



TERMS OF REFERENCE FOR THE INVESTIGATION OF THE DEATHS OF SIYABONGA MABILA AND LAWRENCE TSHWENU

1. The Gauteng Department of Roads and Transport (Department) had appointed King Civils to construct sections of Road K54 in Tshwane and work is currently underway.
2. The Department was informed that on Saturday, 27 February 2021, a tragic and unfortunate incident occurred which led to the deaths of two boys, Lawrence Mike Tony Tshwenu (age 4) and Siyabonga Mabila (age 8).
3. The Department wishes to investigate the deaths to understand as to what transpired on that fateful Saturday afternoon that could have led to the unfortunate incident of Siyabonga and Lawrence in a attenuation pond located within greater area of the construction site.
4. The Department intends that the circumstances of the deaths shall be investigated by an objective, independent Investigator, who shall provide an Investigation Report containing findings and recommendations. The Report shall be completed and delivered to the Department as soon as is reasonably possible, bearing in mind the need for a thorough investigation.
5. The aim and scope of the investigation is to establish:
 - 5.1. the relevant facts and accountability for the deaths of Siyabonga and Lawrence;
 - 5.2. the immediate and surrounding circumstances in which the deaths occurred;

- 5.3. the wider circumstances of the deaths;
- 5.4. all the facts, including any failure on the part of anyone, including individuals, institutions or entities;
- 5.5. whether any improvements to the Department's policies, processes and procedures are recommended by the Investigator, and any additional policies, processes or procedures should be effected; and
- 5.6. any other matter relevant to the Investigation.

Accessibility of the investigation

6. The investigation must be accessible to the families of the deceased and persons who may assist the investigation with the relevant information.

Agreed Principles

7. These Terms of Reference may be amended on the request of the Investigator with the agreement of the Department.

Independence

8. Although the Investigation has been commissioned by the Department, it will be completely independent of the Department, and the findings and recommendations will be those of the Investigator alone.

The Department's role

9. Consistent with the independence of the Investigator, Department shall:
 - 9.1. provide the Investigator with access to all materials and information within its power and control that the Investigator regards as relevant to the purposes of the Investigation;

- 9.2. facilitate meetings (either in person or by telephone or video link) with any person who may have information relevant to the Investigation;
- 9.3. provide such assistance as may be necessary for the Investigator to obtain materials and information requested from third parties;
- 9.4. provide the Investigator with such resources as he/she may consider to be reasonably necessary to carry out the Investigation efficiently and effectively, including any specialist services and taking statements from witnesses and those interviewed; and
- 9.5. more generally, support the Investigation.

Natural Justice Principles

10. The Investigation shall be conducted in accordance with the principles of natural justice, respecting the confidentiality of information received on that basis, rights of privacy and the security of information.

Confidentiality

11. Any information provided to the Investigator in confidence shall be kept confidential, so far as the law allows.
12. Statements and documents provided to the Investigator by any person interviewed in the course of the investigation, and the records of any such interviews, shall not be disclosed, without the consent of the person who provided the material, to any person other than:
 - 12.1. the Head of Department (HOD), the Member of the Executive Council (MEC) and the State Attorney;
 - 12.2. any other duly authorised person whose duties as officers, employees or agents of the Department require them to see the material as part of the

Investigation or such consequential action as the Department may deem appropriate to implement the recommendations in the Report.

Publication

13. Information about the Investigation and these Terms of Reference shall be made publicly available. The available information shall include how contact may be made with the Investigator by any person who may wish to contact the Investigator proactively, in confidence if that is desired, to provide relevant information.
14. The Investigator shall prepare, and provide to the HOD, MEC and State Attorney, in the Report a confidential summary of the conduct of the Investigation, the information obtained, and the findings and recommendations. The findings and recommendations shall be disclosed publicly.

Timing

15. The Investigator shall begin the Investigation immediately, with the objective that the Report will be completed within twelve weeks (12 weeks).

Prepared and approved by

Makhukhu Mampuru
Head of Department
Department of Roads and Transport

Date:

TABLE OF DOCUMENTS PROVIDED

DOCUMENTS	
1.	Terms of Reference
2.	Contract between Gauteng Department of Roads and Transport and GHM Tswelelo
3.	Contract between Gauteng Department of Roads and Transport King Civil
4.	List of people responsible for various aspects of the K54/Tsamaya Road Construction Project
5.	Attenuation Pond Report Approval (Email)
6.	Attenuation Pond Report by GMH Tswelelo
7.	Name and details of Construction Supervisor
8.	List of Subcontractors
9.	King Civil Occupational Health and Safety Incident Investigation Report By EMPOWERisk Management Services (Pty) Ltd
10.	King Civil Incident Notification Report – Flash Report
11.	Maudi Security Services Incident Report
12.	Maudi Security Services Order, Invoices and Timesheets
13.	King Civil CHSO Inspection – Log-Book entries
14.	King Civil Health, Safety, Environment & Risk Management System – Construction of Wetland
15.	King Civil Written Safe Work Method Statement – Site Recess

16.	King Civil Construction Baseline Hazard / Aspect Identification and Risk Impact Assessment
17.	King Civil Health, Safety, Environment & Risk Management System – CR 8(1) – Construction Manager
18.	K54 Consultant Re-appointment documents: <ul style="list-style-type: none"> • Memorandum to HOD • Treasury request and response • BAC memoranda and resolutions • Legal Opinions
19.	Relocation documents <ul style="list-style-type: none"> • Correspondence • Relocation Plan
20.	City of Tshwane Report
21.	Ownership Reports: <ul style="list-style-type: none"> • PTN R12 of Pienaarspoort • PTN R17 of Pienaarspoort
22.	Aerial photograph of pond area
23.	City of Tshwane correspondence with Housing Development Agency
24.	City of Tshwane correspondence City of Tshwane Human Development
25.	City of Tshwane correspondence with Gauteng Department of Agriculture and Rural Development
FOLDERS	
1.	All Comprac Health and Safety Risk Assessments

2.	All King Civil Health and Safety Risk Assessments
3.	Site Meeting Minutes
4.	Wetland drawings
5.	Contractor Certificates



INTERNAL MEMO

Enquiries: Ms. Valerie Govinden
Directorate: Construction Capital Projects
Tel: +27 (0)11 870 9862
Ref: RFP 99/12/2012

**TO : CHAIRPERSON
BAC: ROADS AND TRANSPORT**

**FROM : MS. VALERIE GOVINDEN
DIRECTOR: CONSTRUCTION**

DATE : 16 MAY 2017

**SUBJECT : ROAD K54: REQUEST FOR APPROVAL TO EXTEND THE PERIOD OF
TIME FOR CONSTRUCTION MONITORING FOR THE CONSULTANT, GMH
TSWELOPELE CONSULTING ENGINEERS AND FOR THE ESCALATION
OF THEIR SUPERVISION FEES**

1. PURPOSE

The purpose of the memorandum is to obtain approval from BAC: Roads and Transport to extend the appointment period and the escalation of supervision fees for GMH Consulting Engineers for construction monitoring on project DRT 91/06/2016 at an estimated cost of R 1 681 295.95 (including VAT).

2. BACKGROUND

GMH Tswelopele Consulting Engineers was appointed for the preliminary design review, full survey, full environmental impact assessment, detailed design, contract documentation and construction monitoring for road K54 between P154-1 (K122 Old Bronkhorstspuit Road) and K69 (Hans Strydom / Solomon Mahlangu) as well as

section of Road 2561 in July 2013, at the approved tender sum of R25 976 661.04
(Appointment letter attached as Annexure A).

The tender for construction went out in February 2017. The Contractors appointment is anticipated for June 2017 and construction commencement anticipated for July 2017. The construction period is 30 months.

3. MOTIVATION

The anticipated appointment of the Contractor for construction in June 2017 necessitates the continuation of the appointment of GMH Tswelopele Consulting Engineers as per their letter of appointment, amongst other items, for construction monitoring. The period of construction monitoring will be as per the construction period of the project K54 (30 months) plus additional 1 month for project close-out.

The escalation is based on the Consumer Price Index (CPI) as published by Stats SA
(See annexure B)

4. IMPLICATIONS

Approval of this memo will have the following implications regarding time, legal and financial:

4.1 Time

The purpose of the memorandum is to obtain approval for GMH Tswelopele Consulting Engineers to amend the period time for construction monitoring as per the construction period of the project K54 (30 months) plus an additional 1 month for project close out.

4.2 Legal


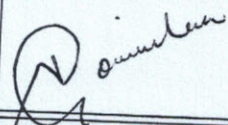
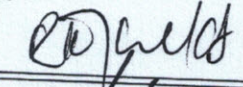
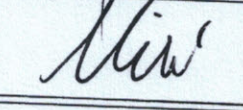
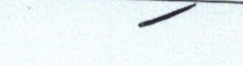
There are no legal consequences foreseen. The escalation is as per the gazetted Engineering Council of South Africa fee rates (ECSA). The contract will be guided by Professional indemnity insurance and supervision agreement.

6. RECOMMENDATION

It is recommended that the BAC: Roads and Transport approve the following:-

6.1 The extension of time for construction site supervision and monitoring for the consultant, GMH Tswelelo, as per the construction period of the project K54 (30 months) plus an additional 1 month for project close out.

6.2 The increase of R 1 681 295.95 (including VAT), which is 6.5% of the contract value for site supervision and extension of time.

NAME AND DESIGNATION	RECOMMENDATION	SIGNATURE	DATE
Ms R. Malemela Eng. Tech: Construction	Par 5 ⁶ Recommended / not Recommended / Recommended with amendments		16/05/2017
Ms. V. Govinden Director: Construction	Par 5 ⁶ Recommended / not Recommended / Recommended with amendments		18/05/2017
Ms K.R. Morena CD: Construction	Par 5 ⁶ Supported / Not supported / Supported with amendments		2/06/2017
Mr A. Kilian DDG: Roads Branch	Par 5 ⁶ Supported / Not supported / Supported with amendments		6/6/2017
Chairperson BAC: Roads and Transport	Par 5 ⁶ Approved / Not Approved / Approved with amendments		

MODULE (K 54)

	Unit	Quantity	Rate	Amount (R)
ASSESSMENT PHASE				
Assessment and preliminary design review phase				
Assessment investigations and preliminary design review	lump sum	1	R 30 000.00	R 30 000.00
Subsistence cost	lump sum	1	R 0.00	R 0.00
Survey services:				
Survey services	prov sum	1	R 400 000.00	R 400 000.00
Handling costs i.r.o. sub item 32.02(a)	%	R 400 000.00	3.00%	R 12 000.00
Environmental services:				
Environmental services during design stage	prov sum	1	R 500 000.00	R 500 000.00
Handling costs i.r.o. sub item 32.03(a)	%	R 500 000.00	3.00%	R 15 000.00
Geotechnical Services:				
Geotechnical services/investigations during design stage	prov sum	1	R 300 000.00	R 300 000.00
Handling cost i.r.o. sub-item 32.04(a)	%	R 300 000.00	5.00%	R 15 000.00
Planning, procurement and administration of the works:				
Planning, procurement and administration of the works	lump sum	1	R 30 000.00	R 30 000.00
(i) Full time	month	1	R 20 000.00	R 20 000.00
(ii) Part time	hour	80	R 250.00	R 20 000.00
Subsistence and travel costs	visit	5	R 0.00	R 0.00
Engineering studies/investigations:				
Engineering studies/investigations during design stage	prov sum	1	R 250 000.00	R 250 000.00
Handling cost i.r.o. sub-item 32.06(a)	%	R 250 000.00	3.00%	R 7 500.00
TOTAL CARRIED FORWARD TO SUMMARY PAGE				R 1 599 500.00

	Unit	Quantity	Rate	Amount (R)
ASSESSMENT & DESIGN REPORT				
Assessment & Design Report				
Submission of a detailed Assessment and Design Report	lump sum	1	R 30 000.00	R 30 000.00
Submission of separate Structures Reports:				
(i) Bridge on K54 (Road over Pretoria-Witbank railway line)	lump sum	1	R 20 000.00	R 20 000.00
(ii) Bridge at km 22,325 (Road over De Wildt-Sentrarand railway line)	lump sum	1	R 20 000.00	R 20 000.00
(iii) All Major Culverts	lump sum	1	R 10 000.00	R 10 000.00
Submission of separate Geotechnical Report for all bridges and major culverts	lump sum	1	R 20 000.00	R 20 000.00
Sign:				
Repairs/pre-treatment of existing pavement followed by surface seal/overlay constructed on existing levels including full design for accommodation of traffic.	km	2	R 15 000.00	R 30 000.00
Continuous or selective vertical and/or horizontal alignment inclusive of new pavement layers. Including drainage	km	11	R 5 000.00	R 55 000.00
Geometric/safety improvements at intersections including full design for accommodation of traffic.	number	10	R 17 260.00	R 172 600.00
Structures (including full design for accommodation of traffic):				
(i) Bridge on K54 (Road over Pretoria-Witbank railway, K54)	percentage	R 44 000 000.00	2.00%	R 880 000.00
(ii) Bridge km 22,325 (Road over De Wildt-Sentrarand railway, K54)	percentage	R 30 000 000.00	2.00%	R 600 000.00
(iii) Major Culvert km 22,205 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(iv) Major Culvert km 22,430 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(v) Major Culvert km 22,645 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(vi) Major Culvert km 24,100 (Road K54)	percentage	R 1 000 000.00	2.00%	R 20 000.00
(vii) Major Culvert km 0,48 (Road 2561)	percentage	R 2 500 000.00	2.00%	R 50 000.00
Construction of surfaced bicycle and pedestrian facilities (lanes/walkways) to new levels on a new alignment (including drainage)	km	9	R 2 000.00	R 18 000.00

[Handwritten Signature]
M.2

Construction of laybys at formalised intersections	number	5	R 2 000.00	R 10 000.00
Occupational Health & Safety requirements	lump sum	1	R 15 000.00	R 15 000.00
Issuance of Property Reports for each individual property (or	number	15	R 2 000.00	R 30 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 2 088 600.00

[Handwritten signature]
[Handwritten initials]

Description	Unit	Quantity	Rate	Amount (R)
TENDER DOCUMENTATION				
Tender documentation:				
Preparation of draft tender documentation	lump sum	1	R 25 000.00	R 25 000.00
Burning of tender documents on CD	number	30	R 50.00	R 1 500.00
TOTAL CARRIED FORWARD TO SUMMARY				R 26 500.00

Description	Unit	Quantity	Rate	Amount (R)
SITE INSPECTION, TENDER PERIOD & TENDER EVALUATION				
Site inspection and tender period				
Service Providers cost	lump sum	1	R 12 500.00	R 12 500.00
Hiring of Venue and/or coach	prime cost	1	R 20 000.00	R 20 000.00
Handling costs i.r.o. sub item 35.01(b)	%	R 20 000.00	0.00%	R 0.00
Tender evaluation report:				
Tender evaluation	lump sum	1	R 30 000.00	R 30 000.00
Evaluation of alternative tenders	prov sum	1	R 30 000.00	R 30 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 92 500.00

Description	Unit	Quantity	Rate	Amount (R)
ADMINISTRATION & MONITORING OF THE WORKS CONTRACT				
Engineer and Head Office:				
Duties of the Engineer	month	20	R 8 000.00	R 160 000.00
Head Office overhead costs	month	20	R 4 000.00	R 80 000.00
Occupational Health and Safety obligations				
(i) Continuous compliance and monthly internal audits	month	20	R 15 000.00	R 300 000.00
(ii) External audits	prov sum	1	R 30 000.00	R 30 000.00
(iii) Handling costs i.r.o. sub-item 36.01(c)(ii)	%	R 30 000.00	0.00%	R 0.00
Monthly Technical meeting and inspection of work by the	month	20	R 5 000.00	R 100 000.00
Monthly Site meeting and site visit	month	20	R 7 500.00	R 150 000.00
Preparation of Works contract documents	lump sum	1	R 4 000.00	R 4 000.00
Establishment of supervisory personnel and office equipment or				
Establishment of personnel and equipment	prime cost sum	1	R 40 000.00	R 40 000.00
Mark-up i.r.o. sub-item 36.03(a)	%	R 40 000.00	0.00%	R 0.00
Monitoring of the Works contract:				
Supervisory personnel	prime cost sum	1	R 3 000 000.00	R 3 000 000.00
Mark-up i.r.o. sub-item 36.04(a)	%	R 3 000 000.00	20.00%	R 600 000.00
Survey team - part time (including all equipment and assis	hour	120	R 1 200.00	R 144 000.00
Provision of office equipment	month	20	R 7 500.00	R 150 000.00
Trainee	prov sum	1	R 90 000.00	R 90 000.00
Handling costs i.r.o. sub item 36.04(m)	%	R 90 000.00	0.00%	R 0.00
Public Liaison Officer	prov sum	1	R 45 000.00	R 45 000.00
Handling costs i.r.o. sub item 36.04(o)	%	R 45 000.00	0.00%	R 0.00
Personnel occupying their own housing	prov sum	1	R 200 000.00	R 200 000.00
Handling costs i.r.o. sub item 36.04(q)	%	R 200 000.00	0.00%	R 0.00
Transport for site personnel and additional duties				
Travelling to perform duties	prov sum	1	R 560 000.00	R 560 000.00
Handling cost i.r.o. item 36.05(a)	%	R 560 000.00	0.00%	R 0.00
Administration during the defects notification period	lump sum	1	R 0.00	R 0.00
TOTAL CARRIED FORWARD TO SUMMARY				R 5 653 000.00

[Handwritten signature]
H.L.

