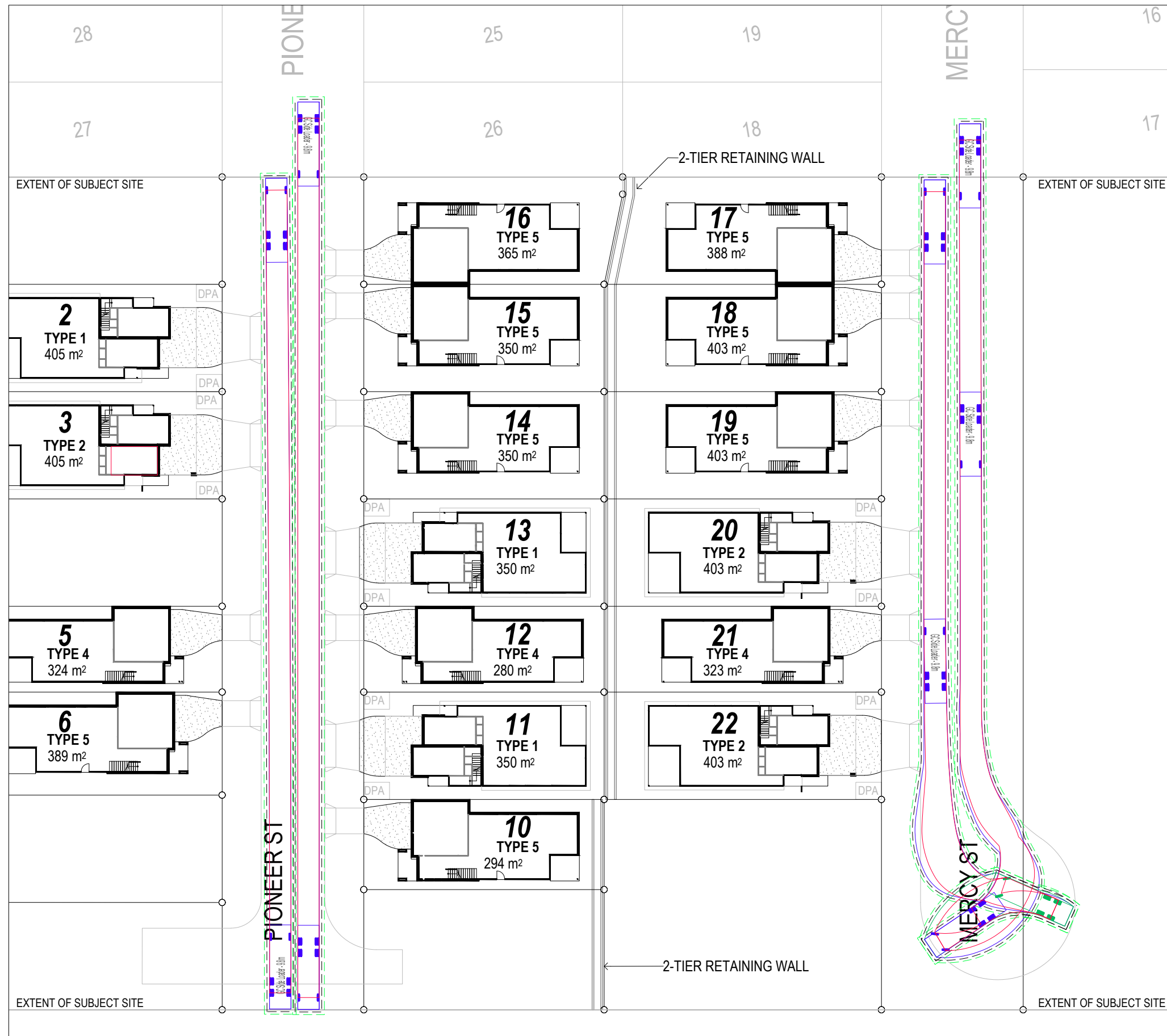
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B	03-02-23	AMENDED DESIGN	JS	IB	IB
A	08-11-22	ORIGINAL ISSUE	JS	RJ	RJ



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

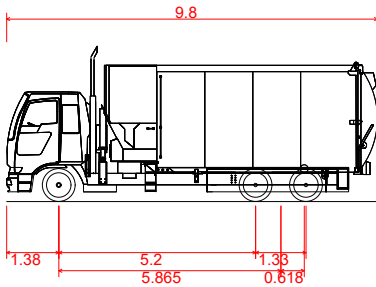
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DRAWING TITLE	REFUSE COLLECTION SWEEP PATH ANALYSIS STATIC COLLECTION PLAN (STAGE 2)

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DRAWING NUMBER	22GCT0014-01	REVISION	C
DATE	28 Aug 2023	SHEET	1 OF 1

