

ETHEKWINI MUNICIPALITY

Occupational Health & Safety Unit



Baseline Risk Assessment in terms of Construction Regulation 5.1(a)

Document Title	Baseline Risk Assessment in terms of Construction Regulation 5.1(a)
Client	eThekweni Municipality – road provision
Project Name	FLOOD DAMAGE REMEDIATION: CONSTRUCTION OF 2 PED BRIDGES IN 121556 STR & 121573 STR, MAWOTHI WARD 57
Contract Number	1R-24367
Revision	01
Date	24/03/2023
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Compiled by (Safety officer)	Siziwe Chiliza  Signature:
Reviewed by (Manager: Safety& Risk)	Arty Zondi  Signature:

MAIN ACTIVITY	Site Establishment					
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
1.1	Travel to site	<ul style="list-style-type: none"> • Potholes • Undulating roads • Poor visibility 	<ul style="list-style-type: none"> • Fatigue 	<ul style="list-style-type: none"> • Oil/diesel spillages 	<ul style="list-style-type: none"> • Community livestock • Other vehicles driving recklessly • Pedestrians • Construction works on public road 	<ul style="list-style-type: none"> • All drivers to be deemed competent • No staff to travel in rear of vehicles with equipment • All equipment to be secured during transport • All vehicles to be road worthy • No drivers/Operators to be under the influence of alcohol or drugs of any kind. • Inspection Records must be kept for all vehicles and plant.

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
1.2	Site clearance and de-vegetation	<ul style="list-style-type: none"> • Poor traffic control • Incompetent drivers • inadequate signage's • Moving of construction vehicles and vehicle colliding • Snakes insect bites & stings 	<ul style="list-style-type: none"> • Back strain • cuts, • Abrasion • heat exhaustion • noise exposure • dust inhalation 	<ul style="list-style-type: none"> • Spilling of oil diesel, petrol • Contamination of ground 	<ul style="list-style-type: none"> • Tripping hazard • dust inhalation • intermittent noise level 	<ul style="list-style-type: none"> • All staff to have medicals done by an occupational medical practitioner prior to commencement of work. All workers to have valid medicals with annexure 3 documents signed and stamped by Occupational Medical Practitioner with records in file. • All staff to work under supervision • Dust suppression is to be maintained • Responsible 8.1 to ensure Instructions are given on Manual handling using Safe Work Procedure (SWP) for Manual Handling. • Only Licensed and Appointed Mechanical Aids Operators (i.e. Crane Operators, TLB operators, Bobcat Operators, etc.) to operate plant on site. • Inspection & Maintenance records must be maintained for all mechanical aids on site.

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
1.3	Site fencing	<ul style="list-style-type: none"> • Pinch points from manual handling • Trip hazards • Underground services 	<ul style="list-style-type: none"> • Heat exposure • Dust • Noise • Chemical burns/ contact dermatitis from cement and eye injuries from cement splashes 	Hydrocarbon spills	<ul style="list-style-type: none"> • Unauthorised persons entering site • School learners entering site • Damage to underground services 	<ul style="list-style-type: none"> • All contractor staff and local labour to be inducted of all “no go” areas • All staff have company logo PPE with name tags • Contractor staff to work within designated areas only • Contractor to conduct DSTI’s (Daily Safety Task Instruction) and communicated at the beginning of the shift daily. DSTI close out to be conducted and attendance registered signed by all staff. • Flagman to be provided to ensure vehicles are guided onto site. • Wear hand protection (PVC Gloves), safety glasses and face shield always by the operator of the concrete chute. • Concrete spillages to be cleaned up and concrete truck chute to be cleaned in concrete wash area. • Stacking & Storage Supervisor to be appointed to control lay down areas.

