

JONES ROAD FILLING STATION, BOKSBURG

TRAFFIC ACCESS STUDY

March 2013

UNITED
BY OUR
DIFFERENCE



PREPARED BY:



WSP SA Civil and Structural Engineers (Pty) Ltd
34 Bouvardia Avenue
Lynnwood Ridge
Pretoria 0081
South Africa
Tel: +27 (12) 361 4141
Fax: +27 (12) 361 4142
e-mail: ZA-Pretoria.WSPCivils-General@wspgroup.co.za
www.wspgroup.co.za
Reg. No. 1973/009683/07

QM

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks				
Date	March 2013			
Prepared by	TL Mamabolo <i>Technologist</i>			
Signature				
Checked by	H Schreurs <i>Pr Eng</i>			
Signature				
Authorised by	H Schreurs <i>Pr Eng</i>			
Signature				
Project Number	15716			
File Reference				

WSP SA Civil and Structural Engineers (Pty) Ltd
34 Bouvardia Avenue
Lynnwood Ridge
Pretoria
0081

Tel: +27 (0) 12 361 4141
Fax: +27 (0) 12 361 4142
<http://www.wspgroup.co.za>

Reg. No: 1973/09683/07

Contents

1	Introduction	2
2	Site Location & Surrounding Road Network	3
2.1	Site location	3
2.2	Surrounding road network	3
3	Site Access	4
3.1	Proposed Access	4
4	Traffic Flows & Development Trips	5
4.1	Existing Traffic Flows	5
4.2	Development Trips	5
4.3	Trip distribution and assignment	6
4.4	Existing Traffic Flows With Development	6
5	Traffic Impact & Capacity Analyses	7
6	Road and/or Intersection Upgrades	8
7	Non-Motorised & Public Transport	9
8	Conclusions & Recommendations	10
9	References	12

Figures

Figure 1	Locality Plan
Figure 2	Existing 2013 Peak Hour Traffic Volumes
Figure 3	Development Peak Hour Pass-by Trips
Figure 4	Existing 2013 Traffic Volumes and Development Pass-by Trips

Drawings

Drawing No: SKC001 – Proposed Access Layout

Annexures

Annexure A	Letter of Comments from Ekurhuleni Municipality
Annexure B	Detailed SIDRA Capacity Calculation Results

1 Introduction

WSP SA Civil and Structural Engineers (Pty) Ltd have been appointed to undertake a Traffic Access Study for a proposed filling station to be located on the eastern side of Jones Road between the access road to Emperors Palace and Griffiths Road in Boksburg, Ekurhuleni. The location of the proposed filling station site is shown in **Figure 1**.

The proposed site will include a filling station with limited retail facilities (i.e. C-store). The Ekurhuleni Municipality requires an access study be completed for the proposed filling station development.

The purpose of this traffic access study is to investigate the expected traffic impact on the adjacent streets on the accesses to the site as a result of the proposed filling station development.

2 Site Location & Surrounding Road Network

2.1 SITE LOCATION

The proposed development site is located along Jones Road on the eastern side of the road between the access road to Emperors Palace and Griffiths Road in Boksburg, Ekurhuleni (see **Figure 1**).

2.2 SURROUNDING ROAD NETWORK

The following existing roads with brief discussions play a significant role within the study area:

Jones Road: This road can be classified as a Class 3 minor arterial road which follows a north-south alignment and borders the proposed development site to the west. This road is a two lane road in either direction with painted median islands within the vicinity of the proposed development site. It is proposed that accesses to the proposed development will be gained off this road.

Griffiths Road: This road can be classified as a Class 2 major arterial road which follows an east-west alignment and lies to the south of the proposed development site and forms an interchange with the R21 freeway and intersects with Jones Road to form a signalised T-intersection. This road is a two lane road in either direction throughout its entire length with physical median islands.

3 Site Access

3.1 PROPOSED ACCESS

There are two proposed access points for the proposed filling station (see drawing **SKC 001**). All the access will be off Jones Road. The proposed accesses to the site are as follows:

- **Access 1:** This will be a left-in only access and will cater for traffic coming from the northern direction and from the access road to Emperors Palace. The access will be located to the north of the development site.
- **Access 2:** This will be a full priority controlled intersection with a stop on the access approach. The access will be located directly opposite the access to Jan Smuts Park industrial development to the south of the development site.

A comments letter from Ekurhuleni Metropolitan Municipality (EMM) stipulates that access to the proposed development will be allowed from Jones Road and only a marginal access will be allowed (refer to **Annexure A** for the comments letter).

It is proposed that a full access (access 2) be supported as there is an existing access (Jan Smuts Park industrial development) which the proposed development access 2 is proposed to be directly opposite to.

The provision of this access is supported from an access management and mobility perspective as this is an addition of a leg to an already existing intersection compared to adding a completely new intersection. Turning lanes will also be provided to the intersection in order to avoid the interruption of traffic flow along Jones Road, therefore the interruption of traffic flow will be negligible.

4 Traffic Flows & Development Trips

4.1 EXISTING TRAFFIC FLOWS

Weekday morning and afternoon traffic counts were done on 15 January 2013 at the following key intersections:

- Jones Road/Access road to Emperors Palace (3-legged, signalised); and
- Jones Road/Access to Jan Smuts Park (3-legged, Priority Controlled).

The existing 2013 weekday morning and afternoon peak hour traffic volumes at the above intersections are shown in **Figure 2**.

4.2 DEVELOPMENT TRIPS

The Department of Transport's "*South African Trip Generation Rates, Second Edition, June 1995*" stipulates that filling stations are *interceptors* and not *generators* of traffic. Thus most of the site traffic will be intercepted from the adjacent road past the site (i.e. Jones Road) and only minimal new traffic can be expected from the surrounding neighbourhood as new or primary trips.

The proposed filling station will be located adjacent Jones Road opposite the Jan Smuts Park industrial development, and approximately 100m to the south of the access road to Emperors Palace. Trips to the filling station will be due to primary trips to the Jan Smuts Park industrial development and pass-by trips on Jones Road; therefore there will not be any primary trips as a result of the proposed filling station development. The site is also located within an industrial area; therefore there will not be any primary trips from residential developments.

The C-Store will be visited as a result of the intercepted traffic on the adjacent road network. The C-Store will be more of a convenience store for the surrounding industrial developments and that there will not be any primary trips to the C-Store.

