Genesis Traffic

Reference: 23016

26 August 2024

Mapletree SR Australia Management Pty Ltd
Mr. Eng Khoon Tan
Senior Manager, Group Development
Mapletree (Australia)
Email: tan.engkhoon@mapletree.com.sg

Dear Eng,

Re: 20 Kelso Crescent, Moorebank (SSD-58978472) – Traffic Response to RFI

I have considered the relevant traffic and parking matters from TfNSW, NSW Department of Planning and the Environment (DPE), Liverpool City Council and Public Submission.

This supplementary assessment responds to those matters and is to be read in conjunction with the architectural plans prepared by Nettleton Tribe. The corresponding responses are outlined in the following:

Council Comment 1 - Traffic Generation

The submitted Traffic Impact Assessment (TIA) appears to underestimate the traffic generation of the development by using lower traffic generation rates compared to the Sydney average trip generation rates provided in the TfNSW 'Guide to traffic generating developments' (Technical Direction TDT 2013/04a1).

Our Response

Section 8.1 of the TIA thoroughly examined the discrepancy found in the TfNSW published data. However, the assessment has now been updated to reflect 0.52 vtph and 0.56 vtph. The corresponding assessment outcome is described in our response to Comment 2 below.

Council Comment 2 - Intersection Assessment

The TIA report indicates that the intersection of Newbridge Road and Kelso Crescent will operate at an unacceptable Level of Service in the future, particularly for right turn movements from Kelso Crescent. A Comprehensive Road Safety Review is recommended, to identify necessary treatments for improving safety at this intersection.

The applicant also needs to reassess the intersection performance based on the traffic generation using the TfNSW rates (0.52 and 0.56 vtph for the AM and PM peak respectively) and identify any improvements that may be required to mitigate the impacts from the development.

Our Response

The intersection performance has been reassessed using 0.52 vehicles per hour (vtph) during the AM peak and 0.56 vtph during the PM peak as a basis. The warehouse with a total GFA of 34,410m² is now projected to generate the following traffic movements (Table 1). For reference, the TfNSW's published daily traffic rate is 4.6 vpd per 100m².

Table 1 Total Trip Generation

Period	AM peak (vtph)	PM peak (vtph)	Daily (vpd)
Total	**179**	**193**	**1,583**
Cars (77%)	138	149	1,219
Trucks (23%)	41	44	364

Applying the same distribution proportions for each direction, Table 2 below summarises the revised car movements to and from each direction.

Table 2 Trip Distribution (Cars)

Cars		AM Peak		PM Peak	
		In (80%)	Out (20%)	In (20%)	Out (80%)
Direction	**Total Trips**	**110**	**28**	**30**	**119**
	Proportion				
North	21%	23	6	6	25
East	14%	15	4	4	17
South	22%	24	6	7	26
West	43%	47	12	13	51

The updated SIDRA results are presented in the following tables. As requested by TfNSW, this assessment further considers a design horizon of 5 and 10 years, incorporating an annual background traffic growth rate of 1.5%.

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Table 3 Existing vs Post-development Network Operation – **Base Year 2023**

Intersection	AM Peak		PM Peak	
	LOS	AVD (s)	LOS	AVD (s)
Existing				
Newbridge Rd/Kelso Cr	C (SRT)	33.0	B (SRT)	26.7
Kelso Cr/Field Close	A (ERT)	5.1	A (ERT)	4.8
Kelso Cr/Iraking Ave	A (SRT)	5.2	A (SRT)	5.1
Iraking Ave/Seton Rd	A (WRT)	5.3	A (WRT)	5.2
Heathcote Rd/Seton Rd	A	6.1	B	14.6
Post-Development				
Newbridge Rd/Kelso Cr	C (SRT)	35.5	C (SRT)	34.5
Kelso Cr/Field Close	A (ERT)	5.2	A (ERT)	4.9
Kelso Cr/Iraking Ave	A (SRT)	5.2	A (SRT)	5.1
Iraking Ave/Seton Rd	A (WRT)	5.3	A (WRT)	5.2
Heathcote Rd/Seton Rd	A	6.8	B	16.1

Table 4 Existing vs Post-development Network Operation – **Year 2028**

Intersection	AM Peak		PM Peak	
	LOS	AVD (s)	LOS	AVD (s)
Existing				
Newbridge Rd/Kelso Cr	D (SRT)	49.3	C (SRT)	32.8
Kelso Cr/Field Close	A (ERT)	5.1	A (ERT)	4.8
Kelso Cr/Iraking Ave	A (SRT)	5.2	A (SRT)	5.2
Iraking Ave/Seton Rd	A (WRT)	5.3	A (WRT)	5.2
Heathcote Rd/Seton Rd	A	6.2	B	15.5
Post-Development				
Newbridge Rd/Kelso Cr	D (SRT)	55.5	C (SRT)	46.7
Kelso Cr/Field Close	A (ERT)	5.3	A (ERT)	4.9
Kelso Cr/Iraking Ave	A (SRT)	5.3	A (SRT)	5.2
Iraking Ave/Seton Rd	A (WRT)	5.3	A (WRT)	5.2
Heathcote Rd/Seton Rd	B	6.8	B	17.9

Table 5 Existing vs Post-development Network Operation – **Year 2033**

Intersection	AM Peak		PM Peak	
	LOS	AVD (s)	LOS	AVD (s)
Existing				
Newbridge Rd/Kelso Cr	F (SRT)	100.3	D (SRT)	47.3
Kelso Cr/Field Close	A (ERT)	5.2	A (ERT)	4.9
Kelso Cr/Iraking Ave	A (SRT)	5.3	A (SRT)	5.2
Iraking Ave/Seton Rd	A (WRT)	5.4	A (WRT)	5.3
Heathcote Rd/Seton Rd	A	6.3	B	17.3
Post-Development				
Newbridge Rd/Kelso Cr	F (SRT)	137.8	E (SRT)	94.6
Kelso Cr/Field Close	A (ERT)	5.3	A (ERT)	5.0
Kelso Cr/Iraking Ave	A (SRT)	5.2	A (SRT)	5.2
Iraking Ave/Seton Rd	A (WRT)	5.7	A (WRT)	5.3
Heathcote Rd/Seton Rd	B	7.5	B	21.4

Abbreviation

WRT = West Approach Right Turn

ERT = East Approach Right Turn

SRT = South Approach Right Turn

NLT = North Approach Right Turn

The assessment, which compares the road network with and without the proposed development traffic, found that the local network can handle the development without a decrease in Level of Service (LOS). However, it noted that by 2033, the south approach of Kelso Crescent at its intersection with Newbridge Road will fail under the AM peak background traffic demand. With the development intuitively, this critical approach will continue to fail. At this point of time, it is expected that area/precinct-wide traffic investigation would be undertaken by the relevant road authority to continue to accommodate the background traffic in the overall road network.

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Council Comment 3 - Vehicular Access

According to the TIA, it is proposed to provide (5) new access driveways, three on Kelso Crescent and two on Seton Road. All light vehicles will access the car park via the northern access at Kelso Crescent and southern access at Seton Road. Truck access to the site involves Kelso Crescent (entry only) and Seton Road (exit only) for those destined to the ground floor. It also proposes entry and exit for trucks via Kelso Crescent to Level 1 Warehouses.

The proposed five (5) driveways is excessive and will reduce the availability of on-street parking. Google maps show a high level of occupancy of on-street parking on the streets fronting the development site. It is the requested the proposal reduce the number of access driveways. For instance, the proposed truck entry access on Kelso Crescent near the intersection with Newbridge Road can be amalgamated with the second access for trucks away from the intersection.

Our Response

Architectural advice provided to this Office confirms that the design cannot physically accommodate a consolidated driveway arrangement on the Kelso Crescent frontage (as suggested in the above comments). This is due to different levels (one ramp leading to the first level; another on the ground level).

Our desktop assessment (Table 6 - overleaf) reveals the potential loss of up to 4 parking spaces on the street. If the Council's recommendation is implemented, i.e. consolidating the two driveways on Kelso Crescent, the loss would likely be 3 spaces (savings of 1 space). It is our view that the quantum lost (4 spaces) is not significant. Notwithstanding, if it is deemed necessary, the applicant is amenable to commission a brief survey of the surrounding car park to record the existing car parking spaces' supply and demand to determine whether the anticipated loss will be adverse to the local area.

