



ETHEKWINI MUNICIPALITY
Occupational Health & Safety Unit



SITE BASELINE RISK ASSESSMENT

Construction Regulations 5.1.(a)

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| Document Title | Baseline S.H.E. Risk Assessment |
| Client | EThekweni Municipality- COASTAL STORMWATER & CATCHMENT MANAGEMENT |
| Project Name | Construction of Culvert, Road and Gabion Protection Works along 108736 Street in Inanda: Ward 55 |
| Contract Number | 1D-35028 |
| Date | 13.03.2026 |
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| Revision Number | BRA:496/03/26 |

BASELINE RISK ASSESSMENT

1.INTRODUCTION: In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

2.PURPOSE: This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

3.SCOPE: This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

4.REVIEW AND MONITORING PLAN

The risk assessment form part of the health and safety plan to be applied on the site and must include the following:

- (a) The identification of the risk and hazards to which to which persons may be exposed.
- (b) An analysis

5. REFERENCES

- (a) Tender document number 1D-35028
- (b) Occupational Health & Safety Act and its Regulation

Construction of Culvert, Road and Gabion Protection Works along 108736 Street in Inanda: Ward 55



SCOPE OF WORK

1 Description of Works

Construction of Culvert, Road and Gabion Protection Works along 108736 Street in Inanda: Ward 55

Scope of works:

- Traffic control and diversion
- Stream diversion
- Construction of a site access
- Removal of reinforced and unreinforced concrete
- Removal of disused pipes
- Excavation for channel foundation
- Trimming of embankments and provision for lateral support system
- Construction of artificial foundation base of dump rock and 75 mm blinding layer
- Erect formwork for cast-insitu channel
- Provision of reinforcement for channel
- Pouring of concrete to form equal panels for the channel
- Allow for concrete curing and strip formwork after curing
- Provision and placement of 1500mm x 1500mm precast concrete culvert and secure to the base slab.
- Provision of erosion protection works and gabion protection works
- Backfilling and compacting channel trench with suitable material
- Construction of reinforced concrete slab
- Reinstatement of roadworks
- Redirect stream to original stream channel
- Redirect traffic to normal route
- Backfilling with suitable material from an offsite source.
- Reinststate ground surface onsite.

1. RISK ESTIMATION AND EVALUATION

RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

| | | |
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| Exposure (E) How frequently does the hazardous event occur | | Risk level |
| Continuously | | 10 |
| Frequently (daily) | | 6 |
| Occasionally (weekly) | | 3 |
| Unusually (monthly) | | 2 |
| Rarely (few a year) | | 1 |

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| Probability (P) The probability of a loss when the hazardous event does occur | | Risk level |
| Frequent (happens often) | | 10 |
| Probable (quite possible) | | 6 |
| Occasional (unusual, but possible) | | 3 |
| Remotely possible (has happened somewhere) | | 1 |
| Improbable (practically impossible) | | 0.5 |

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| Severity (S) Consequences of the hazardous event | | Risk level |
| Catastrophic many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m | | 100 |
| Disaster (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m) | | 40 |
| Very serious (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000 | | 7 |
| Important (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000 | | 3 |
| Noticeable (first aid needed; or interruption of less than 6 hours; damage exceeding R1000) | | 1 |

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| Risk classification (Risk score = E x P x S) | |
| Risk score | Risk level |
| Over 400-----5 | Very high risk – discontinue operation or activity |
| 200 to 400 -----4 | High risk – immediate correction needed |
| 70 to 200-----3 | Substantial risk – correction needed |
| 20 to 70-----2 | Possible risk – attention needed |
| Under 20 -----1 | Risk accepted |

BASELINE RISK ASSESSMENT WORKSHEET

| | Activity | Hazard | Risk | Risk Evaluation | | | Risk Score | Risk level |
|---|--|---|--|-----------------|---|---|------------|------------|
| | | | | E | P | S | | |
| 1 | Access to the site | | | | | | | |
| | <ul style="list-style-type: none">Traveling to and from site in a vehicle. | <ul style="list-style-type: none">Safety belts not worn when traveling in, or operating a vehicle.Vehicle not equipped with safety belts for all passengers.Over speeding of vehicles.Driving on public roads. | <ul style="list-style-type: none">Injuries caused when in vehicle accident.Fatalities when in vehicle accidentRisk of personnel being injured by over speeding vehicles.Involved in accident. | 6 | 6 | 7 | 252 | 4 |
| 2 | Material delivery to the site | | | | | | | |
| | <ul style="list-style-type: none">Loading and offloading of equipment manually.Mechanical handling. | Employee being struck by the load. | <ul style="list-style-type: none">Back strainSkeletal damageHead, hand, and foot injuries.Serious injuryFatality | 3 | 6 | 7 | 126 | 3 |
| 3 | Site establishment | | | | | | | |
| | <ul style="list-style-type: none">Manual and | <ul style="list-style-type: none">Incompetent | <ul style="list-style-type: none">Injuries, | 6 | 6 | 7 | 252 | 4 |