Description	Unit	Quantity	Rate	Amount (R)
PERSONAL DUTIES				
Personal duties by Service Provider				
Personnel - Category A	hour	20	R 900.00	R 18 000.00
Personnel - Category B	hour	120	R 400.00	R 48 000.00
Personnel - Category C	hour	240	R 250.00	R 60 000.00
Personnel - Category D	hour	240	R 200.00	R 48 000.00
Personal duties by the Employer				
Personnel - Category B	hour	-	- 1,550	Rate only
Personnel - Category C	hour	-	-920	Rate only
Personnel - Category D	hour	-	-670	Rate only
TOTAL CARRIED FORWARD TO SUMMARY				R 174 000.00

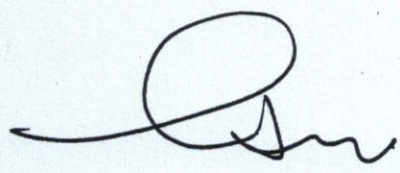
Description	Unit	Quantity	Rate	Amount (R)
MATERIALS INVESTIGATION AND TESTING: DESIGN PHASE				
Materials investigation, testing and reporting: detailed assessment				
	prov sum	1	R 300 000.00	R 300 000.00
(a) Materials investigation, testing and reporting	%	R 300 000.00	5.00%	R 15 000.00
(b) Handling costs i.r.o. pay item 38.01(a)				R 315 000.00
TOTAL CARRIED FORWARD TO SUMMARY				

Description	Unit	Quantity	Rate	Amount (R)
MATERIALS QUALITY CONTROL: CONSTRUCTION PHASE				
On-site laboratory testing:				
	prov sum	1	R 8 000 000.00	R 8 000 000.00
(a) On-site laboratory	%	R 8 000 000.00	0.50%	R 40 000.00
(b) Handling cost i.r.o. sub-item 39.01(a)				R 8 040 000.00
TOTAL CARRIED FORWARD TO SUMMARY				

[Handwritten signature]
M.2

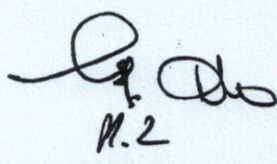
PRICING SCHEDULE

Assessment phase	R 1 599 500.00
Assessment and design report	R 2 088 600.00
Documentation	R 26 500.00
Inspection, tender period and tender evaluation	R 92 500.00
Administration and monitoring of the Works contract	R 5 653 000.00
General duties	R 174 000.00
Site investigation and testing: design phase	R 315 000.00
Site quality control: construction phase	R 8 040 000.00
<hr/>	
SUBTOTAL as provision for Contract Price Adjustment	R 17 989 100.00
<hr/>	
(VAT)	R 20 687 465.00
<hr/>	
CARRIED FORWARD TO FORM OF OFFER (C1.1.1)	R 2 896 245.10
<hr/>	
	R 23 583 710.10



SIGNED

7/3/2013



M.2

CORRECTED K54 BILL OF QUANTITIES (B.O.Q)

[Handwritten Signature]
M.2

ULE (K 54)

	Unit	Quantity	Rate	Amount (R)
ASSESSMENT PHASE				
Assessment and preliminary design review phase				
Assessment investigations and preliminary design review	lump sum	1	30000	R 30 000.00
Subsistence cost	lump sum	1	0	R 0.00
Survey services	prov sum	1	R 400 000.00	R 400 000.00
Handling costs i.r.o. sub item 32.02(a)	%	R 400 000.00	3.00%	R 12 000.00
Environmental and social-economic impact assessment services				
Environmental and social-economic impact assessment studies	prov sum	1	R 800 000.00	R 800 000.00
Handling costs i.r.o. sub item 32.03(a)	%	R 800 000.00	3.00%	R 24 000.00
Geotechnical works:				
Planning, procurement and admin	lump sum	1	30000	R 30 000.00
Supervision of the works	hour	80	R 250.00	R 20 000.00
(j) Part time	visit	5	R 0.00	R 0.00
(iii) Subsistence and travel costs	prov sum	1	R 1 200 000.00	R 1 200 000.00
Planning and geotechnical works				
Engineering studies/investigations:				
Traffic engineering studies/investigations during design stage	prov sum	1	R 250 000.00	R 250 000.00
Handling cost i.r.o. sub-item 32.06(a)	%	R 250 000.00	3.00%	R 7 500.00
TOTAL CARRIED FORWARD TO SUMMARY PAGE				R 2 773 500.00

	Unit	Quantity	Rate	Amount (R)
DESIGN ASSESSMENT & DESIGN REPORT				
Assessment & Design Report				
Submission of a detailed Assessment and Design Report	lump sum	1	R 30 000.00	R 30 000.00
Submission of separate Structures Reports:				
(i) Bridge on K54 (Road over Pretoria-Witbank railway line)	lump sum	1	R 20 000.00	R 20 000.00
(ii) Bridge at km 22,325 (Road over De Wildt-Sentrand railway line)	lump sum	1	R 20 000.00	R 20 000.00
(iii) All Major Culverts	lump sum	1	R 10 000.00	R 10 000.00
Submission of separate Geotechnical Report for all bridges and major culverts	lump sum	1	R 20 000.00	R 20 000.00
Sign:				
Repairs/pre-treatment of existing pavement followed by surface seal/overlay constructed on existing levels including full design for accommodation of traffic.	km	2	R 15 000.00	R 30 000.00
Continuous or selective vertical and/or horizontal realignment inclusive of new pavement layers. Including drainage				
(i) Single carriageway	km	4	R 5 000.00	R 20 000.00
(ii) Dual carriageway	km	7	R 5 000.00	R 35 000.00
Geometric/safety improvements at intersections including full design for accommodation of traffic.				
(i) Crossing road with one approach lane	number	6	R 17 260.00	R 103 560.00
(ii) Crossing road with two or more approach lanes	number	4	R 17 260.00	R 69 040.00
Structures (Including full design for accommodation of traffic):				
(i) Bridge on K54 (Road over Pretoria-Witbank railway, K54)	percentage	R 44 000 000.00	2.00%	R 880 000.00
(ii) Bridge km 22,325 (Road over De Wildt-Sentrand railway, K54)	percentage	R 30 000 000.00	2.00%	R 600 000.00
(v) Major Culvert km 22,205 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(v) Major Culvert km 22,430 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(v) Major Culvert km 22,845 (Road K54)	percentage	R 1 800 000.00	2.00%	R 36 000.00
(v) Major Culvert km 24,100 (Road K54)	percentage	R 1 000 000.00	2.00%	R 20 000.00
(v) Major Culvert km 0,48 (Road 2561)	percentage	R 2 500 000.00	2.00%	R 50 000.00

[Handwritten signature]
M.2

Construction of surfaced bicycle and pedestrian facilities (seawalkways) to new levels on a new alignment (including drainage)	km	9	R 2 000.00	R 18 000.00
Construction of laybys at formalised intersections	number	5	R 2 000.00	R 10 000.00
Street lighting and electrical reticulation design				
Single or dual carriageway	km	9	R 30 406.30	R 273 656.74
Intersections	number	10	R 17 763.00	R 177 630.02
Health & Safety requirements	lump sum	1	R 15 000.00	R 15 000.00
of Property Reports for each individual property (or	number	15	R 2 000.00	R 30 000.00
knowledge to departmental staff	prov sum	1	R 200 000.00	R 200 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 2 739 886.76

[Handwritten signature]
[Handwritten signature] M.2

Item	Unit	Quantity	Rate	Amount (R)
DOCUMENTATION				
Documentation:				
Preparation of draft tender documentation	lump sum	1	R 25 000.00	R 25 000.00
Burning of tender documents on CD	number	30	R 50.00	R 1 500.00
TOTAL CARRIED FORWARD TO SUMMARY				R 26 500.00

Item	Unit	Quantity	Rate	Amount (R)
SECTION, TENDER PERIOD & TENDER EVALUATION				
Section and tender period				
Service Providers cost	lump sum	1	R 12 500.00	R 12 500.00
Hiring of Venue and/or coach	prime cost	1	R 20 000.00	R 20 000.00
Handling costs i.r.o. sub item 35.01(b)	%	R 20 000.00	0.00%	R 0.00
Allocation report:				
Tender evaluation	lump sum	1	30000	R 30 000.00
Evaluation of alternative tenders	prov sum	1	R 30 000.00	R 30 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 92 500.00

Item	Unit	Quantity	Rate	Amount (R)
SECTION 36.01 - EXECUTION & MONITORING OF THE WORKS CONTRACT				
Section and Head Office:				
Duties of the Engineer	month	20	R 8 000.00	R 160 000.00
Head Office overhead costs	month	20	R 4 000.00	R 80 000.00
Occupational Health and Safety obligations				
(i) Continuous compliance and monthly internal audits	month	20	R 15 000.00	R 300 000.00
(ii) External audits	prov sum	1	R 30 000.00	R 30 000.00
(iii) Handling costs i.r.o. sub-item 36.01(c)(ii)	%	R 30 000.00	0.00%	R 0.00
Monthly Technical meeting and inspection of work by the Engineer	month	20	R 5 000.00	R 100 000.00
Monthly Site meeting and site visit	month	20	R 7 500.00	R 150 000.00
Preparation of Works contract documents	lump sum	1	R 4 000.00	R 4 000.00
Deployment of supervisory personnel and office equipment on site				
Deployment of personnel and equipment	prime cost sum	1	R 40 000.00	R 40 000.00
Mark-up i.r.o. sub-item 36.03(a)	%	R 40 000.00	0.00%	R 0.00
Mark-up of the Works contract:				
Supervisory personnel	prime cost sum	1	R 3 000 000.00	R 3 000 000.00
Mark-up i.r.o. sub-item 36.04(a)	%	R 3 000 000.00	20.00%	R 600 000.00
Survey team - part time (including all equipment and assistance)	hour	120	R 1 200.00	R 144 000.00
Provision of office equipment	month	20	R 7 500.00	R 150 000.00
Trainee	prov sum	1	R 90 000.00	R 90 000.00
Handling costs i.r.o. sub item 36.04(m)	%	R 90 000.00	0.00%	R 0.00
Public Liaison Officer	prov sum	1	R 45 000.00	R 45 000.00
Handling costs i.r.o. sub item 36.04(o)	%	R 45 000.00	0.00%	R 0.00
Personnel occupying their own housing	prov sum	1	R 200 000.00	R 200 000.00
Handling costs i.r.o. sub item 36.04(q)	%	R 200 000.00	0.00%	R 0.00
Mark-up for site personnel and additional duties				
Mark-up for site personnel and additional duties	prov sum	1	R 560 000.00	R 560 000.00
Mark-up cost i.r.o. item 36.05(a)	%	R 560 000.00	0.00%	R 0.00
Mark-up for site personnel and additional duties	lump sum	1	R 0.00	R 0.00
TOTAL CARRIED FORWARD TO SUMMARY				R 5 653 000.00

[Handwritten signature]
M.2

	Unit	Quantity	Rate	Amount (R)
PERSONNEL DUTIES				
Duties by Service Provider				
Personnel - Category A	hour	20	R 900.00	R 18 000.00
Personnel - Category B	hour	120	R 400.00	R 48 000.00
Personnel - Category C	hour	240	R 250.00	R 60 000.00
Personnel - Category D	hour	240	R 200.00	R 48 000.00
Duties by the Employer				
Personnel - Category B	hour	-	- 1,550	Rate only
Personnel - Category C	hour	-	-920	Rate only
Personnel - Category D	hour	-	-670	Rate only
TOTAL CARRIED FORWARD TO SUMMARY				R 174 000.00

	Unit	Quantity	Rate	Amount (R)
MATERIALS INVESTIGATION AND TESTING: DESIGN PHASE				
Investigation, testing and reporting: detailed assessment				
Materials investigation, testing and reporting	prov sum	1	R 300 000.00	R 300 000.00
Handling costs i.r.o. pay item 38.01(a)	%	R 300 000.00	5.00%	R 15 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 315 000.00

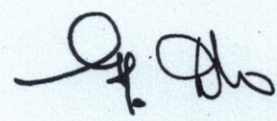
	Unit	Quantity	Rate	Amount (R)
MATERIALS QUALITY CONTROL: CONSTRUCTION PHASE				
On-site laboratory testing:				
On-site laboratory	prov sum	1	R 8 000 000.00	R 8 000 000.00
Handling cost i.r.o. sub-item 39.01(a)	%	R 8 000 000.00	0.50%	R 40 000.00
TOTAL CARRIED FORWARD TO SUMMARY				R 8 040 000.00

[Handwritten Signature]

M.2

PRICING SCHEDULE

Initial assessment phase	<u>R 2 773 500.00</u>
Initial assessment and design report	<u>R 2 739 886.76</u>
Tender Documentation	<u>R 26 500.00</u>
Inspection, tender period and tender evaluation	<u>R 92 500.00</u>
Administration and monitoring of the Works contract	<u>R 5 653 000.00</u>
Additional duties	<u>R 174 000.00</u>
Materials investigation and testing: design phase	<u>R 315 000.00</u>
Materials quality control: construction phase	<u>R 8 040 000.00</u>
<hr/>	
5% of SUBTOTAL as provision for Contract Price Adjustment	<u>R 19 814 386.76</u>
<hr/>	
(excl VAT)	<u>R 22 786 544.77</u>
	<u>R 3 190 116.27</u>
<hr/>	
TOTAL CARRIED FORWARD TO FORM OF OFFER (C1.1.1)	R 25 976 661.04


M.2



GAUTENG PROVINCE

ROADS AND TRANSPORT
REPUBLIC OF SOUTH AFRICA

ROUTE FORM

BRANCH: ROADS REF: RFP 99/12/2012

SUBJECT: ROAD K54: REQUEST FOR APPROVAL TO EXTEND THE PERIOD OF TIME FOR CONSTRUCTION MONITORING FOR THE CONSULTANT, GMH TSWELOPELE CONSULTING ENGINEERS AND FOR THE ESCALATION OF THEIR SUPERVISION FEES

AUTHOR:		SUPERVISOR:	
Ms. Reneilwe Malemela	NAME:	Ms. Valerie Govinden	
Candidate Engineering Technician	RANK:	Director Construction	
(011) 870 9667	TEL:	(011) 870 9862	
5th Floor, Absa Building, Fraser Street	ROOM:	5th Floor, Absa Building, Fraser Street	

MARK ROUTE (1, 2, 3, 4, ETC.)	ROOM	TO	BACK	SIGNATURE	DATE	REMARKS
Engineering Tech: Ms. R. Malemela	5th Floor, Absa	1		<i>Reneilwe</i>	2/6/17	
Dir: Construction: Mr. V. Govinden	5th Floor, Absa	2		<i>Govinden</i>	2/6/17	
CD: Construction: Mrs. R. Morena	10th Floor, Sage N	3		<i>Morena</i>	2/6/17	
DDG: Roads Branch, Mr. A. Kilian	10th Floor, Sage N	4				
CHAIR PERSON: DAC	7th Floor, Sage N	5				

(Return final doc to Reaistrv)

REMARKS

PLEASE RETURN TO ONE (1) *Pls correct submission -*
recomendation is in par 6 and
not 5 as indicated ✓
(Corrected → 06/06/2017.) M.



GAUTENG PROVINCE

ROADS AND TRANSPORT
REPUBLIC OF SOUTH AFRICA

ROUTE FORM

BRANCH: ROADS

REF: RFP 99/12/2012

SUBJECT: ROAD K54: REQUEST FOR APPROVAL TO EXTEND THE PERIOD OF TIME FOR CONSTRUCTION MONITORING FOR THE CONSULTANT, GMH TSWELOPELE CONSULTING ENGINEERS AND FOR THE ESCALATION OF THEIR SUPERVISION FEES

AUTHOR:		SUPERVISOR:				
Ms. Reneilwe Malemela		NAME:	Ms. Valerie Govinden			
Candidate Engineering Technician		RANK:	Director Construction			
(011) 870 9667		TEL:	(011) 870 9862			
5th Floor, Absa Building, Fraser Street		ROOM:	5th Floor, Absa Building, Fraser Street			
MARK ROUTE (1, 2, 3, 4, ETC.)	ROOM	TO	BACK	SIGNATURE	DATE	REMARKS
Engineering Tech: Ms. R. Malemela	5th Floor, Absa	1		<i>Reneilwe Malemela</i>	16/05/17	
Dir: Construction: Mr. V. Govinden	5th Floor, Absa	2		<i>Govinden</i>	18/5/17	
CD: Construction: Mrs. R. Morena	10th Floor, Sage N	3				
DDG: Roads Branch, Mr. A. Kilian	10th Floor, Sage N	4				
CHAIR PERSON: DAC	7th Floor, Sage N	5				
						(Return final doc to Realstrv)

REMARKS Please revise dates

PLEASE RETURN TO ONE (1) on memo. *10/05/17*
30/05/2017

Reneilwe Please provide a correct BoQ as requested by the DDG. You have provided BoQ for D670 instead of K54.



Enquiries: Mulalo Nemudivhiso
 Directorate: Supply Chain Management
 Tel: +27 (0)11 355 7455
 RFP 99/12/2012

GMH/Tswelelo Consulting Engineers

Service: Request for approval to extend the period of time for construction monitoring for the consultant and for the escalation of their supervision fees.

We have the pleasure of informing you that the Gauteng Department of Roads and Transport as per Bid Adjudication Resolution dated 15 June 2017, has approved the appointment period and escalation of supervision fees for site supervision and monitoring as follows:

- Original contract value : R25 976 661.04 (VAT incl.)
- Additional cost : R1 681 295.95 (VAT incl.)
- Extension of time : 1 July 2017-31 January 2020 (30 months + 1 month for project close out)

Yours Faithfully

Mr. Vernon Naidoo
 Director: Supply Chain Management
 Date: 28/08/2017

Name and Surname: GEORGE HARTINGH

Designation: MEMBER

Signed:

Date: 28/08/2017

Accepted and signed on behalf of GMH/Tswelelo Consulting Engineers.

1	Improvement Notice	0
2	Contravention Notice	1
3	Prohibition Notice	1
4	FIELD SERVICE REPORT NO: 255702	

HEALTH AND SAFETY INSPECTION REPORT

The Health and Safety Inspection was conducted on **21ST DECEMBER 2020** for
GAUTENG PROVINCE ROADS AND TRANSPORT – DRT 91062016 - K54

STATISTICS:

Incidents Reported							
LTI Lost Time Injury(s)		MTC Medical Treatment Case(s)		FIRST AID		NEAR MISS / GENERAL INCIDENT	
Week	PTD	Week	PTD	Week	PTD	Week	PTD
0	0	0	0	0	0	0	0
Frequency Rates (PTD)							
LTIFR Lost Time Injury Frequency Rate		0		TIFR Total Injury Frequency Rate		0	
Hours Worked							
Reporting Week:		T.B.A.		Project to Date (PTD):		138 510	

Injuries and Incidents:

- Nothing to report at this time.

Objectives:

- Maintain the barricading of water environments with high visibility netting with safety warning signage visibly displayed.
- Maintain the barricading of the first bridge.
- Ensure access management is implemented and maintained and that if the safety guard has to leave his post, he is relieved and the entrance is not left unattended.
- Ensure excavations are barricaded with solid barricading, visibly displaying the required safety warning signage.

