Transport Impact Assessment

Erf 3495 Struisbaai

Western Cape

October 2026



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SUMMARY SHEET

Report Type	Transport Impact Assessment
Title	Erf 3495 Struisbaai
Location	Western Cape
Client	HELEMIKA NUMBER 1 (PTY) LTD
Reference Number	ITS 4797.1
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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.

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Abbreviations

COTO	Committee of Transport Officials
HCM	Highway Capacity Manual
LOS	Level of Service
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

Erf 3495 Struisbaai, Western Cape

1 Purpose of Study

This report summarises an investigation of the transport related impacts of the proposed development on Erf 3495 in Struisbaai.

The purpose of this report is to identify possible constraints within the surrounding transport network and to recommend appropriate mitigation measures.

2 Locality

The proposed developments are located to the west Adelle Street in Struisbaai. Refer to **Figure 1** for the Locality Map.

3 Land Use

Existing Use: The land is currently vacant land.

Proposed Land Use: 71 Single Residential Units

See **Figure 2** in Annexure A for the Subdivision Plan.

4 Existing Roadways in Site Vicinity

Table 1 provides a summary of the existing roadways in the site vicinity. See **Photos 1** to **2** in Annexure C for the typical cross sections of these roads.

Tabel 1: Roadways in Study Area

Roadway	Classification	Speed Limit (km/h)	NMT Facilities
Main Road/ Marine Drive	R319 Provincial Main Road MR261 (Class 3)	60	Yes
Industria Road/ Adelle Street	Local Distributor (Class 4)	Not posted (40km/h)	No

5 Analyses Hours

The following weekday peak hours are investigated:

- Weekday AM peak hour
- Weekday PM peak hour

6 Scenarios Analysed

The transport impact of the proposed development was analysed for the following scenarios:

<table>
<tr><td></td><td>1. 2026 Existing conditions
2. 2031 Background traffic conditions (existing traffic volumes plus expected future growth in traffic volumes over a 5-year horizon and the trips associated with all approved developments in the site vicinity).
3. 2031 Total traffic conditions (Background traffic volumes plus development trips)

The approved developments/latent rights included in the analysis of the future scenarios are discussed in Section 9</td></tr>
<tr><td>7 Study Intersections (existing control)</td><td>Based on the extent of the proposed development, the following intersections were included in the analysis. Refer to Figure 3 in Annexure A for the lane configuration and intersection controls.

Tabel 2: Study Intersections
<table>
<tr><th>No.</th><th>Name</th><th>Existing Control</th></tr>
<tr><td>1</td><td>Main Road/Industria Road/ Arganauta Road</td><td>4-Way Stop Control</td></tr>
<tr><td>2</td><td>Adelle Street/Development Access (Future Intersection)</td><td>Priority Stop Control</td></tr>
</table></td></tr>
<tr><td>8 Existing Traffic Conditions</td><td>The Existing Traffic conditions are based on existing intersection geometries, controls and counted traffic volumes.

Based on the existing traffic capacity analysis results, the study intersections are currently operating at acceptable Levels-of-Service (LOS) during the typical weekday peak hours.

See Figure 3 in Annexure A for the existing peak hour traffic operations and Table B 1 in Annexure B for a summary of the study intersections measures of efficiencies (MOEs).</td></tr>
<tr><td>9 Approved Developments/ Latent Rights</td><td>Two approved developments included in this study is a housing development Erf 857 along Main Road just outside Struisbaai to the north of the town area and the apartments and retail development on Erven 4261 & 4262. Any possible other latent development trips are associated with the anticipated annual traffic growth for the area.</td></tr>
</table>

10 2031 Background Traffic Conditions	A growth rate of 2% per annum, was applied on the existing traffic volumes over the next five years to determine the background traffic volumes. The planned Struisbaai housing development is expected to generate approximately 114 new trips (49in/65out) during the a.m. peak hour and approximately 288 new trips (154in/134out) during the p.m. peak hour and the approved apartments on Erf 4260 is expected to generate approximately 67 new trips (17in/50out) during the a.m. peak hour and approximately 66 new trips (46in/20out) during the p.m. peak hour. The proposed retail on Erven 4261 & 4262 is expected to generate approximately 149 new trips (57in/92out) during the a.m. peak hour and approximately 487 new trips (265in/222out) during the p.m. peak hour. These trips are included in the background scenario. Based on the background traffic capacity analysis the intersections will continue to operate at an acceptable Levels-of-Service (LOS) during the typical weekday peak hours. Refer to **Figure 4** in **Annexure A** for the weekday AM and PM peak hour traffic operations for the background traffic conditions and **Table B 2** in Annexure B for a summary of the study intersections measures of efficiencies (MOEs).
11 Site Access	Access to Erf 3495 proposed off Adelle Street spaced approximately 90 metres to the south of the Lynn Street intersection. Single ingress and egress lanes are proposed for the development. Based on the results of a queuing analysis for the p.m. peak hour with 50 vehicles entering the site, there is a 97 percent probability for three vehicles or less in the queue with a 24 seconds per vehicle service rate and it is recommended that at least 21m stacking distance be provided. There is approximately 30 metres available for stacking, which is sufficient. The required shoulder sight distance (SSD) along a road with a 60km/h posted speed is 120m for passenger cars. The available SSD along Adelle Street from the access is more than 120m in both directions, which is sufficient. See **Photo 3** and **Photo 4** in Annexure C.

<table>
<tr><td>12 Trip Generation Rates and Development Trips</td><td>Trip generation rates were obtained from The Committee of Transport Officials Trip Data Manual (TMH17 - COTO 2013) for the proposed land uses. Refer to Table B 3 in Annexure B for the trip generation rates and the am/pm directional split for the proposed land uses.