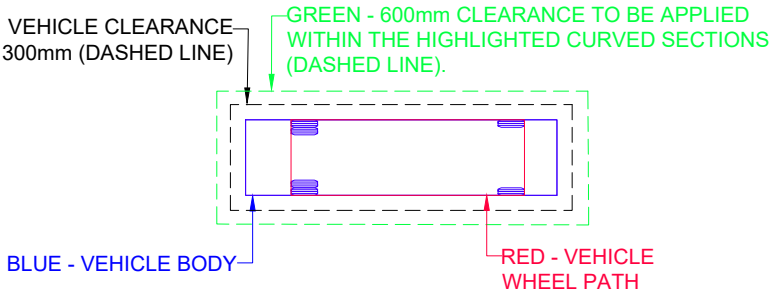


PLEASE NOTE: ROAD RESERVE
DETAILINGS AND MEASUREMENTS
ARE INDICATIVE ONLY, AND SUBJECT
TO FINAL DESIGN.

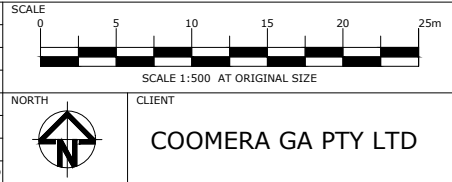
RJ Jones DIRECTOR
RICHARD JONES RPEQ 8943
APPROVED 28 Aug 2023



GC Side Loader - 9.8m	
Overall Length	9.800m
Overall Width	2.500m
Overall Body Height	4.100m
Min Body Ground Clearance	0.250m
Track Width	2.472m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	11.500m
Design Speed Forward	10.0km/h
Manoeuvring Speed Forward	5.0km/h



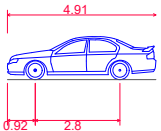
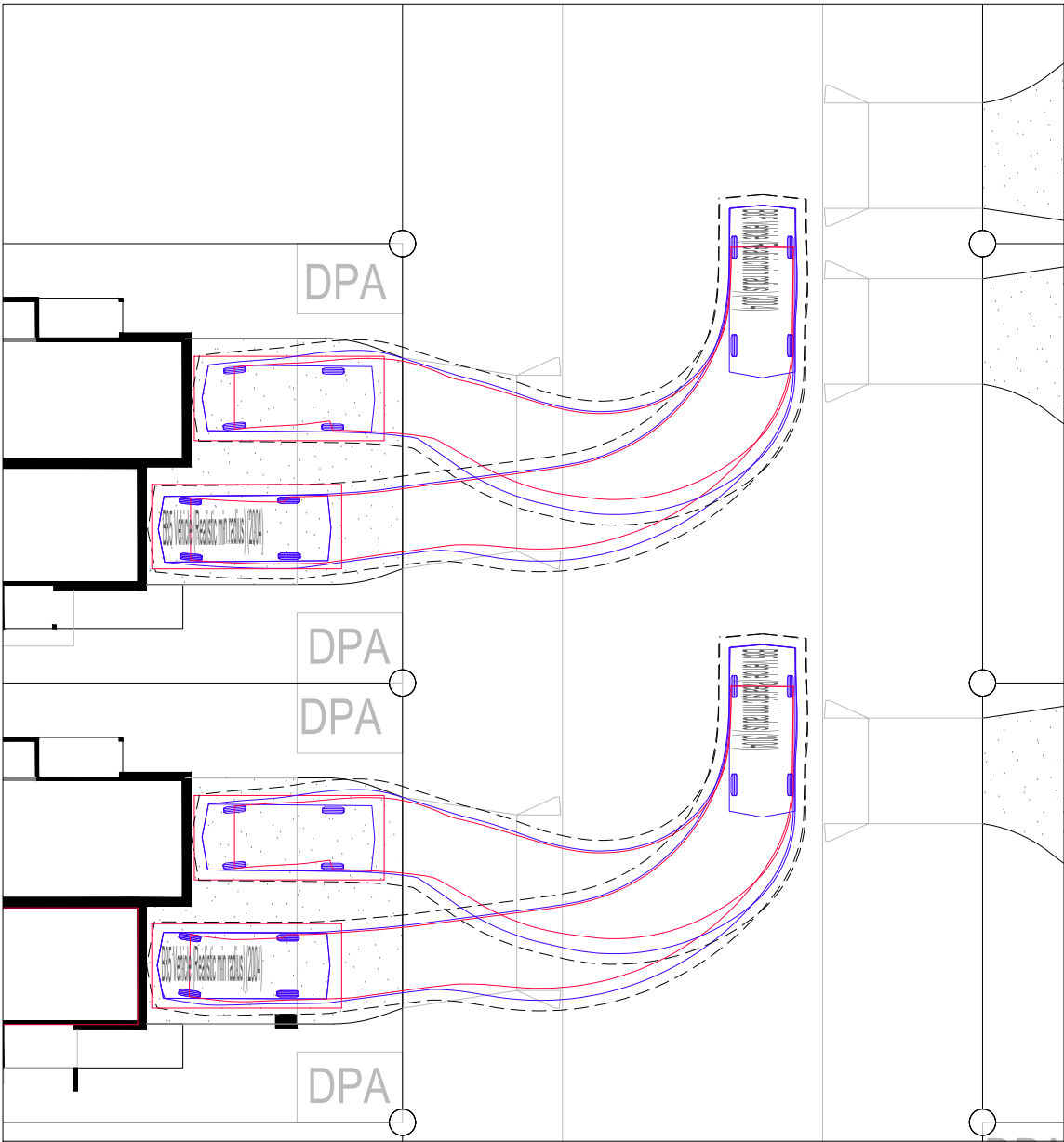
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C	28-08-23	INFORMATION REQUEST	JS	RJ	RJ
B	03-02-23	AMENDED DESIGN	JS	IB	IB
A	08-11-22	ORIGINAL ISSUE	JS	RJ	RJ