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
1.4	Placing of mobile offices	<ul style="list-style-type: none"> • Use of mechanical aids for offloading • Failure of lifting equipment • Fall from heights • Manual handling • Mechanical aids overturning • Overhead power lines 	<ul style="list-style-type: none"> • Noise • Hand and body injuries • Heat exposure • Dust exposure 	Hydrocarbon spills	<ul style="list-style-type: none"> • Exposure to dust • Interaction of machinery and learners 	<ul style="list-style-type: none"> • All operators to be deemed competent • All riggers to be deemed competent • All lifting equipment to be. load tested • Flagman/banksman to be present on-site during movement of plant • Access control to be managed on site • All staff to have the required PPE • Staff working at heights to be trained for heights safety • Contractor to conduct DSTI's (Daily Safety Task Instruction) and communicated at the beginning of the shift on a daily basis. DSTI close out to be conducted and attendance registered signed by all staff. • Ensure Offloading area is clear, level, secure and free from slip trip and falling hazards. • Mechanical Aids must be operated in accordance with the operators training and manufacturers guidelines

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
1.5	Connection of power supply	Electrocution Hand injuries	Heat exhaustion	None	Interruption of power supply	<ul style="list-style-type: none"> • Only authorised person to do electrical connection • A COC is to be provided for all electrical works done • Monthly inspections to be done for all temporary electrical connections • Contractor is to be responsible for power consumption • Required agreements to be in file for electrical usage
1.6	Water supply	Injuries during the laying of water pipes	Drinking water which is not safe for human consumption	None	Theft of water by residents	<ul style="list-style-type: none"> • All drinking water is to be labelled/sign posted • Water use is to be managed on site • The location of standpipes to be correctly positioned to mitigate theft of water from site

1.8	Construction of staff facilities: eat area/toilets/change area	<ul style="list-style-type: none"> • Manual handling • Fall from heights • Hand injuries • Use of portable electrical power tools 	<ul style="list-style-type: none"> • Electrocution • Dust exposure • Heat exposure 	None	None	<ul style="list-style-type: none"> • Separate facilities for both male and female • Drinking water to be provided for staff on site • If portable toilets are to be used required service slips are to be maintained on site • Staff facilities area to be suitable for staff use
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MAIN ACTIVITY	Construction Works					
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.1	Site survey	<ul style="list-style-type: none"> • Trips and falls • Injuries from use of hand tools 	<ul style="list-style-type: none"> • Heat exhaustion • Dust exposure 	Use of cement for markings contamination	<ul style="list-style-type: none"> • Trips and falls • Unauthorised entrance 	<ul style="list-style-type: none"> • Works to be supervised • DSTI to be done • Lime to be used for ground markings • Required PPE to be used • All survey pegs to be made visible • If steel is to be used rebar caps are to be fitted onto them
2.2	Mechanical excavations	<ul style="list-style-type: none"> • Machinery collides with people • Collision with machinery • Fall into open excavation • Collapse of side walls 	<ul style="list-style-type: none"> • Dust exposure • Back injuries • Noise exposure 	Hydrocarbon spills	<ul style="list-style-type: none"> • Dust exposure • Collision with machinery 	<ul style="list-style-type: none"> • DSTI to be done • All staff to have the required PPE • All plant to be inspected before use • All open excavations to be netted off and sign posted • Excavated spoil to be 500mm away from edge of excavation • Nil staff to be in any excavation when machinery in use
2.3	Manual excavations	<ul style="list-style-type: none"> • Slips and falls • Fall into open excavations • Collapse of side walls 	<ul style="list-style-type: none"> • Dust exposure • Back injuries • Heat exhaustion 	None	Fall into open excavations	<ul style="list-style-type: none"> • All staff to be trained in safe works procedure • All spoil to be away from edge of excavation • Ladders to be provided for access and egress from excavations

