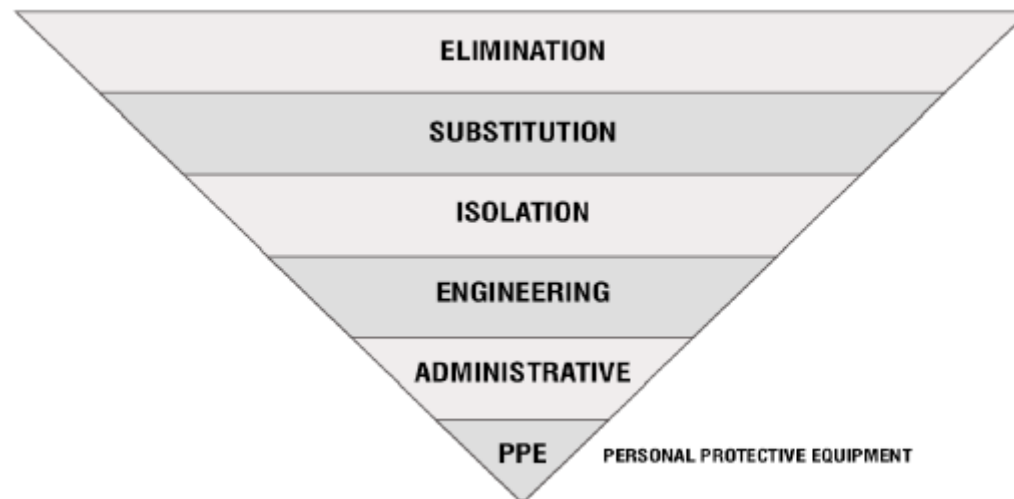


Baseline risk assessment undertaken in terms of Construction Regulation 5(1) to identify the operational risks to be addressed by the project specific health and safety specification



Client name: National Department of Health
Project name: Siloam District Hospital (Phase 2)
Risk assessor: Bertie Viljoen
Assessment date: 14 February 2017

Hierarchy of controls



Definitions

Elimination	The most satisfactory method of dealing with hazards is to get rid of it. Once the hazard has been eliminated, the potential for harm has gone.
Substitution	This involves substituting a dangerous process or substance with one that is not as dangerous.
Isolation	Separate or isolate the hazard from the people
Engineering	Introduce or substitute an engineered device to eliminate or reduce the risk.
Administrative	<p>Administrative solutions usually involve modification of the likelihood of an accident happening. Do this by reducing the number of people exposed to the hazard, and by ensuring that those who must remain exposed know about the hazard and how best to manage it.</p> <p>Administrative solutions also include danger signs, and written systems of work, such as those for working in confined spaces and lock-out procedures.</p>
PPE	Provision of personal protective equipment should only be considered when all other control methods are impractical. They provide a means to increase control, and offer a last line of defence when used with another method higher up the hierarchy.

Key operational activities/risks that will form part of the project

Description of risk	Risk rating	Potential risk impact	Risk mitigation
Emergency preparedness, contingency planning and response	High 23	Inadequate emergency preparedness, contingency planning and response could result in the inability to effectively respond to emergencies and this could impact negatively on the health and safety of employees and other persons.	<ol style="list-style-type: none"> 1. The Contractor to appoint a competent person to act as emergency controller and/or coordinator. 2. The principal contractor to conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place. 3. The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.
First-aid	High 21	Inadequate first-aid arrangements could impact negatively of the ability to respond to first-aid injuries or to stabilise injured employees or other persons that may require advanced health care. This could negatively impact of the injured person's prognosis, recovery and medical costs.	<ol style="list-style-type: none"> 1. The principal contractor to provide first-aid equipment and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSACT. 2. The contingency plan of the principal contractor to include arrangements for the speedily and timeously transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it. 3. The principal contractor to have firm arrangements with his contractors in place regarding the responsibility of these contractor's first-aid arrangements as well as treatment of injured and/or ill employees.
Security	High 22	Inadequate security arrangements could result in unauthorised access by members of the public that could pose a risk to employees working on this site or could also result in the illegal removal of equipment and/or material from the site or injuries to these members of the public.	<ol style="list-style-type: none"> 1. The principal contractor to establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied. 2. The principal contractor to develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

Description of risk	Risk rating	Potential risk impact	Risk mitigation
Accommodation of traffic	High 24	Inadequate traffic accommodation pose a potential risk to employees as well as road users and could not only result in injuries and subsequent medical and other costs to employees, but also injuries to road users and damages to vehicles with subsequent claims against the principal contractor and the client.	<ol style="list-style-type: none"> 1. Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs to be of paramount importance to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/risks/vehicles. 2. The principal contractor to ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn all road users of the presence of construction work as well as construction employees/vehicles. These signs shall be repeated and utilised, where appropriate, as actual construction work is approached. 3. The following signage to be provided as a minimum where construction work is undertaken in, next to or close to a public road: <ul style="list-style-type: none"> • “Construction work ahead” sign at least 45 meters before the start of the construction work; • “Lane narrows” sign 30 meters before the start of the construction work; • “Keep right/left” sign 15 meters before the start of the construction work and again where the tapering begins; and • Delineators and cones every 5 meters for the entire stretch of construction work. 4. The maintenance of all signage and especially those that is suitable after dark to be duly managed. 5. Where appropriate duly trained flag persons to be deployed a good distance ahead of areas where traffic is deviated or lanes closed off. These flag persons to be managed assertively to ensure that they add optimal value and should they not do so they should be retrained and if necessary replaced. 6. The community liaison officer (CLO) to be sensitised on the optimal management of traffic and the risks involved and then be instructed to increase community