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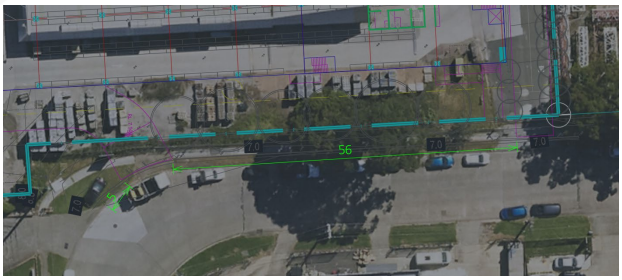
Table 6 On-Street Parking on Kelso Crescent and Seton Road

Kelso Crescent	
Existing	Proposed
	
Available On-Street Parking: 10 spaces	Available On-Street Parking: 5 spaces
Seton Road	
Existing	Proposed
	
Available On-Street Parking: 7 spaces	Available On-Street Parking: 8 spaces
Net Total On-Street Parking:	
17 spaces	13 spaces

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Council Comment 4 - Parking Provisions

The TIA indicates that the development will provide 180 parking spaces. This is 14 spaces short of the 194 spaces requirement of the DCP. The DCP provides car parking rates that are localized and considerate of the Liverpool context. The applicant therefore needs to provide all 194 car parking spaces on site as per the DCP.

It is noted that the development proposes to provide 33 bicycle storage spaces (30 for employees and 3 for visitors), 4 shower/change rooms (2 males, 2 females) and 30 lockers. This is acceptable.

Our Response

The proposed car parking number is a suitable balance between the RMS and DCP criteria. The anticipated onsite employment projection is 174 individuals. The provision of 180 spaces is in line with the development context and is in keeping with the overall 'green travel' initiative, which is underpinned by a principle that is applying a constraint/control of parking supply to discourage excessive private vehicle use.

By contrast, a move towards providing more parking spaces onsite (well in excess of anticipated employment figures) appears to contradict the very objective stated in Council's Comment no. 6 below - concerning encouraging green travel planning.

For this reason, the assessment deems the proposed 180 spaces are a suitable arrangement which has regard to the site's location, accessibility and are adequate for the development.

Council Comment 5 - Pedestrian Crossing Facilities

There are currently no safe pedestrian crossings to enable access to the bus stops on the northern side of Newbridge Road. Council recommends considering and identifying pedestrian crossing facilities on both Newbridge Road and Kelso Crescent to improve safety for pedestrians

Our Response

Signalised pedestrian crossing is available at the intersection of Newbridge Road and Epsom Road some 450m (well within walking distances) to the east from the site.

In relation to crossing opportunity on Kelso Crescent, Council may consider the installation of pedestrian refuge on the less trafficked Field Close.

Council Comment 6 - Green Travel Plan Mode Share Target

The proposed 20% mode share target for public transport outlined in the Green Travel Plan is unlikely to be achieved without targeted interventions. Council therefore recommends further exploration of practical solutions, to promote public transport usage and reduce reliance on private vehicles.

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Our Response

Regardless of any intervention, the availability and accessibility of alternative mode of travel are crucial in the GTP's implementation/effectiveness.

In this context, the GTP aims to reduce reliance on private vehicles for travel to and from the site. Providing enough onsite parking for each employee expected to work at the premises does not align with the intention of encouraging occupants to use public transport. Therefore, the assessment takes the view that reducing onsite parking or allocating spaces to specific user groups, such as carpooling participants or users with specific needs, is the most practical approach to achieve the targeted public transport mode share.

Council Comment 7 - Design drawings of access and parking arrangements

The applicant will be required to provide design drawings of the proposed driveway and parking arrangements (including ramps and aisles) which are to be prepared in accordance with the DCP and Australian Standards. This is to be accompanied by swept path diagrams to demonstrate that all expected vehicles can be accommodated. This will be presented to the Liverpool Local traffic Committee for assessment and approval.

Our Response

The proposed parking access and layout have been assessed against AS2890.1:2004 and AS2890.2:2018. The assessment confirms that the design provisions are sufficient and comply with the relevant standards. Further details of the assessment can be found in **Attachment 2**.

Council Comment 8 - Referral to Transport for New South Wales

As Newbridge Road is a state road, under the care and control of Transport for NSW (TfNSW), this application is referred to TfNSW for their comments. Specifically, Council seeks their input on road safety treatments at the Newbridge Road/Kelso Crescent intersection.

Our Response

Acknowledged. The assessment highlights that consultation with TfNSW has been undertaken as part of Attachment 5 in the TIA. The feedback received from TfNSW has been addressed in the submitted TIA.

TfNSW Comment 1

The proposed development has adopted significantly lower traffic generation rates of 0.24 and 0.18 vtph per 100sqm during the AM and PM peaks respectively. These rates are based on 4 business parks and industry estates in the Sydney metropolitan area, of which, TfNSW would consider Riverwood to be the only comparable site to this DA. TfNSW recommends the traffic generation rates for the proposed development to be determined using the Sydney Average trip generation rates of 0.52 and 0.56 vtph per 100sqm during the AM and PM peaks in accordance with technical direction TDT 2013/04a requirements.

Our Response

This matter has been addressed in the response to Council Comment 2.

TfNSW Comment 2

Revised modelling is recommended taking into consideration Sydney Average trip generation rates of 0.52 and 0.56 vtph per 100sqm during the AM and PM peaks and performance levels of intersections on Heathcote Road and Newbridge Road modelled as a network.

Our Response

This matter has been addressed in the response to Council Comment 2.

It is impractical to model the intersections along Heathcote Road and Newbridge Road as a network as they are located too far apart with multiple traffic origins and destinations in between.

TfNSW Comment 3

Any future submission should be accompanied by SIDRA files for further consideration.

Our Response

Acknowledged - SIDRA files will accompany this submission.

DPE Comment 1

The Department notes that Transport for NSW requires higher total trip generation assumptions than have been used in the Traffic Impact Assessment (TIA). All relevant sections of the TIA must be updated in accordance with the revised assumptions, and any changes assessed, including intersection performance.

Our Response

This matter has been addressed in the response to Council Comment 2.

DPE Comment 2

Further discussion is required in relation to parking rates. The TIA states the 180 spaces provided will be adequate to cater for 174 staff on site (please clarify this number as discussed in point 2 above). However, no discussion has been provided in relation to shift change-overs over the 24-hour operation. The EIS states the development is anticipated to generate between 200-240 operational jobs. Assuming 174 is the number of employees on site at one time (and 200-240 is total employees) the proposed on-site parking provision would appear to be inadequate to cater for shift change-overs.

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Our Response

It is confirmed that there will be a total of 174 staff/employees on-site at one time. The accompanying EIS will be revised accordingly to reflect the correct staffing level.

DPE Comment 3

The vehicle sight line triangle shown in Attachment 4 (sheet no. 01 of 15 of the TIA) at the south eastern exit to the site protrudes onto the neighbouring property. Additionally, the sightline triangle shown for vehicles exiting the southern carpark protrudes through the wall of the building (north of the driveway). Additionally, the ground level swept paths shown in Attachment 4 (sheet no. 08 of 15) indicate 19 m Articulated Vehicles (AVs) utilising the soft landscaped area (as indicated on the landscape plan) within the electrical easement along the southern boundary of the site. Amendments must be made to the plans to address these issues.

Our Response

The sight triangle in the swept path assessment represents the pedestrian sightline triangle. The design objective of this pedestrian sight triangle is to ensure that drivers can see pedestrians on footpaths while exiting the site. The image below shows that the neighbouring property is bordered by mesh fencing, which will be retained following the development, does not obstruct drivers' view of pedestrians on the footpath.

On this basis, the pedestrian sight line is not impeded by the neighbour property, and therefore, meets the design objective of the AS requirement.

Regarding the impeded sight line from the southern carpark, no pedestrians will be walking on the driveway and thus, the pedestrian sight line is not applicable. Consequently, the triangle sight line will be removed from the swept path diagrams.

DPE Comment 4

Please confirm that no parking is permitted on the southern and eastern sides of Seton Rd where the swept paths for 19 m AVs are shown to be adjacent to the curb. Please also provide swept path assessments for the southern and northern ends of Iraking Road given the proposed truck routes indicate use of Iraking Road from the northern exit via Iraking and Seton Road to the south.

Our Response

Swept path diagrams have been revised, ensuring 19m AV swept paths clear the on-street parking. Please refer to Sheet 09 in **Attachment 2**. Furthermore, swept path assessments of 19m AVs turning at the northern and southern ends of Iraking Road are provided in Sheet 14 and 15 of **Attachment 2**.