Based on the trip generation rates summarised in Table B 3 in Annexure B the proposed development can generate the following number of trips:

<table><tr><th>Peak Hour</th><th>In</th><th>Out</th><th>Total</th></tr><tr><td>a.m.</td><td>18</td><td>53</td><td>71</td></tr><tr><td>p.m.</td><td>50</td><td>21</td><td>71</td></tr></table>
Refer Table B 4 in Annexure B for the expected driveway trips.</td></tr>
<tr><td>13 Trip Distribution</td><td>The expected trip distribution for the development based on the existing traffic patterns are as follows:
40% to/from the north via Main Road
45% to/from the east via Main Road
5% to/from the north via Argonauta Avenue
10% to/from the south via Adelle Street</td></tr>
<tr><td>14 2030 Total Traffic Conditions</td><td>Based on the capacity analysis the study intersections will continue to operate at acceptable levels of service during the typical weekday peak hours.

Refer to Figure 6 in Annexure A for the weekday a.m. and p.m. peak hour traffic operations for the total traffic conditions and Table B 5 in Annexure B for the summary of the intersection MOE’s.</td></tr>
<tr><td>15 30th Highest Hour Conditions</td><td>To evaluate a possible worst-case scenario during the peak holiday season the network was also analysed for the 30th highest hour. This is typically the traffic conditions during Easter Weekend. For this scenario the existing traffic volumes along the surrounding road network was doubled to account for the higher traffic volumes during the 30th highest hour of the road network.

Based on the capacity analysis the access intersection will continue to operate at acceptable levels of service during the typical weekday peak hours. The Main Road/Industria Road intersection will operate at capacity, and motorists can</td></tr>
</table>

	experience delays of up to 50 seconds for short periods during the peak holiday season. Refer to **Figure 7** in Annexure A for the traffic operations during the 30th Highest Hour of the surrounding road network.
16 Parking	Parking should be provided in accordance with the local zoning scheme requirements.
17 Pedestrians and Cyclists	There are no NMT facilities along Adelle Street and Industria Road, pedestrians and cyclists use the road surface. No NMT facilities are recommended for the proposed development.
18 Public Transport	***Existing:*** There are public transport services available along Main Road. ***Proposed****:* No specific public transport facilities are recommended for the proposed development.
19 Conclusion & Recommendations	This report summarises an investigation of the transport impacts of the proposed development on Erf 3495 in Struisbaai. Based on the evaluation in this report, the following are concluded and recommended: **Existing Traffic**: The road network and intersections in the study area currently operate acceptably, and no road upgrades are proposed. **Background Traffic**: A growth rate of 2% per annum was used for background growth and the trips of the proposed retail on Erven 4621 & 4262 along with the planned Struisbaai housing development and Apartments on Erf 4260 was also included in the background analysis. The road network and intersections in the study area will continue to operate acceptably, and no road upgrades are proposed. **Development Trips**: 71 weekday a.m. peak hour trips (18 inbound/53 outbound) and 71 weekday p.m. peak hour trips (50 inbound/21 outbound). **Site Access**: Access is proposed off Adelle Street spaced approximately 90 metres to the south of the Lynn Street intersection. Single ingress and egress lanes are proposed for

15 **Conclusion & Recommendations *(Continued)***	the development. Approximately 30m stacking is available, which is sufficient. There is sufficient shoulder sight distance available along Adelle Street from the access. **Total Traffic**: The study intersections will continue to operate acceptably with the proposed development completed. **30th Highest Traffic Hour:** This is typically the traffic conditions during Easter Weekend. It is expected that there will be periods with high congestion at some intersections during the peak holiday period. However, this will only occur for a short periods during the year and it does not justify any major road or intersection upgrades. **Parking**: Parking should be provided in accordance with the local zoning scheme requirements. **Pedestrians and Public Transport**: No dedicated NMT and public transport facilities are recommended for the proposed development. Based on the above investigation, it is evident that the expected transport impacts from the planned development will be low. The current road network with the existing intersection geometry and controls can accommodate the proposed development, without any road improvements. It is recommended that this development can be approved, from a transport engineering point of view.

REFERENCES

1. Highway Capacity Manual (HCM).
2. Western Cape Government, Draft Access Management Guidelines. July 2016
3. Transportation Research Board Highway Capacity Manual, Special Report No. 209. 2000
4. Committee of Transport Officials, South African Trip Data Manual, TMH 17, September 2017
5. Committee of Transport Officials, South African Impact and Site Traffic Assessment Manual, TMH 16 Volume 1, August 2012