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			awareness through talking to all stakeholders including the distribution of suitable information brochures.
Fall protection	Significant 20	Inadequate fall protection arrangements could result in employees and other persons falling from elevated working areas and result in serious injuries or even fatalities.	<ol style="list-style-type: none"> 1. A pre-emptive risk assessment to be carried out for any work undertaken from a fall risk position and will be classified as “work in elevated positions”. 2. As far as is practicable, any person working in an elevated position will work from a stable platform, ladder or other device that is at least as safe as if he or she is working at ground level and whilst working in this position be wearing suitable fall arrest equipment to prevent the person falling from the platform, ladder or other device utilised. This fall arrest equipment will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length and strength that the person will not be able to move over the edge. Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with suitable guard rails at two different heights as prescribed in SANS 10085 code of practice for the design, erection, use and inspection of access scaffolding. 3. Where the requirement in item 2 is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer’s head at all times and the lanyard must be fitted with a shock absorbing device or the person must be attached to a fall arrest system that is approved by the Client. 4. Where the requirements in item 3 are not practicable, a suitable catch net, which is able to sustain the weight of at least the average person working in the elevated position, will be erected. 5. Employees working in elevated positions will be trained to do this safely and without risk to their or other person’s health and safety. 6. Where work on roofs is carried out, the risk assessment must take into account the possibility of persons falling

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>through fragile material, i.e. skylights and openings in the roof.</p> <p>7. Updated records confirming the physical and psychological fitness of employees working at elevated positions will be kept on the health and safety file at all times.</p>
Structures	High 23	Unsafe or sub-standard structures could collapse on employees and/or other persons with subsequent injuries to employees/persons or even fatalities and also impact negatively on project costs, and result in liability claims and reputation risks for all stakeholders.	<ol style="list-style-type: none"> 1. Only skilled employees to be allowed to erect structures and that the skills of these employees are being verified at regular intervals. 2. Steps to be taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it. 3. No structure to be overloaded to the extent where it becomes unsafe. 4. The following information to be requested from the designer and also duly considered: <ul style="list-style-type: none"> • Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work. • A geo-scientific report (where applicable). • The loading the structure is designed to bear. • The methods and sequence of the construction process. • Any other applicable information. 5. All drawings pertaining to the design to be on site, utilised and available for inspection.
Access scaffolding	Significant 20	Unsafe scaffolding structures could collapse or employees may fall from unprotected working platforms and result in injuries or even fatalities. Loose items falling from scaffolding structures could also cause injuries to employees or persons below as well as asset damages with claims.	<ol style="list-style-type: none"> 1. Access scaffolding to be erected, used and maintained safely in accordance with Construction Regulation 16 and SA Bureau of Standards Code of Practice, SANS 10085 entitled, "The Design, Erection, Use and Inspection of Access Scaffolding". 2. Detailed consideration to be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>ensured that there is sufficient material available to erect the scaffolding properly and safely.</p> <p>3. Scaffolding to be erected, altered, maintained or dismantled by person(s) who has/have adequate training and experience in this type of work or under the continuous and direct supervision</p>
Lifting equipment	High 21	The use of unsafe lifting equipment could result in loads being lifted to fail and fall with subsequent injuries or even fatalities as well as asset damages that will result in claims and reputation risks.	<p>Lifting equipment to be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 18 of the OHSACT:</p> <p>The Driven Machinery Regulation requires that:</p> <ul style="list-style-type: none"> a. Lifting equipment to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator; b. Each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit; c. Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted; d. Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML; e. Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ol style="list-style-type: none"> 1. chains – 4 (four) 2. steel wire ropes - 5 (five) 3. fibre ropes- 10 (ten) <ol style="list-style-type: none"> f. Every hook or load attaching device must be designed as such or fitted with a device that will prevent the load from slipping off or disconnecting; g. Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110% of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person; h. All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and i. No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour.
Lifting tackle	High 21	The use of unsafe lifting tackle could result in loads being lifted to fail and fall with subsequent injuries or even fatalities as well as asset damages that will result in claims and reputation risks.	<p>The following requirements to adhered to when lifting tackle is utilised:</p> <ol style="list-style-type: none"> a. Manufactured of sound material, well-constructed and free from latent defects; b. Clearly and conspicuously marked with an identity number; c. Maximum mass load factor of safety: <ul style="list-style-type: none"> • Natural fibre ropes - 10(ten) • Man-made fibre ropes and woven webbing - 06(six) • Steel wire ropes – single rope - 06(six) • Steel wire ropes – combination slings - 08(eight) • Mild Steel chains - 05(five) • High tensile/alloy steel chains - 04(four)

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.
Construction vehicle and mobile plant operators	High 22	The use of vehicles and/or plant operators that are not competent could result in incidents with subsequent injuries or even fatalities as well as asset damage with subsequent costs/claims and reputation risks.	<p>The following requirements to apply to construction vehicle and mobile plant operators:</p> <ul style="list-style-type: none"> a. Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant. b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating. c. Only employees duly authorised to do so may operate any construction vehicle and mobile plant. d. Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.
Construction vehicles and mobile plant	High 22	The use of unsafe construction vehicles and plant could result in incidents with subsequent injuries or even fatalities as well as asset damage with subsequent costs and reputation risks.	<p>Construction vehicles and mobile plant will initially during the competency evaluation process be inspected by SANRAL's health and safety agent prior to being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHSACT and Regulations.</p> <p>Construction vehicles and mobile plant to be:</p> <ul style="list-style-type: none"> 1. Of acceptable design and construction; 2. Maintained in good working order; 3. Used in accordance with their design and intention for which they were designed; 4. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>persons to be allowed to drive construction vehicles and mobile plant;</p> <ol style="list-style-type: none"> 5. Provided with safe and suitable means of access; 6. Fitted with adequate signalling devices to make movement safe including reversing; 7. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into same; 8. Provided with roll-over protection; 9. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency; 10. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and 11. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported. <p>No loose tools, material etcetera is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.</p> <p>No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.</p> <p>The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.</p> <p>Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights, reflectors or adequate</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.</p> <p>In addition construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.</p> <p>All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.</p>
Electrical installations	Significant 20	Unsafe electrical installations could result in employees and other persons being electrocuted with subsequent injuries or even fatalities as well as asset damage due to fire with subsequent costs and reputation risks.	<p>Any electrical work undertaken as part of the project, including the installation of temporary electricity for construction use shall be in accordance with Construction Regulation 24 and the Electrical Installation Regulations.</p> <p>The principal contractor to ensure that:</p> <ol style="list-style-type: none"> 1. Existing services are to be located and clearly marked before construction commences and during the progress thereof; 2. Where the abovementioned is not possible, employees with jackhammers etc. will be protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etcetera; 3. Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site; 4. Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file; 5. Electrical machinery used on a construction site must be inspected daily before start-up by the competent

