

**OCCUPATIONAL HEALTH & SAFETY BASELINE RISK ASSESSMENT)**  
(Reference: Occupational Health and Safety Act, 85 of 1993 & Regulation 5 (1) (A))

## SITE SPECIFIC BASELINE RISK ASSESSMENT

**PROJECT NAME:**

**THABOTONA FARM PRIMARY SCHOOL.**

**PROJECT REFERENCE NUMBER:**

**OHS AGENT**

**CLIENT**

**GONANG CONSULTING SERVICES**

**DEVELOPMENT BANK SOUTHERN AFRICA**



APPROVAL	PREPARED BY	PREPARED FOR
INSTITUTION:	GONANG CONSULTING SERVICES	DEVELOPMENT BANK SOUTHERN AFRICA
POSITION:	OHS AGENT	CLIENT
DATE:	2023/05/14	

CLIENT: DBSA  PRINCIPAL AGENT: GONANG CONSULTING & SERVICE			PROJECT & SCOPE: THABOTONA FARM P.S		BASELINE RISK ASSESSMENT FOR  THABOTONA FARM PRIMARY SCHOOL.				CONTRACT NO:  NEXT REVIEW DATE:		18 months upon appointment of construction	
Date: 14/05/2023			Prepared by:		GONANG CONSULTING SERVICES				Prepared for:		DBSA	
1. Identify Hazards			2. Identify Risks						3. Analyse Risks			
Haz no	Task & Status (All active)	Hazard identification	Risk No	Affected persons	Risk owner	Associated risk	Abnormal Y/N	Causes of risk	Consequences	Existing controls Preventive/Reactive	Likelihood	Risk rating

Task#	Task description	Hazard/ aspect/ failure	Potential risk	SHEQ category	Raw risk rating	Suggested mitigation/ control measures	Residual risk rating
1	Introduction & training	Incident occurring due to uninformed individual	Injury Asset damage Environmental harm Quality non-compliance	S/H AD E QA	9(M)	<ul style="list-style-type: none"> <li>All employees, contractors &amp; visitors to undergo site induction</li> <li>Site induction to outline site hazards in the work area as well as the recommended precautionary measures</li> <li>Site rules required PPE to be communicated</li> <li>Employees to be trained on tools &amp; equipment required for completing tasks assigned to them</li> <li>Supervisors to be trained on process control procedure &amp; required records.</li> <li>Proof of conducted job specific training to be on file in safety office / head office</li> <li>Training matrix to be generated to analyse training requirements for site employees</li> <li>Training arranged according to needs analysis</li> <li>Risk assessment to be communicated to all employees to which it is relevant. Record kept of discussion.</li> </ul>	4 (L)
	COVID-19	Getting or spreading the virus by not washing hands or not washing them adequately	Ill health Fatality	S/H	25E	<ul style="list-style-type: none"> <li>Put in place monitoring and supervision to make sure people are following controls</li> <li>Put up signs to remind people to wash their hands</li> <li>Provide information to workers about when and where they need to wash their hands</li> <li>Identify if there is a need for additional hand washing facility</li> <li>Provide workers with 70% alcohol based waterless hand sanitisers</li> </ul>	5M
		Spreading the virus in common use areas such as toilet facilities, exit/entry points, eating areas, kitchen	Ill health Fatality	S/H	26E	<ul style="list-style-type: none"> <li>Put in place monitoring supervision to make sure people are following controls that are put in place e.g following hygiene procedures, washing hands</li> <li>Near-miss reporting may also help identify where controls cannot be followed or people not doing what they should do.</li> <li>Identify area where social distancing rules cannot be met.</li> <li>Identify areas where workers and visitors frequently touched</li> <li>Put one-way system at the entry/exit point, allowing one person to pass.</li> <li>Put in place cleaning regimes to make sure that frequent touched areas are kept clean</li> </ul>	5M
		Spreading the virus by not cleaning surfaces, equipment and work stations	Ill health Fatality		24 E	<ul style="list-style-type: none"> <li>Identify surfaces that are frequently touched and by many people, shared equipment and specify the level of cleaning and by whom</li> <li>Avoid sharing work equipment by allocating it on personal issue or by putting a cleaning regime in place to clean between use</li> <li>Keep surfaces clear to make it easier to clean and reduce the likelihood of contaminating objects</li> </ul>	5M
		Contracting or spreading the virus by not social distancing	Ill health Fatality		25 E	<ul style="list-style-type: none"> <li>Identify areas where under normal circumstances workers would not be able to maintain social distancing</li> <li>Use marker or sticker on the floor with a distance of 1.5m</li> <li>Create a one-way system</li> <li>Holding meetings virtually than face to face</li> <li>Limit the number of people on site</li> <li>Minimise contact at the security gate</li> <li>Improve ventilation in a closed area</li> </ul>	5M
		Poor workplace ventilation	Ill health Fatality	S/H	9M	<ul style="list-style-type: none"> <li>Identify areas that need additional ventilation to increase air flow</li> <li>Provide mechanical ventilation, desk fans and open windows and doors</li> </ul>	5M

		Increased risk of infection and complications for vulnerable workers	Ill health Fatality	S/H	9M	<ul style="list-style-type: none"> <li>Discuss with employees what their personal risk are and identify what needs to be done in each case</li> <li>Protect the workers from the virus through social distancing and hygiene procedure</li> </ul>	5M
		Working without a mask which will result in the worker contracting the virus	Ill health Fatality	S/H	26E	<ul style="list-style-type: none"> <li>The employer should provide employees with reusable cloth masks</li> <li>The employer must ensure that the cloth masks are washed daily after use</li> <li>Anyone without should be prohibited from entering the construction site if they do not have a mask or are not wearing</li> <li>Prohibit workers from taking off their masks while on duty</li> </ul>	5M
2	Site establishment	Exposure to moving machinery & vehicles	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Management to ensure the site layout is approved by RE</li> <li>Layout to consider site traffic, plant movement &amp; other interfacing contractor site layouts</li> </ul>	4(L)
		Damage to fauna & flora	Environmental harm	EN	6(M)	<ul style="list-style-type: none"> <li>Site camp foot print &amp; hauling routes to be established &amp; confirmed with Client &amp; RE</li> <li>Bund wall to be built around hazardous storage areas to prevent run off into water system &amp; ground pollution</li> <li>Construct berms to direct construction site runoff from entering the storm water/ natural water system</li> <li>Establish waste storage area</li> </ul>	2 (L)
		Hazardous chemical storage	Injury Ground pollution	S/H EN	9(M)	<ul style="list-style-type: none"> <li>No open flames &amp; no smoking signs to be displayed in the vicinity of hazardous chemical store</li> <li>All material safety data sheet (MSDS) to be available at all times</li> <li>Ensure that the person in charge of the chemical store is adequately and comprehensively informed and trained with regards to the potential risk to health caused by exposure etc.</li> <li>Ensure hazardous chemical storage is bunded</li> </ul>	4(L)
						<ul style="list-style-type: none"> <li>Ensure hazardous chemical store is well ventilated</li> <li>Ensure the area is well demarcated and screened off</li> <li>Ensure all spills are reported immediately</li> <li>Liquid bulk storage tanks to be bunded</li> <li>Each bund to be capable of containing the maximum volume of the tank + 10%</li> <li>Fire extinguisher to be in 10 meter radius</li> </ul>	
		Insufficient waste management	Water pollution Ground pollution Aesthetic pollution Air pollution	EN	6 (M)	<ul style="list-style-type: none"> <li>Ensure the waste storage area has sufficient capacity</li> <li>Ensure that all loose materials &amp; waste are covered &amp; tied down to be prevent being dispersed by the wind</li> <li>Ensure storage area clearly marked</li> <li>Ensure all hazardous waste is removed to an approved dumping site/ facility</li> <li>Colour code and label waste bins for waste separation</li> </ul>	2 (L)