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.4	Unsafe stacking and storage practices	<ul style="list-style-type: none"> • Manual handling injuries • Pinch points • Slips and trips 	Back injuries	None	None	<ul style="list-style-type: none"> • Required PPE to be used • DSTI to be done • All works to be supervised • All steel to be stacked within a designated area
2.5	Installation of Temporary Electrical Installations	<ul style="list-style-type: none"> • Use of hand tools injuries • Trips and falls • Collapse of excavation side walls • Contact with machinery 	<ul style="list-style-type: none"> • Chemical burns from concrete • Heat exhaustion • Dust exposure 	Ground contamination	Collision with pedestrians	<ul style="list-style-type: none"> • DSTI to be done • Flagman to direct all trucks to site • All staff to have the required PPE when handling concrete • Nil staff to be in foundation during discharge of concrete into excavation • Delivery trucks to use designated access • Washing of truck chutes to be done within a concrete wash area
2.6	Housekeeping	<ul style="list-style-type: none"> • Manual handling injuries • Trips and falls 	<ul style="list-style-type: none"> • Dust exposure • Back strains • Ergonomically injuries 	Ground contamination due to mixing of mortar on natural ground	Unauthorised access to site	<ul style="list-style-type: none"> • Proper stacking of bricks to be done • Movement of bricks to be done with proper wheelbarrows • All staff to have required PPE • A platform to be created for mixing of mortar • Housekeeping to be maintained on site

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.7	Site Induction	<ul style="list-style-type: none"> Struck by machinery Manual handling injuries Fires 	<ul style="list-style-type: none"> Dust exposure Heat exhaustion HAVS Noise 	Hydrocarbon spills	Unauthorised access	<ul style="list-style-type: none"> All staff to have required PPE DSTI to be done All works to be supervised Safe works procedure to be done and communicated to staff Risk assessments to be communicated by means of training
2.8	Setting up of temporary road works signage	<ul style="list-style-type: none"> Struck by machinery Placing of incorrect signage at locations 	incident Damage to property	Environmental degradation	None	<p>The Contract</p> <ul style="list-style-type: none"> Manager must ensure that a suitable site-specific Traffic Management Plan is developed and implemented and a competent Traffic Safety Officer
2.9	Public vehicular and pedestrian traffic travelling on the public road during construction work	<ul style="list-style-type: none"> injuries car collision 	☹ ☹ incident Damage to property	None	None	<ul style="list-style-type: none"> All works to be supervised <p>All All temporary road traffic signage must comply with the</p> <ul style="list-style-type: none"> SARTSM Flagman to direct all vehicles to site

2.10	Layer works (asphalt layer)	<ul style="list-style-type: none"> • Use of hand tools injuries • Trips and falls • Contact with machinery Respiratory failure • Burns 	<ul style="list-style-type: none"> • Chemical burns from asphalt • Heat exhaustion • High temperature of product 	Ground contamination	none	<ul style="list-style-type: none"> • Flagman to direct all vehicles • All staff to have the required PPE when handling asphalt • Delivery trucks to use designated access • All spills to be cleaned and disposed • Enforced reverse alarms to be fitted Application of dust masks
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REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.11	Backfilling	<ul style="list-style-type: none"> • Manual handling injuries • Trips and falls 	<ul style="list-style-type: none"> • Dust exposure • Back strains • Ergonomically injuries • Heat exhaustion 	Ground contamination due to mixing of mortar on natural ground	Unauthorised access to site	<ul style="list-style-type: none"> • All staff to have required PPE • A platform to be created for mixing of mortar • Waste skips to be provided on site • All asphalt waste to be properly disposed on site • Housekeeping to be maintained on site

2.12	Refuelling plant and equipment	Extremely flammable, high hazard. The liquid can release vapours at temperature below ambient which forms flammable mixtures	Heat exhaustion	Ground contamination due to mixing of mortar on natural ground	Unauthorised access to site	<ul style="list-style-type: none"> • Required appointments to be in file • All works to be supervised Remove all sources of ignition. Contain and collect spillage with non-combustible absorbent materials. Place in a suitable container for disposal in accordance with waste regulations
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REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.13	Excavator Plate compactor, Bomag roller, Front end loader, Mobile crane TLB, milling machine, paver, excavator, skid steer(bobcat), rollers (steel drum/ rubber tyre) grader, insist recycler,	<ul style="list-style-type: none"> • Collapse of scaffolding • Slips and falls • Fall from heights/ elevated positions 	Heat exhaustion	None	Unauthorised access to site	<ul style="list-style-type: none"> • All staff will be deemed fit for work with medicals records in file • Required PPE will be provided for staff • All works to be supervised •