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and</p> <p>6. A competent person appointed in writing must control all temporary electrical installations.</p>
Electrical and mechanical lockout	Significant 20	The lack of suitable lock-out procedures may result in employees and other persons being electrocuted with subsequent injuries or even fatalities with resulting costs and reputation risks.	An electrical and mechanical lockout procedure to be developed by the principal contractor and submitted to the Client for approval before construction commences. All contractors on site must be informed of and adhere to this lockout procedure.
Use and storage of flammables	High 22	The unsafe use and/or storage of flammables could result in fires or explosions with subsequent injuries or even fatalities as well as asset damage due to fire with subsequent costs and reputation risks.	<p>The principal contractor to ensure that:</p> <ul style="list-style-type: none"> a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapors being present unless adequate precautions is taken; b. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient firefighting equipment installed and fire prevention methods practiced for example proper housekeeping; c. Only one day's quantity of flammable is to be kept in the workplace; d. Containers (including empty containers) to be kept closed to prevent fumes/vapors from escaping and accumulating in low lying areas; and e. Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.
Hazardous chemical substances	High 21	The unsafe use of hazardous chemical substances could result in fires with subsequent injuries or even fatalities as well as asset damage due to fire with subsequent costs/claims. Spilled chemical substances may also impact	<p>The principal contractor to ensure that:</p> <ul style="list-style-type: none"> a. Employees receive the necessary information and training to be able to use, handle and store hazardous chemical substances safely;

Description of risk	Risk rating	Potential risk impact	Risk mitigation
		negatively on the health of employees and other persons or negative implications for the environment including legal and claim exposures.	<ul style="list-style-type: none"> b. The risk assessments required in terms of Construction Regulation 9 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace; c. Suppliers provide the necessary information in the form of material safety data sheets regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances; d. An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances; e. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the hazardous chemical substances on the list indicated above; f. No person eats or drinks in a hazardous chemical substances workplace; and g. Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.
Fire prevention and protection	High 23	Inadequate fire prevention and protection measures may impact negatively on the ability to fight fires that may cause injuries or even result in fatalities as well as asset damages with subsequent costs/claims.	<p>The principal contractor to ensure that:</p> <ul style="list-style-type: none"> a. The risk of fire is avoided; b. Sufficient and suitable storage of flammables is provided; c. All employees are instructed in the use of the fire fighting equipment and know how to attempt to extinguish a fire; d. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> e. Employees are informed regarding emergency evacuation procedures and escape routes; f. Emergency escape routes are kept clear at all times and clearly marked; g. Evacuation assembly points are demarcated and made known to employees; h. Evacuation is regularly practiced to ensure that all persons are evacuated timeously and; i. Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind; and j. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.
Housekeeping	Significant 19	Poor housekeeping may impact negatively on productivity, result in employees/persons tripping and falling or even cause a fire with subsequent asset damage and cost/claims as well as reputation exposures.	<p>The principal contractor to ensure that:</p> <ul style="list-style-type: none"> a. Housekeeping is continuously implemented and maintained; b. Materials and equipment is properly stored; c. Scrap, waste and debris is removed off site regularly; d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic; e. Where practicable, construction sites are fenced off to prevent entry of unauthorised persons; f. An unimpeded work space is maintained for every employee; g. Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done; and h. As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials; i. The walls and roof of every indoor workplace be sound and leak-free.
Stacking and storage	Significant 20	Unsafe stacking and storage practices may result in stacked items collapsing	The principal contractor to ensure that:

Description of risk	Risk rating	Potential risk impact	Risk mitigation
		with subsequent injuries or even fatalities as well as asset damage with associated losses and costs.	<ul style="list-style-type: none"> a. A competent person is appointed in writing to supervise all stacking and storage on a construction site; b. Adequate storage areas are provided and demarcated; c. The storage areas are kept neat and under control; d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack; e. The items in the lower layers can support the weight exerted by the top layers; f. Cartons and other containers that may become unstable due to wet conditions are kept dry; g. Pallets and containers are in good condition and no material is allowed to spill out; h. The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang); i. The articles that make up a single tier are consistently of the same size, shape and mass; j. Structures for supporting stacks are structurally sound and able to support the mass of the stack; k. No articles are removed from the bottom of the stack first but from the top tier first; l. Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her; m. Stacks that are in danger of collapsing are broken down and restacked; n. Stability of stacks are not threatened by vehicles or other moving plant and machinery;