The following pass-by traffic interception rates along Jones Road were used for both weekday morning and afternoon peak hours:

- Jones Road northbound 8%
- Jones Road southbound 6%

It was assumed that 3% of the 6% southbound intercepted traffic will use access 1 (left-in only) and 3% will use access 2 (full access).

The number of intercepted pass-by trips along Jones Road are shown in **Table 1**.

Table 1: Intercepted Pass-by Trips

PEAK HOUR	JONES ROAD						
	Through Volumes		Interception Rate		Pass-by Trips		
	NB	SB	NB	SB	NB	SB	WB*
AM Peak Hour	742	280	8%	6%	IN		
					59	16	-
					OUT		
					56	15	4*
					TOTAL		
PM Peak Hour	354	998	8%	6%	IN		
					27	59	-
					OUT		
					26	56	4*
					TOTAL		

*It was assumed that about 4 trips of the total intercepted trips will go to Jan Smuts Park Industrial Development after fuelling (westbound)

Legend: NB = Northbound
SB = Southbound
WB = Westbound

Table 1 shows that the proposed filling station will intercept approximately **150** and **172** pass-by trips during the weekday morning and afternoon peak hours, respectively.

The Department of Transport's "Manual for Traffic Impact Studies (1995)" requires that a traffic access study be done for developments which generate less than **50** peak hour trips.

The proposed filling station will intercept approximately **150** and **172** (both > 50) pass-by trips during the weekday morning and afternoon peak hours, respectively. It must be noted that pass-by trips are not new trips on the road network, but are existing trips which would still go past the proposed development site to respective destinations irrespective of whether there will be a filling station or not.

This access study was done as a result of interruption of flow on Jones Road due to the accesses to the proposed development site.

4.3 TRIP DISTRIBUTION AND ASSIGNMENT

The weekday morning and afternoon peak hour trip distribution and assignment of the pass-by trips to the proposed filling station are shown in **Figure 3**.

4.4 EXISTING TRAFFIC FLOWS WITH DEVELOPMENT

The existing traffic volumes (**Figure 2**) were added to the proposed filling station development pass-by trips (**Figure 3**) to obtain the weekday peak hour existing traffic volumes and development pass-by trips and are shown in **Figure 4**.

5 Traffic Impact & Capacity Analyses

The SIDRA Intersection 5.1 software program was used for capacity calculations.

Only the intersection of Jones Road and the access to Jan Smuts Park industrial development was analysed due to the proposed full access to the development (Access 2).

The intersection of Jones Road and the access road to Emperors Palace will not be affected by the filling station development.

The intersection's capacity calculation results at the analysed intersection are shown in **Table 2**. Detailed capacity calculation results are included in **Annexure B**.

Table 2: Summary of Capacity Analysis Results

INTERSECTION		WEEKDAY AM PEAK HOUR	WEEKDAY PM PEAK HOUR	
PRIORITY CONTROLLED	JONES RD/ ACCESS TO JAN SMUTS PARK DEVELOPMENT/ ACCESS 2 TO DEVELOPMENT	V/C ratio	0.386	0.400
		LOS	N/A*	N/A*
		Delay (sec/veh)	3.6	3.8
Concluding Remarks		The intersection will operate satisfactorily with the proposed upgrades as described in Section 6 and shown on drawing SKC001 .		

N/A = The average intersection delay is not a good LOS measure for priority controlled intersections due to zero delays associated with major road movements*

Legend: V/C ratio = Volume to capacity ratio
 LOS = Level of Service

The capacity analysis indicates that the intersection will operate satisfactorily with the proposed intersection upgrades.

6 Road and/or Intersection Upgrades

Based on the estimated intercepted trips of the proposed development and its projected distribution onto the surrounding road network during the peak hours and the capacity analyses, the following road and/or intersection upgrades are proposed (see drawing **SKC001**):

■ **Jones Road/Access to Jan Smuts Park Development/Access 2 to Development Intersection (Priority Controlled)**

The eastern approach (access approach) requires a shared through, left and right turning lane with one exit lane.

The northern approach's outer through lane has to be changed to a shared through and left turning lane.

Part of the painted median island on the southern approach has to be changed to a right turning lane.

■ **Other Road Upgrades/Changes**

The southern approach at the intersection of Jones Road and the access road to Emperors Palace will be provided with a physical median island over a distance of the existing painted median island to prohibit illegal manoeuvres and turning movements at access 1 (left-in only) of the proposed filling station.

7 Non-Motorised & Public Transport

7.1 GENERAL

In terms of the National Land Transport Transition Act (NLTTA) 22 of 2000, section 29, it is a requirement that an assessment of public and non-motorised transport be included in a traffic impact assessment.

The following comments are made regarding public and non-motorised transport:

- There is an existing pedestrian walkway on the eastern side of Jones Road (i.e. on the side of the proposed filling station development); therefore no additional pedestrian facilities are required.
- Public transport facilities are not required as a result of this development.

8 Conclusions & Recommendations

Based on the content of this document, the following key conclusions and recommendations are relevant:

- The proposed development site is located on the eastern side of Jones Road between the access road to Emperors Palace and Griffiths Road in Boksburg, Ekurhuleni. The proposed site will include a filling station with limited retail facilities (i.e. C-store).
- There are two proposed access points to the proposed filling station development as follows:

- **Access 1:** This will be a left-in only access and will cater for traffic coming from the northern direction and from the access road to Emperors Palace. The access will be located to the north of the development site.
- **Access 2:** This will be a full priority controlled intersection with a stop on the access approach. The access will be located directly opposite the access to Jan Smuts Park industrial development to the south of the development site.

A comments letter from Ekurhuleni Metropolitan Municipality (EMM) stipulates that access to the proposed development will be allowed from Jones Road and only a marginal access will be allowed.

It is proposed that a full access (access 2) be supported as there is an existing access (Jan Smuts Park industrial development) which the proposed development access 2 is proposed to be directly opposite to.

The provision of this access is supported from an access management and mobility perspective as this is an addition of a leg to an already existing intersection compared to adding a completely new intersection. Turning lanes will be provided to the intersection in order to avoid the interruption of traffic flow along Jones Road, therefore the interruption of traffic flow will be negligible.