Prohibitions:

	Prohibitions Raised		Prohibitions Closed-out		% Prohibitions closed	
	Week	PTD	Week	PTD	Week	PTD
Unsafe Acts	0	5	0	5	0%	100%
Unsafe Conditions	1	7	0	6	0%	85%
Total	1	12	0	11	0%	91%



H.S.I. REPORT

Document Number
ADM-037
Revision Number
4
Revision Date
1 December 2019

Site compliance pertaining to construction non-negotiable:

	Complying		Not Complying		Comment
	Week	PTD	Week	PTD	
Visible Leadership	0	14	1	25	No access management.
100% tie off	0	1	0	10	
Barricading / Excavations	2	3	1	17	Water environments barricaded. First bridge barricaded. Excavations not barricaded.
Task Specific Risk Assessments	0	0	0	1	
Safe Lifting Practices	0	0	0	0	
Plant and Equipment	0	5	0	2	
Personal Protective Equipment	0	2	0	4	
Electrical Installations and equipment	0	0	0	2	
Use of motorized equipment	0	0	0	0	
Toolbox talks / DSTI's done	0	0	0	0	
Lifting machinery	0	0	0	1	
Scaffolding compliance	0	4	0	9	
Environmental aspects	0	0	0	0	
Total	2	30	2	71	Physical Compliance factor for this Inspection

Legal Compliance and Risk Management:

- Nothing to report at this time.

Top Hazards:

- Excavations.
- Access management.

Positive Observations:

- Water environments was identified barricaded with high visibility netting with safety warning signage visibly displayed.
- First bridge was found barricaded at the top with sand piles placed and barriers used to prevent people from driving on bridge road.

Improvement Opportunities:

- Refer to Top Hazard(s).



H.S.I. REPORT

Document Number
ADM-037
Revision Number
4
Revision Date
1 December 2019

SITE INSPECTION REVIEW

Notices Issued/ Action Register

REF	DEVIATION	IN	CN	PN	REMEDIAL ACTION	COMPLETION DATE
P7-10	No access management was identified implemented at the main entrance to site e.g. children were found playing in water environment.			✓	Ensure access management is implemented and maintained and that if the safety guard has to leave his post, he is relieved and the entrance is not left unattended.	Immediately
P11-14	Numerous excavations were identified not barricaded with solid barricading.		✓		Ensure excavations are barricaded with solid barricading, visibly displaying the required safety warning signage.	Immediately

IN – IMPROVEMENT NOTICE: Not critical. Agree a defined period to rectify the situation. *(Not more than 3 days)*
CN – CONTRAVENTION NOTICE: Should relate to a legal or system compliance failure. *(End of shift for rectification)*
PN – PROHIBITION NOTICE: Critical deviation with high risk exposure. *(Work stopped and deviation immediately addressed)*



H.S.I. REPORT

Document Number

ADM-037

Revision Number

4

Revision Date

1 December 2019

PHOTO

OBSERVATION & REMEDIAL ACTIONS



P1



P2



P3

OBSERVATION:

Photo 1-3

C.R.27

Water environments was identified barricaded with high visibility netting with safety warning signage visibly displayed.

REMEDIAL ACTIONS:

No action required.



H.S.I. REPORT

Document Number

ADM-037

Revision Number

4

Revision Date

1 December 2019



P4



P5



P6

OBSERVATION:
Photo 4-6

C.R.10;

First bridge was found barricaded at the top with sand piles placed and barriers used to prevent people from driving on bridge road.

REMEDIAL ACTIONS:

No action required.



H.S.I. REPORT

Document Number
ADM-037
Revision Number
4
Revision Date
1 December 2019



P7



P8



P9

OBSERVATION:
Photos 7-10

PROHIBITION NOTICE – C.R.8; C.R.27

No access management was identified implemented at the main entrance to site e.g. children were found playing in water environment. This causes the risk of members of the public sustaining serious injuries in the event of unauthorized access to construction site / children drowning resulting in public liability claims.

REMEDIAL ACTIONS:

Ensure access management is implemented and maintained and that if the safety guard has to leave his post, he is relieved and the entrance is not left unattended.



H.S.I. REPORT

Document Number
ADM-037
Revision Number
4
Revision Date
1 December 2019



P10

OBSERVATION:
Photo 10

PROHIBITION NOTICE – C.R.8; C.R.27

No access management was identified implemented at the main entrance to site e.g. children were found playing in water environment. This causes the risk of members of the public sustaining serious injuries in the event of unauthorized access to construction site / children drowning resulting in public liability claims.

REMEDIAL ACTIONS:

Ensure access management is implemented and maintained and that if the safety guard has to leave his post, he is relieved and the entrance is not left unattended.



P11

OBSERVATION:
Photos 11-14

CONTRAVENTION NOTICE – C.R.13; C.R.10

Numerous excavations were identified not barricaded with solid barricading. This causes the risk of employees sustaining serious injuries in the event of falling.

REMEDIAL ACTION:

Ensure excavations are barricaded with solid barricading, visibly displaying the required safety warning signage.



P12



H.S.I. REPORT

Document Number

ADM-037

Revision Number

4

Revision Date

1 December 2019



P13



P14

OBSERVATION:

Photo 14

CONTRAVENTION NOTICE – C.R.13; C.R.10

Numerous excavations were identified not barricaded with solid barricading. This causes the risk of employees sustaining serious injuries in the event of falling.

REMEDIAL ACTION:

Ensure excavations are barricaded with solid barricading, visibly displaying the required safety warning signage.

Franco Oosthuizen
ComPrac Gauteng (Pty) Ltd
Safety Practitioner
Mobile: 082 906 7426

1	Improvement Notice	0
2	Contravention Notice	2
3	Prohibition Notice	0
4	FIELD SERVICE REPORT NO: 203297	

HEALTH AND SAFETY INSPECTION REPORT

The Health and Safety Inspection was conducted on **8TH NOVEMBER 2018** for
GAUTENG PROVINCE ROADS AND TRANSPORT – DRT 91062016 - K54

STATISTICS:

Incidents Reported							
LTI Lost Time Injury(s)		MTC Medical Treatment Case(s)		FIRST AID		NEAR MISS	
Week	PTD	Week	PTD	Week	PTD	Week	PTD
0	0	0	0	0	0	0	0
Frequency Rates (PTD)							
LTIFR Lost Time Injury Frequency Rate		0		TIFR Total Injury Frequency Rate		0	
Hours Worked							
Reporting Week:		2 115		Project to Date (PTD):		13 995	

Injuries and Incidents:

- Nothing to report at this time.

Objectives:

- Ensure dewatering activities are implemented.
- Ensure scaffold is erected correctly and only safe and inspected scaffold structures are used, visibly displaying the required warning signage indicating the status of the structure.

Prohibitions:

	Prohibitions Raised		Prohibitions Closed-out		% Prohibitions closed	
	Week	PTD	Week	PTD	Week	PTD
Unsafe Acts	0	0	0	0	0%	0%
Unsafe Conditions	0	0	0	0	0%	0%
Total	0	0	0	0	0%	0%



H.S.I. REPORT

Document Number
HSIGAU-001
Revision Number
02
Date
21 November 2011

Site compliance pertaining to construction non-negotiable:

	Complying		Not Complying		Comment
	Week	PTD	Week	PTD	
Visible Leadership	0	2	1	7	Water ponding activities.
100% tie off	0	0	0	0	
Barricading / Excavations	0	0	0	4	
Task Specific Risk Assessments	0	0	0	1	
Safe Lifting Practices	0	0	0	0	
Plant and Equipment	0	1	0	0	
Personal Protective Equipment	0	0	0	1	
Electrical Installations and equipment	0	0	0	0	
Use of motorized equipment	0	0	0	0	
Toolbox talks / DSTI's done	0	0	0	0	
Lifting machinery	0	0	0	0	
Scaffolding compliance	0	0	1	1	Employees conducting activities on a unsafe scaffold.
Environmental aspects	0	0	0	0	
Total	0	3	2	14	Physical Compliance factor for this Inspection

Legal Compliance and Risk Management:

- Nothing to report at this time.

Top Hazards:

- Water.
- Scaffold.

Positive Observations:

- Nothing to report at this time.

Improvement Opportunities:

- Refer to top hazards.



H.S.I. REPORT

Document Number
HSIGAU-001
Revision Number
02
Date
21 November 2011

SITE INSPECTION REVIEW

Notices Issued/ Action Register

REF	DEVIATION	IN	CN	PN	REMEDIAL ACTION	COMPLETION DATE
P1-3	Water ponding was identified on site.		√		Ensure dewatering activities are implemented.	Immediately
P4-8	Numerous employees were identified conducting activities on an unsafe scaffold structure. The unsafe scaffold structure was found erected incorrectly, visibly displaying the correct warning signage "unsafe for use".		√		Ensure scaffold is erected correctly and only safe and inspected scaffold structures are used, visibly displaying the required warning signage indicating the status of the structure.	Immediately

IN – IMPROVEMENT NOTICE: Not critical. Agree a defined period to rectify the situation. *(Not more than 3 days)*
CN – CONTRAVENTION NOTICE: Should relate to a legal or system compliance failure. *(End of shift for rectification)*
PN – PROHIBITION NOTICE: Critical deviation with high risk exposure. *(Work stopped and deviation immediately addressed)*



H.S.I. REPORT

Document Number

HSIGAU-001

Revision Number

02

Date

21 November 2011

PHOTO



P1



P2



P3

OBSERVATION & REMEDIAL ACTIONS

OBSERVATION:

Photos 1-3

CONTRAVENTION NOTICE – N.E.M.A; OHS ACT Section

Water ponding was identified on site. This causes the risk of members of the public / employees sustaining serious injuries in the event of falling / drowning.

REMEDIAL ACTION:

Ensure dewatering activities are implemented.



H.S.I. REPORT

Document Number
HSIGAU-001
Revision Number
02
Date
21 November 2011



P4



P5



P6

OBSERVATION:
Photos 4-8

CONTRAVENTION NOTICE – C.R.16; SANS 10085;

Numerous employees were identified conducting activities on an unsafe scaffold structure. The unsafe scaffold structure was found erected incorrectly, visibly displaying the correct warning signage “unsafe for use” This causes the risk of employees sustaining serious injuries in the event of falling / structure collapsing.

REMEDIAL ACTION:

Ensure scaffold is erected correctly and only safe and inspected scaffold structures are used, visibly displaying the required warning signage indicating the status of the structure.



H.S.I. REPORT

Document Number

HSIGAU-001

Revision Number

02

Date

21 November 2011



P7



P8

OBSERVATION:

Photos 7-8

CONTRAVENTION NOTICE – C.R.16; SANS 10085;

Numerous employees were identified conducting activities on an unsafe scaffold structure. The unsafe scaffold structure was found erected incorrectly, visibly displaying the correct warning signage “unsafe for use” This causes the risk of employees sustaining serious injuries in the event of falling / structure collapsing.

REMEDIAL ACTION:

Ensure scaffold is erected correctly and only safe and inspected scaffold structures are used, visibly displaying the required warning signage indicating the status of the structure.

Wesley Raw
ComPrac Gauteng (Pty) Ltd
Safety Practitioner
Mobile: 082 906 7426

ATTENUATION POND REPORT

FOR

PROPOSED CONSTRUCTION OF K54

IN

MAMELODI

NOVEMBER 2019

Prepared for:

City of Tshwane
Roads and Transport Department
225 Madiba Street
P O Box 1409
PRETORIA
0001

Tel: (012) 358 7788



Prepared by:

GMH/Tswelelo Consulting Engineers
P O Box 2201
RANDBURG
2125

Tel: (011) 462 0601
Fax: (011) 462 0672



Project No : 283-01 Rev 1

INDEX

	Page No
1. INTRODUCTION	1
2. DESCRIPTION OF THE DEVELOPMENT	1
3. AUTHORITY	1
4. INTERNAL ROADS	1
5. EXISTING STORMWATER SYSTEMS	2
6. PURPOSE OF REPORT	2
7. METHODOLOGY AND APPROACH	2
8. CONCEPTUAL STORMWATER MANAGEMENT PLAN	3-5
9. DELIVERABLES	6
10. ENVIRONMENTAL	6
11. CONCLUSION AND RECOMMENDATIONS	6
ANNEXURES:	
Annexure A: Locality Plan and position of Pond	
Annexure B: Pond Calculation Sheets and Hydrographs	
Annexure C: Wetland Drawings and Cross-Sections	
Annexure D: Attenuation Detail Drawings	

1. INTRODUCTION

GMH/Tswelelo Consulting Engineers were appointed by Gauteng Province department of Road and Transport to prepare a detail design and carry out the supervision for the construction of a portion of K54 between P154-1 and K69 in Mamelodi.

K54 comprises of two single lanes as well as a cycle path to be built into the embankment of the northern side of the road. Road surface drainage will deal with the stormwater runoff from the road surface and the surface adjacent to the road formation. Several elements will be used to intercept or capture this runoff and facilitate its safe discharge to an appropriate receiving stream. These elements include in this report:

- Kerb and channel
- Edge and median drainage
- Catch drain
- Pipe networks
- wetland, and.
- Attenuation pond

2. DESCRIPTION OF THE POND

Locality and description of the pond

This pond will be built in the area between the N4 and K16 roads in Mamelodi near the Donkerhoek off ramp west of Bronkortspruit, (construction of pond starts Lat: 25°44'46.47"S & Long: 28°26'06.93"E and end Lat: 25°44'47.98"S & Long: 28°25'57.28"E). Refer to Annexure A.

The "ponds" to be used are existing worked out sand pits created in part by informal mining, this has rendered the area uninhabitable which resulted in the environmental consultants identifying the opportunity to use them as attenuation ponds.

This report documents the findings of the study, and makes recommendations regarding the design of a wet pond facility to be constructed through excavation that provides both permanent and temporary storage of stormwater run-off. It has an outlet structure that creates a permanent pool and detains and attenuates run-off inflows and promotes the settlement of pollutants. This wet pond is also considered as a retention basin that is designed as a multi-stage facility that also provides extended detention for enhance stormwater quality design storm treatment and run-off storage and attenuation for stormwater quantity management. The Total Suspended Solids removal rate for the wetland is 50 to 90 percent depending on the permanent storage volume in the wetland where extended detention is also provided, the duration of detention time provided in the wetland.

3. AUTHORITY

The site falls under the jurisdiction of both the City of Tshwane and the Gauteng Province department of Roads. The stormwater connection and approval will have to be obtained from both the Gauteng Province Department of Roads and Transport and the City of Tshwane before the construction can commence.

4. ACCESS TO THE POND

The pond is located at Road K54 starts on the old Bronkhorstspuit road (P154-1, also known as K22 and under control of SANRAL) just north of the Donkerhoek/Boschkop Interchange on the N4. The north of the abovementioned underpass the Sentrarand to Pretoria rail line is crossed in a road over rail bridge.

Most roads around Mamelodi are surfaced, and in some cases even provided with storm water elements. Road 2561 runs west to east from the Rail over road bridge on Tsamaya Road extension. The project ends where Road 2561 intersects with an existing portion of K54. The intersection has been provided with traffic signals which will be retained.

5. EXISTING STORMWATER SYSTEMS

The original area of study slopes at an average of approximately 1.3% but the catchment slopes of these sections vary typically from 0.7 to 1.9%. No formal stormwater systems exist within the area of study except small pipe culverts underneath the existing railway to the west of the site to drain stormwater from higher laying area to the west and all stormwater drainage occurs overland.

The catchment area of the proposed area of study consists of several high points to the east directing stormwater towards low points on the south western catchment boundary. the existing area can be defined as pre-development catchment.

Various catchment areas were identified to define the impact the runoff catchment on low point along the road K54.

6. PURPOSE OF REPORT

The purpose of this stormwater management plan is to provide the detailed calculations of the wet pond size that would be required to contain the 1:100 year rainfall event and attenuate the outflow into the municipal stormwater drainage system to no more than the 1:5 year rainfall event. this is in the accordance with the requirements of the City of Tshwane.

This report provide the following:

- Detailed design parameters.
- Detailed calculations of the 1:5, 1:10, 1:25, 1:50, 1:100 and 1:200 peak discharge.
- Detailed calculations of the stormwater detention pond.

- Detailed calculations for the 1:5 year discharge outfall.
- Maintenance plan for the proposed stormwater management plan.

7. METHODOLOGY AND APPROACH

The study initially included an assessment of the hydrology, data and literature pertaining to the area.

A site survey was obtained to identify elements that could potentially influence the development of the site. This enables a site assessment of normal flow rates and factors that would influence the site hydrology, as well as the effects of the proposed changes on stormwater runoff at the site, with proposed reasonable measures to capture and contain cement effluent water.

Catchment data was analysed using accepted techniques. Generally-accepted methodologies were used to determine design flow of the site and to calculate the settlement pond size.

Run-off will be collected from the site and the surrounding upstream properties using earth channels, pipe/box culverts ranging from 600mm to 2400x2100mm and discharge into the proposed wetland before it is further discharged into the designed attenuation pond. The wetland is designed to contain run-off and allow storm to settle. The designed pond will accommodate the clean overflow flood from the wetland. Run-off will be kept permanently in the pond at 1m level. A 1050mm pipe is proposed as an outlet pipe from the attenuation pond to convey storm into the existing stream.

8. CONCEPTUAL STORMWATER MANAGEMENT PLAN

Regulations define a methodological approach to provide the optimum method of controlling runoff in such a way that it protects health, welfare and safety of the public, and to protect property from flood hazard by safely routing and discharging stormwater from developments.

The basic principles of a Stormwater Management Plan include:

- The primary objective of identifying appropriate water quantity and quality control measures of the post-development stormwater runoff flows with a view to manage stormwater quality prior to discharge and minimizing the risk of flooding and erosion. The stormwater management plan for this project location will ensure that the storm drainage pattern for the post development condition is consistent with the pre-development condition.
- Preserve the natural environment.
- Create the opportunity to conserve water and make it available to the public for beneficial uses.
- To pursue the improvement of quality of life of affected communities living in the surroundings. and

- To create the need to strive for a sustainable environment while pursuing economic development.
- The design storage volumes are a function of peak storage requirements that often correspond to abnormally wet conditions that continue for an extended period of time.

Runoff and Flow from Study Area

In order to predict the inflow to a wet land required for the project, it was necessary to calculate likely flows from the study area where runoffs are currently discharged further into the existing stream. A larger proportion of rainfall from the site is running off the surface from the surrounding farms and will be discharged into the designated attenuation pond before it is further discharged into the existing stream.

