 ETHEKWINI MUNICIPALITY

 Occupational Health & Safety Unit

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

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| Document Title | Baseline Risk Assessment in terms of Construction Regulation 5.1(a) |
| Client | eThekwini Municipality – road provision |
| Project Name | Upgrade of 121612STR from gravel to concrete surface Ntuzuma ward 45 |
| Contract Number | 1R- |
| Revision | 01 |
| Date | 22/09/2022 |
| Internal Reference no. | BRA 34/09/2022 |
| Compiled by (Safety officer) | Siziwe ChilizaSignature:  |
| Reviewed by (Manager: Safety& Risk) | Arty ZondiSignature:  |

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| 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  | * Potholes
* Undulating roads
* Poor visibility
 | * Fatigue
 | * Oil/diesel spillages
 | * Community livestock
* Other vehicles driving recklessly
* Pedestrians
* Construction works on public road

  | * 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.

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| **REF NO**  |  | **SUB ACTIVITY**  |  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
| 1.2  | Site clearance and de-vegetation   | * Poor traffic control
* Incompetent drivers
* inadequate signage’s
* Moving of construction vehicles and vehicle colliding
* Snakes

insect bites & stings   | * Back strain
* cuts,
* Abrasion
* heat exhaustion
* noise exposure
* dust inhalation
 | * Spilling of oil diesel, petrol
* Contamination of ground
 | * Tripping hazard
* dust inhalation
* intermittent noise level

  | * 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.

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| **REF NO**  |  | **SUB ACTIVITY**  |  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
| 1.3  | Site fencing  | * Pinch points from manual handling
* Trip hazards
* Underground services

  | * Heat exposure
* Dust
* Noise
* Chemical burns/ contact dermatitis from cement and eye

injuries from cement splashes   |  Hydrocarbon spills   | * Unauthorised persons entering site
* School learners entering site
* Damage to underground services

  | * 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.

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| 1.4  | Placing of mobile offices  | * Use of mechanical aids for offloading
* Failure of lifting

equipment * Fall from heights
* Manual handling
* Mechanical aids overturning
* Overhead power lines

  | * Noise
* Hand and body injuries
* Heat exposure
* Dust exposure
 |  Hydrocarbon spills   | * Exposure to dust
* Interaction of machinery and learners
 | * 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

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| 1.5  | Connection of power supply  |  Electrocution Hand injuries   |  Heat exhaustion   | None  |  Interruption of power supply  | * 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

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| 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  | * 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  | * Manual handling
* Fall from heights
* Hand injuries
* Use of portable electrical power tools

      | * Electrocution
* Dust exposure
* Heat exposure

  | None  | 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  | * Trips and falls
* Injuries from use of hand

tools   | * Heat exhaustion
* Dust exposure
 |  Use of cement for markings contamination  | * Trips and falls
* Unauthorised entrance
 | * 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  | * Machinery collides with people
* Collision with machinery
* Fall into open excavation
* Collapse of side walls

  | * Dust exposure
* Back injuries
* Noise exposure

  | Hydrocarbon spills  | * Dust exposure
* Collision with machinery
 | * 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

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| 2.3  | Manual excavations  | * Slips and falls
* Fall into open excavations
* Collapse of side walls

  | * Dust exposure
* Back injuries
* Heat exhaustion

  | None  |  Fall into open excavations  | * 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

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| **REF NO**  |  | **SUB ACTIVITY**  |  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
| 2.4  | Unsafe stacking and storage practices | * Manual handling injuries
* Pinch points
* Slips and trips
 |  Back injuries  | None  | None  | * Required PPE to be used
* DSTI to be done
* All works to be supervised
* All steel to be stacked within a designated area

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| 2.5  | Installation of Temporary Electrical Installations | * Use of hand tools injuries
* Trips and falls
* Collapse of excavation side walls
* Contact with machinery

  | * Chemical burns from concrete
* Heat exhaustion
* Dust exposure
 |  Ground contamination  | Collision with pedestrians   | * 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

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| 2.6  | Housekeeping | * Manual handling injuries
* Trips and falls

  | * Dust exposure
* Back strains
* Ergonomically injuries
 |  Ground contamination due to mixing of mortar on natural ground  | Unauthorised access to site  | * 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

