



## BASELINE RISK ASSESSMENT

### 1. Introduction

In order to ensure that the requirements of the Construction Regulations 5 (1)(a) are fulfilled, the Department of Transport has undertaken the baseline risk assessment for the construction of main road 165 – Howick/Mooi River. The anticipated risks identified in this risk assessment and subsequent project OH&S Risk Profile has been incorporated in the Client OH&S Specification, Part E.

### 2. Terms and Definitions

NO	TERMS	DEFINITIONS
	<b>Hazard</b>	Source or exposure to danger or anything that has the potential to cause harms or may cause harm to people, equipment or the environment
2.1	<b>Risk</b>	The probability that injury or damage will occur or the likelihood, chance or probability that harm may occur from a particular hazard. This is normally represented as a combination of the frequency, consequence and severity of a specified incident or potential incident
2.2	<b>Risk Identification</b>	This has been achieved by a physical inspection of the various areas. The method used here was that of direct observation (physical inspection) interviewing, documentation review coupled with specialist judgment
2.3	<b>Risk Evaluation</b>	The purpose of risk evaluation is to evaluate risk in a systematic and objective way. In this regard numerical calculations have been developed in a weighting and rating process. In the evaluation of risk the severity, probability, legislation and frequency are taken into consideration, according to the criteria
2.4	<b>Risk Rating</b>	= Severity + Frequency + Exposure
2.5	<b>Baseline Risk Assessment</b>	This is the Client's assessment of risk and is a broad assessment and includes all activities taking place on site
2.6	<b>Task Based</b>	This is the Construction or assessment of risk based on the Client Baseline Risk Assessment and project activities
2.7	<b>Issue Based Risk Assessment</b>	In the event that the method of the proposed works change, an incident/accident occurs then an issue- based risk assessment would be conducted
2.8	<b>S.H.E.</b>	Safety, Health and Environment
2.9	<b>Pure Risk</b>	This the risk potential which exist prior to any controls being put in place to minimize the said risk or are those risks that offer only the prospective of loss
2.10	<b>S</b>	Severity
2.11	<b>F</b>	Frequency
2.12	<b>E</b>	Exposure



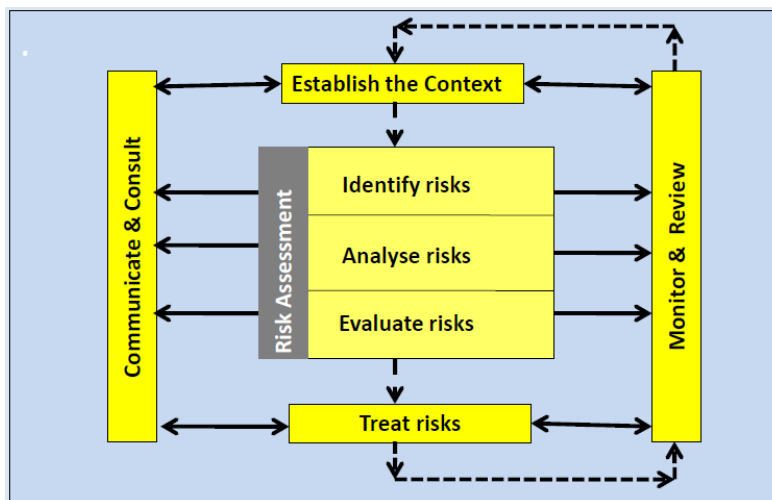
### 3. Objective

The purpose of this document is to lay down the standardised methodology and parameters for all risk assessments conducted. This document is applicable to all the construction activities and processes.

### 4. Methodology

The Contractor shall adopt the following methodology when assessing the project construction risk:-

- **Step 1** - Determine the scope of the assessment
- **Step 2** - Identify the hazards
- **Step 3** - Analyse the risk
- **Step 4** - Evaluate the risk
- **Step 5** - Determine control measures needed
- **Step 6** - Set priority and administer controls
- **Step 7** - Monitor and Review Risk



### 5. Risk Matrix Criteria

As a minimum the frequency, severity and exposure criteria has been adopted to evaluate the identified risk



**5.1 Severity**

This refers to the significance of the effect that the identified risks may have on a person/s should the risks not be adequately and effectively controlled.

**5.2 Frequency**

This refers to the number of times a loss producing event occurs in a given period of time

SEVERITY CRITERIA			
Weight No	Hazard Description	Environment	Safety/Health
1	Insignificant	Low impact, natural rehabilitation	First Aid treatment required
2	Minor	Short-term ecological impact. Requires intervention	Minor injuries or exposure requiring medical attention
4	Moderate	Ecological disturbance, can be rehabilitated	Disabling injury or occupational illness
8	Major	Reversible ecological damage with potential long term impact	Fatality or number of disabilities/disabling diseases
16	Catastrophic	Irreversible ecological damage	Multiple fatalities due to injury or occupational disease

FREQUENCY CRITERIA		
Weight No	Hazard Description	Frequency
1	Rare	Less than once every 2 years
2	Infrequent	Every 1-5 years
3	Frequent	Multiple times per year
4	Often	Monthly
5	Consistent	Weekly/Daily



### 5.3 Exposure

This refers to the number of times a loss producing event occurs in a given period of time

