

Expansion of Kinetic Catamarans on Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339

***Transport Impact Assessment
Knysna***

May 2025



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SUMMARY SHEET

Report Type	Transport Impact Assessment
Title	Expansion of Kinetic Catamarans on Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339
Location	Knysna
Client	Kiwisaffa Alliance (Pty) Ltd
Reference Number	ITS 4825
Project Team	Christoff Krogscheepers Pieter Arangie Lize Neethling
Contact Details	Tel: 021 914 6211
Date	May 2025
Report Status	First Draft
File Name	G:\4825 TIA Erf 3416, Erf 3417 and Ptn of Erf 1339, Knysna\12 Reports\Issued\4825 TIA Erf 3416 Erf 3417 Ptn of Erf 1339 Knysna FirstDraft PA 2025-05-13.docx

It is herewith certified that this Traffic Impact Assessment has been prepared according to requirements of the South African Traffic Impact and Site Traffic Assessment Manual.

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REPORT - SUMMARY TABLE

This transport impact assessment is reported only in a summary table instead of a lengthy report to assist review and interpretation of the results. This summary table includes all the relevant information that is normally contained in a report. It should be sufficient for review and interpretation of the expected transport impacts as well as the comprehension of the required measures to mitigate the transport impact. If any more detail is required please contact the authors.

ANNEXURES

Annexure A:	Locality Plan
	Site Development Plan
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ABBREVIATIONS

COTO	Committee of Transport Officials
Ha	Hectare
HCM	Highway Capacity Manual
LOS	Level of Service
MSDF	Municipal Spatial Development Framework
NMT	Non-motorised Transport
SATGR	South African Trip Generation Rates
SQM	Square Meters (m ²)
TIA	Transport Impact Assessment
V/C	Volume to Capacity Ratio
WCG	Western Cape Government

Transport Impact Assessment

Expansion of Kinetic Catamarans on Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339,
Knysna

1 Purpose of Study

This report summarises an assessment of the transport related impacts expected as part of the proposed expansion of Kinetic Catamarans in Knysna. The purpose of this assessment is to identify potential constraints within the surrounding road network and recommend appropriate mitigation measures, where applicable.

This report forms part of the applications for the subdivision, consolidation and rezoning of Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339 as well as the application for the road closure of New Street.

2 Locality

Reference: Annexure A

Erven: Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339, Knysna.

Descriptions: The site is located within the existing Knysna lower central industrial area, southeast of the Knysna CBD. The development is bordered by the Knysna Lagoon to the southeast and New Street transverses the property.

Refer to **Figure A1** in **Annexure A** for the Locality Plan.

3 Land Use

Reference: Annexure A

There is the existing Kinetic Catamarans facility (2 724 m² area), the South African Sea Cadet Corps (495 m² area) and a drivers testing area (2 025 m²) located on site.

The proposed development will consist of an industrial component (Portion A) and a commercial component (Portion B). The industrial component will be zoned Industrial Zone I and includes the expansion of the existing Kinetic Catamarans facility. The commercial component will be zoned Business Zone I and operate out of the buildings currently being utilised by the South African Sea Cadet Corps.

The total development proposed on site will consist of the land uses summarised in **Tabel 1**.

Table 1: Land Uses and Extent

Land Use	Area	Bulk Factor	Extent
Industrial	6 213.7 m ²	0.65	4 039 m ²
Commercial	495 m ²	0.85	421 m ²
Total			4 758 m ²

Refer to **Figure A2** in **Annexure A** for the Site Development Plan (SDP). Although the proposed development will be implemented in five phases, this report analyses the entire development as if it were implemented at once in terms of the expected transport impact.

4 Existing Roadways <i>Reference: Annexure A</i>	The existing roadways within the site vicinity are summarised in Table 2 .				
	<i>Table 2: Roadways in the Study Area</i>				
	Roadways	Road Classification	Posted Speed (km/h)	Sidewalks?	On-street Parking?
	Main Road (N2)	Class 1: Primary Arterial	60	Both sides	No
	Waterfront Drive	Class 4: Local Distributor	60	Partial, both sides	No
	Long Street	Class 4: Local Distributor	60	Both sides	No
	Tide Street	Class 5: Residential Access Road	60	No	No
	Union Street	Class 5: Residential Access Road	60	Northern side	No
	Unnamed Road	Class 5: Residential Access Road	60	Both sides	Yes, western side
	Queen Street	Class 5: Residential Access Road	60	Western side	No
New Street	Class 5: Residential Access Road	60	Partial, both sides	No	
Refer to Figure A1 in Annexure A for the roads in relation to the proposed development.					
5 Future Roadways	According to the <i>Knysna: Municipal Spatial Development Framework (MSDF)</i> (Knysna Municipality, 2020) a N2 bypass is planned to secure an alternative route through Knysna to improve congestion and resilience in case of disaster. The N2 bypass will be located north of the existing N2 and the Knysna town area. However, the timeline for the N2 bypass is unknown and it was assumed that the bypass will be constructed in the distant future. Therefore, the future N2 bypass was excluded from this study. Refer to Figure 1 for an extract of the MSDF which illustrates the location of the future N2 bypass in yellow.				