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>o. Stacks are built in a header and stretcher fashion and that corners are securely bonded; and</p> <p>p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.</p>
Eating, changing, washing and toilet facilities	Significant 18	Inadequate provision of welfare facilities may have negative implications on the health of employees and other persons as well as the environment with associated claims and costs.	<p>Toilets</p> <ol style="list-style-type: none"> 1. The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 30. 2. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees. <p>Showers</p> <p>At least cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.</p> <p>Change rooms</p> <p>Some form of screened off changing facility must be provided separately for each sex.</p> <p>Eating facility</p> <p>Some form of eating facility sheltered from the sun, wind and rain must be provided.</p> <p>Living accommodation</p> <p>Where the site is in a remote location and transport to home is not readily available, reasonable and suitable living accommodation must be provided after obtaining of</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			the necessary permission from authorities and adhering to requirements such as Bylaws of the local municipality.
Personal and other protective equipment	High 21	Inadequate provision and/or use of unsuitable PPE could cause injuries or even fatalities with associated claims and costs including legal and reputation exposures.	<p>The principal contractor to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she to either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.</p> <p>Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.</p> <p>Where it is not possible to create an absolutely safe and healthy workplace the principal contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.</p> <p>It is a further requirement that the principal contractor maintain the said equipment, that he/she instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s in a consistent and correct manner.</p> <p>Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other valid reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>The principal contractor may not charge any fee for protective equipment prescribed by him or her but may charge for equipment under the following conditions, following a disciplinary hearing:</p> <ul style="list-style-type: none"> • Where the employee requests additional issue in excess of what is prescribed; • Where the employee has blatantly abused or neglected the equipment leading to early failure; and • Where the employee has lost the equipment.
Portable electrical tools and equipment	Significant 20	The use of unsafe and/or unsuitable portable electrical tools and equipment could result in employees and other persons being electrocuted with subsequent injuries or even fatalities as well as asset damage due to fire with subsequent claims and costs.	<p>Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etcetera. In addition electrical appliances such as fridges, hotplates, heaters, etcetera must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.</p> <p>The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:</p> <ul style="list-style-type: none"> • Regular inspections by a competent person appointed in writing; • Inspection results must be recorded in a register; • Only competent authorised persons are allowed to use portable electrical tools and equipment; and • The correct protective equipment is worn/used whilst operating portable electrical tools and equipment. <p>This equipment -</p> <ul style="list-style-type: none"> • Must be maintained in good condition at all times to prevent an electrical shock to the user; • The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> All equipment must be fitted with a switch to allow for safe and easy starting and stopping.
Public health and safety	High 24	The disregard of the public's health and safety could result in injuries or even fatalities with associated claims and reputation risks	<p>The principal contractor will responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes among others:</p> <ul style="list-style-type: none"> a. Non- employees entering the site for whatever reason; b. The surrounding community; and c. Passers by the site. <p>Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.</p> <p>All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.</p>
Excavations	High 22	Excavations excavated in an unsafe manner could collapse with subsequent injuries and fatalities or even damages to adjacent structures/services with resultant claims and costs. Excavations that are not suitably barricaded could result in employees, other persons, animals or even vehicles falling into them resulting in damages, injuries or even fatalities.	<p>All excavation work to comply with the following:</p> <ul style="list-style-type: none"> a. Excavation work must be carried out under the supervision of a competent person with at least two years practical experience in excavation work who has been appointed in writing. b. Before excavation work begins the stability of the ground must be evaluated. c. Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material. d. No person may be required or permitted to work in an excavation that has not been adequately shored or braced.

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> e. Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out but only after written permission has been obtained from the appointed competent person. f. Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing. g. Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained, before excavation proceeds, whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavation supervisor. h. No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load. Best practice requires a one meter clearance so as to reduce the pressure on the side walls as well as risk of material falling onto persons inside the excavation. i. Every excavation must be provided with means of access that must be within 6 metres of any employee within the excavation at any time. Should ladders be utilised for this purpose they should be duly secured. j. The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for employees working in or near in the excavation. k. Every excavation, including the shoring and bracing or any other method to prevent a possible collapse, must

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>be inspected by the appointed competent person as follows:</p> <ul style="list-style-type: none"> • Daily before work commences • After an unexpected collapse of the excavation or part thereof • After substantial damage to any support • After rain <p>l. The results of any inspections must be recorded in a register kept on site in the health and safety file.</p> <p>m. Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off, on all sides, to at least one meter high and as close to the excavation perimeter as practicable. All such excavations must also be provided with warning lights or visible boundary indicators after dark or when visibility is poor.</p>
Working in confined spaces	Significant 20	Employees and other persons working in confined spaces with inadequate ventilation or gasses present may cause these employees/persons to die with subsequent claims, costs and/or reputation risks.	<p>All work undertaken in confined spaces to comply with the following:</p> <p>1. Ventilation</p> <p>The confined space to be opened and allowed to ventilate for at least 15 minutes before entering the confined space. All confined spaces to be barricaded and manned at all times.</p> <p>A gas monitor to be lowered to the bottom of the confined space with a rope to test the presence of any toxic/flammable gas. If any gas is detected, the space to be force ventilated by means of a blower for at least 15 minutes where after the air should be tested again. Under no circumstances may any space be entered while there is a toxic/flammable gas present.</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>After the undertaking of the necessary work, the person in charge of the activities to confirm that all the employees are accounted for.</p> <p>2. Entering a confined space</p> <p>When entering a confined space, the person entering the space to wear a safety harness and fully operational gas detector. A lifeline should be attached to the safety harness and a person on the surface should be in continuous contact with the person in the confined space. At least one person on the surface to be trained in basic first-aid (level 1) with proof of such training as well as a fully equipped first aid box available on site.</p> <p>No person shall remain within a confined space for a period of more than one hour at a time. A minimum of 5 minute rest periods on the surface to be taken after this period before re-entering.</p> <p>Should the alarm sound on the gas monitor, all employees to exit the confined space and the immediate area should also be evacuated immediately. The area to be properly ventilated and re-tested before re-entering the confined space. Professional support should be called for if necessary.</p> <p>Employees to be provided with flameproof lighting when entering a confined space with the possibility of flammable gases. No naked lights, smoking or unprotected electrical apparatus which may cause sparks, shall be permitted in any confined space or in its vicinity.</p> <p>3. General</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>All employees working in confined spaces to be issued with fully functioning gas monitoring equipment and safety harnesses. All these employees to be trained (including refresher training on a regular and continuous basis) in the use thereof.</p> <p>4. Safety equipment</p> <p>All teams to be issued with fully functional gas monitoring equipment and safety harnesses where applicable. All employees to be trained (including refresher training on a regular and continuous basis) in the use thereof.</p> <p>5. General records</p> <p>The following records shall be implemented and maintained by the principal contractor:</p> <ul style="list-style-type: none"> a. Confined space entry permits b. Confined space entry registers c. Safety harness and gas monitoring equipment registers d. Risk assessments e. Incident registers <p>6. Training</p> <ul style="list-style-type: none"> a. All employees that have to enter a confined space to be formally trained and confirmed competent before being required to enter such areas (new employees to complete this training and be declared competent before allowed to work in a confined space). b. Refresher courses to be attended by employees at least once every 2 years or immediately if new