		Insufficient storm water management	Water pollution/ storm water system	EN	6(M)	<ul style="list-style-type: none"> <li>Evaluate existing storm water drainage patterns vs construction program</li> <li>Implement temporary drainage channels and berms</li> <li>Monitor effectiveness of temporary measures</li> </ul>	2 (L)
		Testing services not available at start up	Production loss business disruption	QA BD	12 (M)	<ul style="list-style-type: none"> <li>Ensure sufficient water and electricity supply</li> <li>All equipment to be calibrated and copies of certificates submitted to QC officer</li> <li>Offsite laboratory service to be identified and appointed before construction commences</li> </ul>	6 (M)
		Unapproved material used in construction works	Production loss Business disruption	QA BD	12 (M)	<ul style="list-style-type: none"> <li>Sample of aggregates and mix designs to be tested and approved by RE before construction begins</li> <li>Material approval register and requests established for record purposes</li> </ul>	6(M)
		Process control measures not planned	Production loss Business distribution	QA BD	12 (M)	<ul style="list-style-type: none"> <li>Method statement and quality control plans to be generated submitted to the client rep. for approval before construction activity commences</li> <li>All supervisors trained in process control measures before construction activity commences</li> </ul>	6 (M)
		Restricted/ unsafe access/ egress to site	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Implement traffic accommodation at site access points</li> <li>Ensure required information and warning signage is erected at site access / egress points</li> </ul>	6 (M)
		Collision with vehicle/ individual while creating access through berm using TLB	Injury Property damage	S/H AD R/S/C	6 (M)	<ul style="list-style-type: none"> <li>Only certified and approved operators used</li> <li>Daily plant pre-inspection checklist to be completed and signed off by supervisor</li> <li>Toolbox talk and risk assessment conducted before activity commences (the risk assessment are communicated every 3 months – DSTI done daily)</li> <li>DSTI to be completed and communicated before work commences and communicated before work commences and communication record signed by all employees working in that team.</li> <li>Work area to be barricaded and flagman to control movement of public plant</li> </ul>	2 (L)
		Equipment failure during offloading and positioning of containers/ offices (mobile crane)	Injury Asset damage	S/H AD	9(M)	<ul style="list-style-type: none"> <li>Management (supervisor) to ensure that only certified and approved operator, crane and lifting tackle to be used.</li> <li>All lifting equipment to be inspected and registered</li> <li>Plant pre-inspection checklist to be completed</li> <li>Supervisor to ensure level and solid ground free of underground services</li> <li>Check for overhead obstruction (e.g. power lines, structures)</li> <li>Clear layout map/ instruction to be provided to crane operator</li> </ul>	4 (L)
		Lifted container falling/generator	Injury Asset damage	S/H AD	9(M)	<ul style="list-style-type: none"> <li>Supervisor and rigger to ensure correct lifting tackle and attaching method/procedures applied</li> <li>Correct PPE to be worn by all involved personnel</li> <li>Access to the area to be controlled</li> </ul>	4(L)
		Load swinging and striking	Injury Assets damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Area to be barricaded off during lifting activities to prevent unauthorised entry</li> <li>Two guide ropes to be used on load to ensure stable movement</li> <li>No lifting during high winds or inclement weather</li> </ul>	6(M)

		employees/ other containers				<ul style="list-style-type: none"> <li>Swing radius must be identified to ensure that the load can be offloaded in a safe manner</li> <li>Ensure personnel stay out of the crane swing radius</li> <li>Ensure there are barrier guards showing swing radius</li> <li>A boom angle indicator must be on the crane</li> <li>SWL should be clearly marked on the crane</li> <li>No overhead lifting will be allowed EVER</li> <li>Avoid sudden acceleration or breaking during traveling with a load which will cause the load to swing</li> </ul>	
		Public and workers not informed due to inadequate and incorrect signage	Injury Asset damage	S/H AD R/S/C	12 (M)	<ul style="list-style-type: none"> <li>Legal required signage must be displayed and be clearly visible at all times</li> <li>Information, prohibitive, mandatory and emergency signage explained to workers in tool box talks</li> <li>Signage to be inspected daily to ensure that correct and sufficient signage erected</li> </ul>	6 (M)
3	Ergonomics	Uncomfortable work positions	Body soreness: Back, shoulders, neck, hips, knees and/or feet	H	5(L)	<ul style="list-style-type: none"> <li>Conduct an ergonomic job specification assessment</li> <li>Observe body movements and their frequency</li> <li>Look for awkward movements that involve moving materials with bad postures away from neutral</li> <li>Establish an ergonomics program that can be used to reduce injury by controlling hazards</li> <li>Redesign or install adjustable workstations to reduce awkward joint angles</li> <li>Encourage workers to change posture throughout work shifts</li> <li>Position work in ways that eliminate long/excessive reach, decrease joint flexion/extension requirements and promote neutral postures</li> <li>Avoid employees to work below knees and above shoulders</li> <li>Provide tools that promote neutral joint angles</li> <li>The greater the elbow angle the greater the stress</li> <li>Train workers to keep elbows closer to body and in neutral posture as they work</li> <li>Establish ergonomic training that is specific to the job to make workers aware of ergonomic hazards</li> </ul>	3(L)
		Highly repetitive tasks	Fatigue	H	4(L)	<ul style="list-style-type: none"> <li>Establish system to rotate employees</li> <li>Job rotations are best when each new task requires a different muscle group</li> </ul>	6(M)
		Repetitive lifting of weights over 20 lbs and/or occasional lifting of weights over 50 lbs	Muscle strain, Fatigue and body soreness	H	5(L)	<ul style="list-style-type: none"> <li>Lifting materials to be used on site</li> </ul>	6(M)
		Tools not suitable for a specific task	Injury	H	3(L)	<ul style="list-style-type: none"> <li>Redesign or install tools that promote neutral postures</li> </ul>	7(M)