An attenuation pond is proposed to cater the 1:100year flood. A runoff coefficient of 0.5 is used for the proposed runoff calculations.

Impact on adjacent properties

This will not present a problem as most of flood will be contained in the attenuation pond. The calculations below are based on the area from the surrounding farms, median drain, road reserve and the boundary from the wetland.

Design reference documents

The following documents were consulted during the design of this project:

- Guidelines for the Provision of Engineering Services in Residential Township (Department of Community Development, 1983).
- Drainage Manual (South African National Roads Agency Limited, 5th edition)
- Standard Specifications for Municipal Services and Engineering Works Third Edition 2005
- Guidelines for Human Settlement Planning and design (CSIR)
- Urban Road Storm water Drainage (South African Roads Federation)
- Garmin Map Source plans.

Proposed self contained wetland

Existing drainage patterns, grades as well as final discharge points will be maintained, where possible. The wetland grading will be implemented to ensure that the proposed road K54 is not impacted by the 100-year flood. In addition, the proposed wetland will contain plants to promote treatment and infiltration.

Stormwater systems

The stormwater runoff was designed to be an attenuation dam, ensuring that stormwater is not spilling more than once, on average, in 100years. An excel-based simulation was

utilised. The basis of this calculation was reached by taking a simple hydrograph water balance.

The stormwater structures will cater for energy breakers and the outlets to minimize the possibility of erosion at the point of discharge at various chainages.

A vegetation median drain will be constructed parallel to the road K54 to collect runoff from the road reserve and discharge at the designated low point.

Flood runoff

The slopes over the catchment area are good, and it was easy to maintain suitable slopes on all pipes/box culverts. Small catchments were identified and the run-off calculated using the Rational Method. Flows were then allocated to nodes and box pipe/culverts sized to suit. Calculations were done for the box pipes/culvert system to carry stormwater for a 1:25 year flow as per Gautrans Standards Specifications.

The design storage volumes are a function of the peak storage requirements that often correspond to abnormally wet conditions that continue for an extended period of time. The volume of water that seems likely to flow into the storage facility during an extreme flood event is, however significant. Within the area of study, local floods are estimated as a function of an effective average vary from 21.7 to 294.7mm per hour.

Infrastructure of Wetland and Pond Design

This section provides a brief summary of the preliminary size of the stormwater. The design flow rate for 1:100-year stormwater inflow into the pond were calculated as follows:

The depth of the designed wet pond is 1m deep to avoid thermal stratification and is deep enough to minimize algal blooms and strong winds. Prevention of thermal stratification will minimize short-circuiting and maintain aerobic bottom waters, thus maximizing pollutant uptake and minimizing the potential release of nutrient to the overlying waters. The outlet structure is designed to facilitate withdrawal of cold bottom water to help mitigate any downstream thermal impacts. At the depth the permanent pond can better serve as an aquatic habitat.

The length of the designed wetland and pond is large to simulate conditions found in the plug flow reaction kinetics. under the ideal condition, a plug or pulse of run-off enters the pond and is treated by physical processes of dispersion and settlement as pulse travels the length of the wet pond.

- Area for post development : 360ha
- Designed pond capacity : 226 023m³
- Designed outlet pipe from the pond: 1050mm diameter
- Level of water to be kept in the pond: 1m
- Maximum water depth at the pond : 4.2m

- Designed length of the wetland : 1600m
- Designed width of the wetland : 50m
- Designed wetland capacity : 240 000m³
- Average water depth at the wetland : 3m

Proposed Stormwater Infrastructure and results summary with peak flows

In order to ensure that all stormwater from the median, road reserve, and boundary is discharged into the pond, a system of a mixed open vegetation and concrete channel, is proposed on the eastern side of the road K54. A calculated orifice of 1050mm pipe is proposed as an outlet pipe from the attenuation pond to discharge stormwater into the existing stream.

Return : 1:5year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	31.128	23.544	19.051	16.059	13.919	11.045
Qpout	2.066	2.243	2.310	2.343	2.359	2.310

Return : 1:10year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	38.323	28.986	23.454	19.771	17.137	13.598
Qpout	2.485	5.077	5.756	5.756	5.756	5.756

Return : 1:25year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	50.448	38.157	30.875	26.027	22.559	17.9
Qpout	13.821	16.012	16.012	14.901	13.821	12.775

Return : 1:50year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	62.109	46.976	38.011	32.042	27.773	22.038
Qpout	24.439	27.328	24.621	23.308	22.021	18.328

Return : 1:100year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	76.465	57.835	46.797	39.499	34.193	27.132
Qpout	42.314	40.713	36.041	33.041	30.135	24.621

Return : 1:200year
Orifice : 1050mm pipe

Td	30	45	60	75	90	120
Qpin	94.140	71.203	57.614	48.567	42.096	33.403
Qpout	66.228	58.022	50.570	44.099	39.133	31.576

Side slopes

The designed wet pond have a gradient of 5:1, these slopes promote better establishment and growth of vegetation and a more natural appearance.

Outlet and Inlet Structure

The inlet is designed from the wetland to only allow clean overflow run-off to enter the wet permanent pond while the riser structure of the wet pond is equipped with a bottom drain pipe at 1m deep, the pipe/orifice size is calculated to be 1050mm diameter to drain the permanent pond to a 1m level so that any sediments may be removed mechanically when necessary. The drain pipe will allow water to be kept in the pond at 1m level.

Emergency overflows

The designed wet pond is able to safely convey system overflows to downstream drainage systems. the capacity of the overflow is sufficient to provide safe, stable discharge of stormwater in the event of the overflow. This pond meets the overflow requirements including the safe conveyance of the wet pond's spillway design storm.

Maintenance and rehabilitation of the wetland and pond area

The designed wet land components expect to receive and/ or trap debris and sediment must be inspected for the clogging and excessive debris and sediment accumulation at least once a year as well as after every storm exceeding 25mm of rainfall. The primary location for debris and particularly sediment accumulation will be within the wet land permanent basin. Additional components includes inflow points, trash racks, outlet structures and gabion aprons and only overflow clean storm will be allowed in the designed wet pond.

The maintenance plan of the stormwater management on site will include the following:

- Inspection and maintenance of all stormwater pipes/channels on site. this includes the regular inspection of all stormwater outlet pipes/box culverts from surrounding properties that are generating the run-off from the site ensuring they are directed to the wetland and that are not blocked allowing the stormwater to enter the attenuation pond freely without restrictions;
- Inspection and maintenance of the pond. the outlet from the pond must be regularly inspected ensuring that it is clean allowing to drain without restrictions; and

- Inspection and maintenance of the outlet pipe downstream of the pond. This includes the regular inspection of the outlet pipe and downstream headwall ensuring that the outlet pipe is not blocked and unrestricted allowing the controlled outlet to drain the pond into the municipal bulk stormwater infrastructure.

The successful rehabilitation will require that the cause of damage or degradation is addressed, the natural flow patterns of the wetland system are established in our design (flow is dispersed to avoid storm to concentrate).

Our design method of rehabilitation included engineering interventions such as:

- Earth berms in conjunction with gabion systems to block artificial channels that drain water from or divert polluted to the wetland;
- Gabion weirs to act as settling ponds, to reduce flow velocity or to re-disperse water across former wetland areas thereby re-establishing natural flow paths;
- Gabion structure plugs to raise channel floor sand reduce water velocity;
- Gabion structures to stabilise head-cut or other erosion and prevent gullies;;
- Gabion structures (mattresses and blankets) to provide platform for the growth of desired wetland vegetation;
- The re-vegetation of stabilised areas with appropriate wetland and riparian plant species;
- The fencing of sensitive areas such as the wetland and the attenuation pond to keep grazers out and to allow for the re-establishment of vegetation; and
- The use of natural soil retention systems such as eco-logs, plant plugs, grass, and brush-packing techniques.

Safety Features

A shallow area just inside the perimeter of the wet pond is designed to promote growth of aquatic and wetland plants. This area also serves as a safety feature, reduces shoreline erosion, and conceals floatable trash.

This area will be landscaped with vegetation that hinders or prevents access to the pool. Thick shoreline vegetation also serves to discourage geese.

The principal spillway opening is designed and will be constructed to prevent access by small children.

The designed wet pond will be fenced to keep pedestrians out of the pond and to prevent a fall hazard and warning signs prohibiting swimming will be posted.

An emergency spillway and associated freeboard will be provided in accordance with applicable local or state dam safety requirements. The emergency spillway must be located so that downstream structures will not be impacted by spillway discharges.

Erosion protection (Outlet/emergency overflow)

The design specifies an outfall that will be stable for the maximum (pipe-full) design discharge (the 5 year design storm event or the maximum flow when surcharged during the emergency spillway design event, whichever is greater). The channel immediately below the pond outfall must be modified to prevent erosion and conform to natural dimensions in the shortest possible distance.

Inlet areas should be stabilized to ensure that non-erosive conditions exist during storm events up to the overbank flood event. Inlet pipe inverts should generally be located at or slightly below the permanent pool elevation.

Construction material

The construction will consist of assembling the construction material from site, making sure it meets design specifications. Preparing any staging areas for example to clear and strip as well as reshaping the existing quarry to the desired batter slope. It is proposed that the materials, construction and testing of the stormwater system should comply with the SABS 1200 series of specifications, except in so far as the City of Tshwane require these to be varied.

Geology and stability

The local geology was found to be exactly as per the information contained in the Basic Planning reports. In short it consists of shale from the Pretoria Group of the Transvaal Sequence, overlain by transported material which is made up shale breccia and clay. A diabase dyke is crossed close to the start of the project near the Old Bronkhorstspuit Road.

The geotechnical investigation was discussed and approved with the relevant Department of Roads and Transport personnel. DCP tests were conducted by our office.

The stability will be created by the new wetland vegetation and insure that the slope of both the wetland and pond is not steep.

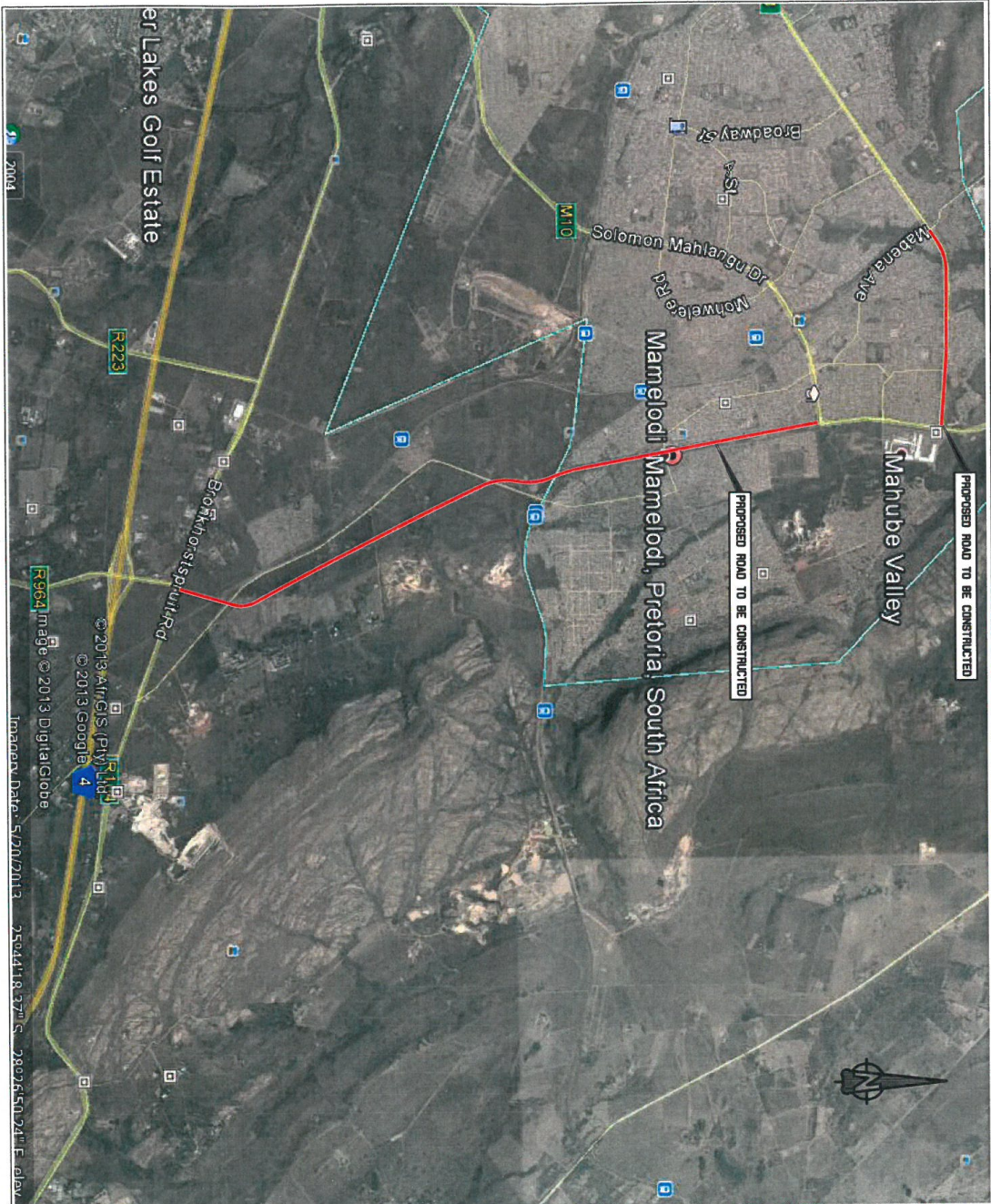
9. CONCLUSION AND RECOMMENDATIONS

The study area is located the N4 and K16 roads in Mamelodi, the Mean Annual Precipitation is approximately 700mm.

The Attenuation Pond Report recommends the use of a wetland, channels, pipe/box culvert and a pond for the settlement of the runoff collected for the site and surrounds area, ensuring that the existing stormwater systems in the area are not overloaded. It is recommended that the water be kept and managed in the wetland and attenuation pond to allow the settlement of runoff and slow release into the existing systems.

ANNEXURE A

LOCALITY PLAN AND POSITION OF POND



<p>LEGEND</p> <p>— PROPOSED ROAD TO BE CONSTRUCTED</p>	
<p align="center">  GAUTENG PROVINCE <small>Department of Water and Forestry REPUBLIC OF SOUTH AFRICA</small> </p>	
<p align="center">CONSTRUCTION OF K54</p>	
<p align="center">CONSULTING ENGINEER</p> <p align="center">  GMH <small>P O BOX 2201 TEL (011) 482-0601 RANDBURG FAX (011) 482-0672 2125</small> </p>	
<p align="center">LOCALITY PLAN</p>	
<p>DATE 02</p> <p>DESIGNED BY GMH</p> <p>CHECKED BY GMH</p> <p>SCALE NTS</p> <p>DATE AUGUST 2013</p> <p>SHEET 1 OF 1</p>	<p>DRAWING NO. 283-00-01L</p> <p>REVISION NO.</p>

ANNEXURE B

POND CALCULATIONS SHEET AND HYDROGRAPHS

ANNEXURE C

WETLAND DESIGN DRAWING AND CROSS-SECTIONS

ANNEXURE D

ATTENUATION POND DETAIL DRAWINGS

Christian Birihanze

From: Gawie Jansen van Vuuren [GawievV@TSHWANE.GOV.ZA]
Sent: 02 December 2019 09:06 AM
To: Christian Birihanze
Cc: 'Gwen Theron'; 'Hattingh, George (#1)'; isaaco@gmhcpp.com; 'Rida Jaffer'; 'Ludwig Geldenhuys'; Gerrit Jansen van Rensburg
Subject: RE: K54 Mamelodi

Good day Christian,

Your report "**ATTENUATION POND REPORT FOR PROPOSED CONSTRUCTION OF K54 IN MAMELODI**" (#283-01 Rev 1, dated November 2019) received 27 November 2019, refers.

The above mentioned report is in principal acceptable and in order.

- Provide us with a pdf copy of the report for record keeping purposes;
- Provide us as soon as possible with a complete set of hard copy construction drawings for the channelization of the Pienaarspoort Spruit and the Attenuation pond;
- Provide us with copies of the rehabilitation plans for the Pienaarspoort Spruit and the Attenuation pond.

I trust you will find the above in order.

Kind regards



Gawie Jansen van Vuuren
Chief Engineer: Integrated Watercourse Management & Drainage Control
Operations

Roads and Transport Department | 2nd Floor | Room B204 | Capitol Towers North | 225 Madiba Street | PO Box 1409 | Pretoria | 0001 | www.tshwane.gov.za | Fraud Hotline: 080 8749 926

Tel: 012 358 7788 | Cell: 083 258 4350 | Email: gawievv@tshwane.gov.za

ATTENDANCE REGISTER

TSAMAYA ROAD K54 INVESTIGATION
14 APRIL 2021

Name	Position	Contact Details
Raymond Siroby	STEP Manager : KC	0826042924 / raymond@kingcivil.co.za
Lucky - Sidu	C.I.O. - K54	0790590097 / lucky.sidu@sa.govmail.com
Anani Tapi	Site Agent	072 1005652 / ananiy@lumizi.co.za
Lance Whitaker	Safety Officer	0828418730 / lancew@kingcivil.co.za
ANDRE BOSMAN	CONTRACTS DIRECTOR	0825770039 / andre@kingcivil.co.za
Jan Prebious	Commercial Advisor	0732571230 / janpreb7@gmail.com
FRANCOIS VAN EDDEKINGE	MANAGING DIRECTOR	0824573188 / info@kingcivil.co.za



John Vester	Contracts Manager.	0710894714 jlv@kingcivil.co.za.



King Civil Engineering Contractors (Pty) Ltd



= Confidential and not for publication =

**The construction of Road K54 between
K22 (old Bronkhorstspruit Road) and
K69 (Solomon Mahlangu) as well as a
section of Road 2561 from K54 to
Tsamaya Road in Mamelodi**

**Occupational Health and Safety Incident
Investigation Report**

Presented by

EMPOWERisk Management Services (Pty) Ltd



Occupational Health and Safety Incident Investigation Report: The construction of Road K54 between K22 (old Bronkhorstspruit Road) and K69 (Solomon Mahlangu) as well as a section of Road 2561 from K54 to Tsamaya Road in Mamelodi

1. Introduction

EMPOWERisk has been appointed by King Civil Engineering Contractors (hereinafter referred to as King Civil) to undertake an independent investigation of an incident that occurred on the above-mentioned project. The focus of the investigation is to determine whether King Civil at the time of the incident adhered to its legal duty as employer to provide and maintain, as far as is reasonably practicable, a working environment that is safe for its employees and that the health and safety of persons other than employees were not negatively affected by its activities.