EXPOSURE CRITERIA			
Weight No	Hazard Description	Environmental Exposure	Safety/Health Exposure
1	Minimal	Incident site	A few of the workforce minimal time
2	Restricted	Localised	A few of the workforce, some of the time/some of the workforce minimal time
3	Local	Construction Site Wide	Some of the workforce, some of the time
4	Widespread	Immediate neighbours	Most of the workforce, some of the time/some of the workforce most of the time
5	Extensive	Community exposure	Most of the workforce, most of the time

### 5.4 Risk Prioritisation

This refers to the prioritisation of risk based on their rating from high to low risks

RISK RANKING	
Total	Priority
20 - 26	High
12 - 19	Medium
3 - 11	Low



Risk Ref	Activity	Potential Hazard	Risk	S	H	E	Risk Evaluation			Pure Risk	Controls mitigation	Effectiveness of Controls	Residual Risk	Residual Risk Ranking
							S	F	E					

1	Site Access													
	1.1 Accessing site using construction vehicles or trucks	a) Excessive speeds	1.1 Construction trucks/ vehicles not negotiating the road bends at high speeds may cause accidents resulting in damage to equipment or severe injuries	<input type="checkbox"/>			8	3	3	14	1.1.1 The Construction Manager must ensure that the access roads are surveyed prior to the construction vehicles and trucks accessing the site 1.1.2 The Construction Manager must develop and implement a Driving Policy and Procedure detailing site access procedures, restrictions, monitoring and requirements	60 %	40%	35
		b) Road blocked off due to community protest	1.1 Construction trucks/ vehicles could crash into barricades resulting in damage to equipment or severe injuries	<input type="checkbox"/>			8	3	4	15	1.1.1 The Construction Manager must ensure that close communication is kept with the local authorities and the appointed Community Liaison Officer to ensure that all personnel accessing the site are timeously alerted	60 %	40%	37,5

		c) Pot Holes	1.1 Construction trucks/ vehicles could crash into barricades resulting damage to equipment or severe injuries	<input type="checkbox"/>			8	3	4	15	1.1.1 The Construction Manager must ensure that the access roads are surveyed prior to the construction vehicles and trucks accessing the site 1.1.2 The Construction Manager must develop and implement a Driving Policy and Procedure detailing site access procedures, restrictions, monitoring and requirements	60 %	40%	37,5
1.2 Delivery of equipment to site		a) Plant Mechanical failure	1.2 The truck could crash into personnel, other vehicles or any other structure resulting in critical injuries	<input type="checkbox"/>			8	1	1	10	1.2.1 The Construction Manager must ensure that the truck is deemed road worthy, free of oil spills and the recent service and daily inspection records are in place	60 %	40%	25
		b) Pedestrians using road	1.2 Vehicles/ trucks could crash into pedestrians walking along roadside resulting in critical injuries or fatalities	<input type="checkbox"/>			8	5	5	18	1.2.1 The Construction Manager must ensure that Plant Operators or Drivers abide by speed limits and are extra vigilant when members of the public are walking past the construction zone	60 %	40%	45

		c) Oil or petrol spills	1.2 Oil or petrol spills could result in ground contamination				1	1	1	3	1.2.1 The Construction Manager must ensure that the truck is deemed road worthy, free of oil spills and the recent service and daily inspection records are in place 1.2.2 The Construction Manager must ensure that the requirements of the Environmental Management Plan are adhered to and vehicles are equipped with a spill control kit	80 %	20%	15
		d) Adverse weather conditions	1.2 Poor visibility and or wet roads may result in a motor vehicle accident				4	3	2	9	1.2.1 The Construction Manager must ensure that the requirements of the Driving Policy and Procedure is implemented on site	60 %	40%	22,5
														<b>217,5</b>
<b>2</b>	<b>Site Establishment</b>													
	2.1 Clearing & Grubbing using Earthmoving Machinery	a) Protected vegetation	2.1 Damage to protected vegetation would result in damage to the ecosystem				4	1	1	6	2.1.1 The Construction Manager must ensure that protected vegetation is clearly demarcated 2.1.2The Construction Manager must ensure that the operational Environmental Management Plan is adhered to and when in doubt to contact the appointed Environmental Control Officer	80 %	20%	30

	b) Use of defective plant	2.1 The use of defective plant may result in accidents	<input type="checkbox"/>			4	1	1	6	2.1.1 The Construction Manager must verify that all plant utilized on site have a recent service inspection register in place signed off by the relevant Technical Manager	60 %	40%	15
	c) Insufficient Potable Water	2.1 Insufficient Potable Water could result in a dehydrated workforce	<input type="checkbox"/>			2	5	4	11	2.1.1 The Construction Manager must conduct a site assessment prior to establishment of the site camp and alternative arrangements made where to source a consistent supply of potable water	80 %	20%	55
	d) Inadequate Welfare Facilities	2.1 Inadequate sheltered eating areas may cause workers to eat in hazardous areas resulting in injuries	<input type="checkbox"/>			4	5	5	14	2.1.1 The Construction Manager must ensure clean, maintained, safe and sheltered eating area(s) able to cater for all employees are erected at the site camp or in close proximity to the work force	80 %	20%	70
	e) Inadequate or insufficient Ablution Facilities	2.1 Inadequate or insufficient Ablution Facilities may result in workers using the adjacent bushes to relieve themselves	<input type="checkbox"/>	<input type="checkbox"/>		4	5	5	14	2.1.1 The Construction Manager must provide sufficient (1:30) portable, clean and maintained toilets in close proximity to the workforce	80 %	20%	70