						<ul style="list-style-type: none"> <li>Establish ergonomic training that is specific to the job to make workers aware of ergonomics hazards and ways to control them</li> </ul>	
4	Site security	Theft/ unauthorised entry	Business disruption Asset damage	BD AD	12 (M)	<ul style="list-style-type: none"> <li>Fencing to be of minimum 1.8m height with 6m gates</li> <li>Security service to be appointed to provide security and access control</li> </ul>	6 (M)
		Employee (including contractor and supplier) under the influence of alcohol or illegal substances	Injury Fatality Asset damage Production loss	S/H AD BD QA	12(M)	<ul style="list-style-type: none"> <li>No employee to be allowed to work when under the influence of drugs or alcohol</li> <li>Random alcohol testing to be conducted on entering site</li> <li>Disciplinary action to be taken against offenders</li> </ul>	6 (M)
5	Emergency preparedness	Insufficient firefighting equipment	Injury Asset damage production loss	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Firefighting equipment analysis to be conducted at site establishment</li> <li>Firefighting equipment placed as per analysis</li> <li>Identification signage must be clear and visible</li> <li>All relevant equipment to be numbered, inspected and on a register</li> <li>All equipment must be serviced annually or after use</li> <li>Identified personnel to be trained in firefighting</li> <li>No personnel shall intentionally or recklessly damage or misuse anything which is provided in the interest of health and safety.</li> </ul>	4 (L)
6	First aid	Inadequate medical assessments Untreated injuries	Aggravated injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Sufficient first aid boxes to be available</li> <li>Identified personnel trained in first aid</li> <li>Identity of first aiders communicated</li> <li>Ensure that appointed first aider is available during each shift</li> <li>First aid boxes to comply with minimum requirements inspected and registered</li> <li>First aid treatment register to be maintained</li> </ul>	2 (L)
7	Facilities	Insufficient Toilet Facilities	Unhygienic conditions	S/H	3 (L)	<ul style="list-style-type: none"> <li>Separate toilets for both genders, must be available and clearly identified</li> </ul>	2 (L)
		Insufficient management of waste	Illnesses and ailments Aesthetic Pollution	S/H EN	6 (M)	<ul style="list-style-type: none"> <li>Separate waste bins for different waste categories to be available and identified</li> <li>Waste disposal plan and schedule must be maintained</li> <li>Bins must have lids</li> </ul>	4 (L)
		Inadequate eating area	Poor hygiene Illnesses and ailments	S/H	6 (M)	<ul style="list-style-type: none"> <li>Adequate, cleaning and shaded eating area to be insured</li> </ul>	2 (L)
		Inadequate drinking water provided	Water contaminated	S/H	6 (M)	<ul style="list-style-type: none"> <li>Facilities or arrangements to be made to ensure sufficient available drinking water for employees in and out of site camp</li> <li>Signage to be installed to identify drinking and non-drinking water facilities</li> </ul>	2 (L)

			Employee dehydration			<ul style="list-style-type: none"> <li>Water supply to be increased in heat water conditions</li> </ul>	
		Unsafe electrical connection	Injury Electrocution	S/H	12 (M)	<ul style="list-style-type: none"> <li>All cables to be routed underground</li> <li>Only qualified electrician to do installation and termination</li> <li>Certificate of compliance to be issued by electrician</li> </ul>	6 (M)
8	Supplier vehicles and deliveries to site by down area	Reckless driving uncertified driver	Injury Fatality Asset Damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>All drivers to be qualified</li> <li>Draws up a site specific document stating site routes, site rules and persons to contact upon arriving at site. This is sent to the service providers upon signing agreements</li> <li>Vehicle warning/ safety devices to be in working order (construction lights, reverse hooter, etc)</li> </ul>	6 (M)
		Substandard truck	Injury Asset Damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Vehicles to be approved and licenced to enter site</li> <li>Vehicle construction lights to be fitted and working to improve visibility</li> <li>No visible oil leaks</li> </ul>	4 (L)
9	Delivery or loading of materials/ suppliers on site	Restricted access and space in laydown/ loading area	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>Lay down area must be well planned to ensure adequate space</li> <li>Access and offloading space must be included in site layout during site establishment</li> <li>Storage area to be demarcated and barricaded</li> <li>No material to protrude through or under the barricading netting</li> </ul>	2 (L)
		Poor tacks/ storage practices	Injury Asset damage	S/H QA	6 (M)	<ul style="list-style-type: none"> <li>Surface of stacking area must be levelled</li> <li>Safe stacking heights adhered to</li> <li>Stacking of material is not permitted to be more than three times higher than the smallest diameter of base</li> <li>Material only to be removed from the top of the stack</li> </ul>	2 (L)
		Employment falling whilst climbing onto truck load bed to offload truck	Injury	S/H	9 (M)	<ul style="list-style-type: none"> <li>Ladder to be used for mounting and dismounting of truck load bed</li> <li>Additional worker to hold ladder below when worker climbing up and down ladder</li> <li>Ladder to be numbered and colour coded</li> <li>Ladder to be inspected on monthly basis and on register</li> </ul>	4 (L)
		Insufficient dunnage	Asset damage	QA	4 (L)	<ul style="list-style-type: none"> <li>Timber poles/ wooden pallets (dunnage) to be used for stacking material susceptible to damp/ rust</li> <li>Rebar, steel components should not be lying directly on the ground</li> <li>Material to be stacked on wood cleared from ground and stacking must be secure</li> </ul>	1 (L)
		Un-informed operator	Injury Property damage	S/H	6 (M)	<ul style="list-style-type: none"> <li>All trucks to report to the site camp for further instruction regarding the final delivery point</li> <li>Draw up a site specific document stating site routes, site rules and persons to contact upon arriving at site. This is sent to the service provider upon signing agreements</li> <li>Supervisor to escort truck to site if delivering directly to the work area</li> </ul>	4 (L)
		Incorrect parking on site	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>Supervisor to ensure that there is enough space to off load before truck arrives on site</li> <li>Traffic accommodation to be planned and implemented if delivery is offloaded close to or in live traffic</li> </ul>	2 (L)
		Load secure	Asset damage	AD QA	9 (M)	<ul style="list-style-type: none"> <li>Delivery truck to be inspected for secure load before the truck is unloaded</li> <li>Site agent/supervisor and safety officer agree on remedial action to have the load offloaded safely</li> </ul>	4 (L)