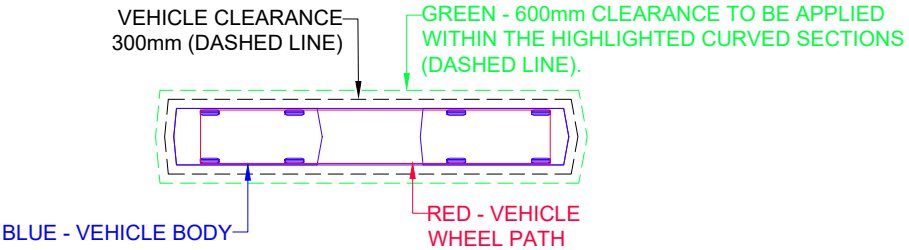
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PROJECT	54 GEORGE ALEXANDER WAY, COOMERA
DRAWING TITLE	REFUSE COLLECTION SWEEP PATH ANALYSIS CONNECTED COLLECTION PLAN (STAGE 3)

PROJECT NUMBER	22GCT0014	ORIGINAL SIZE	A3
DRAWING NUMBER	22GCT0014-02	REVISION	C
DATE	28 Aug 2023	SHEET	1 OF 1



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
Design Speed Forward 5.0km/h



A	28-08-23	ORIGINAL ISSUE	JS	RJ	RJ
REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED

SCALE
0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

NORTH
N

CLIENT
COOMERA GA PTY LTD



TTM CONSULTING PTY LTD
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E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT 54 GEORGE ALEXANDER WAY, COOMERA	PROJECT NUMBER 22GCT0014	ORIGINAL SIZE A3
DRAWING TITLE PARKING ACCESS SWEEP PATH ANALYSIS DRIVEWAY ACCESS FOR DESIGN TYPES 1-2	DRAWING NUMBER 22GCT0014-03	REVISION A
	DATE 28 Aug 2023	SHEET 1 OF 1



Attachment E – Request for Vertical Sightline Mitigation

Memo**PROJECT**

54 George Alexander Way, Coomera

SUBJECT

Non- Conforming Sight Distance (Pioneer Street)

OUR REF

30157884

COUNCIL REF

COM/2023/16

DATE

04/08/2023

ATTENTION

TTM - Mr Richard Jones, Mr Joshua Smith

Richard, Joshua

Further to recent correspondence, we draw your attention to the vertical road geometry proposed for Pioneer Street and confirm we are unable to provide compliant sight distance as necessary for a 50km/hr design speed.

There are several reasons that contribute to this non-conformance, however, is most notably due to the interface with the adjacent development located at 1 Talpa Street, Coomera. (ROL 201700439).

As you are aware, construction of the adjacent development has recently concluded, and we are required to tie into the as constructed levels. The adjacent site is quite steep right to the property boundary whereas this site is less so requiring an approx. 12% change in vertical grade.

We understand the 50km/hr design speed requires a minimum of 53m of sight distance, however we are only able to achieve in order of 35m with the current vertical geometry.

The sight obstruction is generally located at the interface between the two developments. Our opportunity to encroach on the adjacent site and modify the vertical road geometry is limited as there are now live services located within the road reserve.

Following recent discussions, we have undertaken several design iterations in attempt to achieve the minimum sight distance requirements, however given the spatial limitations, none of them provided any meaningful improvement to that mentioned above. On account of the narrow lot width, attempts to relocate and provide larger vertical curve further into the subject site were also unsuccessful. There is simply insufficient room to provide the appropriate vertical curve lengths necessary to conform with the adjacent sight distance.

Accordingly, we would appreciate if the design speed environment could be reduced or alternatively speed control measures, traffic calming devices or similar be employed to mitigate the impacts.

Please contact the undersigned if you have any questions.

Yours sincerely

Gary Menzies

Associate Technical Director

(07) 5503 4818