		f) Unsafe positioning of ablutions and sheltered eating areas	2.1 Unsafe positioning of ablutions and sheltered eating areas may result in vehicles veering off the roads and into the facilities resulting in critical injuries	<input type="checkbox"/>			8	2	3	13	2.1.1 The Construction Manager must ensure that a survey is conducted, the risks assessed before the facilities are positioned and the welfare facilities positioned at a strategic safe location	80 %	20%	65
			2.1 Insufficient portable toilets may result workers utilizing open areas resulting in injuries and illness	<input type="checkbox"/>	<input type="checkbox"/>		2	4	3	9	2.1.1 The Construction Manager must provide sufficient (1:30) portable, clean and maintained toilets in close proximity to the workforce 2.1.2The Construction Manager must further ensure that the safe placement of the portable toilet(s)	80 %	20%	45
		g) Noise Pollution	2.1 Excessive continuous noise may result in NIHL	<input type="checkbox"/>	<input type="checkbox"/>		8	5	5	18	2.1.1 The Construction Manager must ensure that all plant from plant hired companies (suppliers) or that of the PC are compliant with the Noise Induced Hearing Loss Regulations GNR.307 of 7 March 2003 and the Client OHS Specification	80 %	20%	90

	2.2 Appointment of Personnel	a) Medical unfitness	2.2 Medically unfit employees could result in medical induced accidents	<input type="checkbox"/>			8	2	3	13	2.2.1 The Construction Manager must ensure that all employees undergo a medical examination by an Occupational Health Practitioner annually and an updated Annexure 3 is on file 2.2.2 The Construction Manager must ensure that exit medical examinations are conducted on all personal	80 %	20 %	65
	2.3 Unsafe Storage Practices	a) Collapse of stored materials	2.3 Collapse of stored materials may result in injury to personnel	<input type="checkbox"/>			4	2	1	7	2.3.1 The Construction Manager must ensure that the yard storage specifications are adhered to and that a competent Stacking and Storage Supervisor is appointed for the duration of the contract	80 %	20 %	35
	2.4 Installation of Temporary Electrical Installations	a) Exposed Electrical Cables/Wires	2.4 Contact with exposed electrical cables may result in electrocution	<input type="checkbox"/>			8	2	1	11	2.4.1 The Construction Manager must ensure that a specialist Construction is appointed and a site specific H&S Plan, risk assessment, lock -out and safe working procedures are developed for implementation	80 %	20 %	55
														<b>595</b>
<b>3</b>	<b>Traffic Accommodation</b>													



3.1 Moving plant onto site	a) Un-roadworthy Plant, Incompetent Operators, Inadequate PPE	3.1 Mobile plant could crash into personnel, other vehicles or any other structure resulting in critical injuries	□			16	5	3	24	<p>3.1.1 The Construction Manager must ensure that a Plant Management Plan is developed and all construction plant and vehicles are clearly visible and operated by competent operators</p> <p>3.1.2 The Construction Manager must ensure that all plant on site is inspected daily by the appointed person and the recordings of such placed on an applicable register</p> <p>3.1.3 The Construction Manager must ensure that an updated service report is available for each plant and issued by a competent mechanic</p>	60 %	40%	60
	b) Oil or petrol spills	3.1 Oil or petrol spills could result in ground contamination	□		1	1	1	3	<p>3.1.1 The Construction Manager must ensure that all trucks are deemed road worthy, free of oil spills and the recent service and daily inspection records are in place</p> <p>3.1.2 Ensure that the requirements of the Environmental Management Plan are adhered to and vehicles are equipped with a spill control kit</p>	80 %	20%	15	

	3.2 Setting up of temporary road works signage	a) Placing of incorrect signage at locations	3.2 Misinformation may cause drivers to become unable to discern what to do resulting in accidents and irate members of the public	<input type="checkbox"/>			16	5	4	25	3.2.1 The Construction Manager must ensure that a suitable site specific Traffic Management Plan is developed and implemented and a competent Traffic Safety Officer is appointed for the duration of the Construction 3.2.2 All temporary road traffic signage must comply with the SARTSM	60 %	40%	62,5
		b) Handling of and placement of signage without wearing the correct PPE	3.2 Handling of signage without gloves, reflective vests and safety boots may result in injuries	<input type="checkbox"/>			2	5	2	9	3.2.1 The Construction Manager must ensure that a task specific risk assessment for PPE control is implemented	40 %	60%	15
	3.3 Public Vehicular and pedestrian traffic travelling on the P309 during construction works	a) Workers injured by passing traffic	3.3 Collision of public vehicles and workers	<input type="checkbox"/>			16	5	4	25	3.3.1 The Construction Manager must ensure that a competent Traffic Safety Officer is appointed and a site-specific Traffic Management Plan developed for implementation	60 %	40%	62,5
	3.4 Implementing a dropped lane construction zone operating under a Stop & Go traffic control	a) Inefficient two way communication	3.4 Inefficient communication between the Stop & Go Operators may result in accidents	<input type="checkbox"/>			8	5	4	17	3.4.1 The Construction Manager must ensure that the Traffic Control Flagmen have effective reliable means of communication	60 %	40%	42,5