						<ul style="list-style-type: none"> <li>Unstable load to be secured before offloading the consignment</li> <li>Damaged goods to be recorded on delivery note and supplier informed for credit and resupply</li> <li>NCR will then be raised against supplier</li> </ul>	
		Truck driver not equipped with stop blocks and PPE	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>Spare stop block to be provided</li> <li>Engine to be switched off and park brakes engaged</li> <li>Operator to remain in vehicle in case of the vehicle rolling back or forward</li> <li>Operator or co-driver are no to be allowed to exit the vehicle without the correct PPE</li> </ul>	2 (L)
		Employee cut whilst offloading/ loading	Injury	S/H	9 (M)	<ul style="list-style-type: none"> <li>Ensure all materials are free from sharp edges and protruding objects</li> <li>Gloves to be worn at all times</li> <li>Employees to offload from top level of load</li> <li>Supervision at all times</li> </ul>	4 (L)
10	Loading and off-loading of truck with crane truck or mobile crane	Unqualified personnel on site`	Injury	S/H	9(M)	<ul style="list-style-type: none"> <li>Ensure all personnel have be declared fit for duty by a medical practitioner</li> <li>Personnel shall undergo site induction</li> <li>Daily DSTI on task risks to be completed</li> <li>All appointments to be up to date</li> <li>Crane operator must be licenced by an authorised training institution</li> <li>Only competent trained appointed banksmen to assist with lifting operations</li> <li>All competency certificates to be kept with appointments in the safety office</li> </ul>	4 (L)
		Incorrect PPE	Injury	S/H	9 (M)	<ul style="list-style-type: none"> <li>Correct PPE to be issued and worn by employees</li> <li>Hard hats to be utilized during any lifting operations</li> </ul>	4 (L)
		Crane truck/ crane/ lifting tackle not inspected before being sent to site	Injury Asset damage Soil contamination Loss of production	S/H AD EN BD	6 (M)	<ul style="list-style-type: none"> <li>All cranes to be checked and tested by accredited inspector</li> <li>Crane to be inspected and approved by site appointment mobile equipment inspector</li> <li>Non-compliant equipment to be corrected before entering site</li> <li>Crane to have up to date and valid load test certificate, rope test certificate, LMI calibration certificate and crane hook certificate</li> <li>Full maintenance record of crane on file</li> <li>Relative crane documents to be kept in operators cab</li> <li>Crane pre-use checklist available in crane cab, understood and used by operator</li> </ul>	2 (L)
		Incorrect lifting equipment selected	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Task assessed to confirm that lifting equipment is correct</li> <li>Rigging study to be approved by site management and master rigger (5 tons and more)</li> </ul>	4 (L)
		Lifting equipment failure	Injury Fatality Asset damage	S/H AD QA	12 (M)	<ul style="list-style-type: none"> <li>Lifting equipment to be inspected and on register with valid load certificate</li> <li>Peruse inspection prior for use</li> <li>No damage equipment to be used</li> <li>All material/equipment that is to be lifted with a sling must be checked before lifting and after lifting from ground</li> <li>The site appointed person shall inspect and look after the lifting equipment and tools whilst on site</li> </ul>	6(M)

						<ul style="list-style-type: none"> <li>All ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices of the crane will be examined every 6 months</li> <li>No steel on steel lifting (no chain sling to be used on rebar)</li> </ul>	
		Falling from height when connecting lifting equipment	Injury	S/H	9 (M)	<ul style="list-style-type: none"> <li>Constant supervision of lifting operation</li> <li>Personnel must be instructed not to walk on the edge of truck load bed</li> <li>A ladder is to be used when ascending or descending truck from the truck, ensuring 3 point contact with ladder</li> </ul>	4 (L)
		Employee pinned between load/load and truck or ground	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Ensure loads are stable when offloading</li> <li>Workers to ensure proper footing</li> <li>Limbs not to be tangled in the guide rope or chain</li> <li>No person is allowed standing on, or working under a load while it is in suspension</li> </ul>	2 (L)
11	Establishing mobile crane on site	Uneven ground condition	Asset damage Injury Fatality Loss of production	AD S/H BD	8 (M)	<ul style="list-style-type: none"> <li>Supervisor and crane operator to do a pre inspection of ground condition</li> <li>Barricade crane operating area</li> <li>Ensure all personnel are clear of outrigger extension area</li> <li>Hands and feet to keep clear from outriggers and pads or sleepers when crane is levelled</li> <li>Ensure ground where outriggers will be placed is levelled and cleared of obstruction</li> <li>Outrigger pads or sleepers to be placed under outrigger to increase better ground stability</li> <li>Crane to be 100% levelled/ horizontally</li> </ul>	4 (L)
		Obstruction within boom swing radius	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Supervisor/banks men to ensure area is free of any obstruction</li> <li>The crane hook block and hook or load must never be slued over personnel of vehicles, especially if personnel are sitting in the vehicles</li> </ul>	4 (L)
		Excavation	Injury Fatality	S/H	12 (M)	<ul style="list-style-type: none"> <li>Crane not to be established closer than 2 meters to any excavation to prevent possible side wall collapse</li> <li>No material to be placed on the edge or near the edge of any excavation</li> </ul>	4 (L)
		Contact between overhead power lines and crane (arc flash/ electrocution)	Injury Fatality	S/H	6 (M)	<ul style="list-style-type: none"> <li>No work to be conducted within 15 meters of any power line</li> <li>Site manager to ensure a pre-plan meeting and site inspection conducted</li> <li>Permit to work near power lines to be applied for, accepted and approved by local municipality/ Eskom, site manager and client representative</li> </ul>	6 (M)
12	Operating mobile crane on site	Operating slipping whilst ascending or descending from crane	Injury	S/H	9 (M)	<ul style="list-style-type: none"> <li>Ensure operator maintain 3 point contact t all times when ascending and descending equipment</li> <li>Operator to ensure access steps are clean and in good serviceable condition</li> <li>Ensure safety shoes are clean of mud</li> </ul>	4 (L)
		Banks man – slipping, tripping or falling while communicating	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Ensure level working area free from tripping and slipping hazards</li> <li>Provide safe working platforms where necessary</li> </ul>	2 (L)

		with crane operator					
		Incorrect lifting equipment/ equipment failure	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Pre-task assessment to be conducted to ensure that the correct lifting equipment and size crane is used</li> <li>Correct PPE to be worn</li> <li>Competent employee to be appointed to be responsible for equipment and inspection there off</li> <li>Use correct and certified equipment</li> <li>Work within crane and lifting equipment</li> </ul>	6 (M)
		Crane toppling over	Injury Fatality Asset damage	S/H AD	8 (M)	<ul style="list-style-type: none"> <li>Ensure outriggers are in full extended position on a firm and stable ground using spreader boards</li> <li>Load to be raised slowly to check load stability and centre of gravity</li> <li>Banks man only person to communicate with crane operator</li> <li>Operator must always heed to an emergency STOP signal, no matter who gives it, except when specialised engineering lifting operations are conducted – then only the rigger</li> <li>Banks man to communicate with hand signals or radio</li> <li>Lifting not to take place during excessive wind</li> <li>Banks man to remove gloves when giving hand signals</li> <li>Banks man to ensure no person is beneath a suspended load</li> <li>No person to be allowed within the crane swing radius</li> <li>Crane not to travel with outriggers or boom in extended position</li> </ul>	4 (L)
		Employee injured / property damage whilst load being prepared to be hoisted	Injury Asset damage	S/H AD	9 (M)	<ul style="list-style-type: none"> <li>Ensure that operator hoist crane up slowly to rid equipment of slack</li> <li>Lifting equipment to be connected according to procedures</li> <li>All lifting equipment must have a valid load certificate</li> <li>Inspection to be register</li> <li>Hands to be clear when load hooked up</li> <li>Banks msn to ensure all personnel are clear when hoisting</li> <li>No overhead lifting will be allowed</li> </ul>	4 (L)
		Loading control of the hoisted load – striking employees, plant or structure	Injury Fatality Asset damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Work to lifting procedures/task analysis</li> <li>Area to be barricaded during lifting activities to prevent unauthorised entry</li> <li>Area to be barricaded during lifting activities to prevent unauthorised entry</li> <li>Banksman must wear high visibility vest during lifting operations</li> <li>Banks man to communicate with staff manning guide ropes whistles to be utilized</li> <li>Ensure sufficient guide ropes attached to ensure stable movement</li> <li>Work to equipment specifications</li> <li>Work in crane load chart specifications</li> </ul>	4 (L)
		Inclement weather conditions (high winds; lightning; heavy rain)	Injury Fatality	S/H	12 (M)	<ul style="list-style-type: none"> <li>Work within wind guidelines – less than 25km per hr. – evaluate situation in conjunction with operator and site management</li> <li>Do not work in thunderstorms and lightning</li> <li>Do not work on elevated positions when raining</li> </ul>	6 (M)