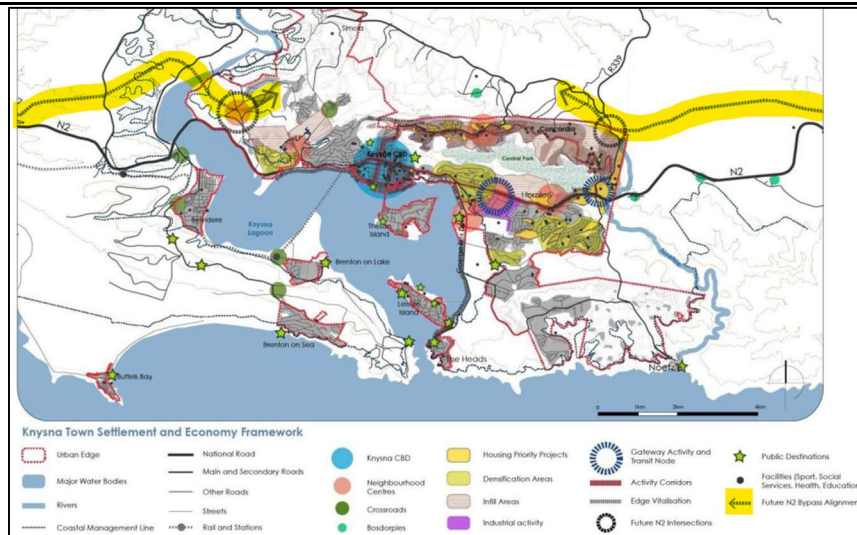


Figure 1: Extract from Knysna: Municipal Spatial Development Framework (Knysna Municipality, 2020)

As previously mentioned, this report forms part of the application for the closure of New Street. It is proposed that a section of New Street, approximately 185 m located on Erf 1316 and Erf 1339, be closed and converted into a private parking facility for the site. This section of New Street is currently unpaved and is being utilised as an informal minibus taxi rank. The location of the section of New Street that will be closed is illustrated in red on **Figure 2**.

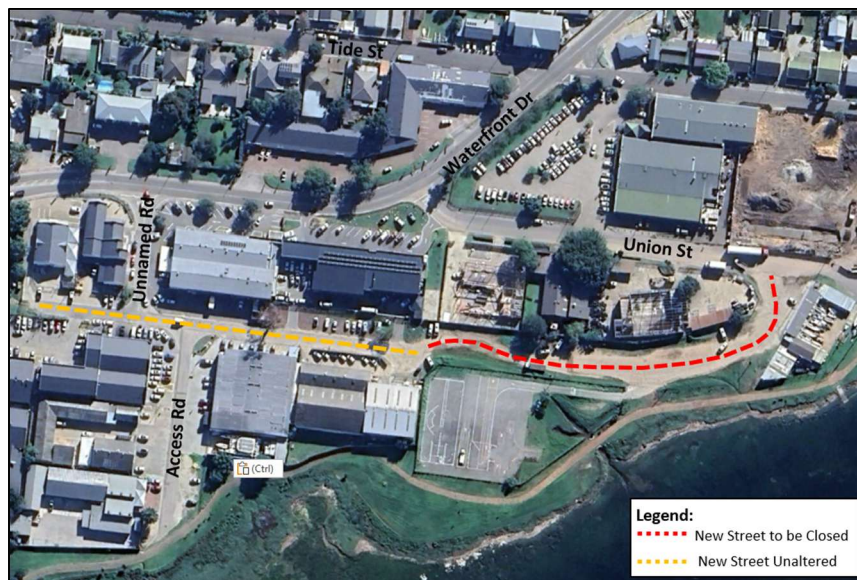
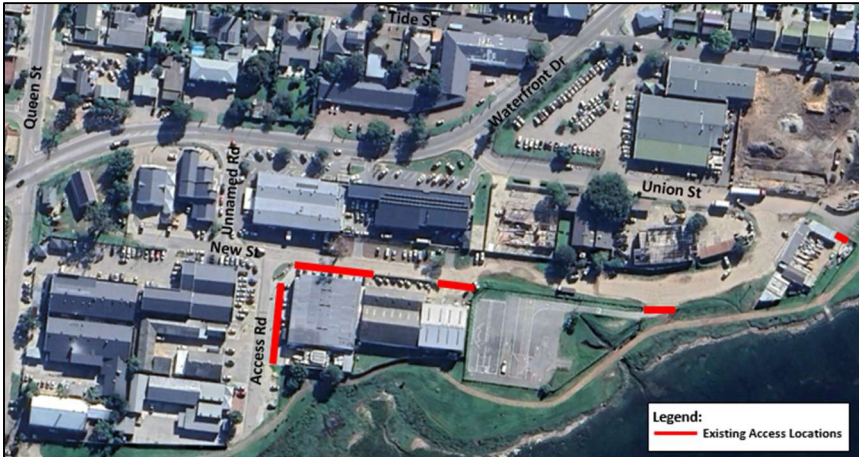


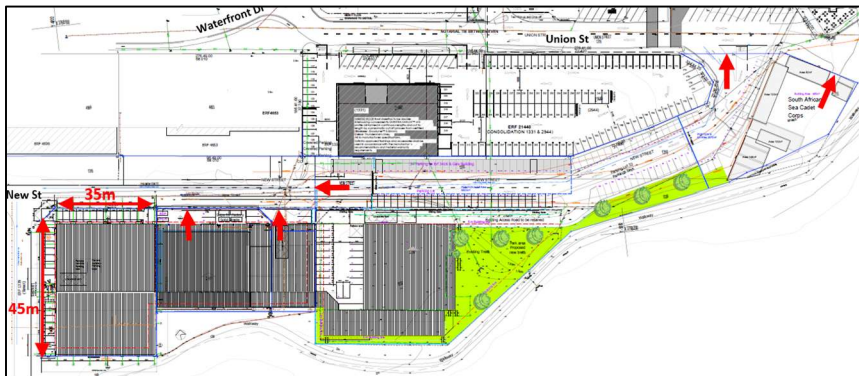
Figure 2: Section of New Street to be Closed

Access through the subject property will be permitted to accommodate the access requirements of the surrounding landowners that currently gain access via the affected section of New Street.

The proposed parking for the site, including the parking facility proposed on New Street, is discussed in **Section 17**.