		b) Limited or no advanced warning area	3.4 Limited or no advanced warning area may result in accidents	<input type="checkbox"/>			8	4	4	16	3.4.1 The Traffic Safety Officer must ensure that temporary road works signage is laid out as per the SARTSM and approved Traffic Management Plan	60 %	40%	40,0
	3.5 Livestock entering working zones or on the road reserve	a) Livestock colliding with passing vehicles	3.5 Livestock colliding with passing vehicles may result in critical injuries	<input type="checkbox"/>			8	2	3	13	3.5.1 The Traffic Safety Officer must ensure that their Traffic Management Plan and Risk Assessment provides specific measures to control or remove livestock from the road reserve and or construction zone	60 %	40%	32,5
														<b>330</b>
<b>4</b>	<b>Bulk Earthworks</b>													
	4.1 Transporting material from quarry, fill and cut fill to spoil	a) Defective Tipper Trucks, Excavators, Graders, Front End Loaders	4.1 The use of a defective Plant may result in accidents	<input type="checkbox"/>			4	1	1	6	4.1.1 The Construction Manager must verify that all Plant utilized on site has a recent service inspection register in place and signed off by the relevant Technical Manager 4.1.2 The Construction Manager must ensure that the Plant have all been assessed for noise by an AIA and that the readings displayed on the vehicles	60 %	40%	15

	b) The use of Incompetent Operators	4.2 The use of an incompetent operator may result in accidents	<input type="checkbox"/>			8	3	1	12	4.2.1 The Construction Manager must verify that the Operators are deemed competent to operate the Tippers and are medical fit	60 %	40%	30
	c) Reversing into an open Excavation	4.3 Reversing into an open excavation may resulting in injury	<input type="checkbox"/>			4	1	1	6	4.3.1 The Construction Manager must ensure that each driver is accompanied by a competent Banksman and designated safe areas for off-loading demarcated	80 %	20%	30
	d) Uneven ground, soft soil, embankments prone to landslides	4.4 Damage to plant and equipment as well as crushing injuries or fatalities	<input type="checkbox"/>			4	1	1	6	4.4.1 The Construction Manager must ensure that each driver is accompanied by a competent Banksman when working in high risk areas	80 %	20%	30
	e) Steep Gradients	4.5 Damage to plant and equipment as well as crushing injuries or fatalities	<input type="checkbox"/>			16	5	3	24	4.5.1 The Construction Manager must ensure that each driver is accompanied by a competent Banksman when working in high risk areas 4.5.2 The Construction Manager must assess steep gradients on foot before plant is moved onto site to determine if area is safe before works commence	60 %	40%	60
	f) Inhalation of Dust	4.6 Excessive dust may cause respiratory illness	<input type="checkbox"/>			3	5	4	12	4.6.1 The Construction Manager must ensure that topsoil stored in stockpiles with mounds does not exceeding 2m to prevent wind-blown dust	80 %	20%	60



		g) Exposure to extreme heat	4.7 Exposure to extreme heat may result in heat strokes	<input type="checkbox"/>			4	2	2	8	4.7.1 The Construction Manager must ensure that the requirements of the ERW 2 is complied and an on-site thermometer is installed	80 %	20%	40
			4.8 The presence of venomous animal may result in attacks and severe injuries	<input type="checkbox"/>			8	3	4	15	4.8.1 The Construction Manager must ensure that a snake standard or procedure is developed and implemented on site 4.8.2 The Construction Manager must embark on a snake/ (venomous animals) awareness training programme	60 %	40%	37,5
		h) No valid Quarry permit	4.9 No valid Quarry permit in place may result in activities being halted	<input type="checkbox"/>			8	4	3	15	4.9.1 The Construction Manager must ensure that a valid permit is received from the respective Quarry	60 %	40%	37,5
														<b>340</b>
<b>5</b>	<b>Road Construction</b>													
	5.1 Survey of the work area	a) Workers injured by passing traffic	5.1 Collision of public vehicles and workers	<input type="checkbox"/>			16	5	4	25	5.1.1 The Construction Manager must ensure that a competent Traffic Safety Officer is appointed and a site-specific Traffic Management Plan implemented 5.1.2The Traffic Safety Officer must ensure that all workers are inducted before a survey of the site is done and suitable PPE worn. i.e. reflective vests	60 %	40%	62,5