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>methodologies or equipment are adopted or acquired.</p> <p>c. Continuous onsite training and support by supervisory staff to be undertaken and enforced where required.</p>
Temporary work	High 23	Unsafe temporary work may cause the temporary structures to collapse with subsequent injuries, fatalities and/or even damages to assets with subsequent claims and costs.	<ol style="list-style-type: none"> 1. Temporary work to be carried out under the supervision of the competent person designated in writing. 2. Temporary work structures to be so designed, erected, supported, braced and maintained that they will be able to support any vertical or lateral loads that may be applied. 3. No load to be imposed onto a structure that the structure is not designed to carry. 4. Temporary work to be erected in accordance with the structural design drawings for such temporary work and if there is any uncertainty, the designer must be consulted before proceeding with the erection/use of the temporary work. 5. All drawings pertaining to the temporary work to be kept and be available on site. 6. All equipment used in the erection of temporary work to be checked by a competent person before use. 7. The foundation or base upon which the temporary work is erected to be able to bear the weight and keep the structure stable. 8. Employees erecting temporary work to be trained in the safe work procedures for the erection, moving and dismantling of the temporary work. 9. Safe access and emergency escape to be provided for employees. 10. A competent person to inspect the temporary work structures that have been erected before, during and after pouring of concrete or the placing of any other load and thereafter daily until the temporary work is stripped. The dismantling also to be undertaken under the direct supervision of the appointed competent

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>person. The results of all inspections must be recorded in a register kept on the site health and safety file.</p> <ol style="list-style-type: none"> 11. The temporary work to be left in place until the designated competent person has authorised its stripping in writing. 12. Any damaged temporary work to be repaired and/or rectified without delay. 13. Deck panels to be secured against displacement. 14. The slipping of employees and other persons on release agents on deck panels to be prevented at all times. 15. Employees' health to be protected against the use of solvents, oils or other similar substances.
Demolition work	High 21	Demolition undertaken in an unsafe manner could cause the structure being demolished to collapse with subsequent injuries and fatalities with costs and claims. The Inadequate management of demolition debris could also result in injuries and claims.	<ol style="list-style-type: none"> 1. Demolition work to be carried out under the supervision of a competent person who has been appointed in writing. 2. A detailed structural engineering survey of the structure to be demolished to be carried out and a method statement on the procedure to be followed in demolishing the structure to be developed by a competent person, before any demolition to be commenced. 3. As demolishing progresses the structural integrity of the structure to be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature or uncontrolled collapse. 4. Steps to be taken to ensure that where a structure is being demolished: <ul style="list-style-type: none"> • no floor, roof or any other part of the structure is overloaded with debris, material or equipment that would make it unsafe; • precautions are taken to prevent the collapse of the structure when any frame, support or reinforcement is cut or removed; • shoring or propping is applied where necessary;

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> • no employee is required or allowed to work under unsupported overhanging material; and • the stability of an adjacent building, structure, road or services is maintained at all times. <p>5. The location and nature of any existing services such as water, electricity, gas etcetera to be established before any demolition is commenced with and any service that may be affected by the demolition must be protected and made safe for employees and other persons.</p> <p>6. Convenient and safe means of access to be provided and maintained at all times.</p> <p>7. No material to be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded.</p> <p>8. Asbestos related work to be conducted to the requirements of the Asbestos Regulations promulgated under the OHSACT and in particular Asbestos Regulation 21, i.e.:</p> <ul style="list-style-type: none"> • demolition of asbestos may only be carried out by a registered (with the Department of Labour) asbestos contractor; • all asbestos materials likely to become airborne must be identified; and • a plan of work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA), whom is approved by the Department of Labour, thirty calendar days prior to commencement of demolishing work unless the plan was drawn up by an AAIA and a signed (by all parties) copy is submitted to the Department of Labour fourteen calendar days before commencement of the demolishing. <p>9. During demolition work:</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> • all asbestos containing material to be disposed of safely, i.e. deposited only at a suitable site and proof of such deposits kept; • employees to be issued with appropriate personal protective equipment and the proper use thereof enforced at all times; and • after the demolition has been completed the area/premises to be thoroughly checked to ensure that all asbestos waste has been removed. <p>10.No employee to allowed to:</p> <ul style="list-style-type: none"> • use compressed air or permit the use of compressed air to remove asbestos dust from any surface or employee or person; • smoke, eat, drink or keep food or beverages in an area not specifically designated for this; and • apply asbestos by spraying.
Bulk mixing plant	Significant 16	The use of unsafe bulk mixing plant could result in injuries and/or fatalities with subsequent costs and claims.	<p>The principal contractor to ensure that:</p> <ol style="list-style-type: none"> a. All bulk mixing plants are operated and supervised by a competent person who has been appointed in writing. b. A detailed risk assessment is undertaken for the erection, maintenance and operation of any bulk mixing plant on site. This risk assessment should be kept on the health and safety file and also duly communicated to all employees working with or close to the bulk mixing plant. c. The placement and erection of a bulk mixing plant complies with the requirements set out by the manufacturer and that such plant is erected as designed. d. All devices to start and stop a bulk mixing plant are provided and that these devices are- <ul style="list-style-type: none"> • placed in an easily accessible position; and