6 Study Intersections (existing control)	The following intersections are included in the scope of the report: Int. 1: N2/Waterfront Drive..... Signalised Int. 2: Waterfront Drive/Tide Street Priority Stop-controlled Int. 3: Waterfront Drive/Union Street..... Priority Stop-controlled Int. 4: Waterfront Drive/Unnamed Road Priority Stop-controlled Int. 5: Waterfront Drive/Queen Street..... Priority Stop-controlled Int. 6: Waterfront Drive/Long Street..... Signalised
7 Analyses Hours	The traffic analyses are based on weekday a.m. and p.m. peak hours. The following peak hours were investigated: • a.m. peak hour: 07:15 – 08:15 • p.m. peak hour: 16:30 – 17:30
8 Scenarios Analysed	The transport impact of the proposed development was analysed for the following scenarios: 1. 2025 Existing Traffic Conditions (based on the existing recorded traffic volumes) 2. 2030 Background Traffic Conditions (2025 existing traffic volumes adjusted with a 3% growth rate per annum over a 5-year horizon period) 3. 2030 Total Traffic Conditions (2030 background traffic volumes plus the development trips)
9 Existing Intersection Operations <i>Reference: Annexure A</i>	Traffic surveys were done to determine the existing peak hour traffic volumes at the study intersections. The surveys were conducted on Friday, 28 March 2025, between 06:45 and 08:15 in the morning. The afternoon traffic volumes were gathered from historic traffic counts available for the study intersections. The study intersections were analysed based on the methods described in the Highway Capacity Manual (HCM) to determine the level of service (LOS), delay per vehicle (in seconds) and volume per capacity (v/c) for each intersection in the peak hours. Based on the existing traffic capacity analyses results, all study intersections are currently operating at acceptable levels of service (LOS) with adequate spare capacity. No upgrades are recommended for this scenario. Refer to Figure A3 and Figure A4 in Annexure A for the existing lane configurations and traffic conditions of the study intersections.

10 Approved Developments/ Latent Rights	The peak hour traffic volumes associated with the completed future Food Lovers Market development on Erf 21439 is included in the Background Analysis discussed in Section 11 below.
11 Future Background Traffic Conditions <i>Reference: Annexure A</i>	The 2030 background traffic volumes were calculated by adjusting the existing traffic volumes with a 3% growth rate per annum over a 5-year period. Actual growth in the area is expected to be lower. The 3% growth rate was applied to ensure a conservative approach and to account for the worst-case traffic growth scenario. This growth rate will also account for trips from future development in the site vicinity. Based on the results of the capacity analyses, all study intersections will continue to operate at acceptable LOS with adequate spare capacity by 2030. No upgrades are proposed for this scenario. Refer to Figure A5 in Annexure A for the summary of the 2030 background traffic conditions of the study intersections.
12 Site Access	The subject property gains access to the road network at several locations along New Street, Union Street and an unnamed access road that borders the site to the west (referred to as Access Road in this report). The existing access locations are indicated in red in Figure 3 below.  <i>Figure 3: Existing Access Locations</i> It is proposed that the commercial component of the proposed development continue to make use of the existing access along Union Street. This access is currently used by the South African Sea Cadet Corps and is located approximately 215 m east of the Waterfront Drive/Union Street intersection. The industrial component of the proposed development will have unrestricted frontage access along the Access Road and New Street. Two additional gated accesses are proposed along New Street (± 65 m and ± 100 m east of the New Street/Access Road intersection), and the previously mentioned private parking facility will be accessed along New Street and Union Street at the locations of the proposed road closure.

	Refer to Figure 4 for an extract of the SDP that indicates the locations of the proposed accesses in red.  <i>Figure 4: Proposed Access Locations</i>																																		
13 Trip Generation Rates and Development Trips <i>Reference: Annexure A & B</i>	The expected number of trips likely to be generated by the proposed development were determined in accordance with the trip generation rates provided in the <i>TMH17 South African Trip Data Manual</i> (COTO, September 2013) and the <i>Trip Generation Handbook 9th Edition</i> (ITE, 2017). Table 3 summarises the expected peak hour trips for the development (including the trips already being generated by the existing Kinetic Catamarans on site). <i>Table 3: Expected Total Development Trips</i> <table><tr><th rowspan="2">Land Use</th><th colspan="3">Weekday a.m. Peak Hour</th><th colspan="3">Weekday p.m. Peak Hour</th></tr><tr><th>In</th><th>Out</th><th>Total</th><th>In</th><th>Out</th><th>Total</th></tr><tr><td>Industrial</td><td>15</td><td>5</td><td>20</td><td>7</td><td>21</td><td>28</td></tr><tr><td>Commercial</td><td>2</td><td>2</td><td>4</td><td>5</td><td>6</td><td>11</td></tr><tr><td>Total Trips</td><td>17</td><td>7</td><td>24</td><td>12</td><td>28</td><td>39</td></tr></table> Further detail for the trip generation rates and development trips are provided in Table B1 in Annexure B. Refer to Figure A6 in Annexure A for the expected development trips.	Land Use	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour			In	Out	Total	In	Out	Total	Industrial	15	5	20	7	21	28	Commercial	2	2	4	5	6	11	Total Trips	17	7	24	12	28	39
Land Use	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour																															
	In	Out	Total	In	Out	Total																													
Industrial	15	5	20	7	21	28																													
Commercial	2	2	4	5	6	11																													
Total Trips	17	7	24	12	28	39																													
14 Trip Distribution	The following trip distribution was applied to the expected peak hour trips of the proposed development: • 15% to/from the north along the N2 towards Knysna’s CBD • 50% to/from the north along the N2 towards Plettenberg Bay • 20% to/from the north along Long Street • 15% to/from the west along Waterfront Drive																																		
15 Public Transport	As previously mentioned, minibus taxis utilise the section of New Street that is proposed to be closed. The closure of the section of New Street will require the minibus taxis to relocate to another site. There are no formal public transport facilities in the vicinity of the site. However, there is no suitable space for public transport embayments within the Waterfront Drive road reserve. Minibus taxis can pick-up/drop-off passengers on site.																																		