- Weekday morning and afternoon traffic counts were done on 15 January 2013 at the following intersections:
 - Jones Road/Access road to Emperors Palace (3-legged, signalised); and
 - Jones Road/Access to Jan Smuts Park (3-legged, Priority Controlled).
- The proposed filling station development will only intercept, but not generate new trips. The filling station will be located adjacent Jones Road opposite the Jan Smuts Park industrial development, and approximately 100m to the south of the access road to Emperors Palace. Trips to the filling station will be due to primary trips to the Jan Smuts Park industrial development and pass-by trips on Jones Road; therefore there will not be any primary trips as a result of the proposed filling station development. The site is also located within an industrial area; therefore there will not be any primary trips from residential developments.
- The C-Store will be visited as a result of the intercepted traffic on the adjacent road network. The C-Store will be more of a convenience store for the surrounding industrial developments and that there will not be any primary trips to the C-Store.

- The proposed development will intercept approximately **150** and **172** pass-by trips during the weekday morning and afternoon peak hours, respectively.
- The capacity analysis indicates that the access intersection will operate satisfactorily with the proposed upgrades.
- There is an existing pedestrian walkway on the eastern side of Jones Road (i.e. on the side of the proposed filling station development); therefore no additional pedestrian facilities are required.
- Public transport facilities are not required as a result of this development.

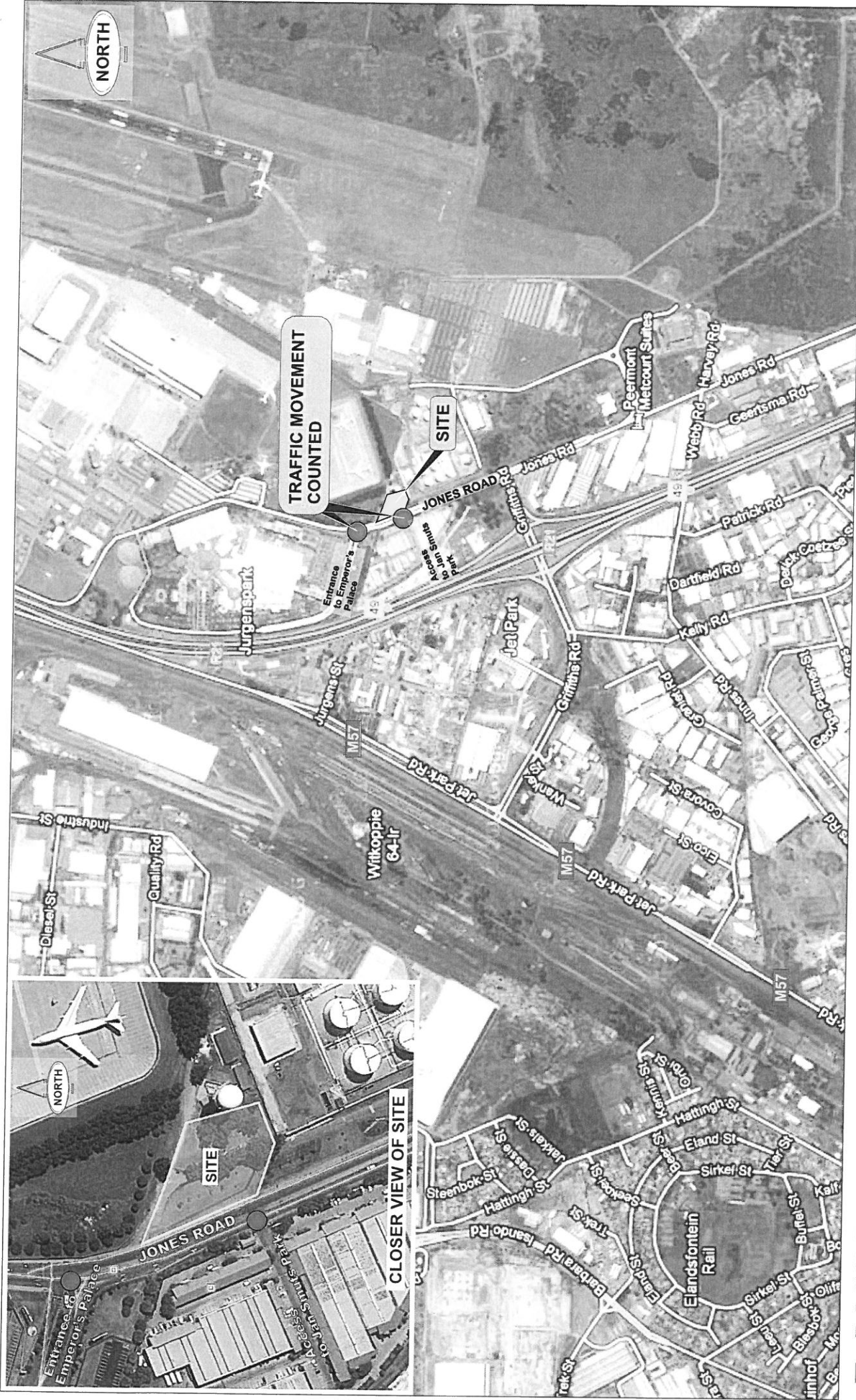
It is therefore concluded and recommended that the proposed filling station development from a traffic engineering point of view be approved provided that the proposed external road upgrades and site accesses are constructed to the relevant design standards of Ekurhuleni Municipality.

9 References

- Akcelik & Associates Pty Ltd, (July 2011) **aaSIDRA 5.1**, Victoria, Australia.
- BKS Incorporated, (June 1995) **South African Trip Generation Rates**, 2nd Edition, Report No. RR 92/228, Department of Transport, Pretoria, South Africa.
- BKS (Pty) Ltd, (October 1995) **Manual for Traffic Impact Studies**, Report No. RR 93/635, Department of Transport, Pretoria, South Africa.
- Transportation Research Board, (2010) **Highway Capacity Manual 2010**, Washington, D.C, USA.