Annexure A

Figures

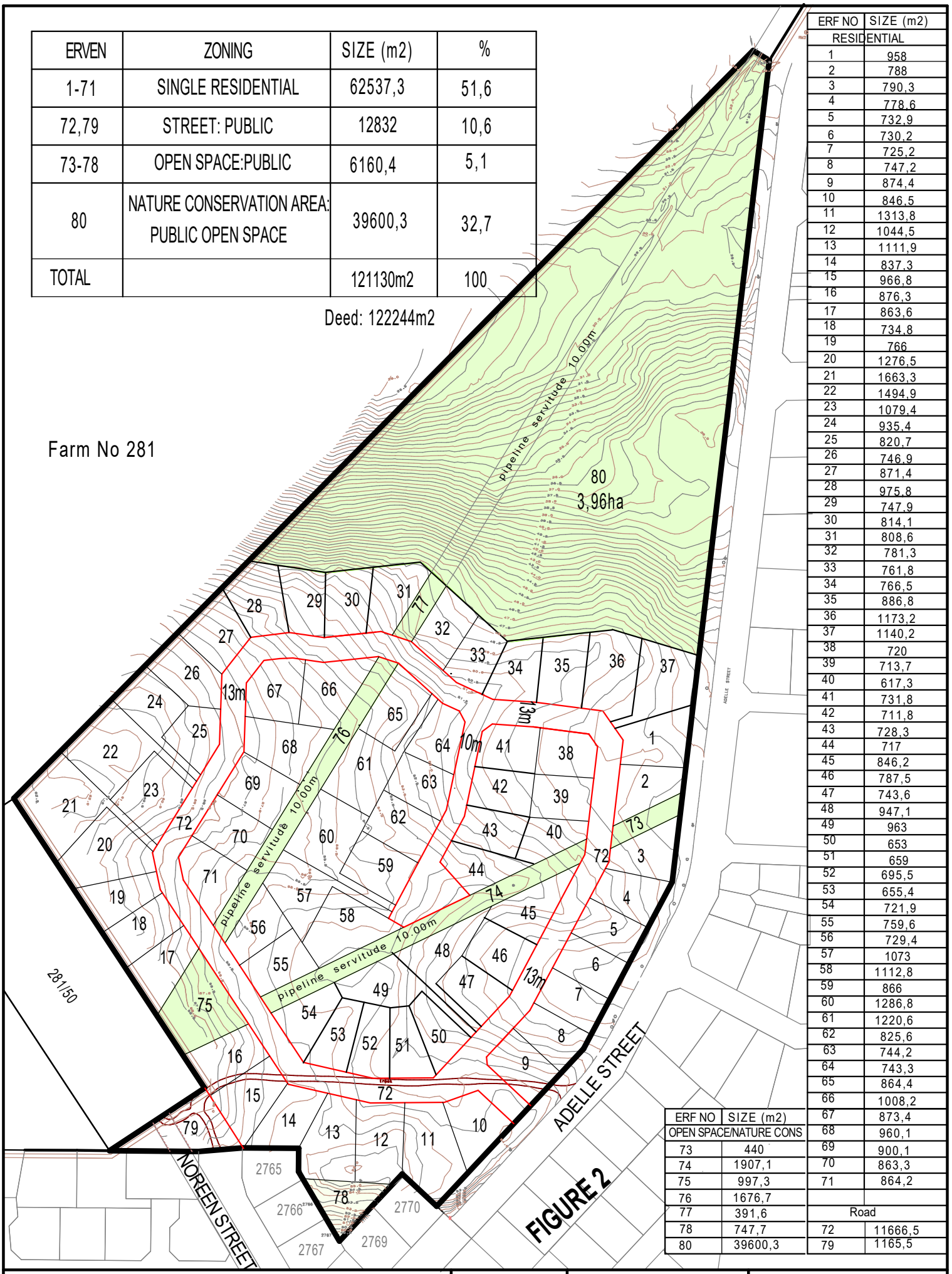


PROJECT:	FIGURE:	NUMBER:
ERF 3495, STRUISBAAI	LOCALITY PLAN	1

ERVEN	ZONING	SIZE (m2)	%
1-71	SINGLE RESIDENTIAL	62537,3	51,6
72,79	STREET: PUBLIC	12832	10,6
73-78	OPEN SPACE:PUBLIC	6160,4	5,1
80	NATURE CONSERVATION AREA: PUBLIC OPEN SPACE	39600,3	32,7
TOTAL		121130m2	100

Deed: 122244m2

Farm No 281



ERF NO	SIZE (m2)
RESIDENTIAL	
1	958
2	788
3	790,3
4	778,6
5	732,9
6	730,2
7	725,2
8	747,2
9	874,4
10	846,5
11	1313,8
12	1044,5
13	1111,9
14	837,3
15	966,8
16	876,3
17	863,6
18	734,8
19	766
20	1276,5
21	1663,3
22	1494,9
23	1079,4
24	935,4
25	820,7
26	746,9
27	871,4
28	975,8
29	747,9
30	814,1
31	808,6
32	781,3
33	761,8
34	766,5
35	886,8
36	1173,2
37	1140,2
38	720
39	713,7
40	617,3
41	731,8
42	711,8
43	728,3
44	717
45	846,2
46	787,5
47	743,6
48	947,1
49	963
50	653
51	659
52	695,5
53	655,4
54	721,9
55	759,6
56	729,4
57	1073
58	1112,8
59	866
60	1286,8
61	1220,6
62	825,6
63	744,2
64	743,3
65	864,4
66	1008,2
67	873,4
68	960,1
69	900,1
70	863,3
71	864,2
Road	
72	11666,5
79	1165,5

ERF NO	SIZE (m2)
OPEN SPACE/NATURE CONS	
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74	1907,1
75	997,3
76	1676,7
77	391,6
78	747,7
80	39600,3