The investigation was undertaken at the site office on Thursday, 11 March 2021.

2. Incident report

2.1 Names of affected persons

- a. Lawrence Mike Tony Tshwenu
Identity number: Unknown
Date of birth: 13 July 2016
- b. Siyabonga Mabila
Identity number: Unknown
Date of birth: 22 August 2013

2.2 Address of affected persons

- a. Lawrence Mike Tony Tshwenu
Ward 100
Pienaarspoort
Adjacent to the K54 under construction
- b. Siyabonga Mabila
Ward 100
Pienaarspoort
Adjacent to the K54 under construction

2.3 Name of employer/ Contractor

King Civil Engineering Contractors (Pty) Ltd

2.4 Address of employer/contractor

Portion 152 Rietfontein, Beyers Naude Drive, Muldersdrift, 1747

2.5 Names of contact persons

Johan Venter – Section 16(2) Designated Person
Anani Yapi – CR 8(1) Construction Manager
Raymond Scrooby – Construction Health and Safety Manager
Lance Whitaker – Construction Health and Safety Officer

2.6 Telephone number of employer/contractor

011 957 2325

2.7 Details of incident

2.7.1 What happened

Based on King Civil, formal incident report, it appears that on 27 February 2021 between 14:00 and 16:00 Lawrence Tshwenu (4), Siyabonga Mabila (8) as well as a third, unknown individual approached the water that had accumulated in the excavations caused by illegal quarrying activities. These excavations are located in an area identified as the wetland outlet (and are hereinafter referred to as “the wetland”).

The security guards appointed to secure the wetland were on patrol. Whilst engaging with children on the eastern side of the wetland, they noticed the children on the western side (busy undressing themselves). They therefore proceeded with one guard on foot and one by vehicle from a south-eastern and north-eastern side. It is reported that the guards, whilst on route noticed that two of the children entered the water. The third child thereafter started screaming and running around. The guard on foot saw members of the community coming from their houses adjacent to the wetland outlet.

Due to previous incidences of assault by the community whilst trying to keep persons from entering the wetland, the guards stopped engaging and reported the matter to their supervisor. The security services proceeded to –

- notify representatives of King Civil of the incident,
- notify the South African Police Services (SAPS), who took control of the scene of the incident. Police divers retrieved the bodies of Lawrence Tshwenu (4) and Siyabonga Mabila (8) who drowned and were declared dead on the scene.

Please see the following photos of the location where the incident took place –



2.7.2 Where it happened (place of incident)

Ward 100
Pienaarspoort
Adjacent to the K54 under construction

2.7.3 When it happened (date and time of incident)

Date: 27 February 2021
Time: Between 14:00 and 16:00

2.7.4 How it happened

Lawrence Tshwenu (4), Siyabonga Mabila (8) as well as a third, unknown individual approached the water that had accumulated in the excavations caused by illegal quarrying activities. They were reportedly not accompanied by an adult and therefore unsupervised.

The security guards appointed to secure the wetland area noted that the children undressed themselves with two of them heading for the water. This triggered them to start moving to the position where the children were noted. One of the security guards approached by foot and the other by vehicle. Whilst on their way they noted that the third child started screaming and running around.

Due to previous incidences of assault by the community whilst trying to keep persons from entering the wetland, the guards stopped engaging and rather reported the matter to their supervisor, who called the South African Police Services (SAPS). SAPS then took control of the scene of the incident. Police divers retrieved the bodies of Lawrence Tshwenu (4) and Siyabonga Mabila (8) who drowned and were declared dead on the scene.

2.7.5 Why it happened

The area where the incident happened was created by historical illegal sand mining activities (images obtained from Google Earth confirm the mining activities dating as far back as February 2004, i.e., 17 years prior to the incident). The wetland was never rehabilitated and the excavations are periodically filled with stormwater runoff, groundwater and rain.

The area is earmarked for rehabilitation as part of the project, but due to illegal structures encroaching, King Civil cannot move their equipment to the area where the incident occurred to commence with the process. The client was formally informed of this (first notification on 12 April 2019 and on an ongoing basis thereafter with the last notification prior to the incident dated 10 February 2021) to assist with the moving of these structures. Copies of notifications are attached as Annexure A for easy reference.

The high day temperatures experienced over the time of the incident also evidently made children more keen to play in the water to cool off.

Please see the following photos where the incident took place (i.e. marked with a white star). It is evident from the following photos that the excavations that formed the wetland are historical due to previous illegal mining activities and not as a result of King Civil's construction activities.

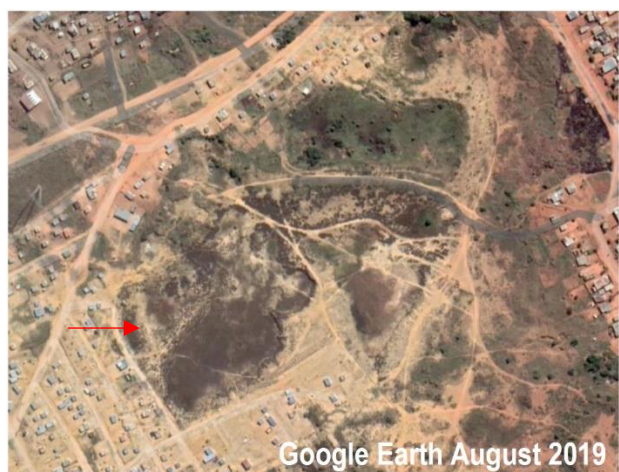




Please note the footprint of the wetland area as far back as February 2004 (this imaged was sourced from Google Maps history)



Note the footprint of the wetland area in August 2019



Please note the footprint of the same wetland area on 05 March 2021 indicating its unaltered footprint.



2.8 Names of witnesses

Other than the two security guards on duty, the only apparent other witness to the incident was the third unidentified person who was with Lawrence Tshwenu and Siyabonga Mabila at the time. King Civil is trying to establish this person's identity via the appointed Community Liaison Officer (CLO) but was unsuccessful in doing so to date. This person is a minor and obtaining a formal witness report may also be challenging.

The details of the security guards on duty at the time are –

- I. RI Maibela (Psira no 2806677); and
- II. NP Mashigo (Psira no 3082186)

The security guards were not requested to provide any formal individual statements. A detailed report on the incident was however submitted by their employer, i.e. Maudi'A Matlakala Security Services (Pty) Ltd. A copy of this report is attached as Annexure B.

3. Additional information obtained

During the formal incident investigation, the following information was presented –

- a. The three individuals most likely had intended to swim, this is based on the following –
 - I. their clothes being found on the embankment;
 - II. they accessed the water in excess of 500 metres from their places of residence; and
 - III. they deliberately passed the position where the guards were patrolling (near their residences) to prevent them being stopped from doing so by the security guards.
- b. The individuals (i.e. small children/minors) were more than 500 metres from their places of residence, unaccompanied/unsupervised by an adult.

- c. A combination of various risk mitigation measures was adopted to safeguard the wetland area due to the perceived risk. This included the introduction and maintenance of passive measures such as notices, signs and barricading. As these are on an ongoing basis removed by the persons and presumably the residents (to play with and for its intrinsic value) these were supplemented by active measures, such as the employing of security guards. Random copies of formal inspections undertaken by King Civil of the passive risk mitigation measures adopted and instructions to improve where gaps were identified are attached as Annexure C. These checklists prove that these measures were assertively managed.
- d. Two security guards were posted at the time of the incident (copy of position sheet attached as Annexure D).
- e. The two guards on duty were duly registered with Psira (i.e. RI Maibela Psira no 2806677 and NP Mashigo Psira no 3082186).

4. Root cause of incident

Based upon the information obtained it is EMPOWERRisk's considered opinion and conclusion that the most probable cause of the fatalities was concluded as follows:

- a. The Wetland and in specific the location where the incident occurred was formed/caused by illegal sand mining activities traceable as far back as February 2004 (see Annexure E for a pictorial overview of how the illegal mining activities impacted on the land over the past two decades);
- b. The specific location could not yet be accessed by King Civil to undertake any work as set in the design. This is due to encroaching and illegal residential structures located in the area;
- c. The risk that the wetland with deep and unstructured (i.e. random) excavations posed on the community were duly noted by King Civil and reasonable as well as foreseeable steps were taken and duly maintained to mitigate the risk, i.e. passive as well as active measures as detailed elsewhere in the report;
- d. The seemingly unstoppable urge of some residents to play in the wetland's water, going beyond imaginable measures, i.e. deliberately passing the notices and signs posted and avoiding the security guards by going to the opposite end from where they are patrolling to do so;
- e. Lack of community to support the security guards in restraining persons from playing in the water, such as the incident where a security guard was attacked by the community for restraining their children from doing so; and
- f. Community allowing even very small children from leaving their properties unaccompanied by adult supervision.

5. Critical factors to be considered

The following critical factors should be considered:

- a. King Civil was not responsible for the excavations filled with water that led to the tragic incident.
- b. King Civil could not yet access the area where the incident occurred and this was reported to the client for intervention.

- c. King Civil nevertheless took and maintained reasonable steps to mitigate the risk.
- d. Some elements in the community are seemingly not supporting but working against the measures taken by King Civil to mitigate the risk.
- e. The risk mitigation measures maintained at the time of the incident was in line with that agreed with the Client, Client's Representative (Resident Engineer) and Client's Construction Health and Safety Agent (Comprac Holdings) during a site inspection in December 2020 to ensure that the site was safe for the construction holiday break.

6. Statutory reporting following the incident

Based on King Civil's formal incident report reviewed, the incident was reported to the –

- a. South African Police Services, case number 195/02/2021 has reference;
- b. Compensation Commissioner – Not applicable as the affected persons were not employed by King Civil.; and
- c. Department of Employment and Labour (see Annexure F).

The above is in line with the legal reporting requirements set by the Occupational Health and Safety Act's (No 85 of 1993) General Administrative Regulations' Annexure 1.

7. Recommendations

EMPOWERisk recommends the following for consideration:

- a. The client be requested to expedite the removal of illegal and encroaching structures to allow King Civil to access the area where the incident occurred so that the area could be made safe;
- b. King Civil maintain the active and passive risk mitigation measures adopted to safeguard the area in the meantime. These risk mitigation measures should however be subjected to regular formal reviews (i.e. formal risk assessment revisions) to ensure they remain relevant and optimal, especially if the site dynamics and risk profile changes;
- c. The client and King Civil, with the assistance of the CLOs, keep on liaising with the community to –
 - I. get their support for the risk mitigation measures adopted;
 - II. inform and warn the community of the risks; and
 - III. assist by not allowing their children to enter the wetlands area without being accompanied by adult supervision

8. Investigation team

The following persons were present during the investigation process:

- a. Independent investigator represented by Bertie Viljoen (Pr CHSA)

- b. King Civil represented by –
- I. Johan Venter – Section 16(2) Designated Person
 - II. Anani Yapi – CR 8(1) Construction Manager
 - III. Raymond Scrooby – Construction Health and Safety Manager
 - IV. Lance Whitaker – Construction Health and Safety Officer

9. Conclusion

EMPOWERisk would like to express its appreciation to King Civil's representatives for the support during the investigation of the incident, the willingness to provide and share information and the evident pro-active safety precautions adopted to mitigate the risks that the project has on employees and other persons.

For any additional information please contact –



Name: Bertie Viljoen Pr CHSA
EMPOWERisk (Pty) Ltd
Tel: 012 819 1600
Cell: 082 415 3714
Fax: 086 672 9573
E-mail: bviljoen@empowerisk.co.za



Mr G Hattingh
GMH / Tswelelo Consulting Engineers
PO Box 2201
Randburg
2125

12 April 2019

Sir,

CONTRACT NO. DRT 91/06/2016 THE CONSTRUCTION OF ROAD K54 BETWEEN K22 (OLD BRONKHORSTSPRUIT ROAD) AND K69 (HANS STRIJDOM, APPROXIMATELY 6.8km) AS WELL AS A SECTION OF ROAD 2561 FROM K54 TO TSAMAYA ROAD IN MAMELODI (APPROXIMATELY 2.2km)

ILLEGAL STRUCTURES CH +2000 TO CH +4170 AND TSAMAYA ROAD

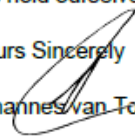
With reference to our Clause 5.6 programme Rev 02, construction between ch+2000 and ch+4170 is scheduled to start on the 26th of April 2019. The relocation of the illegal structures affecting that section has not started. Similarly, the scheduled start date for construction on Tsamaya road is the 27th of August 2019.

From our site meeting held on the 28th of March 2019, the current status of the relocation was discussed at length, and the milestone date for the relocation of the illegal structures between ch+2000 and ch+4170 of the 25th of April 2019 appears unattainable. Failure to meet this milestone is going to have a severe impact on our ability to complete the Contract by the revised completion date of the 3rd of November 2020.

In order to minimise unnecessary delays and additional cost to the Contract, it is vital that the Client address these issues with the appropriate authority and with the necessary urgency that it requires.

We hold ourselves available for any assistance that might be required in concluding the process.

Yours Sincerely


Johannes van Tonder

Authorised Representative



Portion 152, Rietfontein, Beyers Naudé Drive, Muldersdrift • PO Box 1112, Muldersdrift 1747

Tel: (011) 957 2325 • Fax: 086 559 0762 • Email: info@kingcivil.co.za

Reg No: 1982/003698/07 • VAT No: 4120113552

Directors: F van Iddekinge (Managing), LB Mthwa*, P Langeni*, A Bosman

*Non-Executive Directors



Mr G Hattingh
GMH/Tswelelo Consulting Engineers
P.O. Box 2201
RANDBURG
2125

10 February 2021

Sir,

CONTRACT No. DRT 91/06/2016 THE CONSTRUCTION OF ROAD K54 BETWEEN K22 (OLD BRONKHORSTSPRUIT ROAD) AND K69 (HANS STRIJDOM, APPROXIMATELY 6.8km) AS WELL AS A SECTION OF ROAD 2561 FROM K54 TO TSAMAYA ROAD IN MAMELODI (APPROXIMATELY 2.2km)

NOTICE TO CLAIM – ILLEGAL STRUCTURES CH 2+500 TO CH 4+170

In accordance with clause 10.1.1.3 of the General Conditions of Contract for Construction Works (2015) (Third Edition) (GCC2015), we hereby update our notification of our intention to claim extension of time due to the following:

As indicated in our Claim 8 letter we required access to the section between CH 2+000 – CH 4+170 by 13 January 2021 for a final completion date of 12 April 2022. We did not receive access.

Our claim will be in accordance with Clause 5.4.3 – “Delays in giving Possession”.

Since this event is of an ongoing nature, we cannot comply fully with the requirements of Clause 10.1.1.1.

Our claim will be submitted once we are able to accurately calculate the duration of the delay and the cost involved.

Yours Sincerely,


André Bosman
Contracts Director



Portion 152, Rietfontein, Beyers Naudé Drive, Muldersdrift • PO Box 1112, Muldersdrift 1747

Tel: (011) 957 2325 • Fax: 086 559 0762 • Email: info@kingcivil.co.za

Reg No: 1982/003698/07 • VAT No: 4120113552

Directors: F van Iddekinge (Managing), LB Mthwa*, P Langeni*, A Bosman

*Non-Executive Directors

02 MARCH 2021
Manager : King Civil

Ref: Official Report Regarding the matter of children drowning at Dam site

1.

This Report dated 02 March 2021 shall constitute our official report regarding the incident that took place at the dam site on Saturday 27 February between 2pm and 4pm.

2.

On or about the 27th February 2021 between 2pm and 4pm a gruesome incident occurred at the King Civil dam site.

3.

Please take note that the said dam measures as follows;
825m in circumference
303m East to West
180m from North to South
Depth is unknown

4.

The incident is one of the drowning in the dam of 2 Children from the community staying in the shacks around the area.

5.

The Incident occurred during the deployment of two of our professional Psira registered security guards at the dam, take note further that at all times during the weekends the dam has 2 guards deployed to drive and walk around the dam to ensure safety. There were heavy rains from the Thursday to the weekend, therefore due to the bad weather our security was issued a vehicle as there was mud around the area.

6.

During the course of the incident our guards (both) had conveyed on the eastern side to scare away a contingency of community children, when they were done chasing the children on the eastern side, the guard saw other children walking on the southern side and the decided to separate 1 guard with the car towards south and the one on foot towards north side of the dam

7.

The guard on foot from a distance suddenly saw 3 children possibly from the community around racing towards the dam from the western side, removing their clothes and diving into the dam and one child remained behind. The child who remained behind saw that the others were drowning and he started screaming and running.

Our security then noticed the 2 Children inside the dam in distress and was rushing towards the incident when members of the community from the shacks build around the dam also came out in numbers to check what was happening, that is when our security guard stopped and turned back for the fear of his safety and wellbeing. The shacks are build right around the dam and therefore the community was nearer than our security guard.

8.

Kindly take note there has been previous incident of violence around the dam where one of our security guards was brutally assaulted by the same community after having restrained their children from playing in and around the dam where he was later admitted to hospital and subsequently resigned from the company. As it stands the security are working under pressure with the community as the don't want their children to be restrained from playing around the dam.

9.

The matter was then telephonically reported to the management of Maudi security and subsequently to the management of King Civil. The management of Maudi security then send the backup to the dam site , the police was called and the matter was left in the hands of the police. The police called the Sea divers to assist with retrieving the bodies of the 2 children which they manage to retrieve.

We trust that you find all this in order.