	chip spreader, bitumen distributor(tan ker)					
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REF NO	SUB ACTIVITY	SAFETYRISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.15	Employees working in close proximity to moving machinery Exposure to noise	noise	noise	none	No unauthorised access	<ul style="list-style-type: none">• All power tools to be inspected before use. Records to be in file• Housekeeping to be maintained on site• Employee to make use of SABS approved hearing protection, supervisor to ensure that the correct P.P.E is used. Task to be supervised by a competent supervisor
2.16	<ul style="list-style-type: none">• Hazardous chemical substances	injuries Contact with skin/ eyes Inhalation or indigestion	Skin irritation, burns or infections Could cause loss in eyesight		<ul style="list-style-type: none">• Required PPE to be used• DSTI to be done• All works to be supervised• All steel to be stacked within a designated area• Exposed rebar to be fitted with rebar caps• All power tools to be inspected before use.	

2.17	Neighbouring business and public exposed to the nature of the construction activities	<ul style="list-style-type: none"> • Dust exposure • Heat exhaustion 	Dust pollution	Unauthorised access to site	<p>Communication with neighbouring business is critical. Health risk must be communicated to all</p> <ul style="list-style-type: none"> • employees' dust, noise generated out of the construction work must be managed • Fence constructed to approved standard
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REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.18	Emergency Preparedness, Emergency Drill & Evacuation	No training No implementation Planning done Failure to have a basic site-specific Emergency Management Plan	Person/s unprepared to respond to the emergency at hand	none	none	The Construction Manager must ensure that a site-specific Emergency Management Plan is developed for implementation. Adequate number of employees trained in the use of fire equipment

2.17	Utilizing incompetent Sub-Contractors	<ul style="list-style-type: none"> • Use of hand tools injuries • Trips and falls • Contact with machinery 	<ul style="list-style-type: none"> • Chemical burns from concrete • Heat exhaustion • Dust exposure 	Ground contamination	Collision with pedestrians	The Construction Manager must be reasonably satisfied that the Sub Contractors intended to be appointed have the necessary competencies and resources to carry out the work safely
2.18	Brickwork at manholes	<ul style="list-style-type: none"> • Manual handling injuries • Use hand tools injuries 	<ul style="list-style-type: none"> • Ergonomical injuries • Heat exhaustion 	None	None	<ul style="list-style-type: none"> • DSTI to be done • Risk assessment and SWP to be communicated to all staff • All power tools to be inspected before use • Fall arrest equipment to be used at all heights

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.19	Mixing mortar	<ul style="list-style-type: none"> • Unsafe • electrocution • loading strain 	Loading / unloading material	none	none	<p>The Construction Manager must ensure that a SWP is developed implemented about safe lifting and loading procedures</p> <p>All work needs to be supervised</p>

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
2.20	Install Geosynthetic layer	Poor Ergonomics may result in muscular skeletal injuries	<ul style="list-style-type: none"> • Ergonomical injuries • Heat exhaustion 	None	None	The Construction Manager must ensure that workers are trained in the risk of ergonomically injuries and methods to mitigate the risks

MAIN ACTIVITY						
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
3.3	Construction of drains	<ul style="list-style-type: none"> • Trips and falls • Manual handling injuries • Underground services • Open excavations 	<ul style="list-style-type: none"> • Dust exposure • Heat exposure • Ergonomical injuries • Noise exposure 	None	None	<ul style="list-style-type: none"> • All works to be supervised • DSTI to be done • Risk assessments & SWP to be done • All open excavations to be netted off • Access and egress to be provided for all open excavations • All spoil to be away from excavation side wall