5.2 Cutting to fill	a) Contact with Underground/Overhead services	5.2 Employees could be fatally injured and plant damaged if these are not located in layout drawings	<input type="checkbox"/>			8	5	3	16	5.2.1 The Construction Manager must ensure that restriction are put in place where underground utilities are suspected and not on services drawing	60 %	20%	80
	b) High cut faces using an Excavator	5.2 High cut faces using an Excavator could result in plant - tip over	<input type="checkbox"/>			4	3	2	9	5.2.1 The Construction Manager must ensure that a task specific risk assessment is undertaken, and the Operator adequately instructed in the risks of over extension and the controls measures to be implemented	60 %	20%	45
	c) The use of Incompetent Operators	5.2 The use of an incompetent operators may result in accidents	<input type="checkbox"/>			8	3	1	12	5.2.1 The Construction Manager must verify that the Operators are deemed competent to operate the Tipper truck and are medically fit	60 %	40%	30
	d) Inhalation of Dust	5.2 Excessive dust may cause respiratory illness	<input type="checkbox"/>			3	5	4	12	5.2.1 The Construction Manager must ensure that topsoil stored in stockpiles with mounds does not exceeding 2m to prevent wind-blown dust	80 %	20%	60
	e) Inadequate Supervision	5.2 Inadequate Supervision may result in Operator unsafe behaviour	<input type="checkbox"/>			8	1	2	11	5.2.1 The Construction Manager must ensure that adequate Supervision is on site	80 %	20%	55



		f) Isolated rock falls	5.2 Isolated rock falls may result in injuries	<input type="checkbox"/>			8	2	2	12	5.2.1 The Construction Manager must ensure that a cut faces are inspected regularly and all loose rocks are safely dislodged	80 %	20%	60
	5.3 Placing of layerworks	a) Defective Tipper Trucks, Excavators, Front End Loaders	5.3 The use of a defective Plant may result in accidents	<input type="checkbox"/>			4	1	1	6	5.3.1 The Construction Manager must verify that all Plant utilized on site has a recent service inspection register in place and signed off by the relevant Technical Manager 5.3.2 The Construction Manager must ensure that all Plant have all been assessed for noise by an AIA and that the readings displayed on the vehicles	60 %	40%	15
		b) The use of Incompetent Operators	5.3 The use of an incompetent operators may result in accidents	<input type="checkbox"/>			8	3	1	12	5.3.1 The Construction Manager must verify that the Operators are deemed competent to operate the Tipper truck and are medically fit	60 %	40%	30
		c) Inhalation of Dust	5.3 Excessive dust may cause respiratory illness	<input type="checkbox"/>			3	5	4	12	5.3.1 The Construction Manager must ensure that topsoil stored in stockpiles with mounds does not exceeding 2m to prevent wind-blown dust	80 %	20%	60

5.4 Compaction	a) Defective Compaction Plant	5.4 The use of a defective Compaction Plant may result in accidents	<input type="checkbox"/>			4	1	1	6	5.4.1 The Construction Manager must verify that all Compaction Plant utilized on site has a recent service inspection register in place and signed off by the relevant Technical Manager 5.4.2 The Construction Manager must ensure that all Compaction Plant have all been assessed for noise by an AIA and that the readings displayed on the vehicles	60 %	40%	15
	b) The use of Incompetent Operators	5.4 The use of an incompetent operator may result in accidents	<input type="checkbox"/>			8	3	1	12	5.4.1 The Construction Manager must verify that the Operators are deemed competent to operate the Tippers and are medical fit	60 %	40%	30
	c) Workers continuously exposed to vibratory equipment	5.4 Continuous exposure to vibration may result in white fingers or other associated disabling injuries	<input type="checkbox"/>			8	1	4	13	5.4.1 The Construction Manager must ensure that a rotation scheduled is developed and implemented for the use of compaction machinery 5.4.2 The Construction Manager must ensure that all Operators of compactors have valid medical fitness certificate available	60 %	40%	32,5

		d) Noise Pollution	5.4 Excessive continuous noise may result in NIHL	<input type="checkbox"/>	<input type="checkbox"/>	8	5	5	18	5.4.1 The Construction Manager must ensure that all plant from plant hired companies (suppliers) or that of the PC are compliant with the Noise Induced Hearing Loss Regulations GNR.307 of 7 March 2003 and the Client OHS Specification	80 %	20%	90
		e) Workers and Compactors interface	5.4 Workers and Compactors interfacing will result in serious injuries	<input type="checkbox"/>		8	5	3	16	5.4.1 The Construction Manager must ensure that the Compaction Equipment conforms to the requirements for mobile equipment and that the management of plant during the course of compaction is included in the H&S Plan. These may include the use of high-visibility vest, mobile plant rotation lighting, audible reverse sirens etc.	60 %	40%	40
		f) Oil or petrol spills	5.4 Oil or petrol spills could result in ground contamination	<input type="checkbox"/>		1	1	1	3	5.4.1 The Construction Manager must ensure that the truck is deemed road worthy, free of oil spills and the recent service and daily inspection records are in place. 5.4.2 The Construction Manager must ensure that the requirements of the Environmental Management Plan are adhered to and vehicles are equipped with a spill control kit	80 %	20%	15