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> • constructed in such a manner as to prevent accidental starting. e. The machinery and plant selected is suitable for the task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means. f. No person is permitted to remove or modify any guard or safety equipment relating to a bulk mixing plant, unless authorised to do so by the competent person duly appointed as bulk mixing plant supervisor. g. The top platform is provided with guardrails. h. Dust abatement methods are implemented and maintained at all time when the bulk mixing plant is in operation. i. Operators are utilising appropriate and correct PPE i.e. eye, noise, hands and respiratory. j. The bulk mixing plant and surrounding areas are kept clean, dry and free from tripping and slipping hazards. k. All persons authorised to operate the bulk mixing plant are fully- <ul style="list-style-type: none"> • aware of all the dangers involved in the operation thereof; and • conversant with the precautionary measures to be taken in the interest of health and safety. l. No person supervising or operating the bulk mixing plant authorise any other person to operate the plant, unless such person is competent to operate such machinery. m. All precautionary measures as stipulated for confined spaces are adhered to when entering any silo. n. A record is kept of any repairs or maintenance to a bulk mixing plant and that it is readily available on site. o. The bulk mixing plant is inspected weekly by a competent person and inspections register kept in the health and safety file.

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			p. All precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo.
Welding and flame cutting	Medium 13	The unsafe use of welding and flame cutting equipment could result in employees and other persons suffering from burns or even result in fires that could cause injuries and fatalities as well as damage to property with subsequent claims and costs.	<ol style="list-style-type: none"> 1. A competent person to be appointed to supervise welding, flame cutting or similar operations on site. 2. The following rules to govern all welding and flame cutting or similar operations: <ol style="list-style-type: none"> a. The welder will be trained regarding the safe use/operation of the equipment. b. The welder and his assistant will be provided with effective and appropriate personal protective equipment and/or clothing. c. Cables and electrode holders will be effectively insulated. d. The workplace will be effectively screened off to prevent bystanders from being affected by the welding rays or they will be provided with personal protective equipment. e. Special precautions will be taken where welding is undertaken in confined spaces e.g. proper and sufficient ventilation will be provided. f. In wet or damp conditions the welding equipment and the welder will be properly insulated and someone will be on standby to assist in the event of any emergency. g. A qualified person will certify in writing that it is safe to enter and work in a specific confined space before welding or flame cutting is undertaken. h. No welding, flame cutting, grinding, soldering or similar work shall be undertaken in respect of any drum, vessels or similar object or container where such object or container- <ul style="list-style-type: none"> • is completely closed, unless the rise in internal pressure cannot render it dangerous; or

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<ul style="list-style-type: none"> • contains any substance which, under the action of heat may explode or react to form dangerous or poisonous substances. i. Where pressure vessels/welding cylinders containing oxygen or acetylene are transported or used, the proper precautionary measures will be taken against bumping, falling, rolling etcetera. j. Gas welding hoses may only be joined with approved connectors and clamps. k. No oil or grease may be applied to oxygen valves and fittings. l. It is a sound practice to store pressure vessels and/or welding cylinders vertically and to secure them by means of a chain. m. Acetylene cylinders may never be inclined in excess of 45°. n. Proper and adequate fire prevention measures will be instituted and maintained for as long as the welding continues. o. Where explosive and/or flammable vapours are present welding will only be done under “hot work” permits.
Transportation of employees	High 22	The unsafe transportation of employees could result in injuries and/or fatalities with subsequent costs and claims.	<ol style="list-style-type: none"> 1. Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried. 2. Regulation 247 of the National Road Traffic Act, Number 93 of 1996 (NRTA) stipulates that the principal contractor shall not allow employees to be transported in a vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of – <ol style="list-style-type: none"> a. at least 350 mm above the surface on which employees are seated; or

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>b. at least 900 mm above the surface on which employees are standing,</p> <p>in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.</p> <p>3. Regulation 247 of the NRTA also stipulates that the principal contractor shall also not allow any employees to be conveyed in the goods compartment of a vehicle together with any tools or goods, except their personal effects, unless that portion in which the employees are being conveyed is separated by means of a partition, from the portion in which such goods are being conveyed.</p>
Demolition of asbestos	High 23	The undue exposure to asbestos dust exposes employees or other persons to severe health risks and could also cause environmental exposures with subsequent reputation risks.	<p>The principal contractor to ensure that:</p> <p>a. No demolition of asbestos to be undertaken unless the principal contractor or any sub-contractor designated to do so is duly registered as an asbestos contractor with the Department of Labour</p> <p>b. A plan of work to be developed, approved by an Approved Asbestos Inspection Authority and submitted to the Department of Labour at least 14 days prior to commencement of any asbestos demolition work. Proof that the plan of work was submitted to the Department of Labour should be available in the health and safety file which should be kept on site at all times.</p> <p>c. Asbestos waste only to be disposed of in a waste disposal site specifically designated for this purpose in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), as amended. A certificate from the designated disposal site should be obtained and submitted to the client for evaluation. A copy of this certificate should also be available in the health and safety file at all times.</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
Working under or close to overhead power lines	Significant 20	Unsafe working under or close to overhead power lines could result in accidental contact or an arch and employees and other persons being electrocuted with subsequent injuries or even fatalities as well as asset damage with subsequent costs and reputation risks.	<p>The principal contractor to ensure that the following requirements are duly considered and adhere to:</p> <p>1. Passing underneath overhead lines to access the site</p> <p>Some of the access roads to the site cross under existing power lines. To ensure that vehicles traveling to and from the site do not damage these lines and to reduce the risk of accidental contact the principal contractor should erect ground-level barriers to establish a safety zone to keep employees, other persons as well as construction vehicles and plant away from the wires. These barriers should be constructed out of large steel drums filled with rubble, concrete blocks, wire fence earthed at both ends, or earth banks marked with posts.</p> <ul style="list-style-type: none"> a. If steel drums are used they should be highlight by painting them with red and white horizontal stripes. b. If a wire fence is used, put red and white flags on the fence wire posts. c. Make sure the barriers can be seen at night, by using white or fluorescent paint or attaching reflective strips. <p>The principal contractor to –</p> <ul style="list-style-type: none"> a. keep the number of passageways to a minimum; b. define the route of the passageway using fences and erect goalposts at each end to act as gateways using a rigid, non-conducting material, for example timber or plastic pipe, for the goalposts, highlighted with, for example, red and white stripes. If the passageway is too wide to be spanned by a rigid non-conducting goalpost, the principal contractor