16 Non-Motorised Transport	There are existing NMT facilities to accommodate pedestrians along the majority of the roads within the site vicinity and no additional facilities are required for the proposed development.																
17 Total Traffic Conditions Reference: Annexure A	To assess the impact of the proposed development on the surrounding road network, the development traffic was added to the 2030 background traffic volumes. Based on the results of the capacity analyses, all study intersections will continue to operate at acceptable LOS with adequate spare capacity once the development trips are added to the road network. No upgrades are proposed for this scenario. Refer to Figure A7 in Annexure A for the summary of the 2030 total traffic conditions of the study intersections.																
18 Parking	Parking for the proposed development must satisfy the requirements provided in the <i>Knysna Municipality: Zoning Scheme By-law</i> (Knysna Municipality, 2020). Table 4 contains the applicable parking rates and the required number of parking bays for the proposed development. <i>Table 4: Parking Rates and Required Bays</i> <table><tr><th>Land Use</th><th>Extent</th><th>Parking Rate</th><th>Bays Required</th></tr><tr><td>Industrial</td><td>4 039 m²</td><td>2 bays/100 m²</td><td>81 bays</td></tr><tr><td>Business Premises</td><td>421 m²</td><td>4 bays/100 m²</td><td>17 bays</td></tr><tr><td colspan="3">Total Parking Bays</td><td>98 bays</td></tr></table> A total of 98 parking bays must be provided on site for the proposed development. The latest SDP indicated that 170 parking bays will be provided and is thus sufficient. According to the <i>Knysna Municipality: Zoning Scheme By-law</i> (Knysna Municipality, 2020) a minimum of two disabled parking bays must be provided for a development that requires between 51 and 100 on site parking bays. Two disabled parking bays must therefore be included. The disabled parking bays must be a minimum of 3.7 m in width and 5 m in length. These bays must be located as close as possible to the building entrance and be marked as reserved for physically disabled persons. Due to the size of the proposed development (2 501 - 5 000 m²) two off-street loading bay is required by the <i>Knysna Municipality: Zoning Scheme By-law</i> (Knysna Municipality, 2020). Three loading bays will be provided, which is sufficient. The loading bays must measure not less than 4.5 m by 10 m for perpendicular loading and 2.5 m by 12 m for parallel loading bays.	Land Use	Extent	Parking Rate	Bays Required	Industrial	4 039 m ²	2 bays/100 m ²	81 bays	Business Premises	421 m ²	4 bays/100 m ²	17 bays	Total Parking Bays			98 bays
Land Use	Extent	Parking Rate	Bays Required														
Industrial	4 039 m ²	2 bays/100 m ²	81 bays														
Business Premises	421 m ²	4 bays/100 m ²	17 bays														
Total Parking Bays			98 bays														

19 Conclusion & Recommendations

This report summarises the assessment of the transport related impacts of the proposed Kinetic Catamaran expansion on Erf 3416, Erf 3417, Portion of Erf 1316 and Portion of Erf 1339 in Knysna. The assessment resulted in the following conclusions and recommendations.

Land Use

The proposed development will consist of an industrial component and a commercial component with the following extents:

Land Use	Area	Bulk Factor	Extent
Industrial	6 672.7 m ²	0.65	4 039 m ²
Commercial	495 m ²	0.85	421 m ²
Total			4 460 m²

Road Network

This report forms part of the application for the closure of a section of New Street, approximately 185 m located on Erf 1316 and Erf 1339. The section of road proposed to be closed will be converted into a private parking facility for the site. Access through the site will be permitted to accommodate the access requirements of the surrounding landowners that gain access via the affected section of New Street.

Existing 2025 and Background 2030 Traffic Conditions

All the study intersections currently operate and will continue to operate at acceptable LOS for these scenarios. No upgrades are recommended.

Development Trips

It is expected that the proposed development will generate approximately 24 trips (17 in, 7 out) during the a.m. peak hour and 39 trips (12 in, 28 out) during the p.m. peak hour.

2030 Total Traffic Conditions

No capacity constraints are expected on the surrounding road network and the study intersections will continue to operate at acceptable LOS with the additional site generated traffic added to the network.

Access

The commercial component of the development will continue to use the existing access along Union Street, approximately 215 m east of the Waterfront Drive/Union Street intersection.

The industrial component of the development will have unrestricted frontage access along the Access Road and New Street. Two additional gated accesses are proposed along New Street (±65 m and ±100 m east of the New Street/Access Road intersection), and the private parking facility will be accessed along New Street and Union Street at the locations of the road closure.

19 Conclusion & Recommendations (Continued)	Public Transport Minibus taxis may pick-up/drop-off passengers on site and no dedicated public transport facilities are recommended for the proposed development. Non-Motorised Transport The existing facilities in the site vicinity is sufficient. Parking Based on the SDP a total of 170 parking bays will be provided on site, which is sufficient. Conclusion It is concluded that the expected development traffic will not have a significant impact on the external road network and will not require any intersection upgrades. It is recommended that the proposed development be approved from a transport impact perspective.
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REFERENCES

1. Highway Capacity Manual (HCM), Quality and Level-of-Service Concepts, Transportation Research Board, 9 March 2015
2. South African Road Classification and Access Management Manual, TRH26, Version 1.0, August 2012
3. South African Trip Data Manual, TMH17, Version 1.1, COTO, September 2013
4. Institute of Transport Engineers (ITE), Trip Generation Handbook, 9th Edition, 2012
5. Knysna: Municipal Spatial Development Framework, Knysna Municipality, May 2020
6. Knysna Municipality: Zoning Scheme By-law, Knysna Municipality, June 2020
7. Western Cape Government, Road Network Information System (RNIS) website, accessed April 2025

Annexure A

Figures





Note:
Do not scale from this drawing. Check all given dimensions and site dimensions and/or levels prior to any pricing, manufacture or construction of any item.
Greater detail drawings take preference.
Please report any discrepancies to the architect.