						<ul style="list-style-type: none"> <li>Suspended load to be lowered to ground level, outriggers to be retracted, crane to be switched off and operator to remain in cab during lightning storms until further notice</li> <li>Do not work with any steel</li> <li>Daily DSTI to include risks resulting from adverse weather</li> <li>No electrical work is to be conducted on crane in were conditions</li> </ul>	
13	Hazardous chemical storage	Employees not familiar with MSDS Liquid splashing Employees inhaling fumes Liquid spilling from container No information of hazardous substance	Injury Disability Fatality	S/H EN	13 (S)	<ul style="list-style-type: none"> <li>Obtain formal approval of flammable store from the relevant local authority and display the certificate at the entrance to the store</li> <li>Flammable liquid store to conform all legal requirements</li> <li>Assessments to be carried out to determine the quantity of flammable liquid kept on site</li> <li>No open flames and no smoking symbolic signs to be displayed in the vicinity of flammable liquid store</li> <li>All material safety data sheets (MSDS) to be available at all times</li> <li>Liquid bulk storage tanks to be banded</li> <li>Each bund to be capable of containing the maximum volume of the tank +10%</li> <li>Fire extinguisher to be in 10 meter radius</li> </ul>	5 (L)
14	Plant selection	Substandard Plant/incompetent operators	Injury Property damage Product loss	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>All plant to report to safety officer upon arrival on site with the following: <ul style="list-style-type: none"> <li>- Certified copy of ID</li> <li>- Valid medical certificate</li> <li>- Valid training certificate for the equipment she/he will be operating</li> <li>- Site induction to be done before any work commence</li> <li>- Legal appointment letter to be done and signed by the operator</li> <li>- Supervisor to be informed of arrival so that the operator can be informed of his duties</li> <li>- Plant to be inspected and taken photos for site register</li> <li>- Pre-start checklist to be done daily and signed off by the supervisor</li> <li>- All damages and fault to be reported immediately</li> </ul> </li> </ul>	3 (L)
15	Refuelling of plant	Fuel spillage during refuelling of plant	Soil contamination	EN	6 (M)	<ul style="list-style-type: none"> <li>Bonding or drip tray placed under stationary plant</li> <li>Spill kit to be available at all times</li> <li>MSDS available on site</li> <li>Personnel trained in spill cleaning procedure</li> <li>Fire extinguisher and relevant required signage to be installed (no smoking, no open flames and hearing protection)</li> </ul>	4(L)
16	Operating plant on site	Substandard plant	Injury Asset damage Production loss	S/H AD BD	6 (M)	<ul style="list-style-type: none"> <li>Plant to be inspected by site appointed inspector</li> <li>Plant to be listed on equipment register</li> <li>Daily pre-use checklist to be completed</li> <li>Plant to be equipped with warning devices (construction light, reverse hooter, flag, etc.)</li> </ul>	4 (L)

		Incompetent operator	Injury Fatality Asset damage Production loss	S/H AD BD	12 (M)	<ul style="list-style-type: none"> <li>Operator to be inducted and appointed</li> <li>Proof of medical fitness to be available</li> <li>Proof of qualification certificate available/ drivers licence (code EC)</li> <li>Operator to attend risk assessment and DSTI discussions</li> </ul>	6 (M)
		Speeding violation by plant on site	Injury Fatality Asset damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Supervisor to monitor plant speed on site</li> <li>Speed signage displayed on site</li> <li>Operator to slow down if visibility is poor on site</li> <li>Operator to adhere to stipulated following distance (40 meters)</li> </ul>	6 (M)
		Collision with other vehicle/equipment on site	Injury Fatality Asset damage Ground contamination Production loss	S/H AD EN QA	12 (M)	<ul style="list-style-type: none"> <li>Plant to be assigned to designated work area</li> <li>Tipper truck/ ADTs' assigned to haul roads/ route</li> <li>Plant / vehicle headlights to be on in bad visibility</li> <li>Construction plant of the way rule enforced</li> <li>Warning signage and traffic direction signage erected</li> <li>Vehicles to stay within construction plant operators line of sight (part of site induction)</li> <li>Site SHE officer to be informed immediately of incident</li> <li>Incident scene not to be disturbed until investigation is completed</li> <li>Spill kit to be used if any spillage caused by damaged plant or vehicle</li> <li>Supervisor to inform client representative to inspect any damage to completed works</li> </ul>	6 (M)
		Excessive dust caused by construction plant	Air pollution	EN	6 (M)	<ul style="list-style-type: none"> <li>Dust suppression application rate to be established</li> <li>Supervisor to monitor dust in work area</li> <li>Dust suppression application to be increased if excessive dust experience due to activity or weather conditions</li> </ul>	2(L)
		Employee struck by flying object from plant operation	Injury	S/H	6(M)	<ul style="list-style-type: none"> <li>Section 24 – reportable incident</li> <li>Personnel not to be allowed within 10 meters of operating plant (e.g. recycler, grader, roller, etc.)</li> </ul>	4 (L)
17	Survey setting out points	Incorrect setting out points (demarcation)	Quality NCR Production loss	QA BD	6 (M)	<ul style="list-style-type: none"> <li>Ensure surveyor has latest "construction drawings"</li> <li>Verify survey beacon integrity</li> <li>Supervisor to confirm that construction as per survey point</li> </ul>	4 (L)
18	Clearing and grubbing	Damage to flora, fauna and / or heritage items		EN	9 (M)	<ul style="list-style-type: none"> <li>Survey and fence any sensitive area that require protection within/adjacent to the works area in accordance with sensitive area plans and in consultation with the project ecologist</li> <li>Fence areas of significant flora, fauna habitat or known archaeological sites that are to be retained (protected)</li> <li>Fence areas of significant flora, fauna habitat or known archaeological sites that are to be retained (protected)</li> <li>These sites are to be managed in accordance with the working near sensitive areas</li> <li>Limit of clearing to be marked with Pegs/red and white danger tape at a maximum of 50m centres</li> </ul>	3 (L)