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>has to use tensioned steel wire, earthed at each end, or plastic ropes with bunting attached. These should be positioned further away from the overhead line to prevent them being stretched and the safety clearances being reduced by plant moving towards the line;</p> <ul style="list-style-type: none"> c. ensure the surface of the passageway is levelled, firmed-up and well maintained to prevent undue tilting or bouncing of the vehicles and/or equipment; d. put warning notices at either side of the passageway, on or near the goalposts and on approaches to the crossing giving the crossbar clearance height and instructing drivers to lower booms, tipper bodies etcetera and to keep below this height while crossing; e. illuminate the notices and crossbar at night, or in poor weather conditions, to make sure they are visible; f. enforce strict speed control measures; and g. make sure that the barriers and goalposts are maintained. <p>2. Working underneath overhead lines</p> <ul style="list-style-type: none"> a. The principal contractor to confirm with the local authority or if applicable Eskom what the standard is for working close to and under these overhead lines. b. A risk assessment to be undertaken taking into account any situations that could lead to danger from the overhead wires, for example, consider whether someone may need to stand on top of a machine or scaffold platform and lift a long item above their head, or if the combined height of a load on a low truck breaches the safe clearance

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>distance. If this type of situation could exist, applicable precautionary measures have to be taken.</p> <ul style="list-style-type: none"> c. Where there is a risk of contact from, for example, the upward movement of cranes or tipper trucks or employees carrying tools and equipment, the principal contractor to carefully assess the risks and precautionary measures. d. Vehicles, plant, machinery, equipment, or materials that could reach beyond the safe clearance distance not to be taken near the line. e. Under no circumstances may any part of plant or equipment such as ladders, poles and hand tools be able to be utilised within the danger zone or make contact with the lines. f. The principal contractor to allow for uncertainty in measuring the distances and for the possibility of unexpected movement of the equipment due, for example, to wind conditions. g. Long objects to be carried horizontally and close to the ground and vehicles positioned so that no part can reach into the danger zone, even when fully extended. h. Construction vehicles and plant working underneath overhead lines such as cranes, excavators and tele-handlers to be modified by the suppliers with the addition of suitable physical restraints so that they cannot reach beyond the safe clearance distances, measures should be put in place to ensure these restraints are effective and cannot be altered or tampered with. i. Operators of high machinery to be instructed not carry out any work on top of the machinery near overhead power lines. j. Make sure that employees, including any sub-contractors, understand the risks and are provided

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>with instructions about the risk prevention measures.</p> <p>k. Arrange for the work to be directly supervised by a competent person at all times who is familiar with the risks and can make sure that the required safety precautions are observed.</p> <p>3. Emergency procedures</p> <p>If someone or something comes into contact with an overhead line, it is important that everyone involved knows what action to take to reduce the risk of anyone sustaining an electric shock or burn injuries. Key points include –</p> <p>a. Never touch the overhead line's wires.</p> <p>b. Always assume that the wires are live, even if they are not arcing or sparking, or if they otherwise appear to be dead. Even if lines are dead, they may be switched back on either automatically after a few seconds or remotely after a few minutes or even hours if the line's owner is not aware that their line has been damaged.</p> <p>c. In the event of accidental contact call the emergency services. Give them the location of the incident, tell them what has happened and that electricity wires are involved.</p> <p>d. Should any employee or other person come in contact with, or close to, a damaged wire, he must away as quickly as possible and stay away until the line's owner advises that the situation has been made safe.</p> <p>e. In the event of a vehicle touching a wire, the driver and occupants should either stay in the vehicle or, should the need to get out, jump out</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
			<p>of it as far as you can. Never touch the vehicle while standing on the ground. Do not return to the vehicle until it has been confirmed that it is safe to do so.</p> <p>f. All employees and other persons should be aware that if a live wire is touching the ground the area around it may be live. A safe distance from the wire or anything else it may be touching should therefore be maintained.</p> <p>g. Only duly competent and authorised persons may work on electrical wires and installations.</p>
Exposure to poisonous animals or insects	Significant 18	Interaction with poisonous animals or insects could result in injuries or even fatalities.	<p>The principal contractor to ensure that the following are duly adhered to:</p> <p>a. the emergency procedure to be expanded to provide for the effective treatment of employees or other persons visiting exposed to bites or stings from poisonous animals and insects, i.e. the contact details of the nearest medical unit that could treat employees exposed to bites or stings be obtained and arrangements be made with this service provider on the procedures to be followed to ensure swift response when required;</p> <p>b. confirmation to be obtained from this medical unit that they have anti venom reserved to treat employees or other persons visiting that may be exposed to snake bites or scorpion stings;</p> <p>c. competent first aiders to be available to facilitate the treatment of employees or other persons visiting exposed to stings or bites; and</p> <p>d. the potential exposure posed by poisonous animals or insects and awareness thereof to be discussed with all employees as part of the toolbox talks and general awareness training and other persons visiting as part of the pre-site visit induction process.</p>