DPE Comment 5

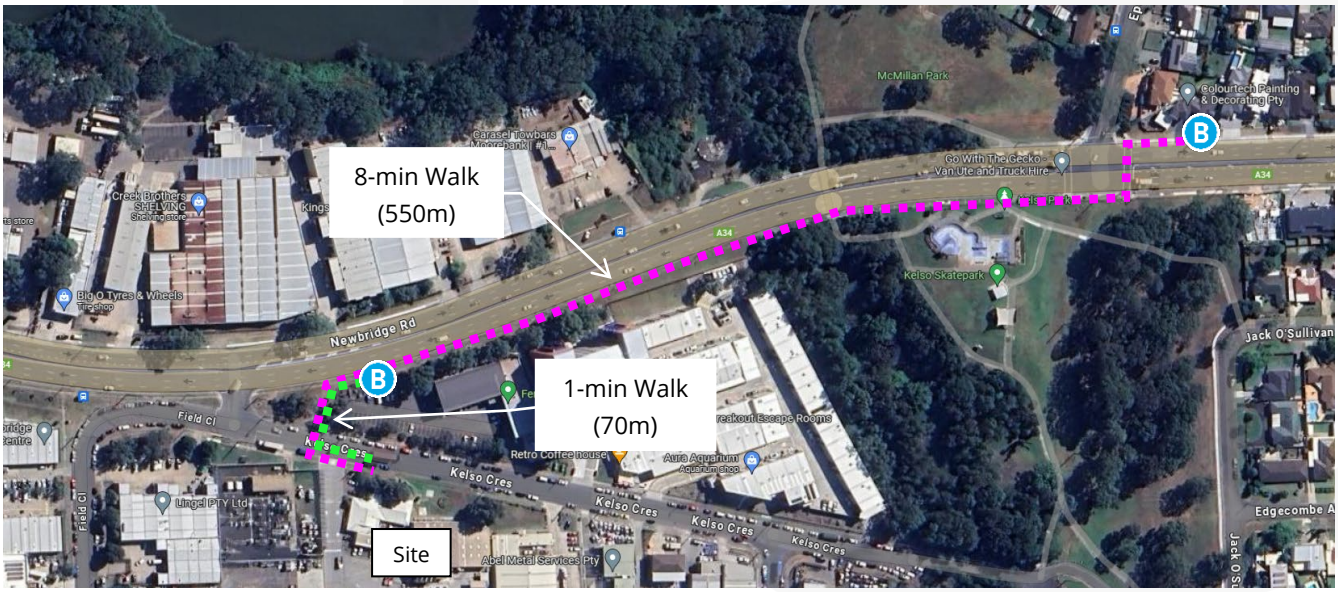
Further details are required regarding the bus services accessible from the site in section 10.5.3, including the frequency and destination/origin of services, to support the assumptions of the Green Travel Plan.

Our Response

Local bus services surrounding the site are summarised in the table below.

Bus Line	Bus Route	Peak Frequency
903	Liverpool to Chipping Norton (Loop Service)	1 trip per hour
M90	Burwood to Liverpool	6-7 trips per hour

The closest bus stops are illustrated in the figure below, showing the walking path, distance and time to the site.



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DPE Comment 6

Discussion/ justification around selection of heavy vehicle routes is also required, particularly with regard to Moorebank Avenue and Heathcote Road. The Department notes that Heathcote Road appears to have significantly less exposure to adjacent residential development.

Our Response

The selection of heavy vehicles routes is determined using the National Heavy Vehicle Regular (NHVR) route planner tool. The tool generates approved routes for heavy vehicles use, ensuring the shortest trip to and from the site with minimal impact on the surrounding development.

Public Comment 1

My objection with this application is the one-way traffic flow through this new complex thus exiting on Seton Road.

This street for many years has been subject to council concerns based on the already heavy traffic flow and the overcrowded parking issues caused from the already heavy vehicles / trucks and cars in the area.

Seton Road is not a very wide road and with cars / trucks parked on either side of the road (2) trucks cannot pass in this road thus creating seriously dangerous situations. Over the years this road has seen many vehicles damaged due to heavy vehicles crashing into parked cars etc.

The traffic lights situated at Seton Road / Heathcote Road currently cause many delays for any vehicles exiting this industrial estate. Queues to exit this estate in the afternoons can nearly reach the proposed development site.

I have serious concerns that if this development is able to proceed with its current traffic flow plan this would cause catastrophic safety issues on the Seton Road and the surrounding streets which are already struggling to cope.

Our Response

1. Regarding the suitability of Seton Road in the context of this development, the assessment indicates that the proposed land use is consistent with the site's existing character and is in keeping with the surrounding areas. Seton Road has accommodated industrial vehicles for many years without significant issues, as demonstrated by the minimal number of vehicle crashes or incidents recorded in the TfNSW Crash Data (Section 3.4 of the TIA).
2. Concerning traffic delays and queues on Seton Road, the site is located approximately half a kilometre north of the signalised intersection between Seton Road and Heathcote Road. Observations at the site did not show traffic queues reaching or approaching the subject site during peak periods of road network activity.

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Public Comment 2

We are the property owners at 353 Newbridge Rd, Moorebank and have been identified as a neighbouring property for the development reference SSD-58978472, located at 20 Kelso Crescent, Moorebank.

The intersection at Kelso Crescent and Newbridge Road requires traffic lights to support the heavy vehicle traffic that will be additionally increased by the sizable development. In addition, a decrease in the road speed along Newbridge Rd, between Bridge Rd, Moorebank and Kelso Crescent to 60klm is required.

Please note that the Kelso Crescent/ Newbridge Road intersection is already dangerous and congested with heavy vehicles accessing Newbridge Road from Kelso Crescent and we have seen numerous accidents at this intersection, some serious.

If the above recommendations are included in the development SSD-58978472, we would welcome the project without objection.

Our Response

1. The Traffic Impact Assessment examines the road network's peak periods, typically between 7am and 9am, and 4pm and 6pm. During these times, the assessment for the development projects (using conservative traffic generation rates published and provided by TfNSW) anticipates 5 trucks per hour turning left from Kelso Crescent onto Newbridge Road in the morning and 6 trucks per hour in the afternoon. Tables 3, 4, and 5 on pages 3 and 4 of this submission also demonstrate that the development does not significantly degrade the intersection's level of service.
2. Regarding crash and safety concerns, Section 3.4 of the TIA, which addresses historical crash data at the intersection, recorded 5 different crashes over a 5-year period. There was no repetitive crash type to suggest any specific road or design deficiency that would constitute a significant safety issue in the design.
3. The assessment acknowledges that background traffic growth will exceed the intersection's capacity by 2033. However, this is not a consequence of the traffic generated by the proposal but rather the result of background traffic growth.

I trust the above adequately responds to Council's concerns. Otherwise, please do not hesitate to contact me at 02 7255 8198 to discuss this further.

Yours faithfully,

Bernard Lo BE (Civil), MTrans, PRE 0001491
Principal

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Attachment 1

Architectural Plan

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Attachment 2

Compliance Check and Swept Path Assessment

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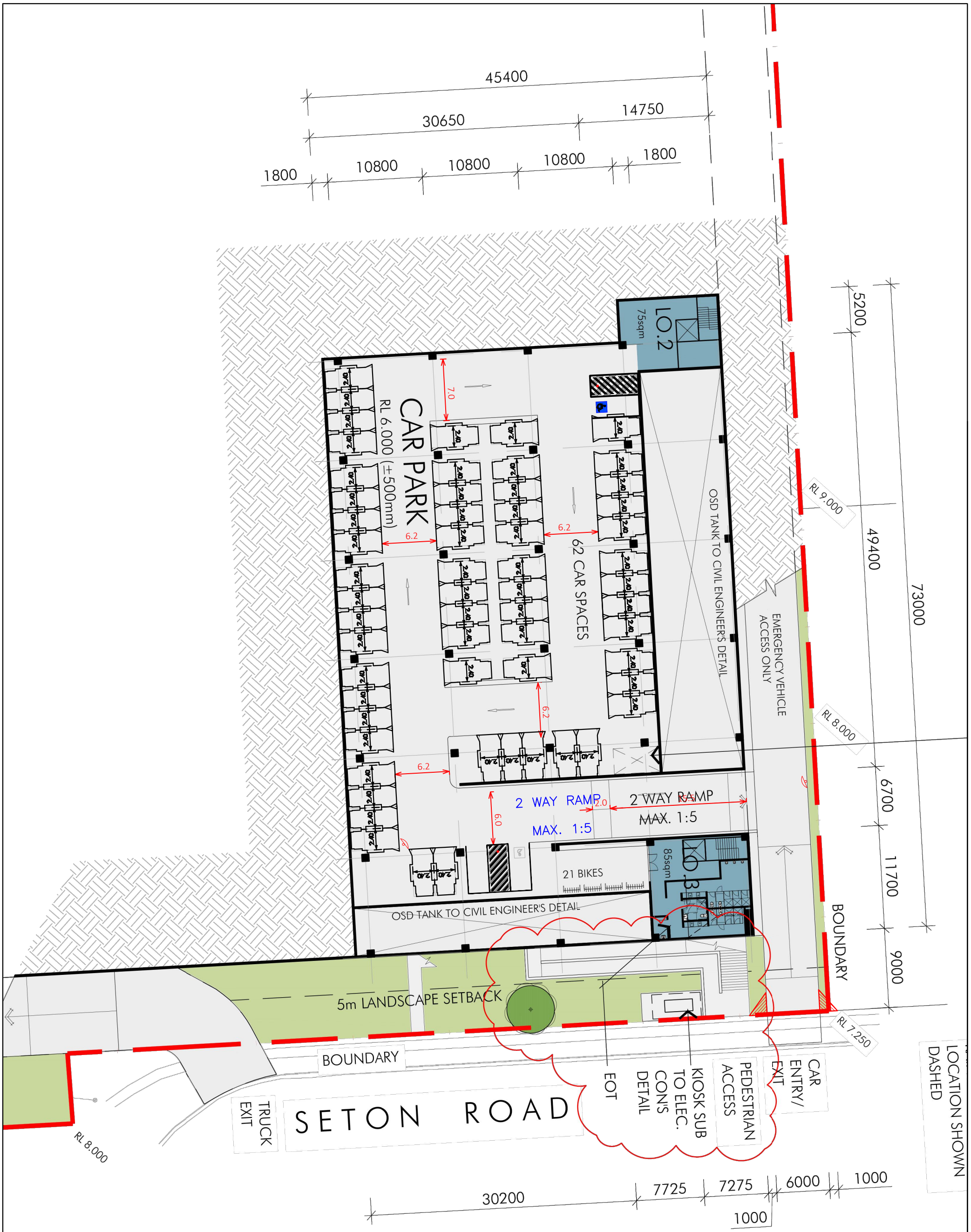
Features	Requirement	Provision	Compliance	Notes
Access for Car Parking (AS2890.1:2004) – Category 2				
Access Width	6m-9m combined	Provided	Yes	
Location (Category 3)	6m from any intersection tangent	Exceeds minimum requirement	Yes	
Sight Distance (60km/h)	Min 45m (50 km/h)	Provided	Yes	
Sight Splays (Pedestrian)	2.5m x 2.0m	Provided	Yes	
Access for 19m long Semi Trailer (AS2890.2:2018)				
Access Driveway	12.5m (two-way on minor road)	14.5m (two-way) 9m (one-way)	Yes	
Ramp Grade	Max 15.4% (1:6.5)	1:12	Yes	
Rates of Change of Grades	Max 6.25% (1:16)	< 1:20	Yes	
Transitions	10m	10m	Yes	
Width (Single Lane)	3.5m	>3.5m	Yes	
Sight Distance (50km/h)	Min 83m	Provided	Yes	
Vertical Clearance	4.5m	6m	Yes	
Driveway / Ramp (AS2890.1:2004)				
Ramp Grade	Max 25% (1:4)	1:11	Yes	
Transitions	2.0m	5.3m	Yes	
Width	5.5m	6.1m	Yes	
Gradient for First 6m of driveway	Max 5% (1 in 20)	N/A	Yes	
Parking Modules (AS2890.1:2004) – User Class 1A				
Space Length	5.4m	5.5m	Yes	
Space Width	2.4m	2.5m	Yes	
Aisle Width	5.8m	6.2m	Yes	
Height Clearance	2.2m	3.17m	Yes	
Gradient	Max 5% (1 in 20)	N/A	Yes	