Yours Sincerely,



Lucas Mabela
Maudi a Matlakala Security Service



Annexure C

 <p>KING CIVIL ENGINEERING CONTRACTORS (PTY) LTD</p>	DOCUMENT REFERENCE	L3.231
	IMPLEMENTATION DATE	7 AUGUST 2020
	REVISION	01
	DATE REVISED	10 NOVEMBER 2020

PROJECT NAME *K54 Road Construction*

PROJECT No. *K266* LOCATION _____ DATE *25/02/2021*

INSPECTION RECORD THE OBSERVATION, ACTION TAKEN AND RESOLUTION			
ACTIVITY/ITEM	OBSERVATION NON-CONFORMANCE / OPPORTUNITY FOR IMPROVEMENT	ACTION TAKEN	RESOLUTION
<i>Storm water pipe installation</i>	<i>Incorrect barricading no warning signage. Left to maintain.</i>	<i>Excavation barricaded on all 4 sides. Deep excavation, warning signage placed.</i>	<i>Daily monitoring</i>
<i>Bypass Maintenance</i>	<i>Delimiters not maintained. Not visible to motorist</i>	<i>Delimiters to be placed next to road where visible at all times.</i>	<i>Daily inspection</i>
<i>Waterfall & Outlet.</i>	<i>Warning signage missing.</i>	<i>Warning signage to be replaced.</i>	<i>Daily inspection</i>

<p>CHSO / ELQ / SHE REP.</p>  <p>_____ SIGNATURE</p> <p><i>25/02/2021</i> _____ DATE</p>	<p>CONSTRUCTION MANAGER SITE RESPONSIBLE PERSON</p>  <p>_____ SIGNATURE</p> <p><i>25-02-2021</i> _____ DATE</p>	<p>NOTES;</p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--	--



LEGAL REGISTER
REGISTER FOR CHSO & ELO INSPECTIONS
- LOG BOOK

DOCUMENT REFERENCE	L3.231
IMPLEMENTATION DATE	7 AUGUST 2020
REVISION	01
DATE REVISED	10 NOVEMBER 2020

PROJECT NAME: *K54 - Mamelodi - Road Construction*
 PROJECT No. *K266* LOCATION: _____ DATE: *16/02/2021*

INSPECTION RECORD THE OBSERVATION, ACTION TAKEN AND RESOLUTION			
ACTIVITY/ITEM	OBSERVATION NON-CONFORMANCE / OPPORTUNITY FOR IMPROVEMENT	ACTION TAKEN	RESOLUTION
<i>Housekeeping</i>	<i>Incorrect stacking and storage of signage.</i>	<i>Storeman and Mosa to store signage accordingly.</i>	
<i>Barricade culverts</i>	<i>Barricade to be maintained all missing signage to be replace.</i>	<i>Barricade replaced Signage replaced.</i>	<i>Mosa to maintain daily.</i>
<i>Storm water Pipe installation</i>	<i>Contractor to ensure Excavation is barricaded at end of shift.</i>	<i>Excavation barricaded and signage posted.</i>	<i>Left to maintain.</i>

CHSO / ELO / SHE REP. _____ CONSTRUCTION MANAGER / SITE RESPONSIBLE PERSON _____ NOTES: _____

[Signature] _____ SIGNATURE _____
 16/02/2021 _____ DATE _____



LEGAL REGISTER
REGISTER FOR CHSO & ELO INSPECTIONS
- LOG BOOK

DOCUMENT REFERENCE	L3.231
IMPLEMENTATION DATE	7 AUGUST 2020
REVISION	01
DATE REVISED	10 NOVEMBER 2020


PROJECT NAME	K54 Road Construction		
PROJECT NO.	K266	LOCATION	Mamelodi
		DATE	08/02/2021

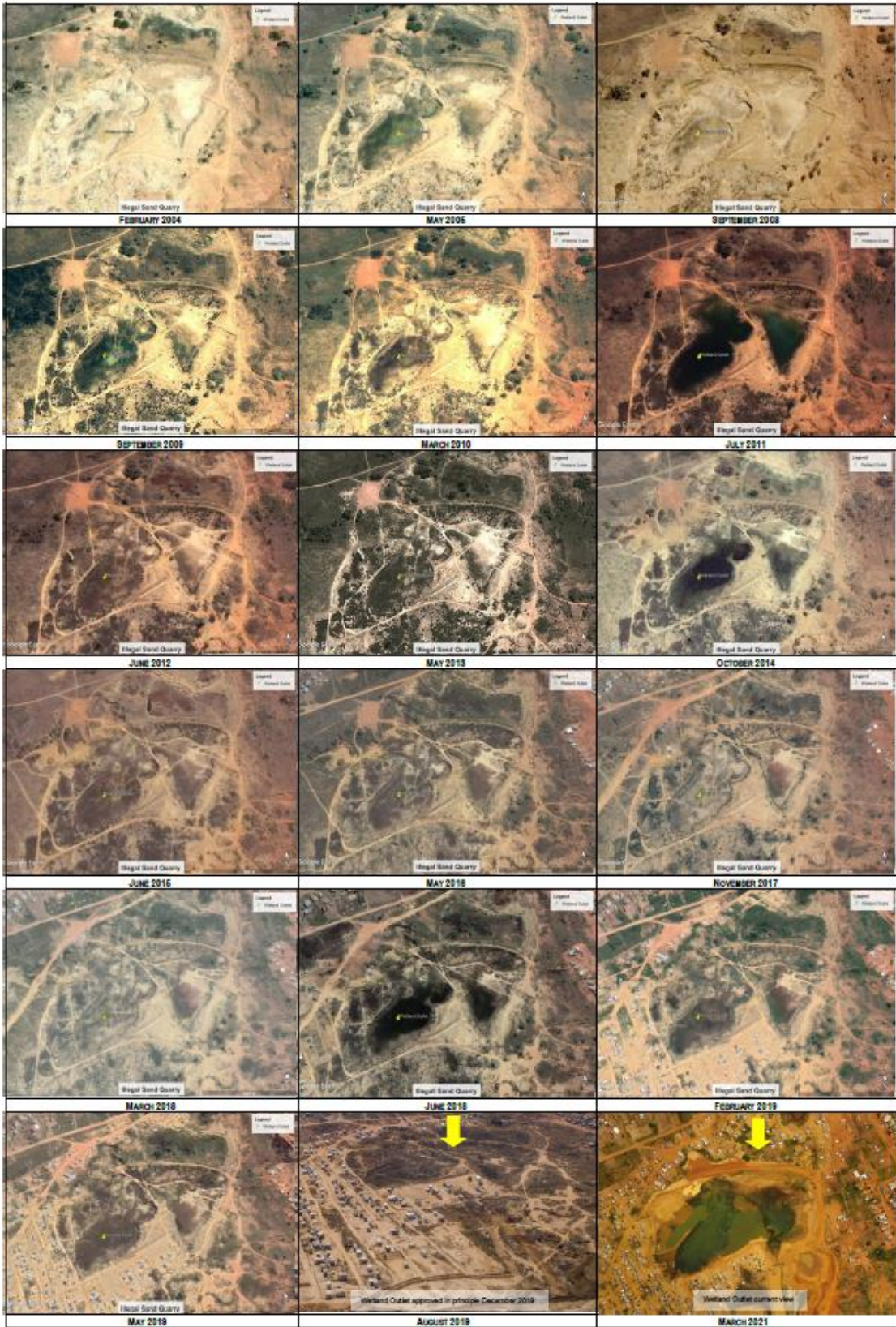
INSPECTION
RECORD THE OBSERVATION, ACTION TAKEN AND RESOLUTION

ACTIVITY/ITEM	OBSERVATION NON-CONFORMANCE / OPPORTUNITY FOR IMPROVEMENT	ACTION TAKEN	RESOLUTION
driptrays	Plant operators not using driptrays when parked at site camp.	all operators to use driptrays	storeman to ensure operators use driptrays
Storm water Pipes	Storm water pipes left open	stormwater pipes to be bricked up until back filled.	Left instructed pipes to be closed.
Wetland Barricade	Missing signage and barricade at wetland.	Barricade and signage replaced.	safety team to monitor daily.

CHSO / ELO / SHE REP.	CONSTRUCTION MANAGER SITE RESPONSIBLE PERSON	NOTES:
SIGNATURE	SIGNATURE	
08/02/2021	08/02/21	
DATE	DATE	

Annexure E

	GOOGLE EARTH ILLEGAL SAND QUARRY TIMELINE 2004 TO 2019	DOCUMENT REFERENCE	L3.178
		IMPLEMENTATION DATE	26 June 2018
		REVISION	-
		DATE REVISED	-



	DOCUMENT REFERENCE	L3.176
	IMPLEMENTATION DATE	26 JUNE 2018
	REVISION	-
	DATE REVISED	-

**ACCIDENT & INCIDENT
NOTIFICATION REPORT
(FLASH REPORT)**

ACCIDENT / INCIDENT NOTIFICATION REPORT – FLASH REPORT

NB: All **Minor Injury (First Aid Cases)**, **Minor Injury (Medical Treatment Cases)**, **Disabling or Loss Time Injuries** and **Fatal Injuries and Environmental** are to be reported telephonically to the Head Office SHE Department immediately after an accident occurred. The Accident Notification Report form must be faxed or e-mailed to Head Office ASAP, but not later than 24 hours from the time of the accident. It is the Originator's responsibility to ensure that information is logged correctly. NB: All **Near Miss and Property Damage Incidents** must be recorded on this form and must be analysed on the site for preventative measures, i.e. Toolbox Talks/ Induction Training etc. **Near Miss Report must not be forwarded to Head Office, only your month-end analyses report.**

To: Safety Manager: R. Scrooby

..... (Signature)

Site Responsible Person: A. Yapi

..... (Signature)

Client Rep/ Consultant: I. Ojungu

..... (Signature)

Project: DRT 91/06/2016 : THE CONSTRUCTION OF ROAD K54 BETWEEN K22 (OLD BRONKHORSTSPRUIT ROAD) AND K69 (SOLOMON MAHLANGU) AS WELL AS A SECTION OF ROAD 2561 FROM K54 TO TSAMAYA ROAD IN MAMELODI

This is to notify you of a:

Near miss	Property Damage	Minor Injury (First aid)	Minor Injury (Medical treatment)	Disabling or Loss Time injury	Fatality	Environmental Incident
-----------	-----------------	--------------------------	----------------------------------	-------------------------------	----------	------------------------

(select and clearly indicate only one of the above and below classifications)


King Civil (Employee/ Equipment)	Sub-Contr. (Employee/ Equipment)	Labour-Only (Employee/ Equipment)	Public Member (3 rd party)		
Name of company involved:		King Civil Engineering Contractors			
Name of affected person / persons:		Lawrence Mike Tony Tshwenu (4)	DIRECTLY EMPLOYED	LOCAL LABOUR	PUBLIC MEMBER
Name of affected person / persons:		Siyabonga Mabilla (8)	DIRECTLY EMPLOYED	LOCAL LABOUR	PUBLIC MEMBER
Date of Incident:		27/02/2021	Time of Incident:		l.b.a, reported 16h47

Short description of incident and injuries:

On Saturday, 27 February 2021 at 16h47 I was contacted by Ivan Ledwaba, whereby he informed me Maudi Security has informed Ivan Ledwaba that 2 children had drowned at the welland outlet.

Investigation will be conducted with findings reported on.

Originator (Print Name): Lance Whitaker

Signature:  Date: 01/03/2021

Raymond Scrooby

From: Raymond Scrooby
Sent: Thursday, 04 March 2021 16:23
To: 'shireletso.tshounyane@labour.gov'; 'zamarobo.mothapo@labour.gov.za'; 'madume@labour.gov.za'
Cc: 'Wesley Raw'; 'Lance Whitaker (LanceW@kingcivil.co.za)'; 'isaaco@gmhcpp.com'; Anani Yapi; 'Johan Venter (johanv@kingcivil.co.za)'
Subject: Section 24 incident notification
Attachments: Incident Notification Report - Flash Report.pdf

Good day

Please find attached notification of OHS Act Section 24 incident.

Location of incident: Wetland outlet structure adjacent to the K54 under construction <https://www.google.com/maps/place/25%C2%B044'40.9%22S+28%C2%B025.7467362,28.4335207,145m/data=!3m1!1e3!4m6!3m5!1s0!7e2!8m2!3d-25.74469714d28.438312>

Details of the children as follow:

Lawrence Mike Tony Tshwenu DoB 2016/07/13 aged 5

Address: Ward 100, Pienaarspoort, Adjacent to the K54 under construction <https://www.google.com/maps/place/25%C2%B044'40.9%22S+28%C2%B025.744697,28.4381752,73m/data=!3m1!1e3!4m6!3m5!1s0!7e2!8m2!3d-25.74469714d28.438312>

Siyabonga Mabila DoB 2013/08/22 aged 7

Address: Ward 100, Pienaarspoort, Adjacent to the K54 under construction <https://www.google.com/maps/place/25%C2%B044'40.9%22S+28%C2%B025.7449235,28.4376482,73m/data=!3m1!1e3!4m6!3m5!1s0!7e2!8m2!3d-25.74469714d28.438312>

Details of King Civil Engineering Contractors as follow:

Johan Venter	Contract Manager	072 089 4713	johanv@kingcivil.co.za
Anani Yapi	Construction Manager	072 100 5652	ananiy@kingcivil.co.za
Raymond Scrooby	CHSM	082 604 2924	raymond@kingcivil.co.za
Lance Whitaker	CHSO	082 841 8730	lancew@kingcivil.co.za

Details of Security company as follow:

Stemmer Monageng Maudi A Matlakala Security Services 076 192 9259

Details of Ward 100 CLO:

Lucky Sidu 065 381 6278 / 079 059 0077

Details of Resident Engineer:

Isaac Ojunga GMH Tswelelo Consulting 071 896 6045 isaaco@gmhcpp.com

Please note that we are currently investigating and will forward report accordingly.

Please request any additional information required, we will assist in any way required.

Thank you

Kind Regards

RAYMOND SCROOBY
Health and Safety Manager



MOBILE: 082 604 2924
OFFICE: 011 957 2325
FAX: 086 559 0762

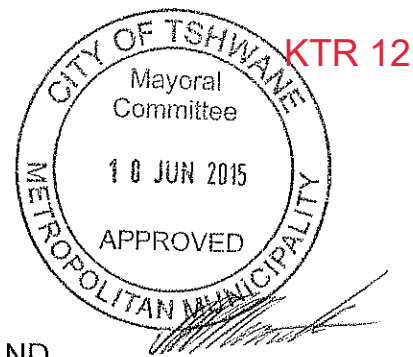
POSTAL: PO Box 1112, Muldersdrift, 1747
EMAIL: raymond@kingcivil.co.za
WEB: www.kingcivil.co.za

VAT reg. No: 4120 113 552

Disclaimer

This email is intended only for the person to whom it is addressed and/or otherwise authorized personnel or recipients. The information contained herein and attached is confidential and its disclosure to any other person is prohibited in terms of law.

Lisa Mangcu (7050) Makgorometje A Makgata (0940)
MAYORAL COMMITTEE: 10 June 2015



2.3.1 JOINT REPORT OF THE OFFICE OF THE
DEPUTY CITY MANAGER: INFRASTRUCTURE AND
PROGRAMME MANAGEMENT AND THE CITY PLANNING AND
DEVELOPMENT DEPARTMENT
(CITY PLANNING)
APPLICATION IN TERMS OF CLAUSE 16 AND 32 OF THE TSHWANE TOWN-
PLANNING SCHEME, 2008 (REVISED 2014) FOR THE ESTABLISHMENT OF
MUNICIPAL TRANSITIONAL SETTLEMENTS ON VARIOUS LAND PARCELS
WITHIN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY AS PART OF
THE RE-AGA TSHWANE PROGRAMME
(From the Strategic Land Development Tribunal: 25 May 2015)

The Strategic Land Development Tribunal (SLDT) considered the report at its meeting held on the 25 May 2015 and approved the report in principle with the following amendments viz.

- a) That the Annexure identifying the land parcels/areas be separated between CoT owned land, national and provincial government owned land and privately owned land.
- b) That the recommendations of the report reflect the process of dealing with the establishment of Municipal Transitional Settlements (MTS) for all the identified land parcels/areas.
- c) That the amended report be submitted to the Mayoral Committee for final approval.

1. PURPOSE

The purpose of the report is to consider the application for the formalisation of informal settlements/Townships as outlined in the report through the establishment of Municipal Transitional Settlements in terms of Clause 16 and 32 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014) in line with the Re-aga-Tshwane programme.

2. STRATEGIC OBJECTIVES

The specific Strategic Objectives addressed in this report are:

Strategic Objective 1:

Provide basic services, water and sanitation, roads and stormwater and electricity;

Strategic Objective 2:

Economic growth and development and job creation;

Strategic Objective 3:

Sustainable communities with clean, healthy and safe environments and integrated Social services;

3. CONTEXT

The Re-aga-Tshwane programme is a multi-dimensional programme which includes amongst others the formalisation of informal settlements/townships, the provision of services etc. Formalisation in this context takes the following forms in terms of approval or consent within any one or a combination of the legislative regimes as mentioned hereunder viz.

- Sub-Divisions, Rezoning and Consolidation of areas and or erven.
- Tshwane Town-Planning Scheme, 2008 (Revised 2014) amongst others the establishment of Municipal Transitional Settlements (MTS).
- Approval of a Township in terms of the Local Government Ordinance of 1986 (Ordinance 15 of 1986)
- Application/Approval of an informal settlement/township in terms of the Less Formal Township Establishment Act, 1991 and the
- Housing Act 107 of 1997 (as amended)

Areas formalised through the abovementioned processes could relate to currently occupied areas, vacant land for the purposes of relocation of communities as well as areas to be developed in the partnership with other spheres of government and or the private sector for the provision of sustainable human settlements and economic development purposes as well as to meet the principles and policy prescriptions of Vision 2055.

4. BACKGROUND

The City of Tshwane has established a Re-aga-Tshwane Mayoral Task Team to embark on formalisation of informal settlements and townships, the development of affordable housing in order to restore human dignity, provide services and issue title to the respective beneficiaries. In order for the city to mitigate and better the living conditions of people residing in the informal settlements it proposes to establish the Municipal Transitional Settlements in terms of Clause 16 (consent use application) and Clause 32 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014).

In terms of Clause 5 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014), Municipal Transitional Settlement means land and buildings used for the settlement of persons in temporary dwelling-units and the provision of ancillary structures and services while permanent dwelling-units are being constructed in terms of the relevant legislation subject to Schedule 27.

A Municipal Transitional Settlement shall be an area of land acquired to provide temporary/permanent housing for persons identified by the Municipality in need of housing and which area of land shall be proclaimed in terms of the relevant legislation by the Municipality. It shall consist mainly of housing and streets but may also contain ancillary structures and services which in the opinion of the Municipality are necessary for the provision of a safe, orderly and healthy living environment.

Furthermore, clause 32 permits the municipality to erect, use or maintain any building, works or land owned by the municipality.