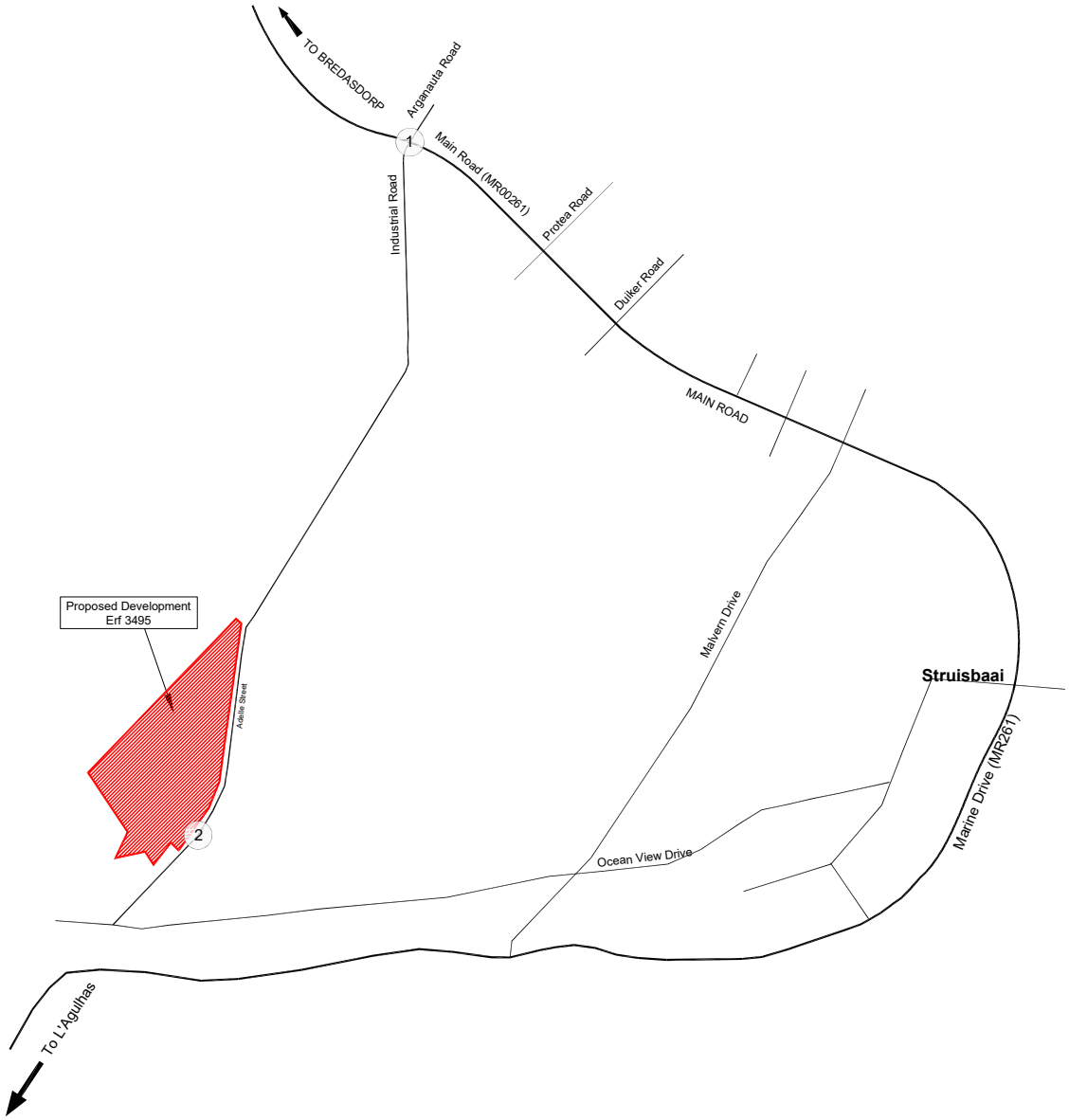
SDP: ERF 3495 STRUISBAAI
ALTERNATIVE 2 (PREFERABLE)