20 KELSO CRESCENT, MOOREBANK
BASEMENT LEVEL
CAR PARK DESIGN ASSESSMENT

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 01 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG
REVIEWED BY B.LO

SCALE A3 1:400

PRELIMINARY PLAN
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WARNING
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY.
THE EXACT LOCATIONS SHALL BE PROVEN ON SITE.
ALL EXISTING SERVICES SHOWN ARE NOT GUARANTEED.

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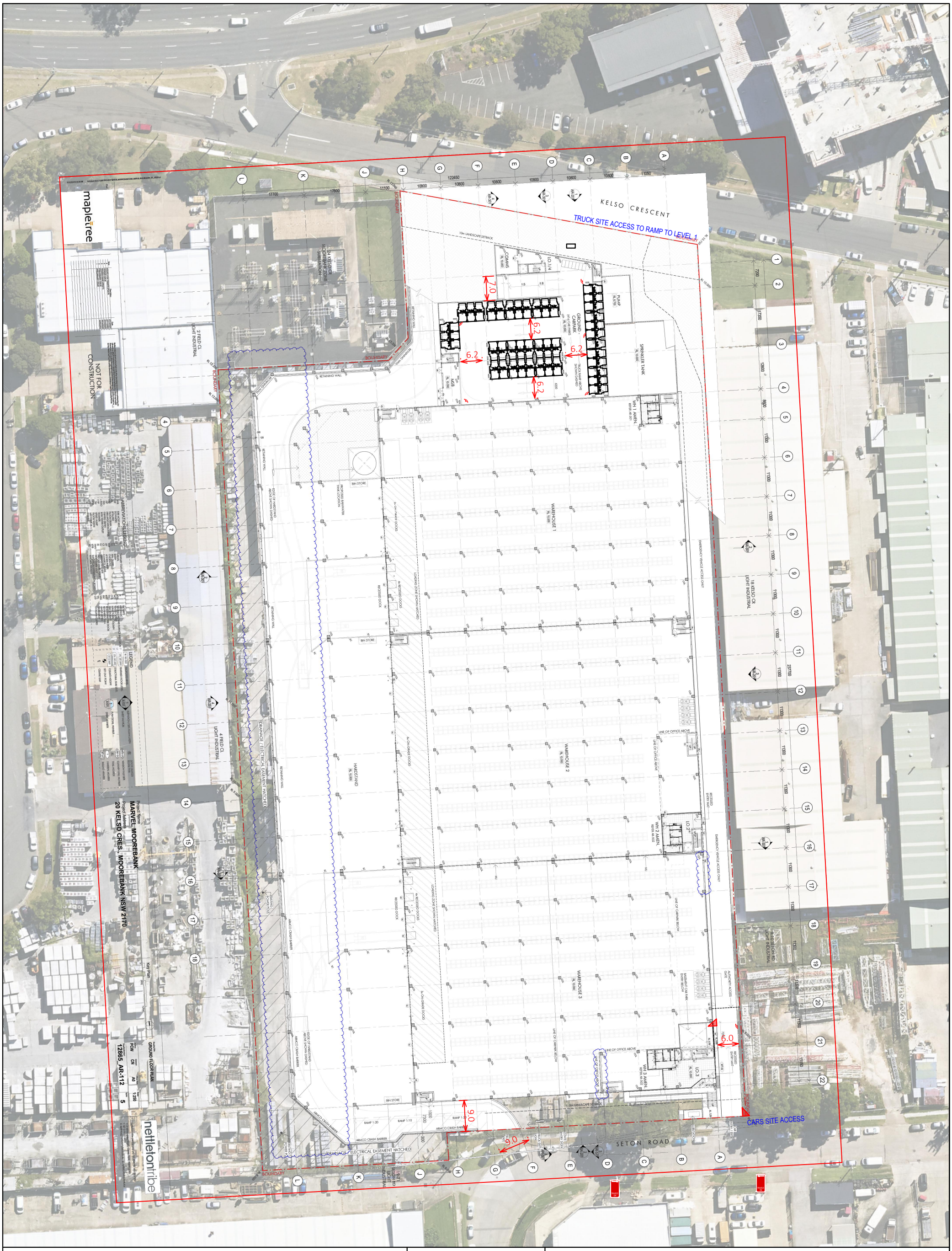
Plotted by Brian Bui



20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL
CAR PARK DESIGN ASSESSMENT

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 02 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 0 10.0 20.0 1:1000

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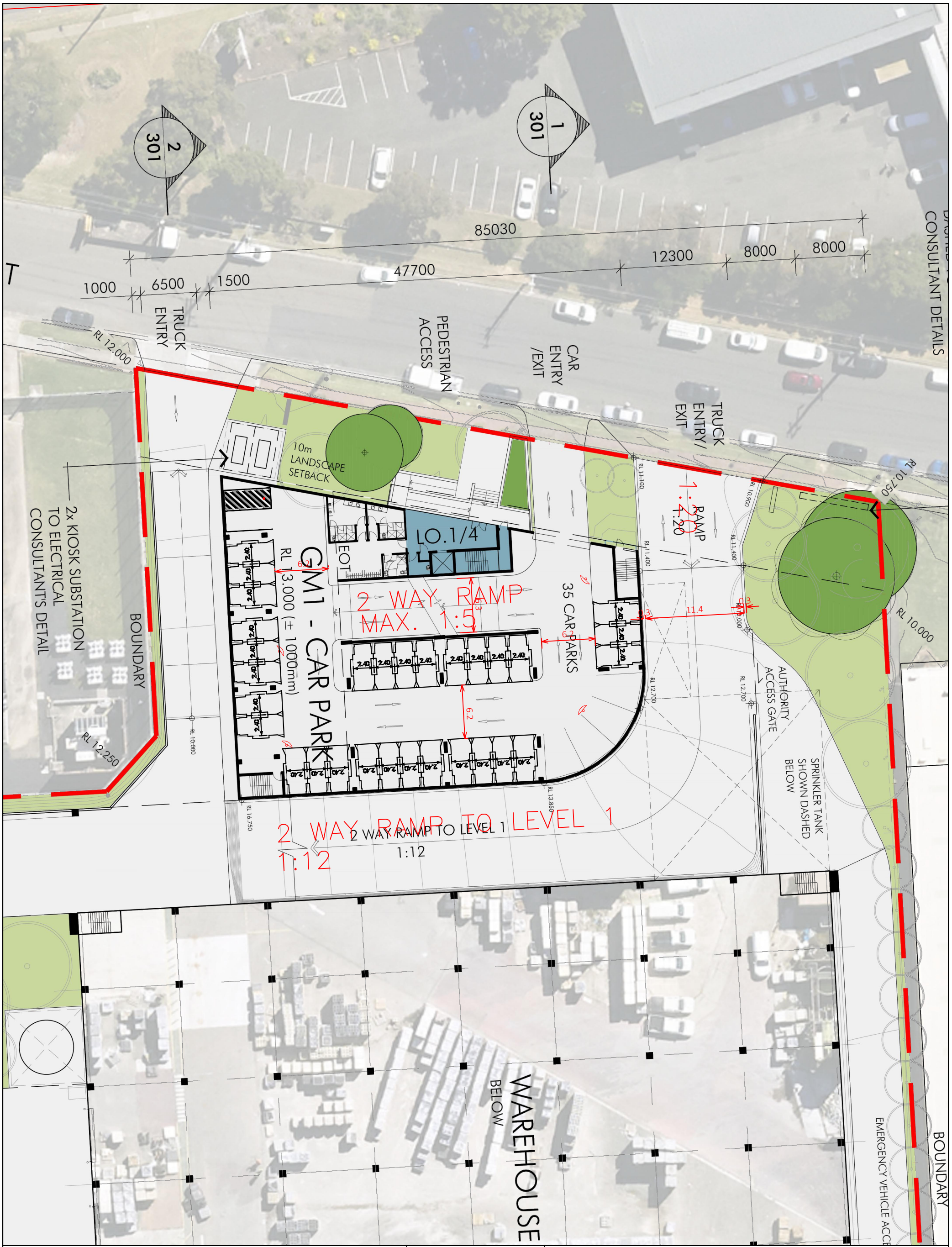