Notwithstanding the provisions of clause 32 above, the establishment of MTS may also apply to privately owned land that is to be developed for sustainable human settlements in partnership with the municipality and/or any other sphere of government, Tribal Authority land and land that is privately owned in consultation with the owner (where possible).

5. DISCUSSION

The properties to be established as Municipal Transitional Settlements are outlined in Annexure A, B and C of this report and further on in this report, the properties affected by the proposed development (Municipal Transitional Settlement) will be referred to as the "subject properties".

6. THE APPLICABLE TOWN-PLANNING SCHEME

In terms of Clause 14, Table B of the Tshwane Town-Planning Scheme, 2008 (Revised 2014) there are six (6) Use Zones identified under which a Municipal Transitional Settlement may be created and approved or used with the consent of the Municipality.

These Use Zones includes:

- (a) Use Zone 10 : Industrial 1;
- (b) Use Zone 15 : Municipal;
- (c) Use Zone 16 : Government;
- (d) Use Zone 17 : Agricultural;
- (e) Use Zone 19 : Undetermined; and
- (f) Use Zone 27 : Infrastructure Works.

Each and every property within a town-planning scheme area has a specific use zone and a number of development and density controls such as height, coverage, Floor Area Ratio, building lines, parking provisions as well as access issues. This amounts to the development rights of a property.

Although majority of the land parcels are presently zoned "Undetermined" which permits Municipal Transitional Settlement with the consent of the Municipality in terms of clause 16 of the Tshwane Town Planning Scheme, it must be recognised that some of the land parcels do not have the appropriate zoning to accommodate Municipal Transitional Settlement.

In this instance clause 32 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014) should be applied to these land parcels in order to establish the Municipal Transitional Settlement.

Notwithstanding the above, the city's land spread is made up of different geographical typologies which need to be taken into account. In this regard, a MTS may be established in rural communities, peri-urban communities and communities residing on "agricultural" land taking into account the different housing needs, typologies and the spatial configuration of the city.

7. APPLICABLE POLICIES AND PLANS APPLICABLE POLICIES AND PLANS

7.1 Need and Desirability

Formalisation of informal settlement/townships is ideal when an informal settlement is appropriately located in terms of sound spatial planning principles (i.e. access to public transport, work opportunities, infill and compaction compliant, etc.) and is thus capable of becoming viable human settlements. It must therefore be clearly understood that informal settlements are typified by the absence of formal planning and as a result unplanned growth manifest.

In addition to living in poor accommodation, many households do not have access to basic services in respect of water, sanitation, refuse removal and electricity. However, this so-called unplanned growth should be seen in the context of where people find employment, migration patterns and given the fluidity of the situation, it is therefore incumbent upon the City to have a flexible approach in managing economic development and growth, public transport requirements and housing demand.

Therefore, in terms of the provisions of Clause 16 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014), Municipal Transitional Settlements can be instituted as a means to bring a level of security to residents within informal settlements/townships other than the formal township establishment processes which are long and tedious.

The latter is reiterated by Schedule 27 of the Tshwane Town-Planning Scheme, 2008 (Revised 2014) which states that “the Municipality shall formalise the area of land designated as a Municipal Transitional Settlement at its earliest convenience within a reasonable time in pursuance of its responsibilities and legal obligations.”

7.2. Tshwane Vision 2055

The Tshwane Vision 2055 has identified land as one of the enablers to attract investment. Large tracts of land owned by the government have also had a significant influence on the development patterns of the city, mostly by acting as buffers and restricting spatial integration. Much of this land is under-utilized and is located strategically for infill development or economic opportunities.

7.3 Metropolitan Spatial Development Framework

The MSDF represents the spatial interpretation of desired growth and development for the City. Its primary focus is on economic and infrastructure development and it gives spatial expression to the development plans (City Development Strategy and Integrated Development Plan).

7.4 Regional Spatial Development Framework

The RSDF is considered to be the implementation mechanism for the City's strategic intentions. The RSDF provides a framework for interpreting the vision, planning principles and structuring elements of the City of Tshwane. The subject properties are all guided by their respective RSDFs.

8. PREVIOUS COUNCIL AND MAYORAL COMMITTEE RESOLUTIONS

The report to consider the establishment of Municipal Transitional Settlements will be in line with the following Frameworks, Polices and Strategies as approved by the CoT:

- Regional Spatial Development Frameworks; and
- The Tshwane-Town-planning Scheme, 2008 (Revised 2014).

This report is not against any previous resolutions taken by Council or the Mayoral Committee.

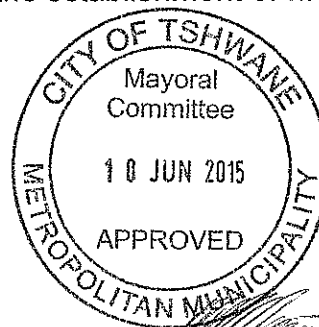
9. CONCLUSION

The importance of Title Deed conditions as development control measures is diminishing due to the implementation of more effective and flexible Policy documents and Laws such as Town-Planning Schemes and Ordinances. The Title Deed conditions are difficult to implement and in turn they limit development.

The Tshwane Town-Planning Scheme, 2008 (Revised 2014), in conjunction with the Town-Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986) effectively control development within the Tshwane Municipal area.

ANNEXURES:

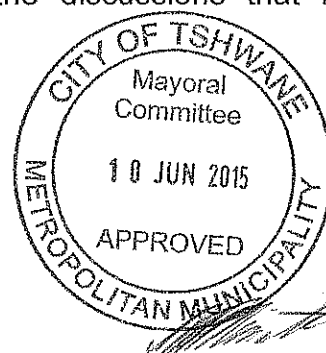
- A: CoT owned list of Land Parcels/Areas identified for the Establishment of MTS
- B: Other government owned land parcels/areas identified for the Establishment of MTS
- C: Privately owned land parcels/areas identified for the establishment of MTS

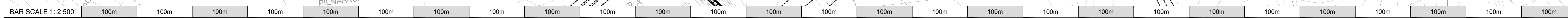
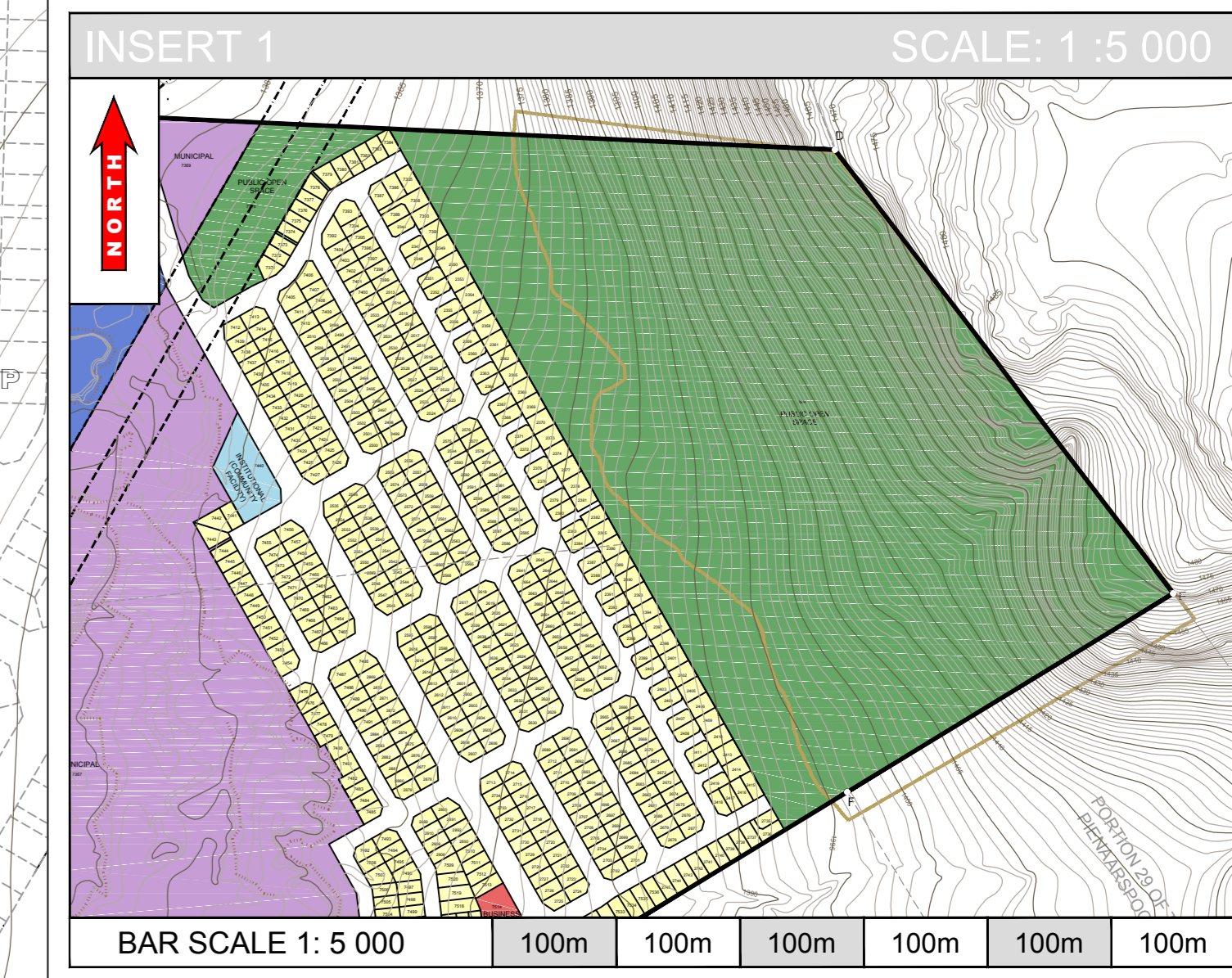
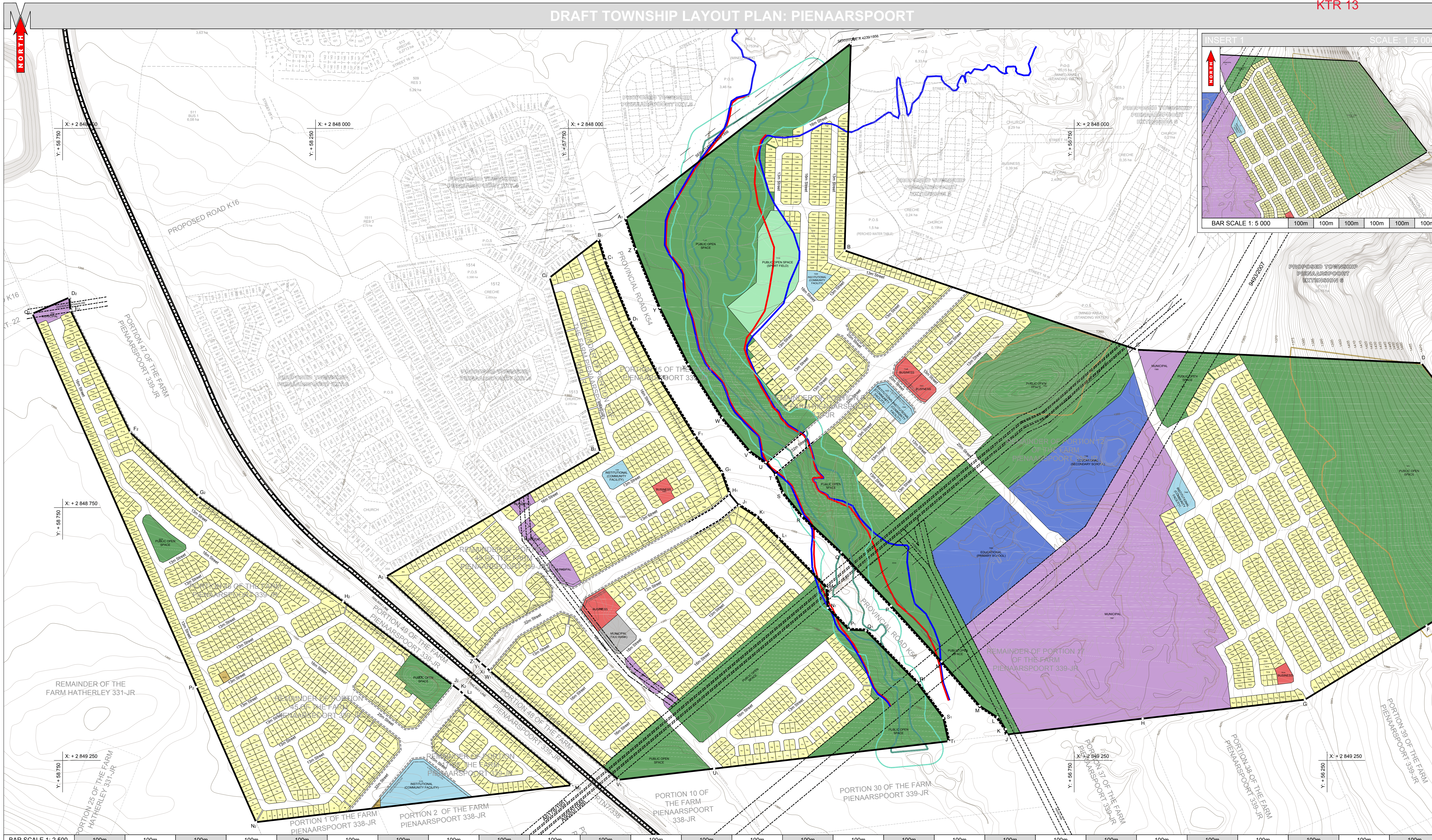


RESOLVED:

1. That the establishment of Municipal Transitional Settlements on all the land parcels/ areas owned by the municipality, as identified in Annexure A be approved in terms of the Tshwane Town Planning Scheme in terms of Schedule 27 and Clause 32 of the said scheme;
2. That the establishment of Municipal Transitional Settlements on all the land parcels/ areas owned by other spheres of government that is being developed in partnership with the municipality, as identified in Annexure B be approved in terms of the Tshwane Town Planning Scheme in terms of Schedule 27 and Clause 32 of the said scheme;
3. That the establishment of Municipal Transitional Settlements on all the land parcels/ areas privately owned as identified in Annexure C be approved in terms of the Tshwane Town Planning Scheme in terms of Schedule 27 and Clause 32 of the said scheme with the consent of the land owner;

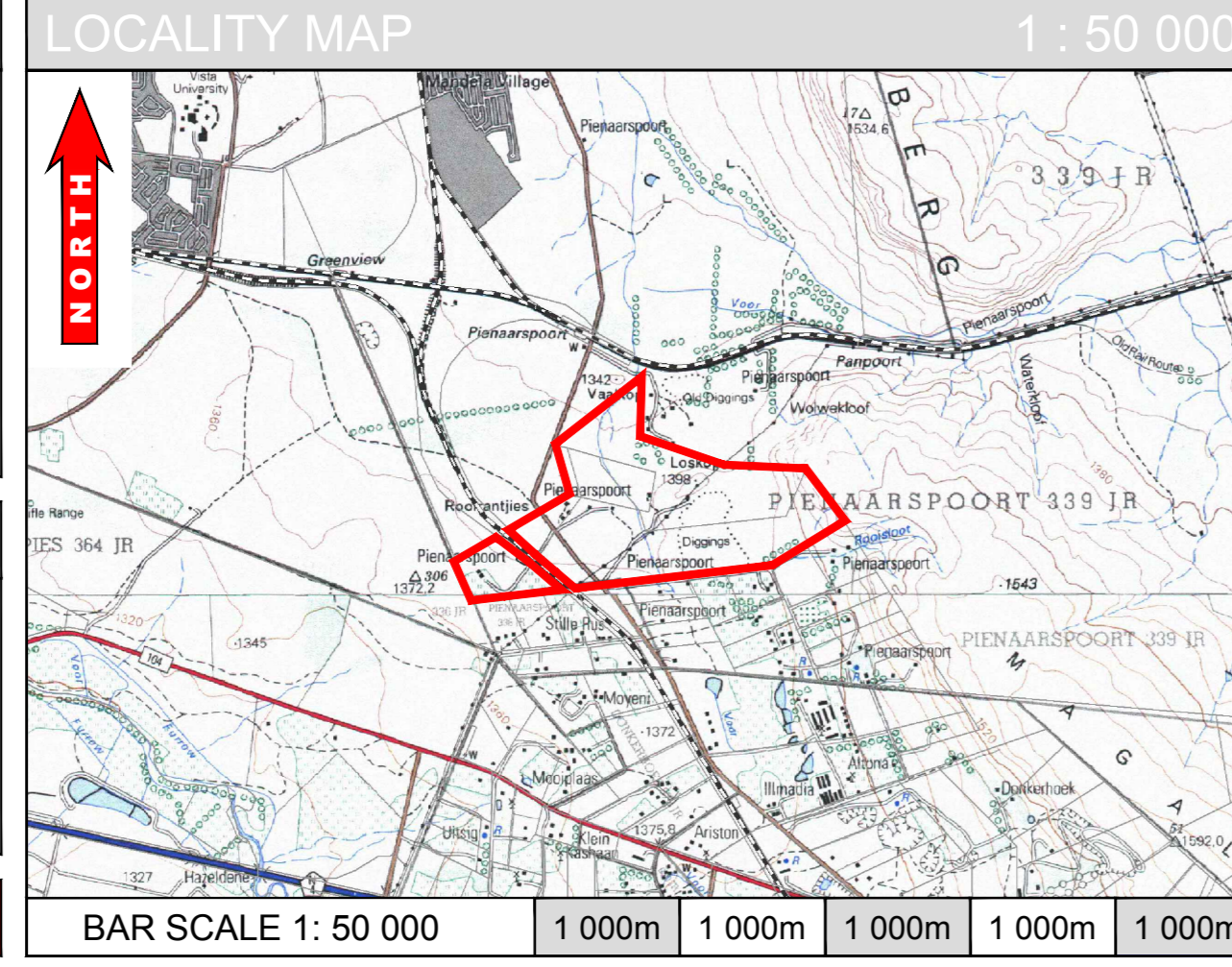
4. That, in terms of recommendation 3 above, where the land owner is un-contactable, a notice be placed in any newspaper giving the said owner Thirty (30) days from the date of the notice to respond to the establishment of a Municipal Transitional Settlement;
5. That the City Manager be authorised to enter into a land availability agreement with all owners of privately owned land as outlined in Annexure C;
6. That the Group Legal Counsel issue expropriation notices on privately owned land where no agreement has been reached in terms of Recommendation 4;
7. That in terms of recommendations 1 and 2 above, the land parcels/areas identified be approved as formalised areas in terms of the Re-aga-Tshwane Programme;
8. That for purposes of ensuring that appropriate land use rights are obtained, the Strategic Executive Director: City Planning and Development be authorised to submit any and all applications, take any steps or requests for approvals required to bring appropriate zonings into operation on the land parcels or creating cadastral entities (subdivisions and consolidations) including but not limited to applications in terms of the Town Planning and Townships Ordinance, 1986 the National Environmental Management Act as well as other legislation as outlined in paragraph 3 of the report;
9. That the City manager be authorised to issue Power of Attorneys for the land parcels/areas identified in Annexures A and B (where applicable) for the following viz.
 - a) Submission of Township Applications and all land use applications incidental thereto.
 - b) Beneficiary administration and the transfer of properties to the individual occupiers.
 - c) The preparation and submission of engineering designs and the installation of such services.
 - d) The preparation and submission of any application for any studies that is required.
 - e) The opening of a township register and the submission of proclamation notices.
 - f) The submission of applications to the surveyor Generals Office.
 - g) The submission and approval of building plans.
10. That the municipality shall proclaim the land parcels designated as Municipal Transitional Settlements in Annexures A and B at its earliest convenience within a reasonable time in pursuance of its responsibilities and legal obligations;
11. That areas be included in the report; and
12. That the Executive Director: Formalisation makes a presentation to the Mayoral Committee scheduled for 1 July 2015 on the discussions that relate to the preapproved building plans.