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PROJECT INFORMATION :

SANS Classification - D2 (Moderate Risk Industrial)
Zoning - Industrial Zone I
Occupancy - 1 person per 15m²
Building Lines - 0.0 metres

Q	17/04/2025	Updated Storm water Servitude	MG
P	16/04/2025	Updated as per Lizemaries Recommendations	MG
O	14/04/2025	Updated Proposed Sewer & Water Line	MG
N	09/04/2025	Updated Proposed Sewer	MG
M	11/03/2025	Added Susuki Dealership	MG
L	28/02/2025	Revised Boundaries	MG
K	25/02/2025	Update Cadet buildings as per survey	MG
J	24/02/2025	Removed Parade Ground and Parking	MG
I	17/02/2025	Change boundary to follow HWM	MG
H	03/02/2025	Updated Area Schedule to retain courtyard	MG
G	30/01/2025	Removed Draft Town planners boundary	MG
F	29/01/2025	Updated Boundary line to survey	MG
E	09/12/2024	Updated Parking	MG
D	05/12/2024	Revised Footprint and indicated Boundary	MG
C	28/05/2024	Revised Sewer line	MG
B	28/05/2024	Revised Erf perimeters as per Clients email	MG
A	09/05/2023	Revised Erf perimeters as per Clients email	TK
REV	DATE	DESCRIPTION	BY

IN CASE OF DOUBT OR DISCREPANCIES PLEASE REFER TO ARCHITECT FOR INSTRUCTIONS.
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DRAWING STATUS :

DESIGN

PROJECT :

KINETIC CATAMARANS
Proposed New Erven
ERF 3416 and Erf 3417
Portion of Erf 1316 & 1339

DRAWING TITLE :

Site Development Plan
Phase 1-4



DATE: 01/04/2023

SCALE: 1:500 @A1

JOB NO.: 020

DRAWN BY: MG

DWG NO.: 100

REV: Q

CAD REFERENCE: P:\020 Kinetic Yacht Factory\Current Docs\Drawings\200 - Working Drawings\020-100 New SDP Yacht Factory.dwg

Lettable Area												
Phase 1a old Mitchells Building			Phase 1b old Mitchells Building		Phase 2 Drivers Testing Area		Phase 3 Harevey Building		Phase 4 galvanised Building			
Zone	Area	Parking Bays	Area	Parking Bays	Area	Parking Bays	Area	Parking Bays	Area	Parking Bays	Total Area	
Ground Floor	579.6 m²		1134.3 m²		1560 m²	31.2	1042 m²		756 m²			
Ground Floor Court Yard					523	10.5						
Mezzanine Floor	97.3 m²		242.5 m²		473 m²	9.5	195 m²		134 m²			
Total	676.9 m²	13.5	1376.8 m²	27.5	2033 m²	40.7	1237 m²	25	890 m²	17.8	6213.7 m²	
Parking Calculations			Required Parking		Future Expansion		Current Water Usage					
Parking Required incl Mez			124 bays		136 bays		3417		Dec-24		19.73 kl @ 21.93 R432.68	
Parking Existing 3417			34 bays		34 bays						8.27 kl @ 42.8 R353.96	
Proposed Parking erf 3416			8 bays		8 bays		Total				28 kl	
Parking bays required for 3516 & galv build			34 bays		34 bays		3416		Dec-24		23.67 kl @ R20.71 R490.21	
Courtyard			16 bays		0 bays						19.33 kl @ 40.41 R781.13	
Roadway parking Portion A			25 bays		25 bays		Total				43 kl	
Parking For Future Expasion			32 bays		32 bays		Total erf 3416 & 3417				71 kl 2755.9 m²	
Total Provided			149 bays		133 bays							
additional Required (- Additional provided)			-25 bays		3 bays		Proposed area		160 Kl		6213.7 m²	
Loading Bays Require (5000m²-1000m²)			3 Bays		3 bays		Increase of		89 Kl			
WC Calculations					Water usage							
Occupancy			414 Persons		Predicted staff numbers		300					
WC required			18 WC		usage @		20		6000		per day	
WC existng			9 WC		Proposed Monthly usage		126000		litres			
Possibly remove 2 at Western wall			2 WC		Proposed Storage		120000		litres			
New WC's Required			11 WC									