MAIN ACTIVITY						
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
3.4	Pouring Ready Mix concrete	<ul style="list-style-type: none"> • Noise • Dust • Bumping against, 	<ul style="list-style-type: none"> • noise induced hearing loss 	None	None	<ul style="list-style-type: none"> • flag person required and Visual check required • Wearing required PPE

		<ul style="list-style-type: none"> • Concrete truck tipping over • 				
3.5	Waste removal	<ul style="list-style-type: none"> • Noise • Dust • Bumping against, • Struck by flying items 	<ul style="list-style-type: none"> • cuts and abrasions • dust inhalation • noise induced hearing loss 	None	None	<ul style="list-style-type: none"> • Safe & proper use of hand tools • Wearing required PPE • practise of proper manual lifting of material

MAIN ACTIVITY						
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
3.9	Inlet and outlet structures	<ul style="list-style-type: none"> • Use of hand tools injuries • Trips and falls • Contact with machinery • Working in a restricted area • Manual handling 	<ul style="list-style-type: none"> • Dust exposure • Ergonomical injuries • Chemical burns 	None	None	<ul style="list-style-type: none"> • Safe & proper use of hand tools • Wearing required PPE • practise of proper manual lifting of material • Supervise the works by a competent supervisor
3.10	Working with hot asphalt	<ul style="list-style-type: none"> • lack of proper access / working platform 	☒ Heat exhaustion	None	None	<ul style="list-style-type: none"> • DSTI to be done • Risk assessment and SWP to be communicated to all staff • Scaffold to be erected by competent person • Scaffold to be erected as per SANS 10085 • Supervise the works by a competent supervisor • Staff to be trained for work at heights • Fall arrest equipment to be used at all heights • Adequate lighting to be provided

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
6.3	Cleaning tools with solvent	<ul style="list-style-type: none"> • Use of power tool – electrocution • Manual handling • Work in restricted area 	<ul style="list-style-type: none"> • Dust exposure 	None	None	<ul style="list-style-type: none"> • All power tools to be inspected before use • DSTI to be done • Risk assessment/SWP to be done and in file • All staff to have required PPE
6.5	Manual lifting of tool	<ul style="list-style-type: none"> • Fall from heights • Fall of equipment from heights 	<ul style="list-style-type: none"> • Dust exposure • Heat exhaustion • Manual exertion 	None	None	<ul style="list-style-type: none"> • Work platform to be inspected • Full supervision at all times • Staff to have fall arrest equipment in use • Manual lifting techniques to be always practiced
	Welding, flame cutting, soldering and similar operations	<ul style="list-style-type: none"> • Fumes inhalation • Eye injury 	<ul style="list-style-type: none"> • Chest pain • heat 	none	none	<ul style="list-style-type: none"> • Proper PPE required • Close supervision

MAIN ACTIVITY						
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
7.1	Inlet and outlet structures	Struck by vehicle	heat	none	none	Traffic management plan required
7.2	Applying tack	Eye injury	contamination	none	none	Close supervision all the time

MAIN ACTIVITY						
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
8.1	Site levelling using excavator/ bob cat	<ul style="list-style-type: none"> • Trips and falls • Exposed survey pegs • Use of hand tools 	<ul style="list-style-type: none"> • Heat exposure • Noise exposure 	Hydrocarbon spills	<ul style="list-style-type: none"> • Pedestrians exposed to machinery • Accidents 	<ul style="list-style-type: none"> • Works to be supervised • Staff to use required PPE • Dust suppression to be maintained • Refuelling to be done in designated areas • Rebar caps to be fitted on exposed pegs • Risk assessments and SWP to be done for staff • All plant operators to be deemed competent • Flagman to be present on site
8.2	Backfill and compaction of other layers	<ul style="list-style-type: none"> • Manual handling • Trips and falls • Use of mobile plant accidents 	<ul style="list-style-type: none"> • Heat exhaustion • Dust exposure • Noise exposure 	Hydrocarbon spills	<ul style="list-style-type: none"> • Pedestrians exposed to machinery • Accidents 	<ul style="list-style-type: none"> • Works to be supervised • Staff to use required PPE • Dust suppression to be maintained • Refuelling to be done in designated areas • Rebar caps to be fitted on exposed pegs • Risk assessments and SWP to be done for staff • All plant operators to be deemed competent • Flagman to be present on site