TOWNSHIP DETAILS
TOWNSHIP NAME: THE PROPOSED PIENAARSPORT TOWNSHIP
SITUATED ON: THE REMAINDER OF PORTION 3, THE REMAINDER OF PORTION 12, THE REMAINDER OF PORTION 17, THE REMAINDER OF PORTION 45 AND PORTION 46 OF THE FARM PIENAARSPORT 339-JR.
LOCAL AUTHORITY: CITY OF TSHWANE METROPOLITAN MUNICIPALITY
PROVINCE: GAUTENG

DRAWING PARTICULARS
 DESIGNED: D BESTER
 DRAWN: I VAN ZYL
 SCALE: 1:2 500 (PAPER A0)
 DATE: 2015-09-14
 LAYOUT PLAN NO: GPD_PIENAARSPORT / 01
 DRAWING NUMBER: MP_A45_2015-09-11_Pienaarsport



LEGEND

COLOUR NOTATION	USE ZONE	ZONING	LAND USE	ERF NO.	NO OF STANDS	NO OF UNITS	AREA IN HA	% OF AREA	
Yellow	1	Residential 5	Residential (60 units/ha)	-	2 821	2 821	64 8205	33.97	
Red	6	Business 1	Neighbourhood Shopping Facility	-	5	-	0.9764	0.51	
Blue	13	Educational	Primary / Secondary School	-	2	-	6.9020	3.62	
Light Blue	14	Institutional	Community Facilities	-	6	-	1.9184	1.01	
Purple	15	Municipal	Transport Terminus	-	1	-	0.3241	0.17	
Purple	15	Municipal	Municipal Purposes	-	9	-	18.9022	9.91	
Brown	26	Cemetery	Cemetery	-	2	-	0.0507	0.03	
Green	20	Public Open Space	Sport and Recreation	-	1	-	1.7484	0.92	
Green	20	Public Open Space	Parks	-	9	-	55.9608	29.33	
Grey	22	Existing Streets	Streets	-	-	-	39.2059	20.53	
					TOTAL	2 856	2 821	190.8094	100

GEOTECHNICAL ZONES

*Geotech to be conducted

- GENERAL NOTES**
- The proposed Piensaarsport Township measures a combined area of approximately 190.8094ha and consists of three portions represented by the following figures:
 - Figure A,B,C,D,E,F,G,H,I,J,K,L,M,N,P,Q,R,S,T,U,V,W,X,Y,Z,A1: A measuring approximately 112.5936ha in extent;
 - Figure B1,C1,D1,E1,F1,G1,H1,I1,J1,K1,L1,M1,N1,P1,Q1,R1,S1,T1,U1,V1,W1,X1,Y1,Z1,A2,B2,C2,B1: measuring approximately 47.8447ha in extent; and
 - Figure D2,E2,F2,G2,H2,I2,J2,K2,L2,M2,N2,P2,Q2: measuring approximately 30.3711ha in extent.
 - The said township extends over the following farm portions: (1) the Remainder of Portion 3 of the Farm Piensaarsport 339-JR, (2) the Remainder of Portion 12 of the Farm Piensaarsport 339-JR, (3) Portion 15 of the Farm Piensaarsport 339-JR, (4) the Remainder of Portion 17 of the Farm Piensaarsport 339-JR, (5) the Remainder of Portion 45 of the Farm Piensaarsport 339-JR, and (6) Portion 46 of the Farm Piensaarsport 339-JR.
 - The ruling erf size applied to the properties equates to 200m² in extent with a minimum erf size of 160m².
 - The proposed development accommodates 13m, 16m, 20m, 25m and 32m road widths as indicated on the layout plan.
 - All cul-de-sacs are 8m wide and all panhandles are 4m wide unless otherwise indicated.
 - The contours are drawn in 1m intervals which survey was done in accordance with the standards laid down by the regulations relating to township establishment and land use.
 - Contour Datum Plan: Mean Sea Level (MSL)
 - The contour data was derived from the Tshwane Cadastral Data Bank.
 - Cadastral boundaries: - - - - -
 - Ridge: ————
 - Flooding delineation:
 - 1:100: ————
 - 1:50: ————
 - Wetland delineation:
 - Wetland area: ————
 - 30m buffer: ————
 - Building lines: - - - - -
 - Line of no access:
 - Provincial: ————
 - Local: ————
 - Powerline Servitude's: ————
 - Shadow planning equating a total of 21 erven, measuring 10.5094Ha: ————
 - Railway: ————
 - Excavation limit: ————
 - All areas and measurements indicated are approximate and subject to final survey.
 - All cadastral data used was provided by the City of Tshwane Metropolitan Municipality.



Tshwane Owner Information Report

Document Date : 2021-06-22

Property Information			
Property Description		Physical Address	
Parcel Label	R/12	Street Number	
Class	Farm Portion	Street Name	
Legal Area (sq m)	631713	Township / Farm Description	
Status	Registered	Name	PIENAARSPOORT 339-JR
GIS (LIS Key)	052000000/12/R	Class	
Property Key	052000000/12/R	Status	Registered

Current Owner :

Buyer	ID Number	Title Deed No	Registration Date	Purchase Price
GROTER PRETORIA METROPOLITAANSE RAAD		T67681/1997	19970714	R2200000

History Owner :

Buyer	ID Number	Title Deed No	Registration Date
-------	-----------	---------------	-------------------

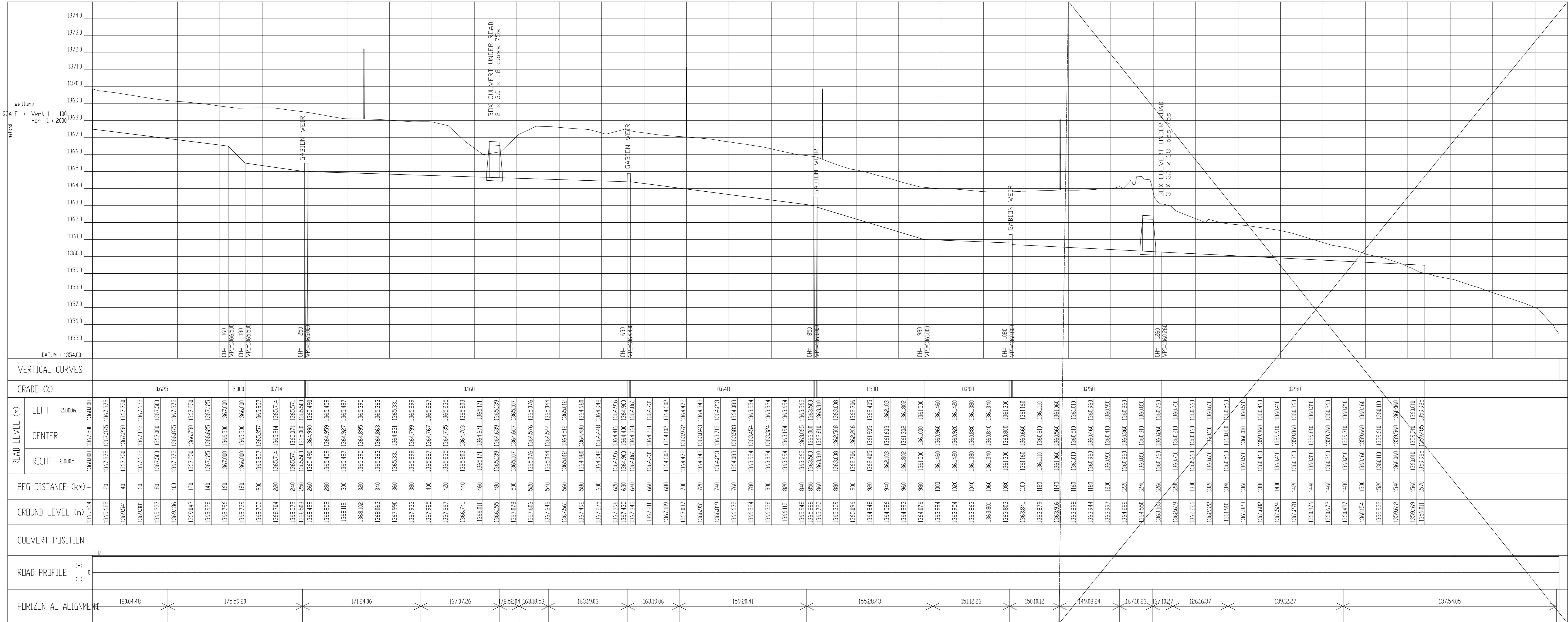
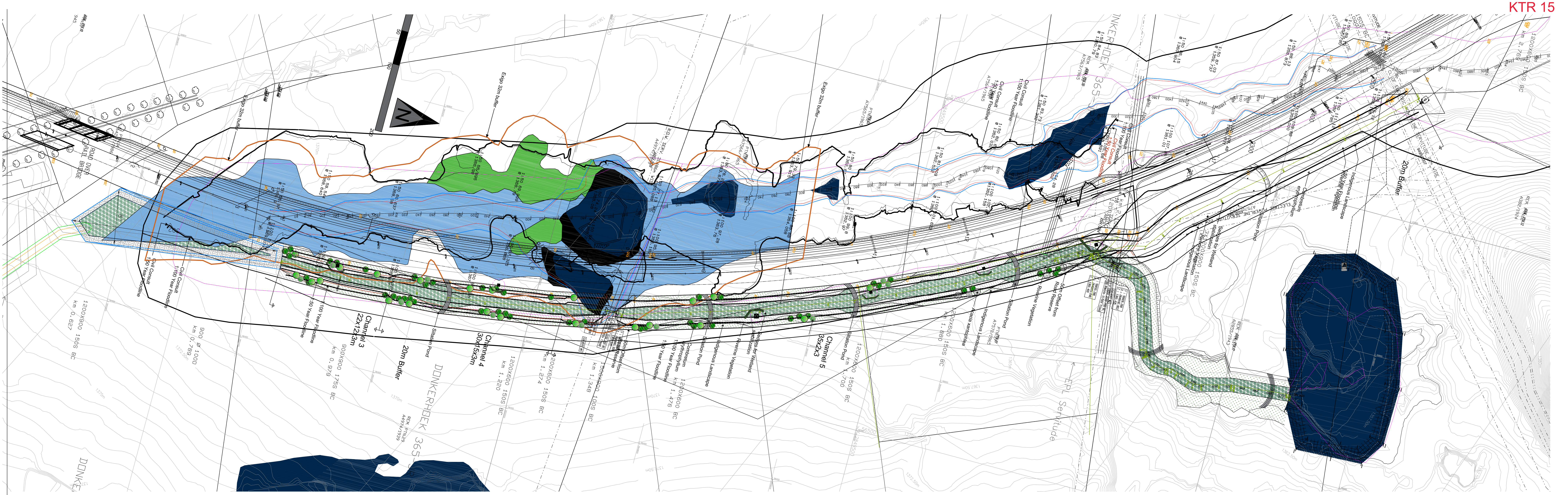
Tshwane Owner Information Report

Document Date : 2021-06-22

Property Information			
Property Description		Physical Address	
Parcel Label	R/17	Street Number	
Class	Farm Portion	Street Name	
Legal Area (sq m)	844925	Township / Farm Description	
Status	Registered	Name	PIENAARSPOORT 339-JR
GIS (LIS Key)	052000000/17/R	Class	
Property Key	052000000/17/R	Status	Registered

Current Owner :				
Buyer	ID Number	Title Deed No	Registration Date	Purchase Price
GROTER PRETORIA METROPOLITAANSE RAAD		T67681/1997	19970714	R2200000

History Owner :			
Buyer	ID Number	Title Deed No	Registration Date



HORIZONTAL ALIGNMENT DATA							
P/No	Name	Y	X	Radius	Tr. In	Tr. Out	Defl.
1	Start	56522.419	2850280.448	-	-	-	-
2	PI 1	56522.295	2850280.680	0.00	0.00	0.00	Left
3	PI 2	56533.404	2850122.254	0.00	0.00	0.00	Left
4	PI 3	56554.445	2849984.424	0.00	0.00	0.00	Left
5	PI 4	56574.959	2848893.809	0.00	0.00	0.00	Right
6	PI 5	56575.407	2848871.140	0.00	0.00	0.00	Left
7	PI 6	56585.354	2848837.954	0.00	0.00	0.00	Right
8	PI 7	56582.201	2848746.369	0.00	0.00	0.00	Right
9	PI 8	56589.805	2848690.291	0.00	0.00	0.00	Left
10	PI 9	56582.607	2848549.593	0.00	0.00	0.00	Left
11	PI 10	56744.253	2848414.237	0.00	0.00	0.00	Left
12	PI 11	56787.301	2848325.100	0.00	0.00	0.00	Left
13	PI 12	56817.191	2848284.019	0.00	0.00	0.00	Left
14	PI 13	56853.402	2848223.419	0.00	0.00	0.00	Right
15	PI 14	56882.389	2848185.253	0.00	0.00	0.00	Right
16	PI 15	56867.288	2848182.079	0.00	0.00	0.00	Left
17	PI 16	56919.692	2848123.683	0.00	0.00	0.00	Right
18	PI 17	57008.274	2848001.909	0.00	0.00	0.00	Left
19	PI 18	57176.874	2848834.414	-	-	-	-

VERTICAL ALIGNMENT DATA					
Peg dist.	Elev.	Bvc	Evc	CL	Grade(%)
0.000	1367.500	0.000	0.000	0.00	-0.625
160.000	1365.500	160.000	160.000	0.00	-5.000
180.000	1365.500	160.000	180.000	0.00	-0.714
230.000	1365.000	230.000	230.000	0.00	0.160
254.000	1365.000	254.000	254.000	0.00	-0.160
630.000	1364.400	630.000	630.000	0.00	300.000
634.000	1364.400	634.000	634.000	0.00	-0.648
850.000	1363.000	850.000	850.000	0.00	284.500
854.000	1362.000	854.000	854.000	0.00	-1.508
980.000	1361.000	980.000	980.000	0.00	-0.200
1080.000	1360.800	1080.000	1080.000	0.00	302.000
1084.000	1360.700	1084.000	1084.000	0.00	-0.250
1260.000	1360.280	1260.000	1260.000	0.00	-0.250
1570.000	1359.485	1570.000	1570.000	0.00	-0.602

GMH/TWELELO DGW No.283/00/W 201 rev 02

SHEET 1 OF 2 SHEETS

01	2/02/2014	GABIONS ADDED AT PYLONS	OPGEMEET DEUR / SURVEYED BY GREEFF Topographical and Engineering Surveyors P O BOX 2237 1790WOOD RIDGE, 0600 TELEPHONE: 0121 842 0000	ONTWERP DEUR DESIGNED BY NAGESIEN DEUR CHECKED BY	M CORTHOITS G HATTINGH	ONTWERP GOEDGEKEUR DESIGN APPROVED	GOEDGEKEUR DEUR APPROVED BY	GAUTENG PROVINSE DEPARTMENT: PAAIË EN VERVOER REPUBLIEK VAN SUID AFRIKA	GAUTENG PROVINSE DEPARTMENT: ROADS AND TRANSPORT REPUBLIC OF SOUTH AFRICA	SKAAL/SCALE AS SHOWN	LEER N° /FILE No	DISTRIK/DISTRICT TSHWANE	TIPPE ONTWERP/TYPE OF PLANNING DETAIL DESIGN
02	05/08/2014	ATTENTION DAM AND OUTLET TO RIVER ADDED		ONTWERP DEUR DRAWN BY NAGESIEN DEUR CHECKED BY	M CORTHOITS M ZOLKIEWICZ			THE CONSTRUCTION OF K 54 BETWEEN N 4 AND K 16 IN MAMELODI PLAN & LONGITUDINAL SECTION WETLAND			OOREENKOMS N° /AGREEMENT No	PAD N° /ROAD No K 54	PLAN N° /PLAN No GRP 09/13/ 1DP/IA
Nr	DATUM	WYSIGING/AMENDMENTS	DATUM	HANDTEK / SIGNTR	DATUM / DATE	DATUM / DATE	DATUM / DATE						

DRAWING REF.: GRP 09/13/ 1DP/IA











P4



P5

OBSERVATION:
Photos 4-6

PROHIBITION NOTICE – OHS ACT Section 8; C.R.7; C.R.8; C.R.9

Danger tape and soft barricading was found around water ponding area. This causes the risk of employees / members of the public sustaining serious injuries or fatality in the event of falling and drowning.

REMEDIAL ACTIONS:

Ensure that all construction water ponding areas are barricaded with solid barricading and ensure that barricading is maintained at all times.



P2



P3

OBSERVATION:
Photos 2-6

PROHIBITION NOTICE – OHS ACT Section 8; C.R.7; C.R.8; C.R.9

Danger tape and soft barricading was found around water ponding area. This causes the risk of employees / members of the public sustaining serious injuries or fatality in the event of falling and drowning.

REMEDIAL ACTIONS:

Ensure that all construction water ponding areas are barricaded with solid barricading and ensure that barricading is maintained at all times.