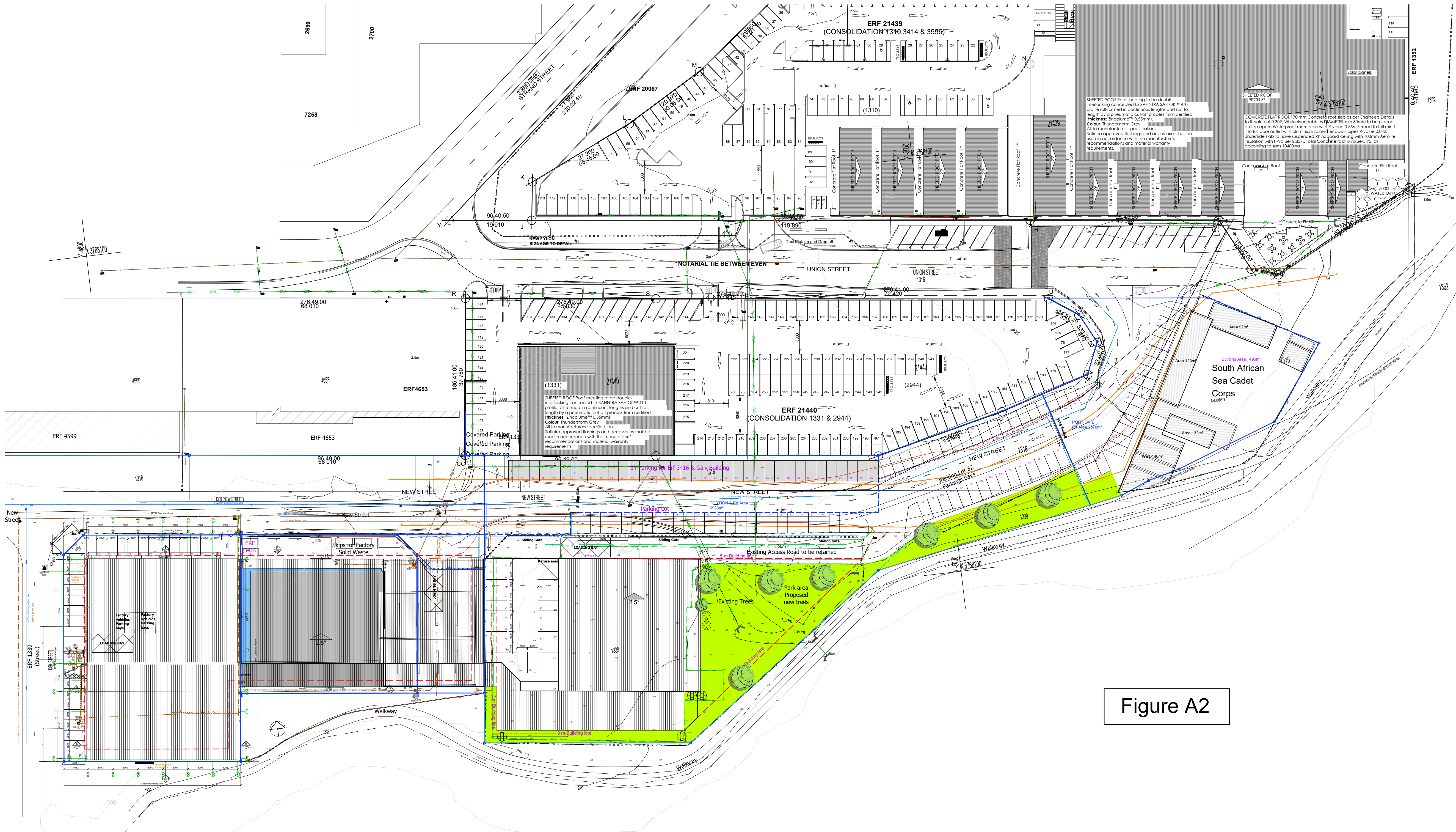
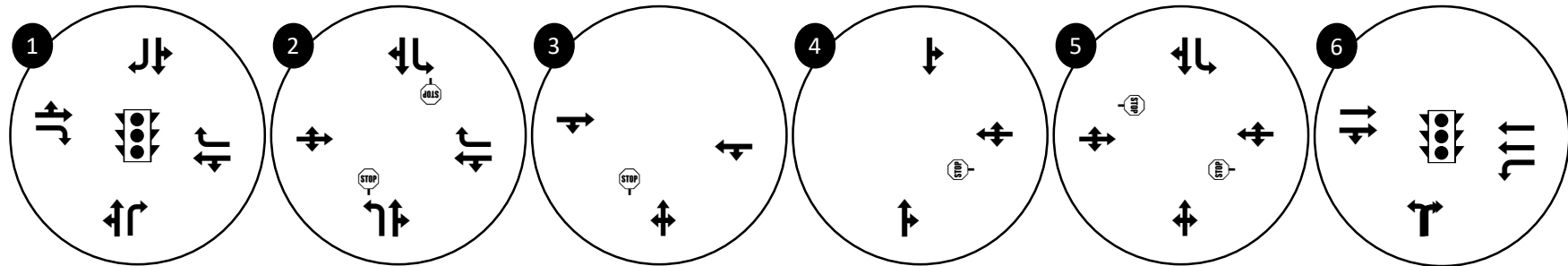