						<ul style="list-style-type: none"> <li>Pegs marked clearly indicate clearing side</li> <li>Limits of clearing to be set out by survey</li> </ul>	
19	Top soil management	Failing to preserve top soil	Erosion	ENV	12 (M)	<ul style="list-style-type: none"> <li>Top soil will be stripped together with the grass, ground cover and sedges from all over the site here permanent and temporary roads are located</li> <li>Top soil shall be stripped to the depth of 150mm or as specified in the spec</li> <li>Top soil shall be stockpiled separately from fill material and not use as a fill</li> </ul>	4 (L)
20	Clearing operations	Damage to watercourses and prepared areas	Water pollution	ENV	12 (M)	<ul style="list-style-type: none"> <li>Locate stockpiles clear of properties and away from watercourses where possible.</li> <li>Provide protection that prevents vegetative material from falling into or entering any creek or stream</li> <li>Where construction activities allow, only remove the upright trunk part of the tree within riparian zones, leaving the stump and roots within the ground to minimise disturbed areas</li> <li>Access along identified paths and tracks, and vehicle movement plan in place</li> <li>Transport of clearing plant and equipment across waterways to be undertaken at an approved established across point only</li> </ul>	6 (M)
21	Exposing of existing services; Telkom lines Overhead power lines Electrical cables Water supply lines	Damage to existing services, injury to employees, damage to assets	Injury Fatality Asset damage Community impact	S/H AD S/C	12 (M)	<ul style="list-style-type: none"> <li>Prior to executions commencing consult the utilities supplier's/ site owner about underground gas and electricity supplies, obtain copies of service plans</li> <li>Before work begins, underground cables must be located, identifies and clearly marked</li> <li>Clearing the area where service has been detected</li> <li>Once a locating device has been used to determine cable positions and routes, excavation may take place, with trial holes dug using suitable hand tools as necessary to confirm this</li> <li>Excavate alongside the service rather than directly above it</li> <li>Final exposure of service by horizontal digging is recommended as the force applied to hand tools can be controlled more effectively</li> <li>Insulated tools should be used when hand digging near electric cables</li> <li>Ensure services are supported once exposed,</li> <li>Identify the service and fulfil any specific reinstatement requirements when backfilling</li> <li>Find out the maximum height and reach of your own and contractors equipment (include the height of radio aerials or flashing beacons in the measurements)</li> <li>Create alternative access routes or work areas to avoid OHPLS entirely where possible</li> <li>Use barriers and overhead goalposts to control access and traffic routes</li> <li>Contact the Distribution Network Operator (DNO) to obtain the safe clearance distance. (your DNO can usually supply stickers describing emergency procedures and containing contact numbers that can be stuck in the cabs of vehicles likely to be used near overhead power lines)</li> <li>Retract booms of telescopic handlers and lower crane jibs when they are moving on site</li> <li>Plant working near overhead power lines is suspended from steel tower; or 9m (plus length of jib) if the lines is supported on wooden poles</li> <li>Consider the risk of a flashover occurring between the power line and your equipment; actually touching the line is not necessary for an incident to occur and can be fatal</li> </ul>	6 (M)

22	Excavation	Uncontrolled moving plant	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>Equipment may not be left running without operator cabin</li> <li>Excavator to be park in a safe manner before operator leaves cabin</li> <li>Section 24</li> </ul>	4(L)
		Pedestrian and vehicle/plant movement in close proximity to excavation	Injury Fatality Asset damage Production loss	S/H AD BD	12 (M)	<ul style="list-style-type: none"> <li>All excavations will be adequately shored and braced if not sloped</li> <li>All excavation areas to be barricaded until backfill is complete</li> <li>Daily excavation inspection conducted before work commenced in area appointed inspector (CR 13 (1)(a)) checklist to be handed to safety officer for filling</li> <li>Hard hats to be worn when working in excavations deeper than 1.5m</li> <li>Warning and prohibition signage to be installed at access to excavation</li> <li>Restrict access to excavation area to authorized persons and plant only</li> <li>Fence to be constructed if deep excavation close to public thoroughfare to reduce accessibility and increase visibility</li> <li>Flagman to be used to control/ warn plant and pedestrian traffic</li> </ul>	6 (M)
		Poor visibility of excavation area after dark	Injury Asset damage	S/H	9 (M)	<ul style="list-style-type: none"> <li>Excavate only what is required for immediate production</li> <li>Excavation to be backfilled as soon as possible after work completed</li> <li>Smaller holes, trenches and hollows must also be barricaded and backfilled as soon as practicable</li> <li>Areas to be barricaded until backfilling can be executed</li> <li>Reflectors to be placed on barricading for increased visibility</li> <li>Reflective signage to be used around deep excavations close to public thoroughfares</li> </ul>	6 (M)
		Decreased visibility in excavation	Injury Asset damage	S/H	9 (M)	<ul style="list-style-type: none"> <li>Positioning of excavator must be in order to facilitate maximum possible visibility</li> <li>Vehicles in deep excavations must be identified by use of flag and signage</li> <li>When poor visibility occurs a flagman/ spotter, should be dedicated to each plant</li> <li>Flagman to be behind soft berm/safety den (20m radius)</li> <li>Construction lights and vehicle lights to be switched on</li> <li>One-way traffic flow in and around excavation</li> <li>Reduce man and machine interface in excavation due to plan fumes</li> </ul>	4(L)
		Over-excavation	Quality NCR Damage to Flora and Fauna	QA EN	6 (M)	<ul style="list-style-type: none"> <li>Excavation setting out points to be clearly marked and visible</li> <li>Excavation only to take place within identified points</li> <li>Depth of excavation to be measured regularly to reduce risk of over excavation</li> <li>Client representative called if unsuitable material found at requires depth. Formal instruction to continue excavating to be requested from client representative.</li> </ul>	2 (L)
		Poor or no access/egress to and from excavation	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>All excavation will be supplied with sufficient access/egress ladders or ramps for entry and exit</li> <li>Ladders placed no further than 6m away from nearest workers and no further than 6m apart</li> <li>Access ladder must extend at least 900mm above the top of the excavation level (checked numbered and on register)</li> <li>Access and egress ramp must not exceed the safe operating parameters of required plant</li> </ul>	2 (L)