Figures

- Figure 1 Locality Plan
- Figure 2 Existing 2013 Peak Hour Traffic Volumes
- Figure 3 Development Peak Hour Pass-by Trips
- Figure 4 Existing 2013 Traffic Volumes and Development Pass-by Trips



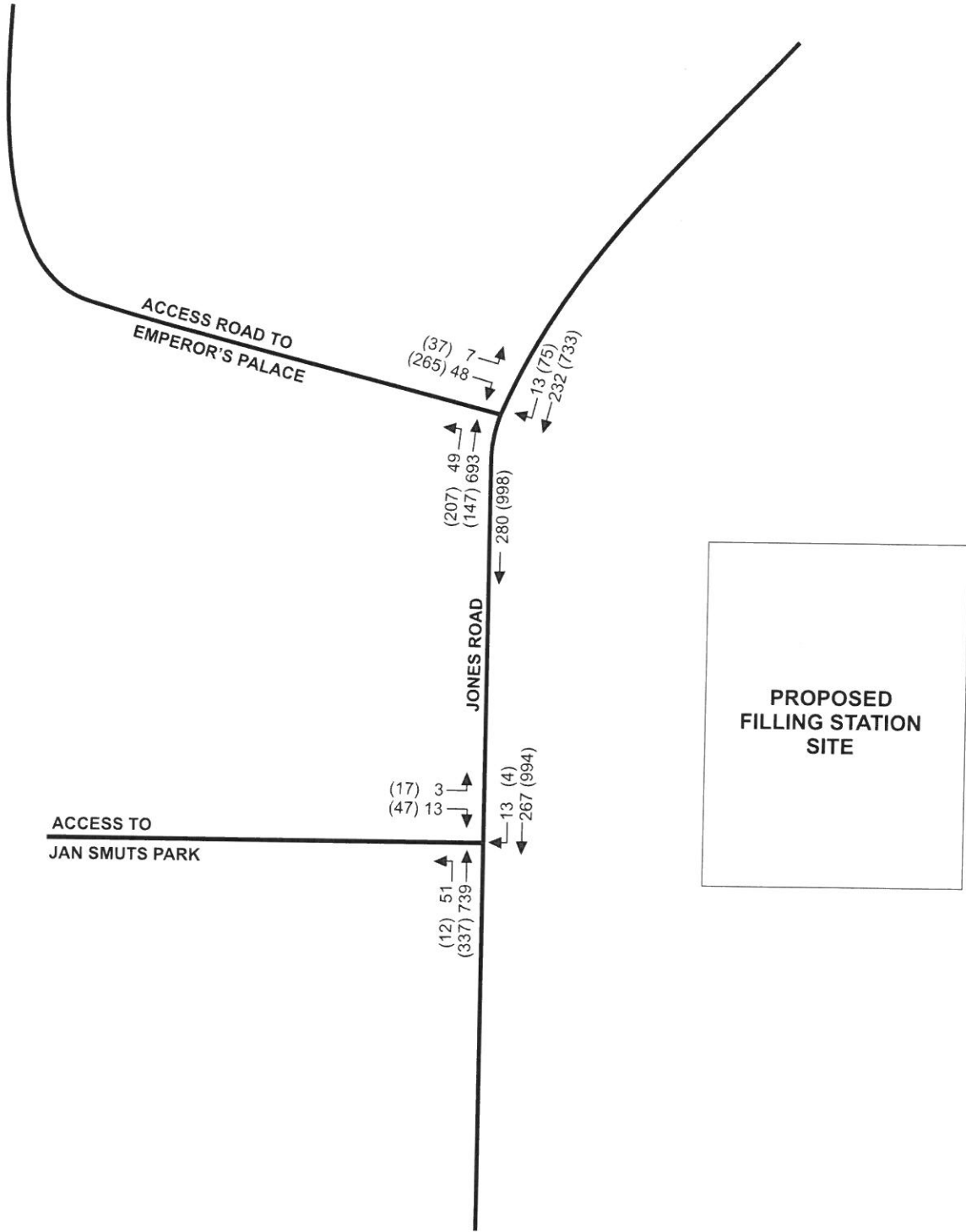
15716_ACSA Sasol Jones Road_Locality Plan_Figure 1.cdr

Project: **ACSA SASOL JONES ROAD**

Figure Description: **LOCALITY PLAN**

No. **1**





GENERAL LEGEND:

255 - Weekday AM Peak hour Volume
 (255) - Weekday PM Peak hour Volume

Checked by : H Schreurs Pr Eng



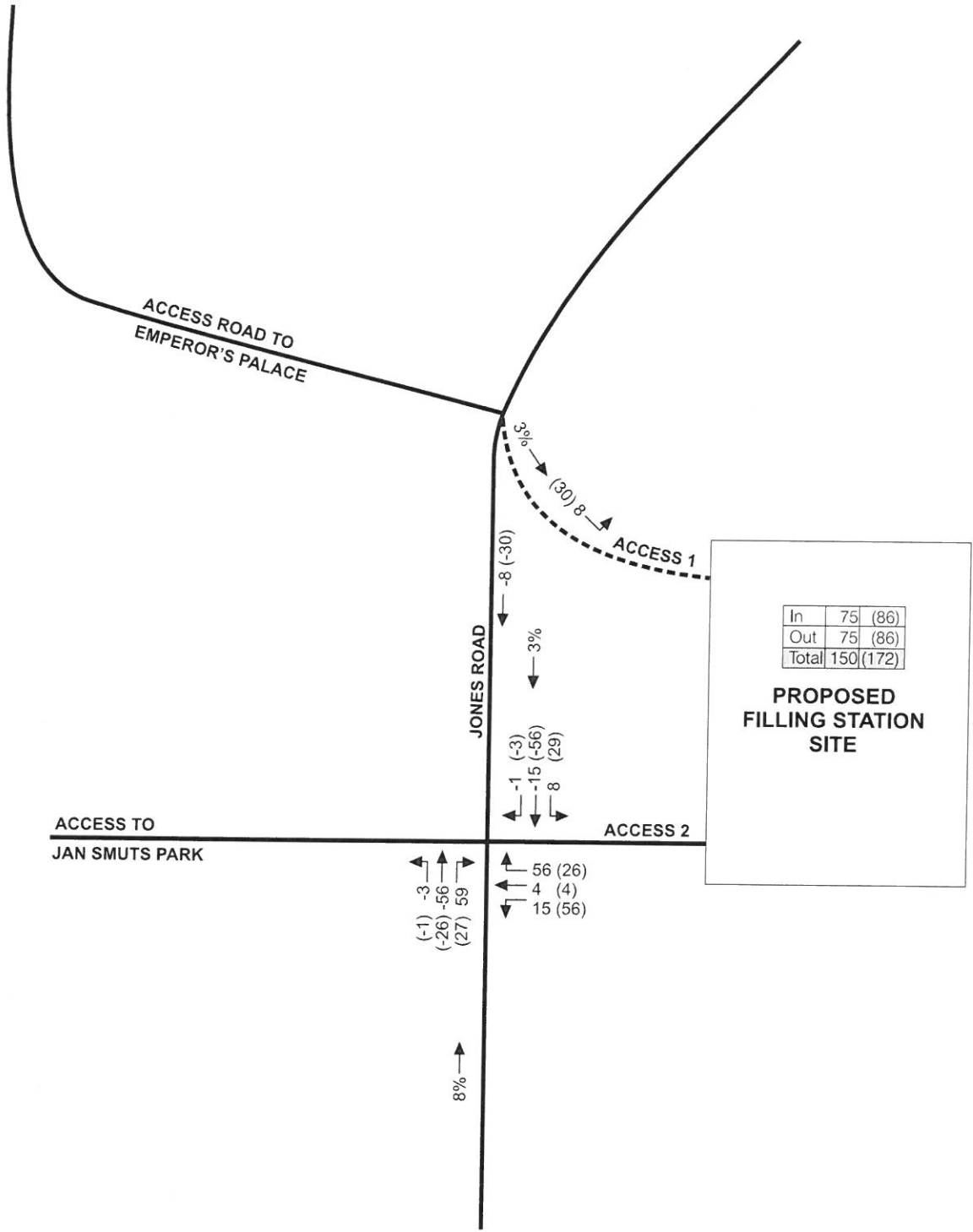
Project: ACSA SASOL JONES ROAD

15716_ACSA Sasol Jones Rd_Existing 2013 Weekday Peak hr Traffic Volumes_2.cdr

Figure: EXISTING 2013 WEEKDAY PEAK HR TRAFFIC VOLUMES

No. 2

Schematic layout



GENERAL LEGEND:

255 - Weekday AM Peak hour Volume
 (255) - Weekday PM Peak hour Volume

Checked by : H Schreurs Pr Eng

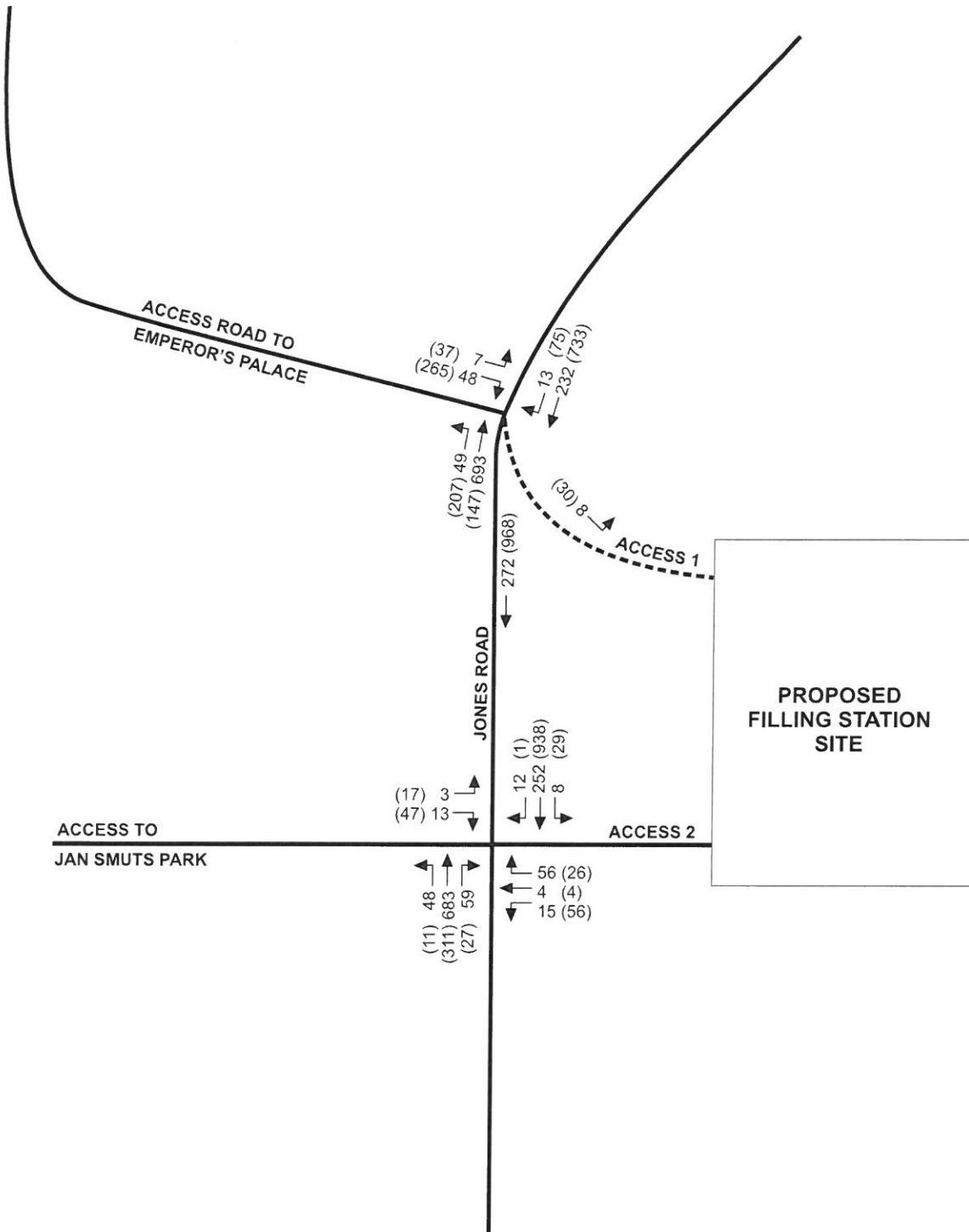
15716_ACSA Sasol Jones Rd_Weekday Peak hr Pass-by Trips_3.cdr



Project:
ACSA SASOL JONES ROAD

Figure:
WEEKDAY PEAK HR PASS-BY TRIPS

No.
3



GENERAL LEGEND:

255 - Weekday AM Peak hour Volume
 (255) - Weekday PM Peak hour Volume

Checked by : H Schreurs Pr Eng



Project:
ACSA SASOL JONES ROAD

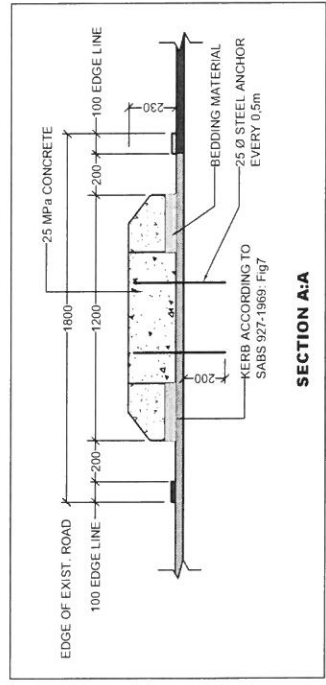
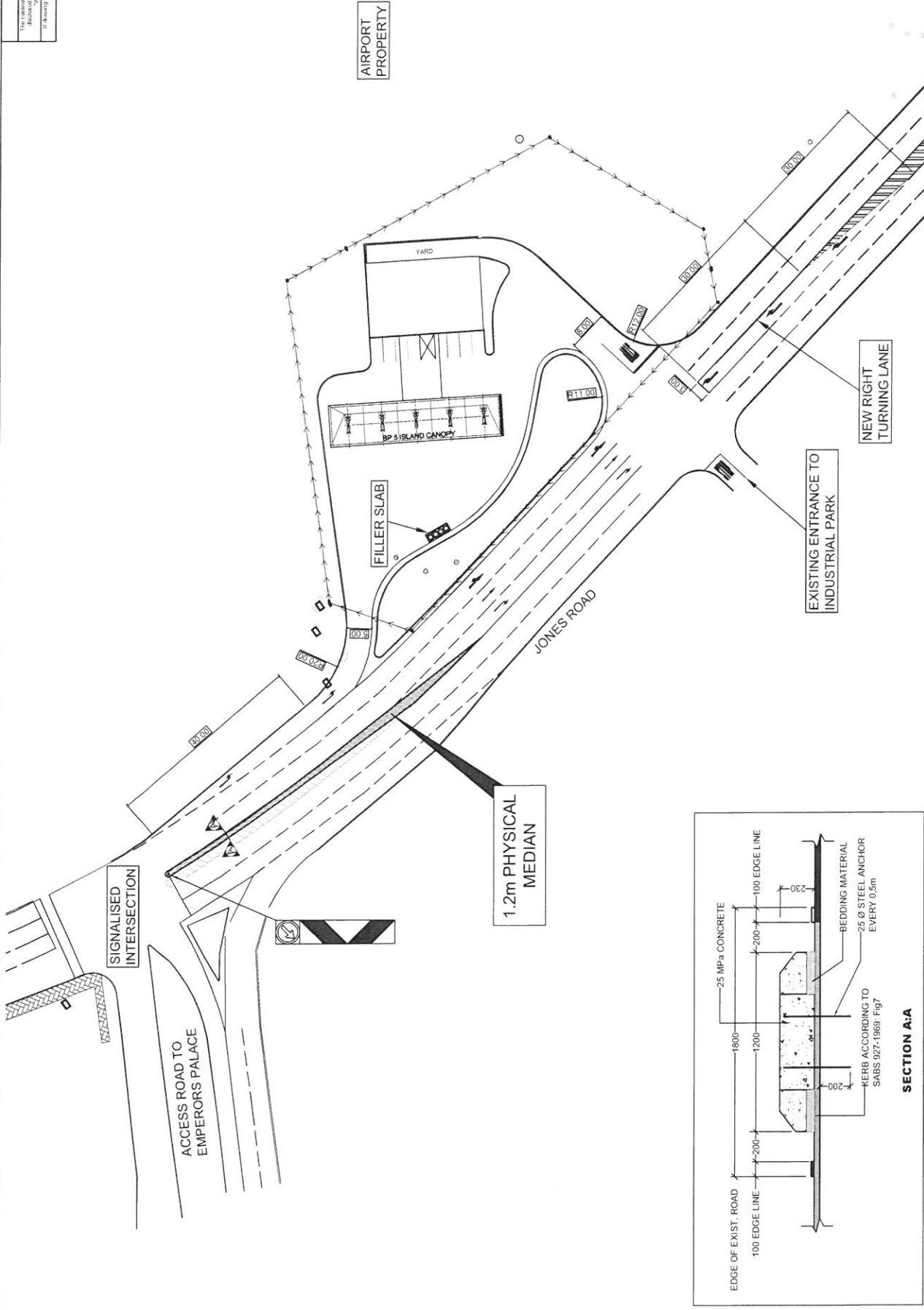
Figure:
**EXISTING 2013 WEEKDAY
 PEAK HR TRAFFIC VOLUMES
 AND FILLING STATION PASS-BY TRIPS**

No.
4

Drawings

Drawing No: SKC001 – Proposed Access Layout

© COPYRIGHT RESERVED
 This drawing is the property of WSP SA CIVIL AND STRUCTURAL ENGINEERS (PTY) LTD. It is to be used only for the project and site for which it was prepared. It is not to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of WSP SA CIVIL AND STRUCTURAL ENGINEERS (PTY) LTD.
 If necessary, please contact WSP SA CIVIL AND STRUCTURAL ENGINEERS (PTY) LTD. at the following address:
 WSP Project Office, Level 11, 111 Sturges Street, Johannesburg, South Africa.