5.5 Manually handling of Cement	a) Inhalation of Cement	5.5 Employees continuous inhalation of cement may result in respiratory illnesses	<input type="checkbox"/>	4	5	4	13	5.5.1 The Construction Manager must ensure that all employees are instructed of the risk of inhaling cement 5.5.2 All employees handling cement must be provided with an appropriate level dust mask - FFP 2	60 %	40%	32,5
	b) Cement packaging	5.5 Cement packages could enter the water course or cause ground pollution	<input type="checkbox"/>	2	5	3	10	5.5.1 The Construction Manager must ensure that a site specific Waste Management Plan is developed and implemented	60 %	40%	25
	c) Workers individually lifting 50kg bags	5.5 Poor ergonomics may result in muscular skeletal injuries	<input type="checkbox"/>	2	5	4	11	5.5.1 The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content of this SWP	60 %	40%	27,5
5.6 The surfacing of road	a) Contact with hot asphalt	5.6 Contact with hot asphalt will result in severe burns	<input type="checkbox"/>	2	4	4	10	5.6.1 The Construction Manager must ensure that a suitable method statement, safe working procedure is developed for implementation which should include the selection of suitable and effective PPE	60 %	40%	25
	b) Inhalation of HCS fumes or vapours	5.6 Employees inhaling HCS fumes or vapours could result in respiratory illness	<input type="checkbox"/>	4	2	3	9	5.6.2 The Construction Manager must ensure that suitable method statement, safe working procedure is developed for implementation which should include the selection of suitable and effective PPE i.e. Dust Mask FFP 2 or respirators	60 %	40%	22,5

	5.7 Cleaning, Marking of road and erection of guardrails and installation of road signage	a) Manual sweeping or marking road	5.7 Employees sweeping or marking of the road could be struck by passing vehicles	<input type="checkbox"/>			16	1	2	19	5.7.1 The Construction Manager must ensure strict compliance to the approved Traffic Management Plan and workers provided with the appropriate PPE as determined by the approved task based risk assessment	60 %	40%	47,5
		b) Inhalation of Road Marking Paint	5.7 Employees inhaling road marking paint could result in respiratory illness	<input type="checkbox"/>			4	1	2	7	5.7.2 The Construction Manager must ensure that workers are provided with suitable PPE i.e. Dust Mask FFP 2 or respirators	60 %	40%	17,5
		c) Use of defective lifting equipment to lift structural steel framework, signage and lighting	5.7 The use of defective lifting equipment could result in the load being dropped and lifting equipment damaged causing possible injury to personnel	<input type="checkbox"/>			4	2	1	7	5.7.1 The Construction Manager must ensure that all lifting equipment conforms to the Driven Machinery Regulations 2015	80 %	20%	35

		d) Use of defective lifting equipment	5.7 The use of defective lifting equipment could result in the load being dropped and lifting equipment damaged causing possible injury to personnel	<input type="checkbox"/>			4	2	1	7	5.7.1 The Construction Manager must ensure that all lifting equipment conforms to the Driven Machinery Regulations 2015	80 %	20%	35
<b>987,5</b>														
<b>6</b>	<b>Drainage &amp; Structures</b>													
	6.1 Placing concrete stones, bidum, subsoil pipes and concrete pipes	a) Operating of TLB or Excavator in close proximity to workers	6.1 Critical Injuries caused by TLB/Excavator striking workers or TLB rolling over	<input type="checkbox"/>			8	2	2	12	6.1.1 The Contract Manager must ensure that the TLB/Excavator Operators utilize banksmen's	80 %	40%	30
		b) Using TLB or Excavator for lifting pipes or other material	6.1 Critical Injuries caused by TLB or Excavator striking workers or rolling over	<input type="checkbox"/>			8	2	2	12	6.1.1 The Contract Manager must ensure that the TLB/Excavator has been modified or designed to be used as lifting equipment and the load test certificates provided	80 %	20%	60

		c) Incorrect use of or defective hand tools	6.1 The incorrect usage and or defective handtools could result in non-disabling/first aid case. ie. of the hands or eyes	<input type="checkbox"/>			2	5	2	9	6.1.1 The Contract Manager must ensure that all handtools are inspected monthly and recorded in an applicable register with all defective handtools removed from site	60 %	40%	22,5
6.2 Construction of Headwalls, Drains, Gabions, Kerbs & Channelling		a) Poor Ergonomics	6.2 Poor ergonomics may result in muscular skeletal injuries	<input type="checkbox"/>			4	3	3	10	6.2 The Contract Manager must ensure that workers are trained in the risk of Ergonomical injuries and methods to mitigate the risks	60 %	40%	25
		b) Handling of Profiles, wires, stones, bricks, kerbs & channelling	6.2 The handling of profiles, wires, stones, bricks, kerbs and channelling may result in minor cuts or abrasions	<input type="checkbox"/>			1	3	3	7	6.2 The Contract Manager must ensure that workers are trained in the safe handling of material and equipment	60 %	40%	17,5
		c) Unsafe Scaffolding	6.2 Unsafe scaffolding could result in collapse and critical injuries	<input type="checkbox"/>			16	5	3	24	6.2.1 The appointed competent Scaffolding supervisor must ensure that all erectors are deemed competent and the scaffolding conforms to SANS 10085	80 %		