Figure A2

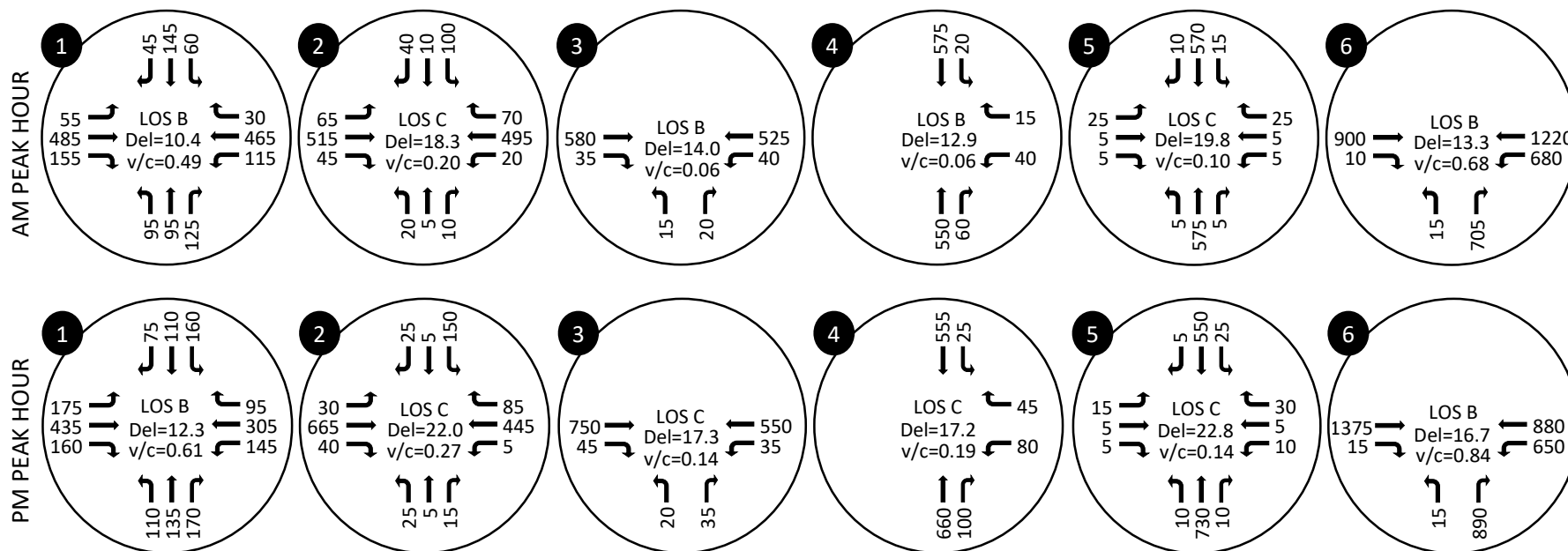
Legend:

- 👉 Turning lanes and turning movements
- 🛑 Stop Control
- 🚦 Traffic Signal Control
- Roundabout (Yield Control)



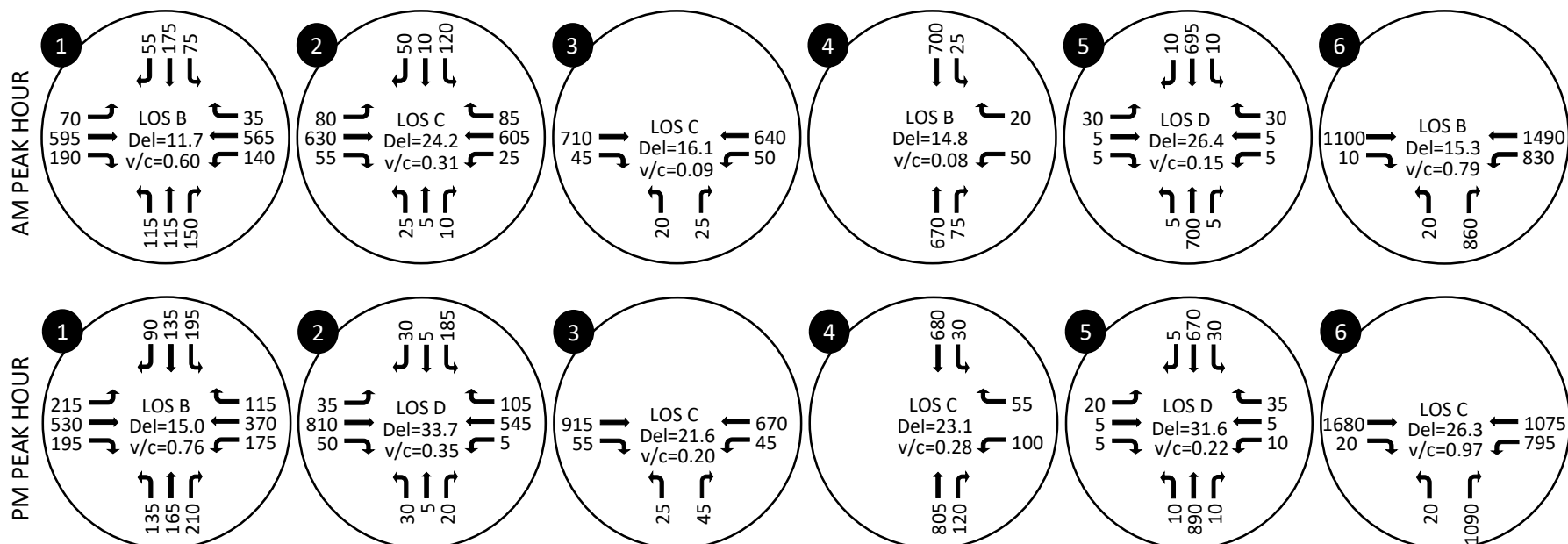
Diagrammatic / Not to Scale

CM : Critical Movement
 LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
 DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
 V/C: Critical V/C Ratio
 Turning movements
 Critical Movement
 Free Flow Left Turn
 Overlap Left Turn