SCALE	1:750	CHECKED	H SCHREURS	APPROVED	H SCHREURS
DESIGN		DRAWN	ND MCKANSI	DATE	2013/02/28
PROJECT No.	15716	DRAWING No.	SKC001	REV.	A

PROJECT	JONES ROAD FILLING STATION
TITLE	PROPOSED ACCESS LAYOUT

WSP

WSP SA Civil and Structural Engineers (Pty) Ltd
 24 Bouwaria Avenue, Lynnwood Ridge, Pretoria, 0081
 Postal Suite 287, Apple Gate X025, Lynnwood Ridge, 0080
 Tel: +27(0)12 355 3185
 www.wspgroup.com

CLIENT					
FOR INFORMATION					
REV	DATE	BY	DESCRIPTION	CHK	APD
A					

© WSP Group nlc

Annexures

- Annexure A Letter of Comments from Ekurhuleni Municipality
- Annexure B Detailed SIDRA Capacity Calculation Results

Annexure A

Letter of Comments from Ekurhuleni Municipality

Memorandum



To: CITY DEVELOPMENT DEPARTMENT:
Boksburg Northern Service Delivery Region
Attention: AREA MANAGER Roads and Stormwater

Your Ref: 15/4/3/1/81/187 Kempton Park Civic Centre
cnr C R Swart Drive and Pretoria Rd

From: Regional Director (RTCW: North) P O Box 13
KEMPTON PARK
1620

Our Ref: 15/4/7-WITK 64 IR

Enquiries: R M van Huyssteen Fax : (011) 398 2074
marlus.vhuyssteen@ekurhuleni.gov.za

Tel: 011 999 3864

Date: 15 November 2012

Subject: PROPOSED REZONING ON PORTION OF PORTION 187 OF THE FARM
WITKOPPIE 64-IR: AMENDMENT SCHEME 1798

Your memorandum dated 30 October 2012 refers.

The following comments are applicable on the proposed rezoning.

Rezoning Proposal

1. In view of this department, the available infrastructure will be able to support the rights applied for, subject to the conditions below.
2. Please note that the comments made on this rezoning application must not be seen as support for the proposed site development plan that is attached. The Site Development Plan will only be considered on receipt of the formal site development plan after approval of the amendment scheme.

Access Arrangements

3. Access to the property will be allowed from Jones Road. Only a marginal access will be allowed (as reflected in the application)

Traffic Impact Assessment

4. The expected trip generation will be between 50 and 150 peak hour trips. Hence a traffic impact statement will be required. The purpose of the traffic impact statement is to clarify the access to the site and to deal with matters like access widths, throat lengths, internal manoeuvring, etc.
5. The traffic impact statement will be required before the site development plan for the development can be considered.
6. The traffic impact statement must be done by the applicant at his cost and according to the Manual for Traffic Impact Studies. The maximum rights applied for must be used in the traffic impact statement (and not the intention or current usage on site).
7. The traffic impact statement must address amongst others, the access to the site, parking layout, parking accommodation on site in terms of the town planning scheme requirements, traffic circulation, public transport and pedestrian movements associated with the development, as well as on-and-off loading requirements. The impact of the development on the surrounding road network must also be addressed, with special attention to the capacity of the network for the proposed rights.

8. It must be noted that any improvements to the road network required as a result of the development, as indicated in the traffic impact statement, will be for the cost of the developer.
9. Way leave approvals must be obtained for all improvements to the infrastructure, as a result of the development, within the public road reserves, prior to construction.

Road Infrastructure Requirements

10. Only improvements to the access, in line with a Site Development Plan, to be submitted, are at present foreseen. See point 9 above with respect to obtaining way leave approval prior to construction. Also note that this department understands that the area under consideration is affected with various services that needs to be considered during the construction. The developer to take note of this challenge.

Stormwater Infrastructure

11. A stormwater management assessment will be required. Where there is an increase in the impermeable area of an Erf, a complete stormwater management plan will be required addressing, amongst others, the attenuation of storm water on the site to the satisfaction of this department. Such a Storm-water Management Plan (SMP) must be prepared in line with the EMM SMP guideline document, by a professional storm-water planning engineer, at the cost of the developer and must be submitted to this department for approval prior to the approval of the site development plan.
12. The recommendations of the Storm-water Management Plan must be implemented by the developer at his costs, which recommendations must be incorporated in the site development plan to be submitted for the development.
13. The storm-water management plan (SMP) must be submitted to this office in hard copy and in electronic copy (only in PDF format).
14. The storm water system for the development must be linked to the nearest Municipal storm water system. The SMP must also address the capacity of the receiving stormwater network and identify where upgrading will be required.

Parking

15. With respect to parking please note that parking must be provided on the stand itself. The parking requirements must meet the Town Planning Scheme requirements. No access to parking bays from public or private roads will be allowed. Parking dimensions must meet the requirements as stipulated in the "Parking Standards (Second Edition)" as published by the Department of Transport. This matter must however be addressed in the site development plan.

Site Development Plan

16. A Site Development Plan will be required that amongst others must provide the detail with respect to:
 - a. Parking on site and the dimensions, complete with the parking schedule in terms of the town planning scheme.
 - b. Internal movement on site, including the design vehicle used.
 - c. Access arrangements, including dimensions of the throat length and access width. Where a traffic impact statement/study is required, an approval letter of the traffic impact study, with the recommendations of the traffic impact study, must be submitted with the SDP.
 - d. The storm-water management on site and the discharge arrangements (as per the storm-water management plan). Where a stormwater management plan is required, an approval letter of the stormwater management plan, with the recommendations of the SMP, must be submitted with the SDP.
 - e. Provision for public transport.
 - f. Pedestrian accommodation.
 - g. Proof of the payment of the bulk engineering services contribution.

Contributions

17. A road and storm-water contribution of R 391 836.01 is payable on this application (See Annexure A), which contribution is valid until end of June 2013 after which it will be escalated. For this development, the trip generation was based upon a Filling Station. The reason for not

considering the "Aerodrome" rights in the calculation is based upon the understanding that contributions will be levied for any additional rights on the site, despite the aerodrome rights.

18. The contribution amount must be paid into Vote Number 4308 051 425 575 with REZ-PTN-PTN 187-WITK 64IR as the description. A copy of the receipt must be submitted to this department. The bulk engineering services contribution is payable within 28 days of the proclamation of the amendment scheme or prior to the submission of the site development plan whichever comes first.

Environmental Considerations

19. General Comment: Please note that the installation or construction of any road and storm-water infrastructure required for the rezoning, within or outside the application site, may be considered a listed activity in terms of the National Environmental Management Act of 1998. It will be the developer's responsibility to acquaint him of these regulations and to obtain the necessary authorisation from the Gauteng Department of Agriculture and Rural development (GDARD) where applicable. Where applicable, an application must also be made to the Department of Water and Environment (DWE) in terms of the National Water Act of 1998 where any such infrastructure may require a Section 21 licence. Therefore, the necessary authorisation will be required from the Gauteng Department of Agriculture and Rural Development (GDARD) as well as DWE prior to this department commenting favourably on the site development plan.