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
8.4	Concreting of walkways/ driveway	<ul style="list-style-type: none"> • Use of hand tools injuries • Trips and falls • Collapse of excavation side walls • Contact with machinery 	<ul style="list-style-type: none"> • Chemical burns from concrete • Heat exhaustion • Dust exposure 	Ground contamination	Collision with pedestrians	<ul style="list-style-type: none"> • DSTI to be done • Flagman to direct all trucks to site • All staff to have the required PPE when handling concrete • Nil staff to be in foundation during discharge of concrete into excavation • Delivery trucks to use designated access • All spills to be cleaned and disposed

MAIN ACTIVITY	COVID 19					
REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIRONMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
9.1	Travel to site Deliveries -use of public transport	<ul style="list-style-type: none"> • Nil decontamination of public transport • Passengers in public transport not using face masks • Nil social distancing in public transport • Nil decontamination of supplies and deliveries 	<ul style="list-style-type: none"> • Staff contracting the virus during use of public transport • Staff contracting virus during handling of contaminated supplies 	None	None	<ul style="list-style-type: none"> • All staff to ensure that they use a face mask and sanitise when using the public transport • Contractor could arrange for a dedicated transport for all staff to and from work. • Staff are not to use their work PPE when travelling on public transport. • All staff to follow decontamination procedures when entering work site
9.2	Management to prepare site before construction works commence	<ul style="list-style-type: none"> • Nil decontamination of offices and facilities • Failure to align policies and procedures to COVID 19 virus 	<ul style="list-style-type: none"> • Returning staff not provided with COVID related PPE and disinfectants • Possible contamination to staff 	none	Unauthorised persons entering site	<ul style="list-style-type: none"> • Management to ensure all offices, facilities are disinfected with proper disinfectants • Overgrown vegetation to be cut before any staff can return to site • Required COVID 19 PPE is to be purchased and made available for staff when project commences

	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
	Site preparation	<ul style="list-style-type: none"> • Failure to display related signage's for site access due to COVID virus. • Nil PPE and sanitisers (COVID related) for staff to return to work • Management not inducted/educated on COVID 19 	Staff returning to work are not educated on policy changes Management unable to provide correct information to staff on COVID 19 issues	none	none	<ul style="list-style-type: none"> • Required access control signage's (COVID related) to be displayed at main entrance • Management to rearrange facilities area to ensure social distancing • Policies and procedures (COVID related) to be amended and approved before site can reopen. This is to be communicated to all staff • An induction program (COVID 19) is to be prepared which is to be communicated to all staff when project commences • Required sanitisers and disinfectants to be purchased and made available before project commences • Contractor to ensure required staff information form pertaining to COVID 19 is available which is to be filled out by each staff • Adequate hazardous waste bins to be made available on site
9.3	Entering of construction work site	Staff fail to use required PPE	Staff may be infected with the virus	none		<p>☑ All staff to follow the required social distancing when at main entrance</p>

REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
	Entering construction work	<ul style="list-style-type: none"> • Congestion of staff at main entrance to site • Failure of contractor to screen staff entering site • Staff not maintaining social distancing 	<p>Staff spreading of the virus to other staff</p>	none	none	<ul style="list-style-type: none"> • Due to lockdown, staff are to declare their movement, medical history during lockdown. These records are to be kept on site for record/tracing purposes • All staff are to be tested as per contractor's protocol to enter the site. Taking of staff temperature and desensitising of entire staff. An infrared thermometer is to be used. • Contractor to ensure all staff conducting the required testing is provided with the required PPE and is supervised by management. • Staff are not permitted to enter the site with their work PPE. Work PPE is to be left on site when leaving site to prevent possible contamination of work PPE • Any staff tested with a high temperature or signs of COVID is to follow the quarantine procedure until staff can be tested by the DOH for possible COVID 19 infection.