20 KELSO CRESCENT, MOOREBANK
GROUND MEZZANINE FLOOR
CAR PARK DESIGN ASSESSMENT

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 03 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

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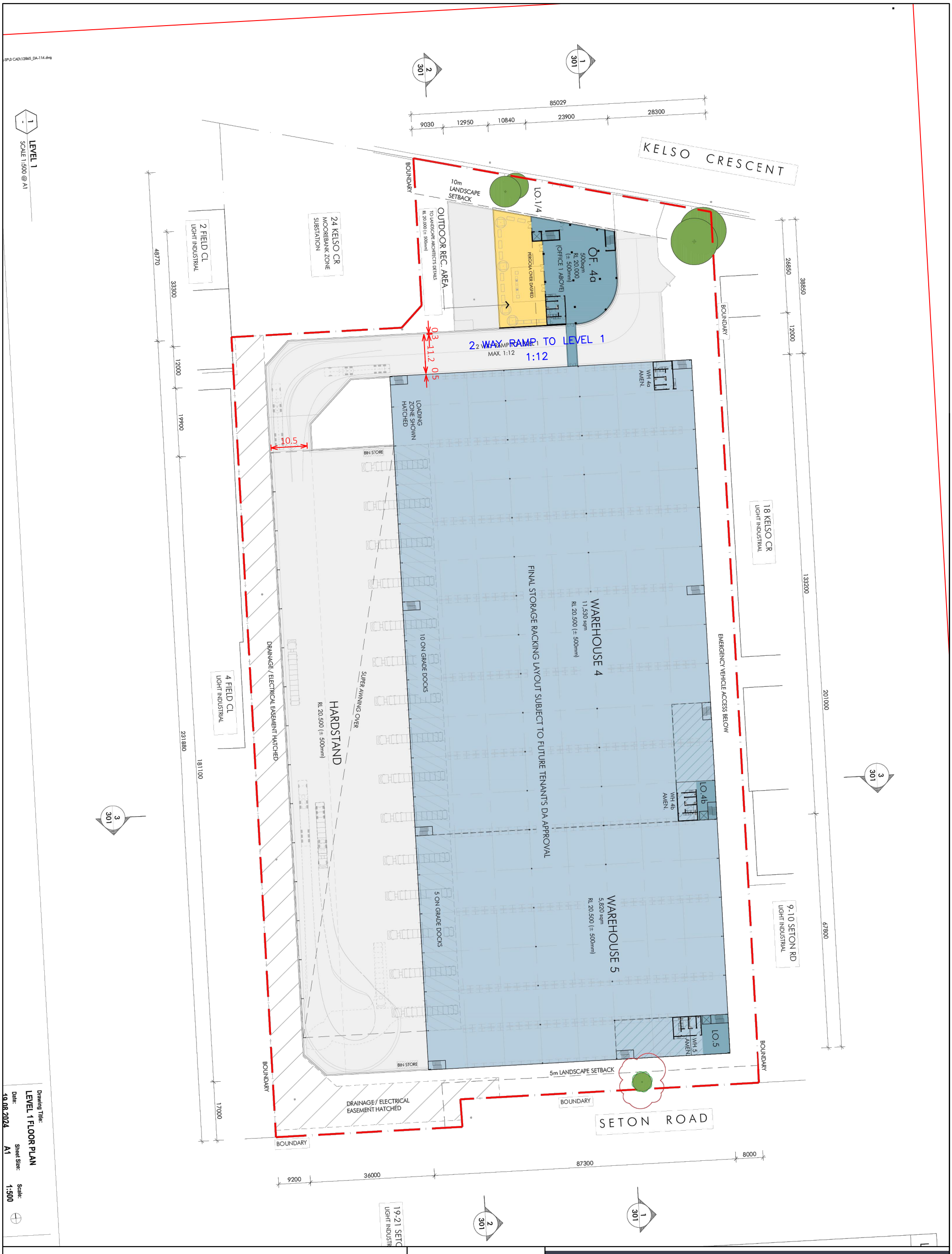

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Date: 19.08.2024
Sheet Size: A1
Scale: 1:500

20 KELSO CRESCENT, MOOREBANK
LEVEL 1
CAR PARK DESIGN ASSESSMENT

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 04 OF 15 ISSUE DATE 23 August 2024

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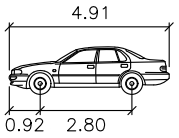
G:\2023\23016 - 20 Kelso Crescent, Moorebank\Drawings\23016-V1.10-SP.dwg
Plotted by Brian Bui

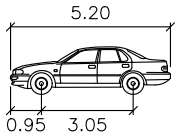
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

LO.2
75sqm

5200

RL 9.000

RL 8.000

CAR PARK
RL 6.000 (±500mm)

62 CAR SPACES

OSD TANK TO CIVIL ENGINEER'S DETAIL

EMERGENCY VEHICLE ACCESS ONLY

2 WAY RAMP
MAX. 1:5

2 WAY RAMP
MAX. 1:5

21 BIKES

LO.B1
85sqm

OSD TANK TO CIVIL ENGINEER'S DETAIL

LANDSCAPE SETBACK

BOUNDARY

B99 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

20 KELSO CRESCENT, MOOREBANK
BASEMENT LEVEL
SWEPT PATH ASSESSMENT- STANDARD B85 AND B99 VEHICLE

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 05 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG
REVIEWED BY B.LO

SCALE A3 1:250

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE PROVEN ON SITE. ALL EXISTING SERVICES SHOWN ARE NOT GUARANTEED.