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| | mechanical clearing of the land <ul style="list-style-type: none"> • Off-loading and positioning of containers by mobile crane • Fencing off the site • Installation of temporary water supply, electricity, ablution facilities, | construction mobile plant operator <ul style="list-style-type: none"> • Manual Handling of equipment and materials. • Uneven surfaces • Driving on dangerous and undulating terrain. • Reckless driving. • Electrocution • Incorrect/ poor connection of temporary services | Accidents <ul style="list-style-type: none"> • Skeletal injuries • Destruction of services • Death, burns | | | | | |
| 4 | Site clearing | | | | | | | |
| | <ul style="list-style-type: none"> • Clearing of the site using construction mobile plant | <ul style="list-style-type: none"> • Overgrown vegetation • Rubble existing on site • Snakes • Bees • Incompetent driver/ operator | <ul style="list-style-type: none"> • Nuisance, poisonous • Environmental contamination • Death, poison • Accident/ property damage. Collision with | 6 | 6 | 7 | 252 | 4 |

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|----------|--|---|---|---|---|---|-----|---|
| | | <ul style="list-style-type: none"> • Unsafe construction mobile plant • Petrol and oil spillages | <ul style="list-style-type: none"> • other vehicles • Noise | | | | | |
| 5 | Protection of existing services | | | | | | | |
| | <ul style="list-style-type: none"> • Relocation and maintenance of watermain, sewer, stormwater, electrical cables, telkom/ neotel cables. | <ul style="list-style-type: none"> • Disturbance of the services, • Improper connection, • Sewer spillage, • Blockage of sewer and stormwater lines • Exposure to biological agents • Electrocution • Damage to Telkom/ neotel cables, stormwater, sewer | <ul style="list-style-type: none"> • No water and electricity, community strikes, • Health hazards • Environmental hazards • Burns, death • Financial costs for replacing damaged cables | 6 | 6 | 7 | 252 | 4 |
| 6 | Removal of rubble and large trees | | | | | | | |
| | <ul style="list-style-type: none"> • Mechanical and manual • loading of rubble • Mechanical removal of trees • Removal of rubble | <ul style="list-style-type: none"> • Dust, • Mobile plant came into contact with trucks. • Incompetent | <ul style="list-style-type: none"> • Respiratory problem. • Damage to equipment. • Damage to property. | 3 | 6 | 7 | 126 | 3 |

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| | and trees to damp site | operator and lack of planning. • Reckless driving. | • Motor Vehicle Accident | | | | | |
| 7. Construction Activities of Gabions | | | | | | | | |
| | • Construction of Gabion | • Cutting of the mesh fabric • Handling wire • Poor ergonomics may result in muscular skeletal injuries | • Hands Injuries • Skeletal injuries • Back strain • Skeletal damage | 6 | 3 | 7 | 126 | 3 |
| 9 | Traffic management | | | | | | | |
| | • The use of construction vehicle and mobile plant in the public and next to private roads/ streets | • Poor/ no traffic management plan in place • Lack of traffic management training • Unroadworthy plant and vehicle • Collision with other vehicles | • Accidents, death, broken bones, damage to property • Noncompliance with the National Road Traffic Act, Council Road Traffic bi-laws and other applicable Regulations • Blockage/ inconvenient access to industrial/ commercial | 6 | 6 | 7 | 252 | 4 |

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| | | | areas | | | | | |
| 10 | Busy residential areas | | | | | | | |
| | <ul style="list-style-type: none"> Working next to residential, commercial, industrial areas | <ul style="list-style-type: none"> Public exposure to construction activities. Destruction of businesses and services in the area. Other activities in the areas Strikes in the area | <ul style="list-style-type: none"> Injuries public and employees, broken bones, damage to property, death, Production loss, disturbance of personnel activities Fights, lawsuits, disagreement Damage to property, injuries to employees | 6 | 3 | 7 | 126 | 3 |
| 11 | Construction mobile plant and machinery | | | | | | | |
| | <ul style="list-style-type: none"> Use of construction vehicles and mobile plants and equipment | <ul style="list-style-type: none"> Unsafe construction plants and equipment Incompetent drivers/operators Uneven surface Equipment/machinery failure Running out of control | <ul style="list-style-type: none"> Accidents. Property damage. Noncompliance with DMR. Noncompliance with stipulated safe working load. Capsizing of mobile construction plants. Jammed construction | 6 | 6 | 7 | 252 | 4 |