9.4	Work tasks	<ul style="list-style-type: none"> • Nil social distancing on site • Staff socialising on site • Staff not using their required PPE to prevent COVID infections 	<ul style="list-style-type: none"> • Spreading of the virus to other staff • Possible infections 	none	Possible closure of site due to infection	<ul style="list-style-type: none"> • Identified tasks are to be evaluated to encourage social distancing • All staff to have the required PPE when on site • Staff to decontaminate all tools and workspace prior to any activity • Monitoring to be done by management • Inductions to be done for all staff on social distancing whilst at work. • Failure of staff to comply with COVID control measures are to be removed off site.
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REF NO	SUB ACTIVITY	SAFETY RISKS	HEALTH RISK	ENVIROMENTAL RISK	PUBLIC RISK	RECOMMENDED RISK CONTROL MEASURE
9.5	Use of facilities during break intervals	<ul style="list-style-type: none"> • Nil social distancing • Nil hygiene been maintained at break intervals • Nil paper towel provided for staff at wash facilities • Lack of chairs for staff at facilities area 	<ul style="list-style-type: none"> • Possible contamination of staff • Staff not practising adequate hygiene control measures • Possible spread of virus • Inadequate provision of hand wash /sanitisers for staff 	none	none	<ul style="list-style-type: none"> • Breaks are to be staggered to allow social distancing of staff • All staff are to take their breaks at the identified facilities area • Layout of facilities area to be planned to encourage social distancing • Table and chairs to be disinfected before and after all break intervals • Toilets to be disinfected at frequent interval. • Adequate hand wash and sanitisers are to be provided for staff to frequently wash their hands • Paper towels to be provided for staff use • Labelled bins to be provided for all hazardous waste • Staff are not to share any meals or utensils • Staff are not to leave the site to purchase any meals

9.6	Use of jackhammer	<ul style="list-style-type: none"> • Injuries • Noise • Loss limb 	<ul style="list-style-type: none"> • vibration 	none	none	<ul style="list-style-type: none"> • Tools need to be inspected • Safety team supervisor
9.10	Ground water	<ul style="list-style-type: none"> • Injuries • Wet soil • Soil erosion 	<ul style="list-style-type: none"> • Ground seepage 	Rock formations Water Wet soil	none	<ul style="list-style-type: none"> • Proper PPE required • Close supervision
9.11	Slope stability	<ul style="list-style-type: none"> • Multiple injuries • Cracks caused by compacting • fatality 	<ul style="list-style-type: none"> • Excavation collapsed 	Rock formation		<ul style="list-style-type: none"> • Racking back required • Close supervision • PPE required
9.12	excavation	<ul style="list-style-type: none"> • Collapsed and cause multiple injury • fatality 	<ul style="list-style-type: none"> • vibration 			<ul style="list-style-type: none"> • Competent person to check on excavation • Close supervision on blasting • Notification for blasting

9.13	Fixing steel together for	<ul style="list-style-type: none"> Wire can poke employees on the eye Physical injuries 	<ul style="list-style-type: none"> Steel poking 	none	none	<ul style="list-style-type: none"> DSTI communicated every day before task commence. Supervisor to be present all times during the process
9.14	Lining the inside of the gabion with bedim	<ul style="list-style-type: none"> Workers can be struck by the roll of bedim Personal injury stanley knife 	<ul style="list-style-type: none"> Rolling of bedim 	none	none	<ul style="list-style-type: none"> Proper communication and awareness required between employees correct type of ppe
9.15	Filling gabions with rocks by hand	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Stone falling 	none	none	<ul style="list-style-type: none"> Awareness whilst in work area