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| 2.7  | Site Induction | * Struck by machinery
* Manual handling injuries
* Fires

  | * Dust exposure
* Heat exhaustion
* HAVS
* Noise
 | Hydrocarbon spills   |  Unauthorised access  | * 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 | * Struck by machinery
* Placing of incorrect signage at locations
 |  incidentDamage to property |  Environmental degradation  | None  |  The Contract * 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 | * injuries
* car collision

  |   incidentDamage to property | None  | None  |  * All works to be supervised

All All temporary road traffic signage must comply with the * SARTSM
* Flagman to direct all vehicles to site
 |
| 2.10  | Layer works (asphalt layer) | * Use of hand tools injuries
* Trips and falls
* Contact with machinery

Respiratory failure  * Burns

  | * Chemical burns from asphalt
* Heat exhaustion
* High temperature of product
 |  Ground contamination  |  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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| 2.11  | Backfilling | * Manual handling injuries
* Trips and falls

  | * Dust exposure
* Back strains
* Ergonomically injuries
* Heat exhaustion
 | Ground contamination due to mixing of mortar on natural ground  |  Unauthorised access to site  | * 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

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| 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  | * 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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| 2.13  | Excavator Plate compactor, Bomag roller, Front end loader, Mobile craneTLB, milling machine, paver, excavator, skid steer(bobcat), rollers (steel drum/ rubber tyre) grader, insist recycler, chip spreader, bitumen distributor(tanker) | * Collapse of scaffolding
* Slips and falls
* Fall from heights/ elevated

positions    |  Heat exhaustion   | None  |  Unauthorised access to site   | * 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

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|  2.15 |  Employees working in close proximity to moving machinery Exposure to noise |  noise |  noise |  none |  No unauthorised access | * 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  | * Hazardous chemical substances
 |  injuriesContact with skin/ eyes  Inhalation or indigestion | Skin irritation, burns or infections Could cause loss in eyesight |  | * 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.

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| 2.17  | Neighbouring business and public exposed to the nature of the construction activities | * Dust exposure
* Heat exhaustion

  |  Dust pollution  |  Unauthorised access to site  |  Communication with neighbouring business is critical. Health risk must be communicated to all * employees’ dust, noise generated out of the construction work must be managed
* Fence constructed to approved standard
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|  2.18 |  Emergency Preparedness, Emergency Drill & Evacuation |  No training No implementation Planning doneFailure 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 | * Use of hand tools injuries
* Trips and falls
* Contact with machinery

  | * 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  | * Manual handling injuries
* Use hand

tools injuries   | * Ergonomical injuries
* Heat exhaustion

  | None  | 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

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| 2.19  |  Mixing mortar | * Unsafe
* electrocution
* loading strain

  |  Loading / unloading material |  none |  none |  The Construction Manager must ensure that a SWP is developed implemented about safe lifting and loading proceduresAll work needs to be supervised |

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| 2.20  | Install Geosynthetic layer |  Poor Ergonomics may result in muscular skeletal injuries | * 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  |

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| MAIN ACTIVITY  |    |
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| 3.3  | Construction of drains | * Trips and falls
* Manual handling injuries
* Underground services
* Open excavations

  | * Dust exposure
* Heat exposure
* Ergonomical injuries
* Noise exposure
 | None  | 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

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| MAIN ACTIVITY  |   |
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| 3.4 | Pouring Ready Mix concrete | * Noise
* Dust
* Bumping against,
* Concrete truck tipping over
 | * noise induced hearing loss
 | None  | None  | * flag person required and Visual check required
* Wearing required PPE
 |
| 3.5 | Waste removal | * Noise
* Dust
* Bumping against,
* Struck by flying items
 | * cuts and abrasions
* dust inhalation
* noise induced hearing loss
 | None  | None  | * Safe & proper use of hand tools
* Wearing required PPE
* practise of proper manual lifting of material
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| MAIN ACTIVITY  |   |
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| 3.9 | Inlet and outlet structures | * Use of hand tools injuries
* Trips and falls
* Contact with machinery
* Working in a restricted area
* Manual handling
 | * Dust exposure
* Ergonomical injuries
* Chemical burns
 | None  | 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 | * lack of proper access / working platform

  |  Heat exhaustion  | None  | 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