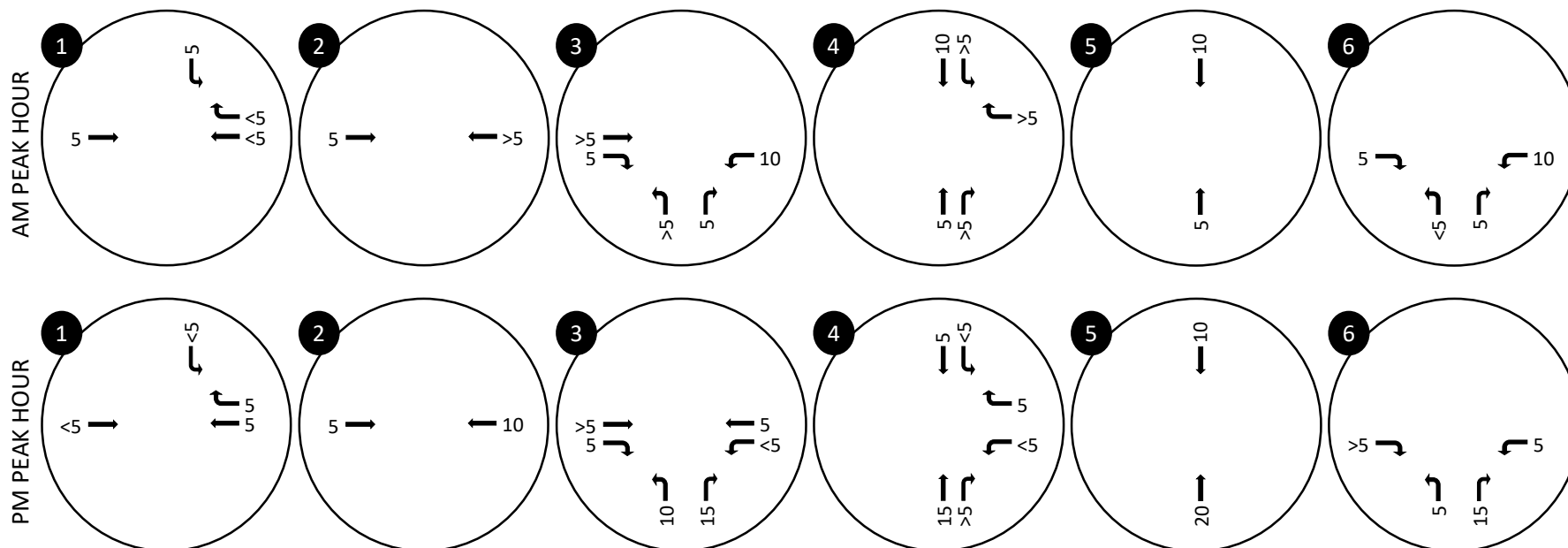
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CM : Critical Movement
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 movement if unsignalised
 V/C: Critical V/C Ratio
 Turning movements
 Critical Movement
 Free Flow Left Turn
 Overlap Left Turn



Diagrammatic / Not to Scale

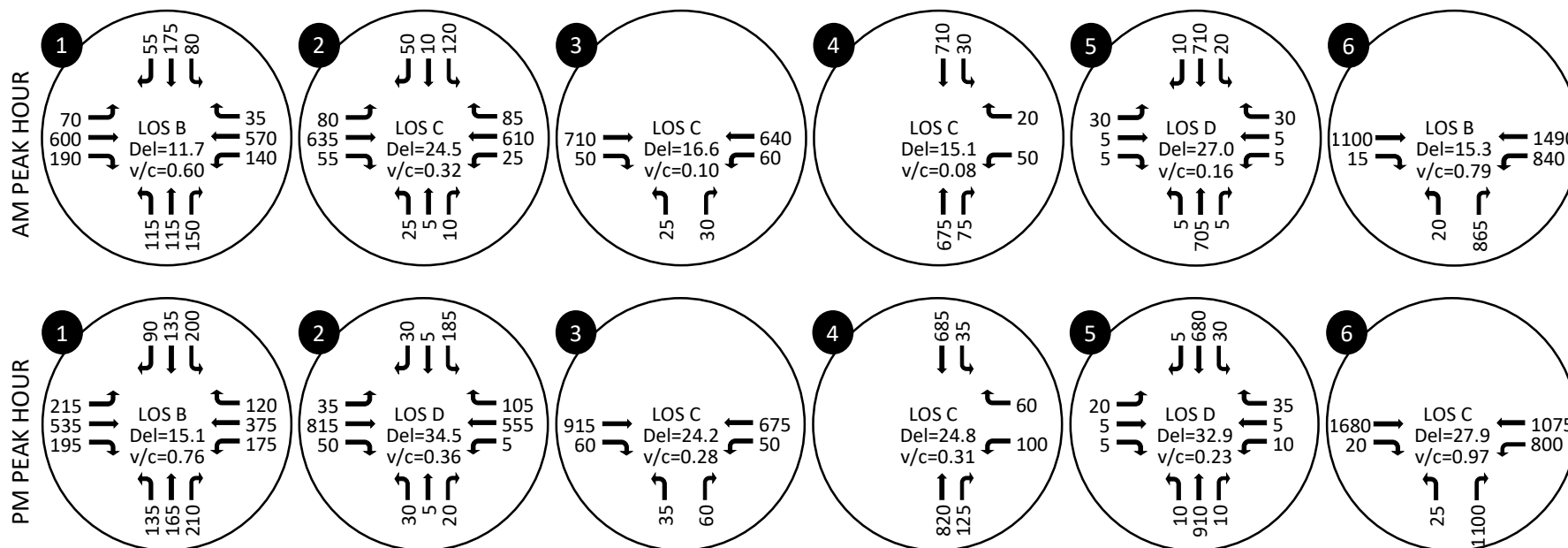
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Diagrammatic / Not to Scale

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 V/C: Critical V/C Ratio

Turning movements
 Critical Movement
 Free Flow Left Turn
 Overlap Left Turn



Diagramtic / Not to Scale

Annexure B

Trip Generation Tables

Table B1: Trip Generation Rates

Land Use	Units	Source	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Rate	In	Out	Rate	In	Out
Heavy Industries/Manufacturing	100m ²	COTO120	0,50	75%	25%	0,70	25%	75%
Speciality Retail	100m ²	ITE826	1,00	48%	52%	2,71	44%	56%

Table B2: Expected Peak Hour Development Trips

Land Use	Units	Size/ Volume	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Heavy Industries/Manufacturing	100m ²	4039	15	5	20	7	21	28
Industrial Park	100m ²	421	2	2	4	5	6	11
			17	7	24	12	28	39