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Genesis Traffic

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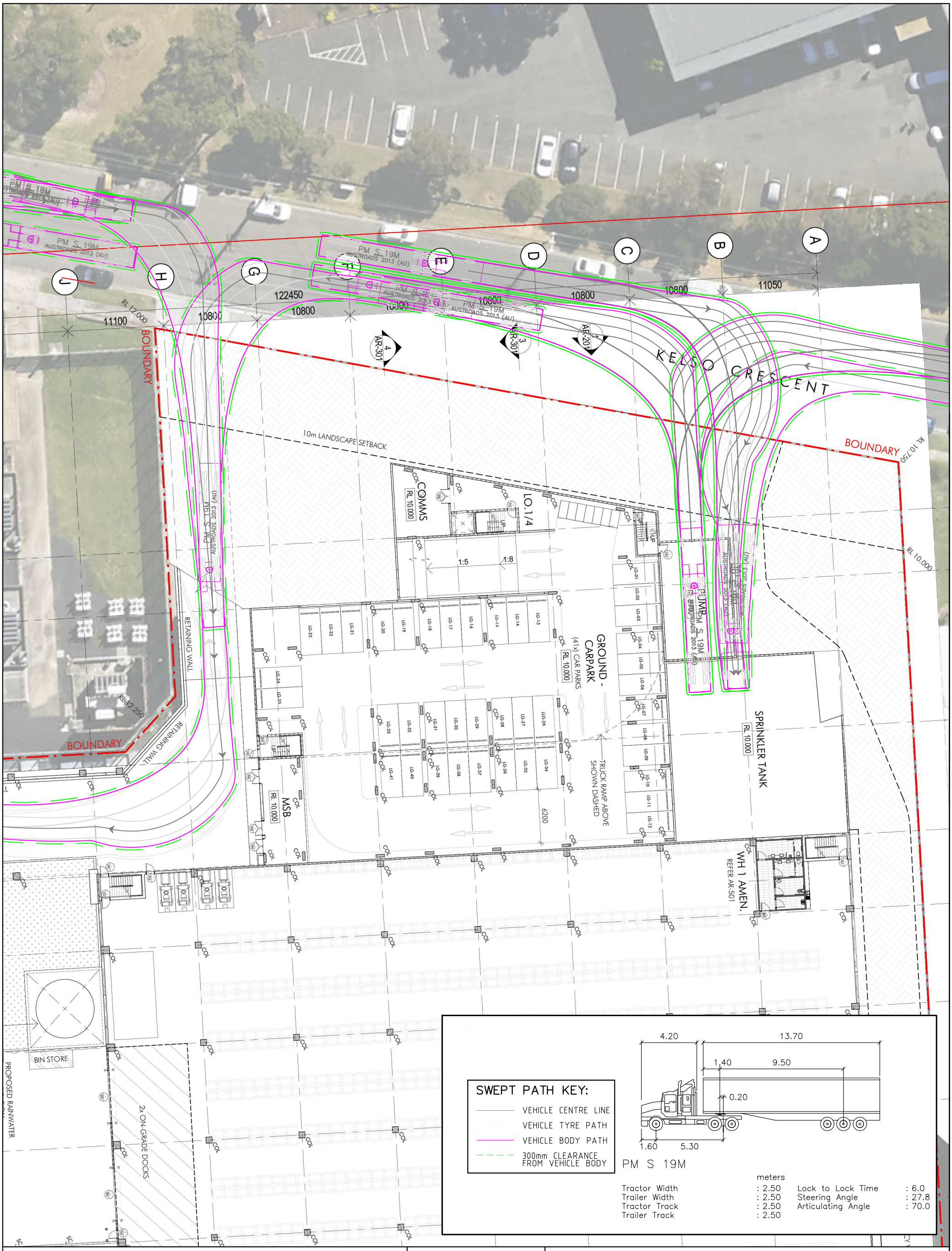
Plotted by Brian Bui



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

PM S 19M

meters			
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

20 KELSO CRESCENT, MOOREBANK
GROUND MEZZANINE LEVEL - ENTERING AND EXITING SITE
SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE

DRAWING REF NO. 23016-V1.10-SP | SHEET NO. 06 OF 15 | ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG | REVIEWED BY B.LO

SCALE A3 0 4.0 8.0 1:400

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

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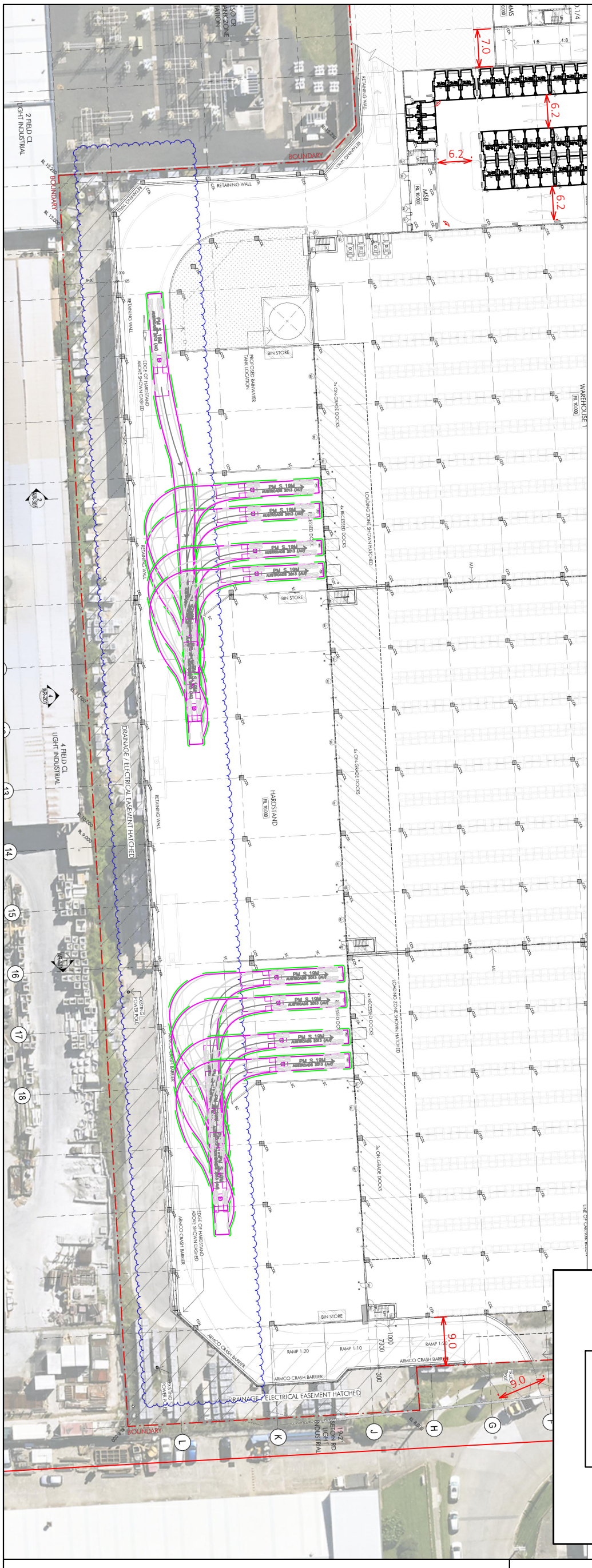
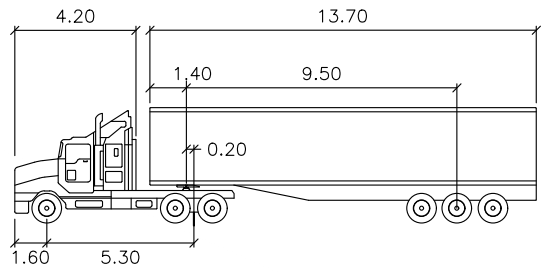
Plotted by Brian Bui



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



PM S 19M

meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL
SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE (AV)

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 07 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 0 8.0 16.0 1:800

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
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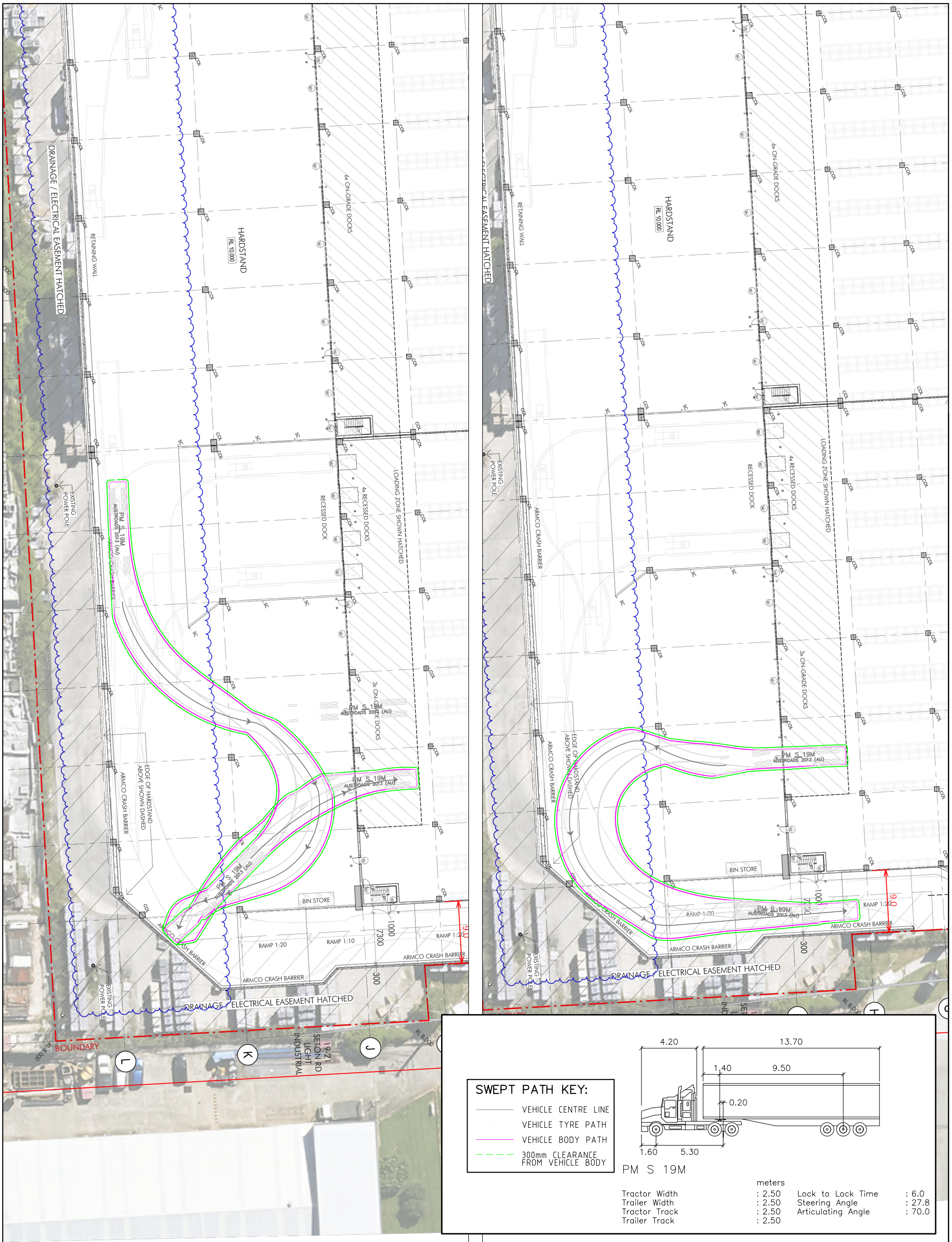
Plotted by Brian Bui