		Excavation collapse			6(M)	<ul style="list-style-type: none"> <li>Never work in excavation 1.2m deep or over unless the sides have been suitably shored and braced, or have been benched to prevent collapse</li> <li>The competent person on site must carry out a risk assessment to decide if shoring is required at depths less than 1.2m</li> <li>Before entering any excavation, inspect the walls for signs of collapse, particularly after heavy rain</li> <li>Do not go into unsupported excavations</li> <li>Never work ahead of the support</li> <li>Remember that even work in shallow trenches can be dangerous</li> <li>You may need to provide support if work involves bending, or kneeling in the trench</li> </ul>	3(L)
23	Generator installation	Biological hazards	Injury Skin Irritation Death	EN	4(L)	<ul style="list-style-type: none"> <li>The use of PPE reduces contact exposure</li> <li>Calmly move away when one sees a snake</li> <li>Take an employee to the clinic or give them aid treatment if one gets a sider or bee bit</li> </ul>	6 (M)
24	Handling and storage of excavated material	Excess spoil limiting mobility (rocks, stone boulders etc.)	Injury Asset damage	S/H AD	6 (M)	<ul style="list-style-type: none"> <li>Excess spoil will be removed from excavation work area at least 2m from side of excavation</li> <li>Spoil remaining in work area for backfilling purpose will be stockpiled in an identified safe area</li> <li>Position of stockpile not to restrict access/egress of work area</li> </ul>	5 (L)
		Material placed too closed excavation side resulting in sides collapsing	Injury Fatality Asset damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>No excavated material will be placed within 2m from excavation edge</li> <li>All excavation sides will be battered to prevent collapsing of materials</li> <li>Spoil at edges will not exceed height of 2m and will be shored 1-2 at all times</li> </ul>	7 (M)
25	Fixing reinforcing	Employee falling whilst carrying reinforcing / mesh to work area	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Employees to make use of demarcated walk ways</li> <li>Foreman and site supervisor to ensure that walk ways are clear and proper housing conducted on regular basis</li> <li>No material to protrude from demarcated area (gum poles or rebar)</li> </ul>	2 (L)
		Employees carrying material that is too heavy	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Supervisor to ensure that sufficient number of employees assigned to carry reinforcing depending on size, length and weight</li> <li>Workers delegated to carry steel to be rotated</li> <li>Heavy material to be lifted with crane/ hi-ab</li> <li>Gloves to be utilized at all times</li> </ul>	2(L)
		Employees' hand cut whilst working with steel/ mesh	Injury	S/H	4 (L)	<ul style="list-style-type: none"> <li>All employees to wear gloves at all times</li> <li>Correct tools to be used for task</li> </ul>	3 (L)
		No materials traceability of reinforcing / mesh in structure(s)	Non-compliance to client / ISO requirements	QA	9(M)	<ul style="list-style-type: none"> <li>Requisition/orders to be detail for which structure steel is ordered</li> <li>Suppliers to reference structure and mill certificate on delivery note</li> <li>Mill certificates to accompany deliveries to site</li> </ul>	4 (L)



		Employee falls and injured due to pieces of reinforcing offcuts and binding wire ground	Injury Aesthetic pollution	S/H EN	6 (M)	<ul style="list-style-type: none"> <li>All material and offcuts to be cleared between and after each shift</li> <li>All offcuts to be placed in an area away from walk way</li> <li>Offcuts to be contained in containers and disposed of correctly</li> </ul>	2 (L)
26	Erecting shutters	Employees injured whilst lifting shutter into position	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Supervisor to ensure more than one person handling heavy shutters</li> <li>Crane to be used for placement of heavy shutters placed in deep excavation/ areas with difficult access</li> </ul>	4(L)
		Shutters not secured sufficiently causing the shutter to kick during concrete pouring	Injury Production loss Ground contamination	S/H	9 (M)	<ul style="list-style-type: none"> <li>Supervisor to ensure that shutters are safe and stable prior to moving to next shutter</li> <li>Cover requirements between shutter and reinforcement to be checked before pouring concrete</li> </ul>	5L
27	Placing concrete	Concrete discharged onto concrete hands		S/H	6 (M)	<ul style="list-style-type: none"> <li>Employees receiving concrete must stand clear whilst concrete is discharged</li> <li>Correct PPE to be worn at all times</li> </ul>	7L
		Concrete hands injured whilst placing concrete by hand		S/H	6 (M)	<ul style="list-style-type: none"> <li>Only trained and competent employees to conduct task</li> <li>DSTI to be attended before commencement of task</li> <li>Sufficient space must be allowed between workers to allow for swinging and movement radius</li> <li>Long socks must be worn with gumboots</li> <li>Safety glasses to be worn during concrete operations</li> <li>Only approved and inspected hand tools to be used</li> </ul>	5(L)
		Employees injured whilst standing on rebar during placement of concrete	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Safe working platform provided for employees required to stand on rebar whilst placing concrete to prevent feet and leg injuries</li> <li>Safety gum boots to be worn at all times</li> <li>All upright rebar to be fitted with end caps</li> </ul>	2 (L)
		Employees injured when poker slips from operators hand whilst vibrating concrete	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Ensure employee is trained in using a vibrating poker</li> <li>Operator to have firm footing and proper grip/ hold on vibrator</li> <li>Correct PPE to be worn at all times (safety glasses)</li> <li>Supervision at all times</li> </ul>	2 (L)
		Defective vibrator	Injury	S/H	6 (M)	<ul style="list-style-type: none"> <li>Vibrator and motor must be inspected prior commencing with task</li> </ul>	2 (L)

			Asset damage			<ul style="list-style-type: none"> <li>Ensure proper machine guard, no exposed components of the vibrator motor</li> </ul>	
		Concrete spilled/ discharge onto ground	Ground pollution	EN	9 (M)	<ul style="list-style-type: none"> <li>Waste and spilled concrete must be cleaned up and removed from work area immediately</li> <li>Ensure that affected area is properly cleansed</li> <li>Contaminated ground to be removed and disposed of</li> <li>Safety department to be notified</li> </ul>	4 (L)
		Poor visibility resulting in poor control of operation	Injury Quality NCR	S/H QA	6 (M)	<ul style="list-style-type: none"> <li>No work to be conducted after sun set without adequate lighting (mobile lighting units)</li> <li>Design a traffic management and lighting plan</li> <li>Notification of night work to be handed in to relevant parties in time for approval</li> <li>Schedule to be drafted for setting up the traffic control devices</li> <li>Correct and high visibility PPE to be worn</li> </ul>	2 (L)
		Uncontrolled banana bucket movement	Injury Asset damage Production loss	S/H	9 (M)	<ul style="list-style-type: none"> <li>Bucket to be inspected before use / CoC to be available on site for inspection</li> <li>Employees to stand clear of bucket during task</li> <li>Employees to keep eye contact with bucket</li> <li>Bucket to be fitted with guide rope</li> <li>Movement to be controlled by tanks man</li> <li>No lifting of bucket during wind above 25km/h</li> <li>Task to be supervised</li> <li>Equipment to be clean after each pour</li> </ul>	4 (L)
		Concrete starting to set due to transport/site delay	Quality NCR Production loss	QA BD	6(M)	<ul style="list-style-type: none"> <li>Slumps check to be done to verify slump</li> <li>No water is to be added to concrete batch</li> <li>Concrete not to be poured</li> <li>Delivery note number to be recorded and batch returned to site</li> <li>If delivery delayed due to supplier – delivery note to be submitted to clerk for credit note</li> <li>NCR issued to supplier</li> </ul>	1 (L)
28	Direct concrete discharge from ready mix truck	Standard truck on site	Injury Fatality Asset damage Pollution (air, noise, ground)	S/H	12 (M)	<ul style="list-style-type: none"> <li>Vehicle maintenance records to be available for inspection as per procumbent Terms and Conditions</li> <li>Operator to have valid driver's licence</li> <li>Vehicles found to be substandard/ polluting the environment will be recorded and sent off site. The vehicle will not be allowed on site before confirmation is received that the vehicle has been repaired</li> </ul>	4 (L)
		Truck on incorrect routes/ site	Loss of production	BD	12 (M)	<ul style="list-style-type: none"> <li>Trucks to be escorted in and out of site at all times</li> <li>Site plan to be supplied to Ready Mix Plant</li> <li>Only routes as per approved traffic plan to be utilised</li> <li>Driver to obey all road signs, instruction and site</li> </ul>	4 (L)
		Unsafe positioning of truck during	Injury Fatality Asset damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Supervisor to ensure that there is sufficient space for the truck to discharge its load safely</li> <li>Traffic accommodation to be planned and implemented if delivery is offloaded close to or in live traffic</li> <li>Vehicle to be positioned behind traffic barriers</li> <li>Flagman to be in place at all times to instruct operator and traffic</li> </ul>	4 (L)