		d) Working from Height	6.2 Working from height may result in falls and critical injuries	<input type="checkbox"/>		16	5	3	24	6.2.1 The Contract Manager must ensure that all personnel working from height are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented	60 %		
6.3 Handling of Cement	a) Cement	6.3 Employees continuous inhalation of cement may result in respiratory illnesses	<input type="checkbox"/>		4	4	3	11	6.3.1 The Construction Manager must ensure that all employees are instructed of the risk of inhaling cement 6.3.2 All employees handling cement must be provided with an appropriate level dust mask	60 %	40%	27,5	
	b) Discarded cement packaging	6.3 Cement packaging could enter the water course or cause ground pollution	<input type="checkbox"/>		2	5	3	10	6.3.1 The Construction Manager must ensure that a site specific Waste Management Plan is developed and implemented	60 %	40%	25	
	c) Poor Ergonomics	6.3 Poor ergonomics may result in muscular skeletal injuries	<input type="checkbox"/>		4	5	4	13	6.3.1 The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content of this SWP	60 %	40%	32,5	
6.4 Pouring Ready Mix Concrete	a) Concrete Truck tipping over	6.4 The Concrete Truck tipping over could result in serious injury to the operator and employees close by	<input type="checkbox"/>		8	2	1	11	6.4.1 The Construction Manager must ensure that safe access to pouring platform is created before the truck arrives on site	80 %	20%	55	



													295
7	Excavation Works												
7.1 Excavating	a) Open Excavations	7.1 Open excavations could result in employees, animals or members of the public falling into it	<input type="checkbox"/>			8	5	4	17	7.1.1 The Construction Manager must ensure that only excavations necessary for pipe laying for the day is dug and backfilled by end of day 7.1.2 The Construction Manager must ensure that open excavations ( <i>if necessary</i> ) are barricaded with a barrier or fence-like structure or at least 1m. ( <i>Requirements of CR 13 must be met</i> )	80 %	20%	85
	b) Unauthorised entry	7.1 Unauthorised access to site may result in critical injury to people and or livestock	<input type="checkbox"/>			8	3	3	14	7.1.1 The Construction Manager must ensure that excavations should preferably not be open beyond what can be closed daily 7.1.2 The Construction Manager must take cognisance of the Clients OHS Specification	80 %	20%	70
	c) Open Excavation >1.5m	7.1 Excavations > 1.5M caving in may result in multiple fatalities	<input type="checkbox"/>			16	5	4	25	7.1.1 The Construction Manager must ensure that excavations are shored/braced or vertical walls sloped to 45 degrees and the excavation declared safe for use by the competent appointed Excavation Supervisor before employees are allowed access 7.1.2 The H&S Officer must ensure that a permit system is adopted for the duration of the Contract	80 %	20%	125

7.2 Manual Excavation	a) The use of Hand tools (Picks, spades etc)	7.2 An employee using a pick could strike the employee in front/rear resulting in injury	<input type="checkbox"/>			4	5	3	12	7.2.1 The Construction Manager must ensure that employees are instructed in the contents of the site specific risk assessment	60 %	40%	30
	b) Working in natural elements, sun, rain, glare & wind	7.2 Extreme heat may result in heat strokes	<input type="checkbox"/>			8	2	3	13	7.2.1 The Construction Manager must ensure that all employees have undergone medical examinations by an Occupational Health Practitioner and the requirements of the Environmental Regulations for Workplaces 2 are adhered to	60 %	40%	32,5
	c) Fast moving vehicles	7.2 Passing traffic could crash into employees working in the excavation or exiting	<input type="checkbox"/>			16	2	2	20	7.2.1 The Construction Manager must ensure that a site specific Traffic Accommodation Plan is developed and implemented on site which may include installing solid barriers	80 %	20%	100
	d) Inhalation of Dust	7.2 Excessive dust may cause respiratory illness	<input type="checkbox"/>			3	5	4	12	7.2.1 The Construction Manager must ensure that topsoil stored in stockpiles with mounds does not exceeding 2m to prevent wind-blown dust	80 %	20%	60
	e) Poor Ergonomics	7.2 Poor ergonomics may result in muscular skeletal injuries	<input type="checkbox"/>			4	5	4	13	7.2.1 The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content of the site specific risk assessment	60 %	40%	32,5

		f) Snakes bites	7.2 The presence of snakes may result in snake bites causing fatalities	<input type="checkbox"/>			8	3	4	15	7.2.1 The Construction Manager must ensure that a snake standard or procedure is developed and implemented on site 7.2.2 The Site Agent must embark on a snake/ ( <i>venomous animals</i> ) awareness training programme	60 %	40%	37,5
7.3 Mechanical Excavation		a) The use of Defective Plant	7.3 The use of a defective plant may result in accidents	<input type="checkbox"/>			4	1	1	6	7.3.1 The Construction Manager must verify that all plant utilized on site has a recent service inspection register in place and signed off by the relevant Technical Manager	60 %	40%	15
		b) The use of an Incompetent Operator	7.3 The use of an incompetent operator may result in accidents	<input type="checkbox"/>			8	3	1	12	7.3.1 The Construction Manager must verify that the Operator is deemed competent to operate that specific plant and is medically fit 7.3.2 The H&S Officer must take cognisance of the requirements of Driven Machinery Regulations 2015	60 %	40%	30
		c) Excavating across roads	7.3 Excavating across roads may result in accidents	<input type="checkbox"/>			4	1	1	6	7.3.1 The Construction Manager must ensure that a site specific Traffic Accommodation Plan is developed and implemented	80 %	20%	30