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| 6.3  | Cleaning tools with solvent | * Use of power tool – electrocution
* Manual handling
* Work in restricted area
 |  Dust exposure   | None  | 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 |  * Fall from heights
* Fall of
* equipment from heights
 | * Dust exposure
* Heat exhaustion
* Manual exertion
 | None      | None  | * Work platform to be inspected
* Full supervision at all times
* Staff to have fall arrest equipment in use
* Manual lifting techniques to be practiced at all times
 |
|  | Welding, flame cutting, soldering and similar operations  | * Fumes inhalation
* Eye injury
 | * Chest pain
* heat
 | none | none | * Proper PPE required
* Close supervision
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| MAIN ACTIVITY  |   |
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| 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 |

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| MAIN ACTIVITY  |   |
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| 8.1  | Site levelling using excavator/ bob cat   | * Trips and falls
* Exposed survey pegs
* Use of hand tools

  | * Heat exposure
* Noise exposure
 |  Hydrocarbon spills  | * Pedestrians exposed to machinery
* Accidents
 | * 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

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| 8.2  | Backfill and compaction of other layers | * Manual handling
* Trips and falls
* Use of mobile plant accidents

  | * Heat exhaustion
* Dust exposure
* Noise exposure
 |  Hydrocarbon spills  | * Pedestrians exposed to machinery
* Accidents
 | * 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

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| **REF NO**  | **SUB ACTIVITY**  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
| 8.4  | Concreting of walkways/ driveway  | * Use of hand tools injuries
* Trips and falls
* Collapse of excavation side walls
* Contact with machinery

  | * Chemical burns from concrete
* Heat exhaustion
* Dust exposure
 |  Ground contamination  |  Collision with pedestrians  | * 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

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| MAIN ACTIVITY  |  COVID 19   |
| **REF NO**  | **SUB ACTIVITY**  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
| 9.1  | Travel to site Deliveries -use of public transport  | * 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   | * Staff contracting the virus during use of public transport
* Staff contracting virus during handling of contaminated

supplies   | None  | 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  | * Nil

decontamination of offices and facilities * Failure to align policies and procedures to COVID 19 virus

  | * Returning staff not provided with COVID related PPE and disinfectants
* Possible contamination

to staff   |  none |  Unauthorised persons entering site   | * 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  | * 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/educate

d 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 | * 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

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|  9.3  | Entering of construction work site  |  Staff fail to use required PPE   | Staff may be infected with the virus   |  none |   |  All staff to follow the required social distancing when at main entrance   |
| **REF NO**  | **SUB ACTIVITY**  | **SAFETY RISKS**  | **HEALTH RISK**  | **ENVIROMENTAL RISK**  | **PUBLIC RISK**  | **RECOMMENDED RISK CONTROL MEASURE**  |
|   |  Entering construction work | * Congestion of staff at main entrance to site
* Failure of contractor to screen staff entering site
* Staff not maintaining

social distancing   |  Staff spreading of the virus to other staff   |  none |  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.

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| 9.4  | Work tasks   | * Nil social distancing on

site * Staff socialising on site
* Staff not using their required

PPE to prevent COVID infections    | * Spreading of the virus to other staff
* Possible infections

  | none  |  Possible closure of site due to infection   | * 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  | * 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    | * 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 | * 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

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| 9.6 | Use of jackhammer | * Injuries
* Noise
* Loss limb
 | * vibration
 | none | none | * Tools need to be inspected
* Safety team supervisor
 |
| 9.10 | Ground water | * Injuries
* Wet soil
* Soil erosion
 | * Ground seepage
 | Rock formationsWaterWet soil | none | * Proper PPE required
* Close supervision
 |
| 9.11 | Slope stability | * Multiple injuries
* Cracks caused by compacting
* fatality
 | * Excavation collapsed
 | Rock formation |  | * Racking back required
* Close supervision
* PPE required
 |
| 9.12 | excavation | * Collapsed and cause multiple injury
* fatality
 | * vibration
 |  |  | * Competent person to check on excavation
* Close supervision on blasting
* Notification for blasting
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