I trust you find the above in order.


P. N. DU PLESSIS Pr. Eng.
REGIONAL DIRECTOR (RTCW: NORTH)

CONTRIBUTION CALCULATION CERTIFICATION

I, R M van Huyssteen , being the author of the above-mentioned comments, hereby certify that the contribution calculation contained in the memorandum above, namely a contribution of R 391 836 01, valid to June 2013, has been done in accordance with the current approved bulk Roads and Stormwater Engineering Contribution Policy.



R M van Huyssteen

Date: 20/11/15

I, P N du Plessis, being the Regional Director: Roads and Stormwater, Northern Region hereby certifies that the contribution calculation contained in the memorandum above has been verified by me.



P N DU PLESSIS Pr. Eng.
REGIONAL DIRECTOR (RTCW: NORTH)

Date: 18/11/12

Recorded on database:

Yes: X	No
--------	----

Annexure B

Detailed SIDRA Capacity Calculation Results

Annexure B.1

SIDRA Output: Jones Rd/Access to Jan Smuts Development/Access 2 to Development Intersection
Existing 2013 AM Peak Hour Traffic Volumes and Filling Station Pass-by Trips

Site: 2013 AM Peak Background+Pass-by Trips

MOVEMENT SUMMARY

Jones Road/Access to Jan Smuts Park/Access 2 to Development Intersection
2013 AM Peak Hour Background Traffic and Pass-by Trips
Proposed Configuration
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Seg. Sat. v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Jones Rd (S)											
1	L	51	0.0	0.166	6.2	LOS A	0.0	0.0	0.02	1.03	45.0
2	T	719	0.0	0.166	0.0	LOS A	0.0	0.0	0.02	0.00	52.0
3	R	62	0.0	0.063	9.4	LOS A	0.2	1.6	0.36	0.66	47.3
Approach		812	0.0	0.166	1.2	NA	0.2	1.6	0.02	0.11	55.1
East Access 2 to Development (E)											
4	L	16	0.0	0.366	32.0	LOS D	1.5	10.3	0.79	0.90	32.7
5	T	4	0.0	0.366	32.5	LOS D	1.5	10.3	0.79	1.06	32.5
6	R	16	0.0	0.366	32.0	LOS D	1.5	10.3	0.79	1.06	32.7
Approach		36	0.0	0.366	32.0	LOS D	1.5	10.3	0.79	1.03	32.7
North Jones Rd (N)											
7	L	6	0.0	0.067	6.2	LOS A	0.0	0.0	0.02	1.05	45.0
8	T	265	0.0	0.067	0.0	LOS A	0.0	0.0	0.02	0.00	52.0
9	R	12	0.0	0.020	12.5	LOS B	0.1	0.6	0.59	0.77	44.6
Approach		278	0.0	0.067	0.6	NA	0.1	0.6	0.02	0.06	55.7
West Access to Jan Smuts Park (W)											
10	L	3	0.0	0.117	33.5	LOS D	0.4	2.6	0.35	1.00	32.0
11	T	1	0.0	0.117	34.0	LOS D	0.4	2.6	0.35	1.00	31.9
12	R	14	0.0	0.117	33.5	LOS D	0.4	2.6	0.35	1.00	32.0
Approach		18	0.0	0.117	33.5	LOS D	0.4	2.6	0.35	1.00	32.0
All Vehicles		1215	0.0	0.366	3.6	NA	1.5	10.3	0.09	0.17	54.6

Level of Service (LOS) Method: Delay (HCM 2000)
 Vehicle movement LOS values are based on average delay per movement
 Minor Road Approach LOS values are based on average delay for all vehicle movements
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements
 SIDRA Standard Delay Model used

Annexure B1.2

SIDRA Output: Jones Rd/Access to Jan Smuts Development/Access 2 to Development Intersection
 Existing 2013 PM Peak Hour Traffic Volumes and Filling Station Pass-by Trips

MOVEMENT SUMMARY											Site: 2013 PM Peak Background+Pass-by Trips
Jones Road/Access to Jan Smuts Park/Access 2 to Development Intersection 2013 PM Peak Hour Background Traffic and Pass-by Trips Proposed Configuration Stop (Two-Way)											
Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Diag. Sats v/c	Average Delay sec	Level of Service	95% Bksp of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Jones Rd (S)											
1	L	12	0.0	0.063	8.2	LOS A	0.0	0.0	0.00	1.04	49.0
2	T	327	0.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	28	0.0	0.066	15.6	LOS C	0.2	1.6	0.71	0.91	41.9
Approach		367	0.0	0.065	1.6	NA	0.2	1.6	0.26	0.10	57.7
East Access 2 to Development (E)											
4	L	59	0.0	0.400	30.0	LOS D	1.5	10.4	0.36	1.07	33.7
5	T	4	0.0	0.400	30.6	LOS D	1.5	10.4	0.36	1.06	32.6
6	R	27	0.0	0.400	30.0	LOS D	1.5	10.4	0.36	1.06	33.7
Approach		91	0.0	0.400	30.1	LOS D	1.5	10.4	0.36	1.07	33.7
North Jones Rd (N)											
7	L	31	0.0	0.249	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	597	0.0	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	1	0.0	0.001	9.6	LOS A	0.0	0.0	0.39	0.99	47.2
Approach		1019	0.0	0.249	0.3	NA	0.0	0.0	0.00	0.03	59.6
West Access to Jan Smuts Park (W)											
10	L	18	0.0	0.396	34.1	LOS D	1.3	9.1	0.31	0.99	31.7
11	T	1	0.0	0.396	34.6	LOS D	1.3	9.1	0.31	1.06	31.6
12	R	49	0.0	0.396	34.1	LOS D	1.3	9.1	0.31	1.05	31.7
Approach		68	0.0	0.396	34.1	LOS D	1.3	9.1	0.31	1.04	31.7
All Vehicles		1545	0.0	0.400	3.6	NA	1.5	10.4	0.10	0.15	54.6

Level of Service (LOS) Method: Delay (HCM 2000)
 Vehicle movement LOS values are based on average delay per movement
 Minor Road Approach LOS values are based on average delay for all vehicle movements
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements
 SIDRA Standard Delay Model used