PLAN: SDP_BELLA VISTA

DATE: 13 Aug 2025

SCALE 1:2500

UMSIZA PLANNING
Town and Regional Planner



EXISTING LANE CONFIGURATIONS

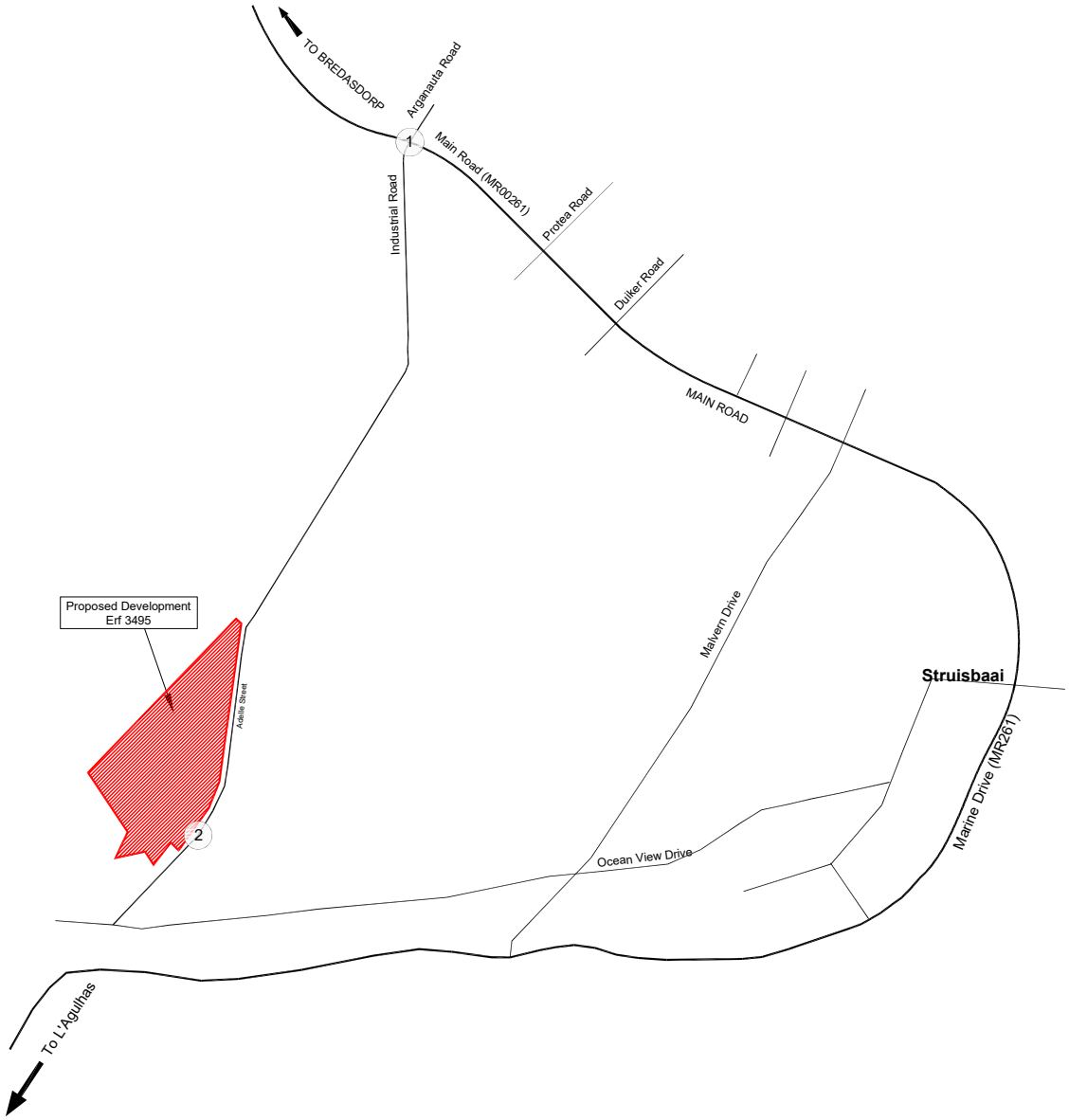
AM PEAK PERIOD

PM PEAK PERIOD



LEGEND
CM = CRITICAL MOVEMENT (UNSIGNALISED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALISED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALISED)
Del = INTERSECTION AVERAGE DELAY (SIGNALISED)/CRITICAL MOVEMENT DELAY UNSIGNALISED
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
STOP/ YIELD CONTROL

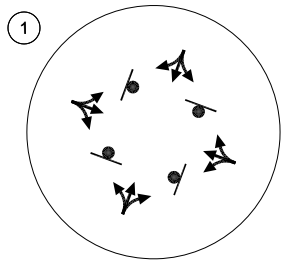
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ERF 3495 STRUISBAAI	EXISTING LANE CONFIGURATION AND WEEKDAY AM AND PM PEAK HOUR TRAFFIC CONDITIONS	3

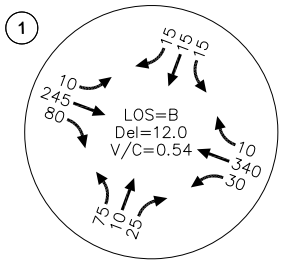


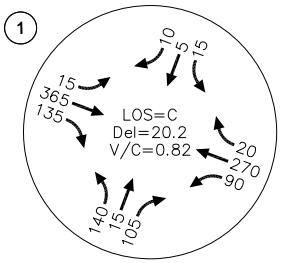
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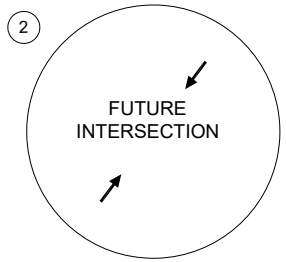
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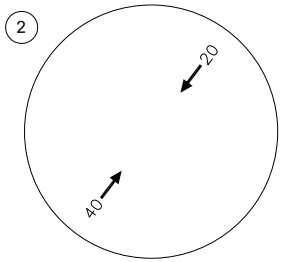
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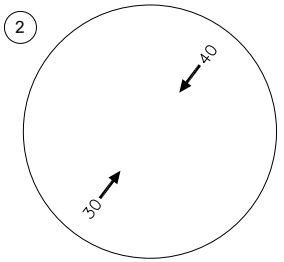