Description of risk	Risk rating	Potential risk impact	Risk mitigation
Working in inclement weather	High 21	Inclement weather conditions encountered during construction work could result in injuries or even fatalities and/or even damages to assets with subsequent claims and costs.	<p>The principal contractor to implement an early warning system to identify inclement weather and to prevent such weather from posing negative implications on the safety of employees and other persons visiting.</p> <p>The early warning system to, as a minimum. provide for the following:</p> <p>1. Construction work done during electrical storms</p> <ul style="list-style-type: none"> a. The principal contractor to ensure that all employees are removed from heights and all employees are as safe as possible, in inclement weather conditions. b. No work to be allowed on the construction site during electric storms where employees cannot be protected from it. Protection involves: <ul style="list-style-type: none"> • eating area fitted with a lightning mast • workshops • inside buildings c. No work to be allowed in electrical storms on top of open structural steel, even when earthed. d. No work to be allowed on height where the lightning is within a 10 kilometre radius. e. After inclement weather on-site risk assessments to be reviewed to include wet conditions. <p>2. Lifting equipment operations during inclement weather</p> <ul style="list-style-type: none"> a. Lifting operations will stop during lightning within a 10 kilometre radius and wind above 28 km/h, and the lifting equipment operator will not be allowed to leave the lifting equipment with the booms extended.

Description of risk	Risk rating	Potential risk impact	Risk mitigation										
			<div><div><div>b. Lifting operations will stop during rain, rigging and hand lifts.</div><div>c. Booms on all lifting equipment will be retracted.</div><div>d. All rigging operations will stop and employees will be removed from site.</div></div><div><div>3. Construction work done during rain</div><div><div>a. During rainy conditions all work on steel structures to stop.</div><div>b. No electrical tools to be used during rainy weather in open areas.</div><div>c. If necessary work only to be done in water proof areas where there is a zero risk for electrocution.</div><div>d. Areas to be cleared for work during rain:<div><div>workshops</div><div>offices</div><div>work on ground level with the provision that the area is maintained in a safe dry condition</div></div></div></div></div><div><div>4. Scaffolding activities during inclement weather conditions</div><div><div>During inclement weather only limited scaffolding actions to be permitted i.e. erecting and dismantling activities.</div><div><div>Guidelines for safe choices:</div><table><tr><th>Weather type</th><th>Building and dismantling of scaffolding</th></tr><tr><td>Lightning</td><td>Stop all activities</td></tr><tr><td>Light rain</td><td>Stop all activities</td></tr><tr><td>Heavy rain</td><td>Stop all activities</td></tr><tr><td>Wind <28 km/h</td><td>Full use</td></tr></table></div></div></div></div>	Weather type	Building and dismantling of scaffolding	Lightning	Stop all activities	Light rain	Stop all activities	Heavy rain	Stop all activities	Wind <28 km/h	Full use
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			<table><tr><td>Wind >40 km/h</td><td>Stop all activities</td></tr><tr><td>Light mist</td><td>Full use</td></tr><tr><td>Heavy mist</td><td>Full use</td></tr><tr><td>Hail</td><td>Stop all activities</td></tr></table>	Wind >40 km/h	Stop all activities	Light mist	Full use	Heavy mist	Full use	Hail	Stop all activities	
Wind >40 km/h	Stop all activities											
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Hail	Stop all activities											
			<p>All scaffold users to:</p> <ul style="list-style-type: none">a. Ensure that scaffolding is inspected immediately after inclement weather conditions.b. Ensure that the risks associated with working at heights during inclement weather are identified and reasonably mitigated.c. Be cautious of slip/trip hazards when performing activities during inclement weather.d. Take note of the weather when completing the daily safe task instructions on site, where applicable. <p>5. Driving in inclement weather</p> <p>The principal contractor to ensure that the danger of driving in wet conditions is adequately covered in a risk assessment.</p> <p>The risk assessment to include, but not limited to:</p> <ul style="list-style-type: none">a. route planningb. speed reductionc. planning for emergency situationsd. driving precautions for slippery surfacese. visibility hazards									

Risk areas arising from the activities outlined above that the principal contractor's operational risk assessments to be undertaken in terms of Construction Regulation 9(1) should cover

- a. Aggregate/Sand Delivery
- b. Arc welding
- c. Brickwork
- d. Bulk mixing plant
- e. Compressed gas cylinders-handling
- f. Compressors – Air
- g. Cutting of pipes
- h. Demolition
- i. Distribution boards – Electrical
- j. Drivers – of vehicles
- k. Electrical installation – Maintenance of
- l. Excavation work
- m. Excavator
- n. Exposure to poisonous animals or insects
- o. Fire prevention and protection
- p. Front end loader
- q. Fuel supply
- r. Gas welding-cutting operations
- s. Hand and spray painting
- t. Hand tools
- u. Kerb laying
- v. Landscaping
- w. Laying of pipes
- x. Laying of storm water drains
- y. Levelling – of materials
- z. Loading supervisor
- aa. Loading/unloading - of trucks
- bb. Machine operator
- cc. Making of steel items
- dd. Manholes – Laying of precast section
- ee. Material delivery
- ff. Material handling

gg.	Placing concrete
hh.	Plastering
ii.	Portable ladders
jj.	Refuelling vehicles/plant
kk.	Scaffolding
ll.	Site establishment
mm.	Temporary works
nn.	Termite proofing
oo.	Tile stacking
pp.	Traffic control
qq.	Trenches – Digging of
rr.	Use of portable electrical tools
ss.	Work in confined spaces
tt.	Work in fall risk positions
uu.	Working close to existing services i.e. electrical, waste water etc
vv.	Working close to traffic
ww.	Working in inclement weather
xx.	Workshops

Sign-off by Professional Construction Health and Safety Agent

This serves as confirmation that I, Bertie Viljoen, have developed this baseline risk assessment in terms of Construction Regulation 5(1)(a) and that the results were duly taken into consideration during the development of the project specific occupational health and safety specification developed in terms of Construction Regulation 5(1)(b).

Signed on this 17 th day of February 2017



Bertie Viljoen Pr CHSA
CHSA/033/2016