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

PM S 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL
SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE (AV)

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 08 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 0 5.0 10.0 1:500

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY.
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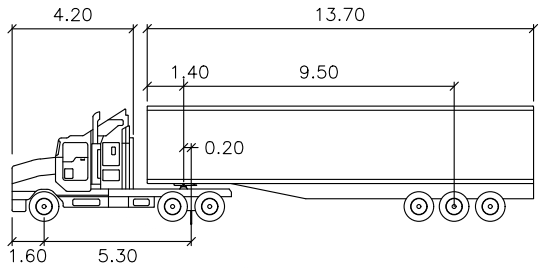
Plotted by Brian Bui

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



PM S 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

DRAINAGE / ELECTRICAL EASEMENT HATCHED
RETAINING WALL
HARDSTAND
RL 10.000
6x ON-GRADE DOCKS
RECESSED ENTRY MAT
WH 2 AMEN.
REFER AR-502
LO.2
LOADING ZONE SHOWN HATCHED
4x RECESSED DOCKS
RECESSED DOCK
LINE OF CARPARK BELOW
EXISTING POWER POLE
ARMCO CRASH BARRIER
3x ON-GRADE DOCKS
WAREHOUSE 3
RL 10.000
BASEMENT CAR PARK ENTRY BELOW
LINE OF OFFICE ABOVE
WH 3 AMEN.
REFER AR-502
LO.3
RL 10.000
BIN STORE
5M LANDSCAPE SETBACK
RAMP 1:20
RAMP 1:10
SETON ROAD
TRUCK EXIT
ESTATE ENTRY SIGN
SUBSTATION
BOUNDARY
19-21 SETON RD LIGHT INDUSTRIAL
RL 8.000

20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL
SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 09 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 — 0 5.0 10.0 — 1:500

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
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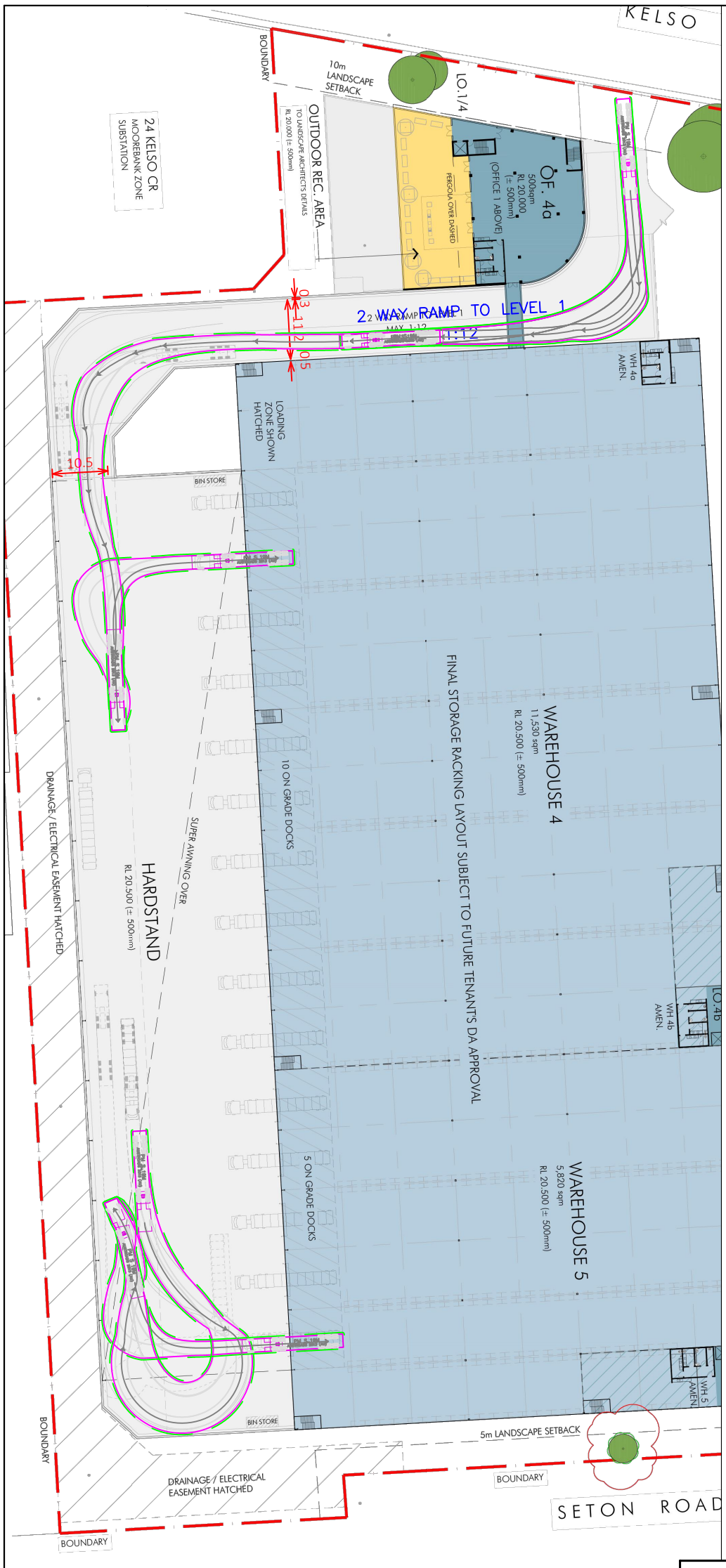
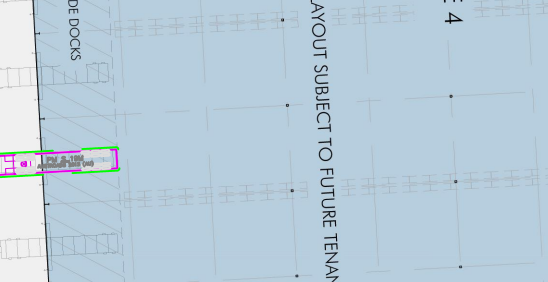
Plotted by Brian Bui



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



PM S 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

20 KELSO CRESCENT, MOOREBANK
LEVEL 1
SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE (AV)

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 10 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG
REVIEWED BY B.LO