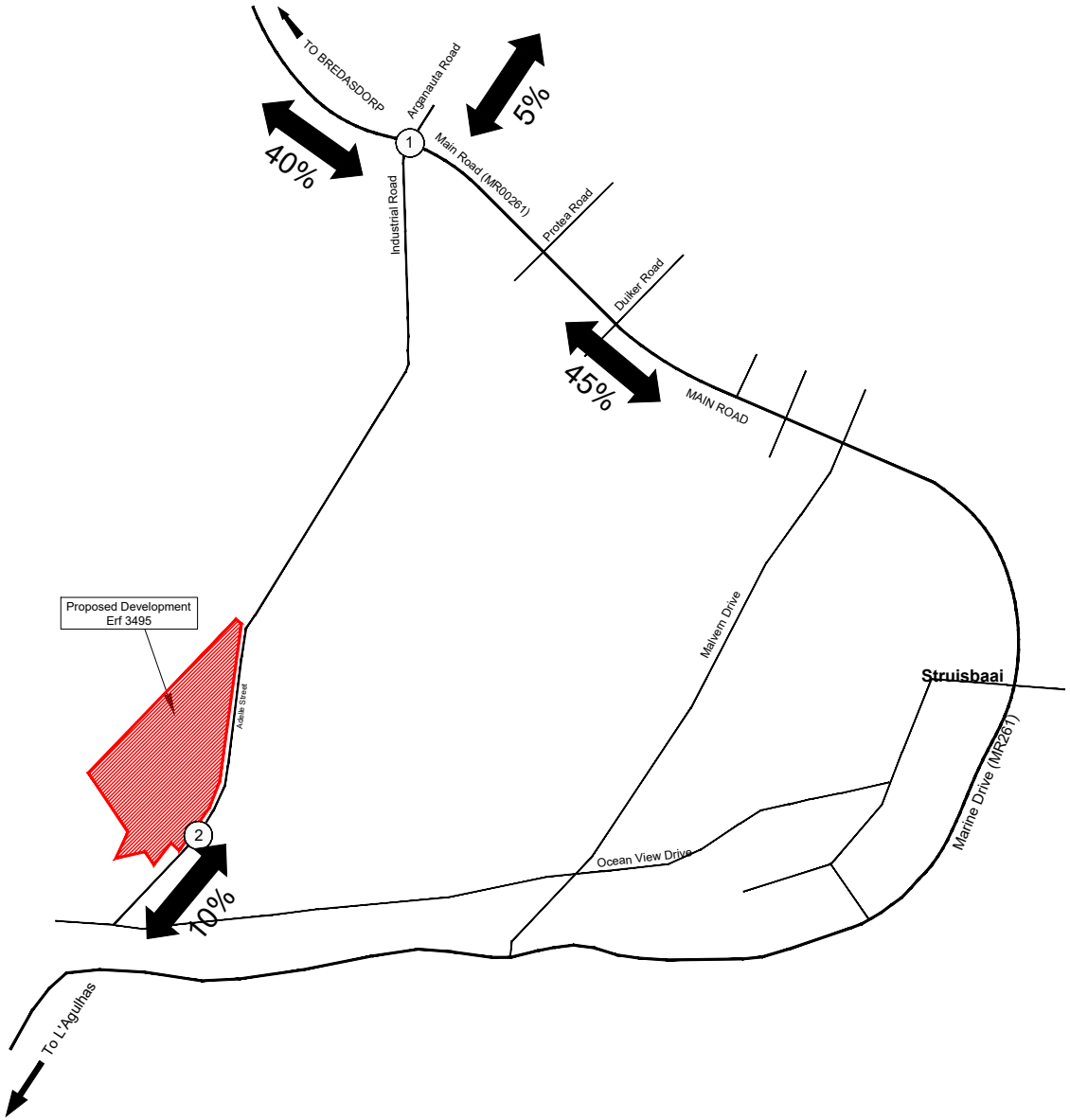






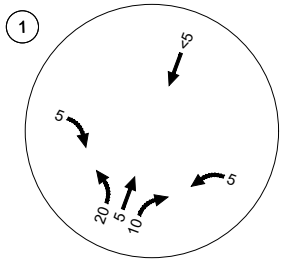
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Del = INTERSECTION AVERAGE DELAY (SIGNALISED)/CRITICAL MOVEMENT DELAY UNSIGNALISED
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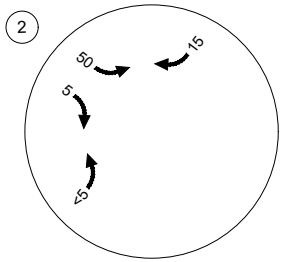
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ERF 3495 STRUISBAAI	BACKGROUND WEEKDAY AM AND PM PEAK HOUR TRAFFIC CONDITIONS	4



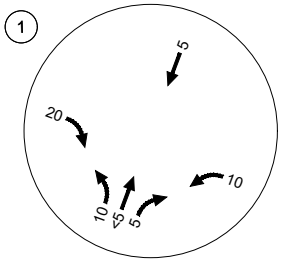


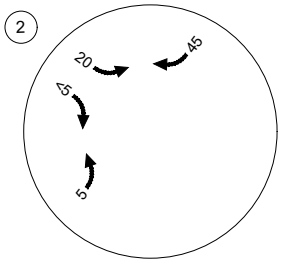
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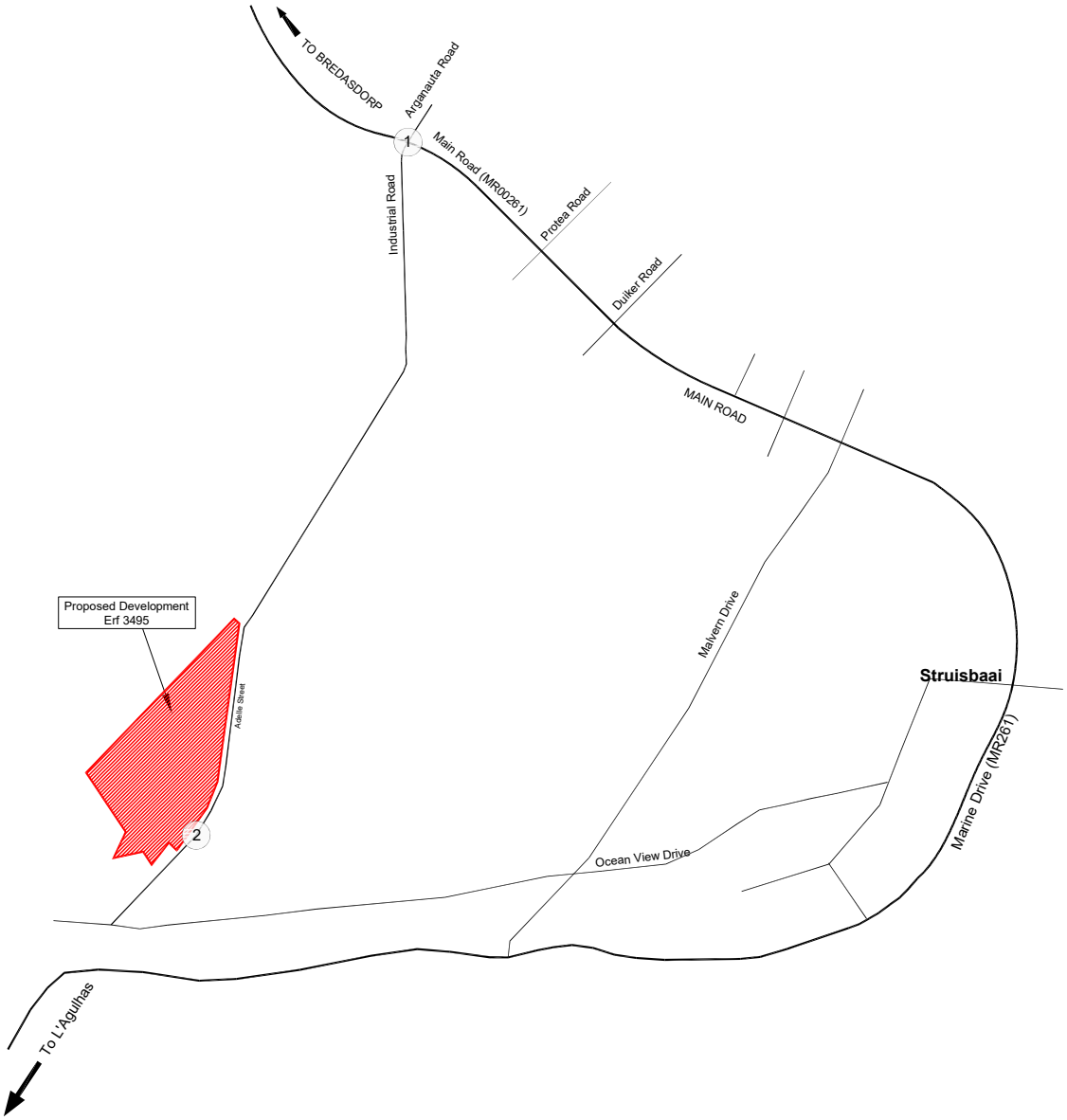
PM PEAK PERIOD