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| | | <ul style="list-style-type: none"> Noise Vibration Oil Spillage Dust | mobile plants, death <ul style="list-style-type: none"> Injury to employees and community, death, loss of limb/ disablement Damage to property Noise induced hearing loss Muscular pains, kidney damage, Environmental contamination Lung disease | | | | | |
| 12 | Breaking and removal of existing paving. | | | | | | | |
| | <ul style="list-style-type: none"> Use of a breaker and a saw cutting machine. | <ul style="list-style-type: none"> Defective machine. Incorrect operating methodology/ breaker operated by an incompetent person. Pointed objects e.g. wires, nails, | <ul style="list-style-type: none"> Injury to employees. Muscular pains, kidney damage, Noise induced hearing loss. | 3 | 6 | 7 | 126 | 3 |

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| | | crusher and glasses. • Vibration. • Noise. | | | | | | |
| 13 | Construction of concrete Pipes | | | | | | | |
| | • Steel fixing • Pouring of ready-mix concrete • Floating of the slab | • Manual handling of steel/ sharp points • Cement contact with body • Over bending | • Hand injuries, • Environmental contamination • Lung disease, eye irritation • Injury to hands • Backache | 6 | 6 | 3 | 108 | 3 |
| 14 | Construction/upgrading of stormwater drainage system | | | | | | | |
| | • Excavation above 1m deep using and excavator and TLB • Preparation and laying of concrete pipes using a lifting equipment • Construction of above 1m deep manhole using cement, blocks, handtools and concrete manhole rings/ cover • Connection of the | • Excavating in an in fill and dumped material • Collapsing of trenches. • Unsafe access to trench • Unprotected trenches • People exposure to excavations • Unsafe lifting devices • Incompetent | • Collapsing of trench walls • Death, dislocation, trauma/ panic attack • Broken bone, dislocation, • Falling into excavation. • Injury to body. Accidents. • Property Damage. • Noncompliance with DMR. | 6 | 6 | 7 | 252 | 4 |

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| | stormwater pipes into the existing stormwater drainage system | lifting machinery operator <ul style="list-style-type: none"> • Equipment failure • Overloading of equipment/ machinery • Working/ operating equipment too close to the excavation • Contact with and inhalation of cement dust • Manual handling of heavy manhole rings and covers • Incorrect connection of stormwater pipes | <ul style="list-style-type: none"> • Noncompliance with stipulated safe working load. • Falling into excavation. Property damage. • Respiratory diseases. Skin disease/ irritation • Back/ spine problems. Possible of pinch. Skeletal injuries. Injury to hands and toes. • Destruction/ blockage of stormwater drainage system | | | | | |
| 15 | Manual moving of precast product | | | | | | | |
| | <ul style="list-style-type: none"> • Manual handling and moving of precast product using | <ul style="list-style-type: none"> • Unsafe wheelbarrows, • Manual handling of | <ul style="list-style-type: none"> • Injury to hands/ toes • Skeletal injuries • Slippery surface | 3 | 3 | 3 | 27 | 2 |

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| | wheelbarrows, | precast product <ul style="list-style-type: none"> Lifting of excess/ heavy load Ergonomics hazards | <ul style="list-style-type: none"> Tripping hazards Ergonomic risks | | | | | |
| 16 | Earthworks | | | | | | | |
| | <ul style="list-style-type: none"> Layer works Compaction | <ul style="list-style-type: none"> Traffic accidents on site when transporting materials. Reversing of trucks and mobile plant. Dust inhalation. Incompetent driver/ operator Dust Vibration Noise | <ul style="list-style-type: none"> Damage to Property. Respiratory failure Fatigue. Kidney damage. Muscle/ body/ joint pain Noise induced hearing loss Burns, skin infections Breathing/ respiratory diseases | 3 | 3 | 3 | 27 | 2 |
| 17 | Site security | | | | | | | |
| | <ul style="list-style-type: none"> Provision of security to staff and property | <ul style="list-style-type: none"> Incompetent security personnel Unguided | <ul style="list-style-type: none"> Loss of property Theft, Financial risk Uncontrolled | 6 | 6 | 3 | 108 | 3 |

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| | | property <ul style="list-style-type: none"> • Unprotected/ fenced site camp • Working in a high risk zone | entry <ul style="list-style-type: none"> • Hijacking/ Mugging | | | | | |
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