SCALE A3 0 10.0 20.0 1:1000

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

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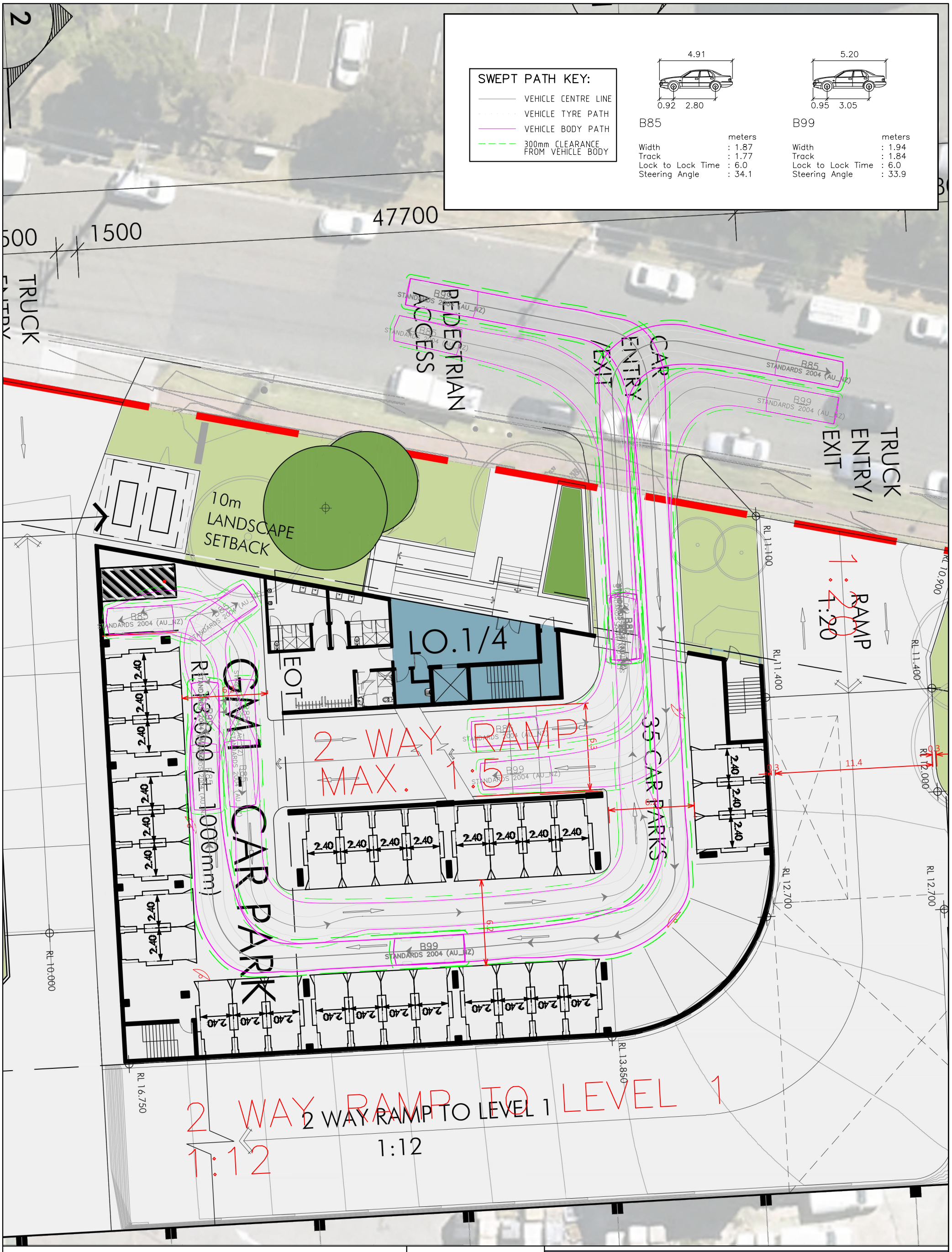
Plotted by Brian Bui



20 KELSO CRESCENT, MOOREBANK
GROUND MEZZANINE LEVEL
SWEPT PATH ASSESSMENT - ACCESS TO CAR PARK

DRAWING REF NO. 23016-V1.10-SP | SHEET NO. 11 OF 15 | ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG | REVIEWED BY B.LO

SCALE A3 1:250

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

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Genesis Traffic

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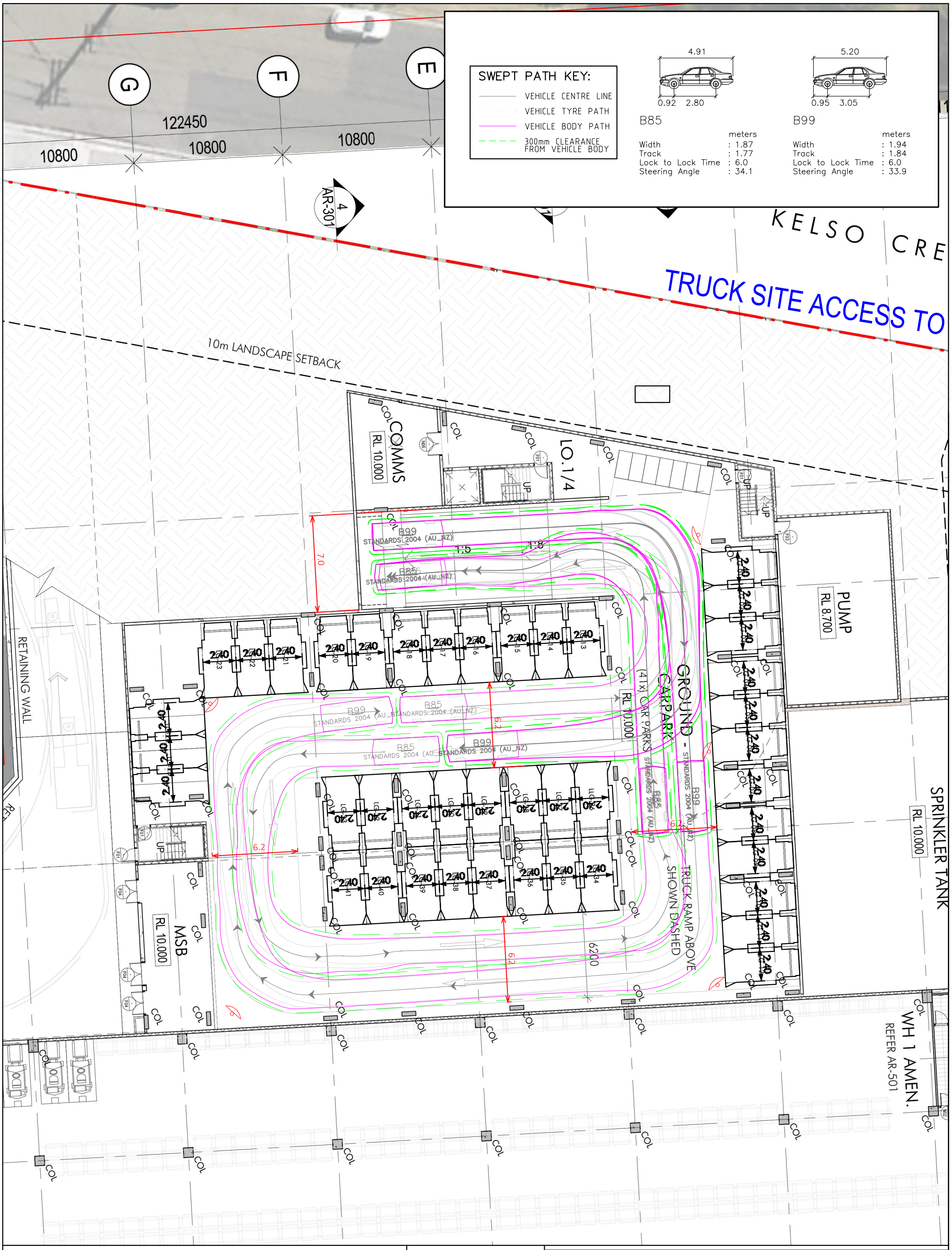
Plotted by Brian Bui



20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL
SWEPT PATH ASSESSMENT

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 12 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 0 2.5 5.0 1:250

PRELIMINARY PLAN
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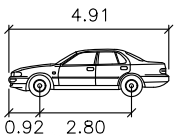
Plotted by Brian Bui

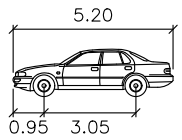
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1



B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

BASEMENT CAR PARK ENTRY BELOW

WH 3 AMEN. REFER AR-502

LO.3

RL 10.000

RECESSED ENTRY MAT

RL 9.000

RL 8.750

RL 7.250

SUBSTATION

ENTRY / EXIT

BOUNDARY

CARS SITE ACCESS

11300

11150

20

21

22

B85 STANDARDS 2004 (AU_NZ)

B99 STANDARDS 2004 (AU_NZ)

NO STOPPING

SETON ROAD

20 KELSO CRESCENT, MOOREBANK
GROUND LEVEL - SITE ACCESS FROM / TO SETON ROAD
SWEPT PATH ASSESSMENT - STANDARD B99 AND B85 VEHICLE

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 13 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY N.BORJA / L.NG

REVIEWED BY B.LO

SCALE A3 1:200

PRELIMINARY PLAN
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Plotted by Brian Bui

KELSO CRESCENT

IRAKING AVENUE

IRAKING AVENUE

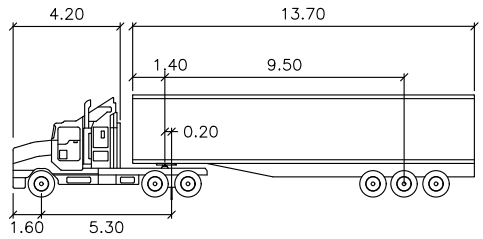
SETON ROAD

PM S 19M
AUSTROADS 2013 (AU)

7.28m

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



PM S 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

20 KELSO CRESCENT, MOOREBANK

SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 14 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 — 0 5.0 10.0 — 1:500

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

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Plotted by Brian Bui

20 KELSO CRESCENT, MOOREBANK

SWEPT PATH ASSESSMENT - 19m ARTICULATED VEHICLE

DRAWING REF NO. 23016-V1.10-SP SHEET NO. 15 OF 15 ISSUE DATE 23 August 2024

DESIGNED BY	REVIEWED BY
N.BORJA / L.NG	B.LO

SCALE A3 0 5.0 10.0 1:500

PRELIMINARY PLAN
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