VEHICLE TRIP GENERATION			
PEAK HOUR	IN	OUT	TOTAL
AM	18	53	71
PM	50	21	71

PROJECT:	FIGURE:	NUMBER:
ERF 3495 STRUISBAAI	DEVELOPMENT TRIPS AND DISTRIBUTION	5



EXISTING LANE CONFIGURATIONS | AM PEAK PERIOD | PM PEAK PERIOD



LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALISED)

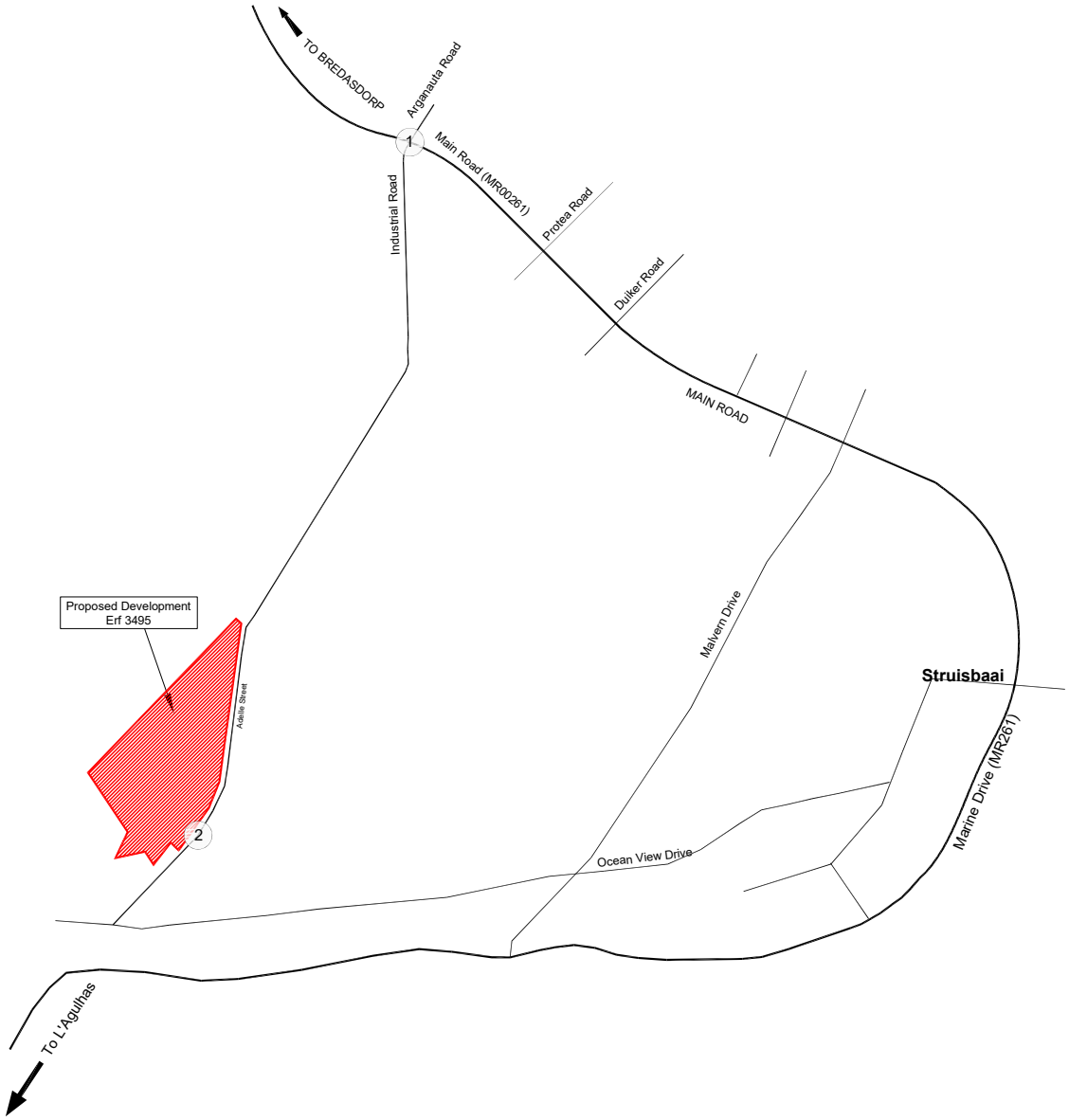
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Del = INTERSECTION AVERAGE DELAY (SIGNALISED)/CRITICAL MOVEMENT DELAY UNSIGNALISED