		d) Accessing Excavations >1.5M	7.3 Assessing Excavations > 1.5M may result in multiple fatalities due to cave-ins	<input type="checkbox"/>		16	5	4	25	7.3.1 The Contract Manager must ensure that excavations are shored/braced or vertical walls sloped to 45 degrees and the excavation declared safe for use by the competent appointed Excavation Supervisor before employees are allowed access	80 %	20%	125
		e) Stagnant Water	7.3 Stagnant water could result in water contamination and health risk to employees	<input type="checkbox"/>		4	3	4	11	7.3.1 The Contract Manager must ensure that temporary drainage is established	80 %	20%	55
		f) Defective dewatering machinery	7.3 Defective dewatering machinery may result in ground contamination	<input type="checkbox"/>		1	4	2	7	7.3.1 The Contract Manager must ensure that all dewatering machinery is inspected before use and the recent maintenance history on file	80 %	20%	35
													<b>862,5</b>
<b>8</b>	<b>Emergency Management</b>												
	8.1 Development and Implementation of an Emergency Management Plan	a) Failure to have a basic, site specific emergency management plan	8.1 Failure to have a basic, site specific emergency management plan may result in injury or damage to property	<input type="checkbox"/>		16	5	5	26	8.1.1 The Construction Manager must ensure that a site specific emergency management plan is developed for implementation	60 %	40%	65

		b) Workers not trained in the Emergency Plan	8.2 Workers not trained in the Emergency Plan may result in their inability to respond to emergencies	<input type="checkbox"/>			8	2	5	15	8.2.1 The Construction Manager must ensure that workers are adequately and regularly trained to respond to emergencies	60 %	40%	37,5
		c) Insufficient or no emergency equipment or personnel	8.3 Insufficient or no emergency equipment or personnel on site may result in emergencies being critical	<input type="checkbox"/>			16	2	3	21	8.3 The Construction Manager must ensure that a suitable number of employees are appointed to the Emergency Team and that First Aid boxes, First Aiders, Fire team members and any other equipment as identified during a risk assessment process is on site	60 %	40%	52,5
														<b>155</b>
<b>9</b>	<b>Sub-Contractor Management</b>													
		a) Failure to adequately assess Subcontractors S.H.E Management System before work commences and at regular intervals	9.1 Failure to manage Subcontractors may result in injury and non-compliance to legislation	<input type="checkbox"/>			8	5	3	16	9.1.1 The H&S Officer must ensure that the appointed Subcontractors S.H.E system is audit monthly and on site activities supervised or monitored	60 %	40%	40

		b) Inadequate Supervision	9.2 Inadequate Supervision may result in a high level of employee unsafe behaviour	<input type="checkbox"/>		8	1	2	11	9.2.1 The Construction Manager must ensure that Subcontractors have adequate competent supervision on site at all times	80 %	20%	55
		c) Utilizing incompetent Subcontractors	9.3 Utilizing incompetent Subcontractors may result in accidents	<input type="checkbox"/>		8	1	2	11	9.3.1 The Construction Manager must be reasonably satisfied that the Subcontractors intended to be appointed have the necessary competencies and resources to carry out the work safely	60 %	20%	55
			9.3 Utilizing incompetent Subcontractors may result in damage to the environment	<input type="checkbox"/>		2	2	2	6	9.3.2The Construction Manager must be reasonably satisfied that the Subcontractors intended to be appointed have the necessary competencies and resources to carry out the work safely	60 %	20%	30
		d) No valid Letter of Good Standing for local Subcontractors	9.4 No valid Letters of Good Standing for local Subcontractors may result in injured employees not being treated at the nearest Hospital	<input type="checkbox"/>		4	5	3	12	9.4.1 The Construction Manager must be ensure that local Subcontractors have a valid Letter of Good Standing in place or have made and application to the Workmen's Compensation Commissioner	60 %	20%	60
													<b>240</b>
<b>10</b>	<b>Community Risk Management</b>												

		a) Failure to adequately monitor and manage the multi- faced social issues	10.1 Failure to manage social issues could result in violence protest and injury to employees	<input type="checkbox"/>			16	3	5	24	10.1.1 The Construction Manager must ensure that a Community Liaison Officer (CLO) and Project Steering Committee is appointed to manage social issues	60 %	40%	60
			10.1 Failure to manage social issues could result in violence protest and damage to property and environment	<input type="checkbox"/>			16	1	3	20	10.1.1 The Construction Manager must ensure that a Community Liaison Officer (CLO) and Project Steering Committee is appointed to manage social issues	60 %	40%	50
		b) No regular Project Steering Committee held	10.2 No regular monthly Project Steering Committee meetings held may cause H&S/Social issues to be overlooked resulting in violent protest and injuries	<input type="checkbox"/>			16	3	5	24	10.2.1 The Construction Manager must ensure that monthly Project Steering Committee are held with all the relevant role-players present	60 %	40%	60
		c) Project Steering Committee not regularly briefed on Health and Safety	10.3 Project Steering Committee not briefed on Health and Safety may result in work stoppages and an aggrieved workforce	<input type="checkbox"/>			8	3	5	16	10.3.1 The Construction Manager must ensure that Project Steering Committee are regularly briefed on project Health and Safety risks	60 %	40%	40







**6. Project Risk Profile – D1126**