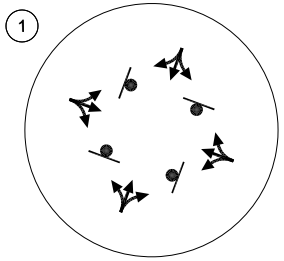
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

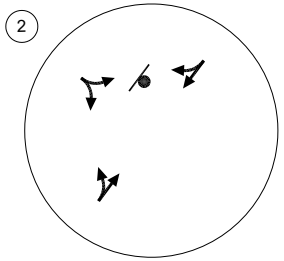
STOP/ YIELD CONTROL

PROJECT:	FIGURE:	NUMBER:
ERF 3495 STRUISBAAI	TOTAL WEEKDAY AM AND PM PEAK HOUR TRAFFIC CONDITIONS	6

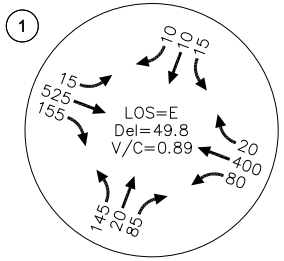


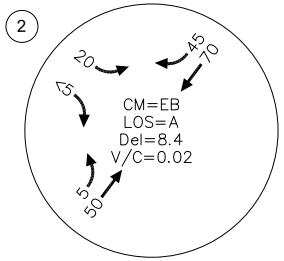
EXISTING LANE CONFIGURATIONS





30TH HIGHEST HOUR





LEGEND
CM = CRITICAL MOVEMENT (UNSIGNALISED)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALISED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALISED)
Del = INTERSECTION AVERAGE DELAY (SIGNALISED)/CRITICAL MOVEMENT DELAY UNSIGNALISED
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STOP/ YIELD CONTROL

PROJECT:	FIGURE:	NUMBER:
ERF 3495 STRUISBAAI	30th HIGHEST HOUR TRAFFIC CONDITIONS	7

Annexure B

Tables

Table B 1: ***Available Shoulder Sight Distance to the north along Adelle Street***

Intersection	Existing Weekday A.M. Peak Hour Traffic Volumes			Existing Weekday P.M. Peak Hour Traffic Volumes		
	LOS	Delay	V/C	LOS	Delay	V/C
Main Road/Industria Street/Argonauta Avenue	A	9.4	0.36	A	9.2	0.36
Adelle Street/ Development Access	Future Intersection					

LOS – Level-of-Service, Delay in seconds per vehicle, V/C – Volume-to-capacity Ratio. Data for Two-way Stop is for Critical Approach

Table B 2: Background Levels-of-Service and Operation of Intersections

Intersection	Background Weekday A.M. Peak Hour Traffic Volumes			Background Weekday P.M. Peak Hour Traffic Volumes		
	LOS	Delay	V/C	LOS	Delay	V/C
Main Road/Industria Street/Argonauta Avenue	B	12.0	0.54	C	20.2	0.82
Adelle Street/ Development Access	Future Intersection					

LOS – Level-of-Service, Delay in seconds per vehicle, V/C – Volume-to-capacity Ratio. Data for Two-way Stop is for Critical Approach

Table B 3: Trip Generation Rates

Land Use	Units	Source	Size/ Volume	Weekday AM Peak Hour			Weekday PM Peak		
				Rate	In	Out	Rate	In	Out
Single Residential	Units	COTO210	71	1.00	25%	75%	1.00	70%	30%

Table B 4: Estimated Trip Generation

Land Use	Trip Type	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Residential	Driveway	18	53	71	50	21	71

Table B 5: Total Levels-of-Service and Operation of Intersections

Intersection	Total Weekday A.M. Peak Hour Traffic Volumes				Total Weekday P.M. Peak Hour Traffic Volumes			
	CM	LOS	Delay	V/C	CM	LOS	Delay	V/C
Main Road/Industria Street/Argonauta Avenue	N/A	B	12.6	0.47	N/A	C	23.1	0.72
Adelle Street/ Development Access	EB	A	8.0	0.05	EB	A	7.9	0.02

CM-Critical Movement, LOS – Level-of-Service, Delay in seconds per vehicle, V/C – Volume-to-capacity Ratio.
Data for Two-way Stop is for Critical Approach

Table B 6: 30TH Highest Traffic Hour Levels-of-Service and Operation of Intersections

Intersection	Total Weekday P.M. Peak Hour Traffic Volumes			
	CM	LOS	Delay	V/C
Main Road/Industria Street/Argonauta Avenue	N/A	E	49.8	0.89
Adelle Street/ Development Access	EB	A	8.4	0.02

CM-Critical Movement, LOS – Level-of-Service, Delay in seconds per vehicle, V/C – Volume-to-capacity Ratio.
Data for Two-way Stop is for Critical Approach

Annexure C

Photographs



Photo 1: Southbound View along Main Road towards Industria Road



Photo 2: Southbound View along Adelle Street towards the Erf3495



Photo 3: Available Shoulder Sight Distance to the north along Adelle Street



Photo 4: Available Shoulder Sight Distance to the south along Adelle Street