		discharge of concrete				<ul style="list-style-type: none"> <li>Flag man to be inside "safety den" (20m radius)</li> <li>Operator to obey flagman instructions</li> <li>Truck must be positioned on a level and stable area, stop blocks to be used when deemed necessary by supervisor</li> </ul>	
		Uncontrolled movement of truck	Injury Fatality Asset damage	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Driver to ensure vehicle is in neutral and the park brake is activated when discharging concrete</li> <li>Vehicle may not be left running without the driver being in the cab/ in control of the vehicle</li> <li>Vehicle to be parked in a safe manner before the driver leaves the vehicle</li> <li>Stop blocks to be used if vehicle is parked and unattended</li> </ul>	4 (L)
29	Using electric small tools	Machine used by incompetent employee/ unauthorised user	Injury Asset damage	S/H	9 (M)	<ul style="list-style-type: none"> <li>Ensure that the employee is competent in using the specific machines</li> <li>Conduct Planned Task Observation to confirm employee ability</li> <li>Ensure machine not to be left unsupervised</li> </ul>	4 (L)
		Employee injured due to: -spark created from cutting/grinding process -flying objects -inadequate work space	Injury Fire	S/H EN	6(M)	<ul style="list-style-type: none"> <li>Correct PPE to be worn at all times</li> <li>Other employees to be instructed to stay clear of cutting/ grinding activity</li> <li>Cutting/ grinding operations not to be done in high traffic areas without screens being erected</li> <li>Material to be secured by another person when cutting/ grinding / drilling (loose material)</li> <li>Off cuts to be contained in a drum (store properly)</li> <li>Fire extinguisher in close proximity to activity</li> <li>Ensure employees are not wearing loose clothes</li> <li>Adequate space should be allocated for task</li> <li>Space identified for materials</li> </ul>	2 (L)
		Defective tool/machine	Injury Fatality	S/H	9 (M)	<ul style="list-style-type: none"> <li>Pre-use inspection/ checklist to be done before use</li> <li>Discontinue use of worn /defective sundry until (drill bits, grinder disks, etc)</li> <li>No permanent lock switch allowed</li> <li>Machine guards are to be in place and not removed</li> <li>All equipment defects must be reported to supervisor and storeman</li> <li>Faulty equipment to be removed from site</li> </ul>	4 (L)
		Employee injured as a result of an electric shock		S/H	5(L)	<ul style="list-style-type: none"> <li>Electrical small tools not to be used whilst employee standing in water or rain</li> <li>Plugs and cables to be checked and reported if damaged</li> </ul>	8(M)
		Incorrect storage	Asset damage Property loss	S/H	6 (M)	<ul style="list-style-type: none"> <li>Storage to be controlled by a trained and competent storeman</li> <li>Equipment not to be unsupervised when used on site</li> </ul>	2 (L)
30	Exposure to a water environment	Oil, petrol or diesel spillage	Ground water pollution	EN	4(L)	<ul style="list-style-type: none"> <li>Rehabilitate the ground after a spillage by removing the top layer of the soil and correctly dispose</li> <li>Put drip trays on every plant on site</li> </ul>	4 (L)

31	Exposure to noise	High pitch of noise from the operation	NIHL(Noise Induced hearing loss) TTS	S/H	8(M)	<ul style="list-style-type: none"> <li>Issue ear plugs or ear muffs</li> <li>Give the employees time to move away from the noise for 15mins or more in every 3 hours</li> </ul>	4 (L)
32	Exposure to vibration	Vibration	Restlessness Motion sickness Lower back pain Bone damage Impairment of, balance or both	S/H	8(M)	<ul style="list-style-type: none"> <li>Give the employees time from any vibrating surface or machinery(at least 10mins or more in every 3 hours )</li> <li>Train the employees to use the machinery in the correct way</li> <li>Provide glove for your employees to reduce contact</li> </ul>	6 (M)
33	Compaction of material	Incompetent operator Poor communication Non-compliance to safety regulations	Injury Property damage	S/H	9(H)	<ul style="list-style-type: none"> <li>Ensure trained competent operators at all times</li> <li>Ensure supervision at all times</li> </ul>	3 (L)
	HIV/Aids and other diseases	Spill of blood on the equipment Dust	Disease	S/H	4(L)	<ul style="list-style-type: none"> <li>Induct the employees about HIV/Aids</li> <li>Provide condoms for the employees</li> <li>Provide dust mask's and make sure there is enough ventilation in the working environment</li> </ul>	4(M)
34	Angle grinder	Ungraded grinder	Injury Death	S/H	4(L)	<ul style="list-style-type: none"> <li>Safeguard all your grinders before use</li> <li>Only competent people are allowed to use the grinder</li> <li>Provide training for the use of grinders</li> </ul>	6 (M)
35	Construction of selected fill (identify tipping area and tipping area hazards	Cracks on the ground due to unstable slopes Heavy rain	Production loss	BD	4 (L)	<ul style="list-style-type: none"> <li>Always inspect the tipping areas for instabilities</li> <li>Barricade and keep away machineries from unsafe, unstable surfaces</li> <li>If practicable make use of berm if practicable to indicate to operators where to stop</li> <li>Seek advice from supervisors on the control measure</li> </ul>	4(L)
		Working in proximity of power lines Reversing of mobile machineries Overloading of trucks	Injury Disability Fatality	S/H	9 (M)	<ul style="list-style-type: none"> <li>Locate all loading and tipping area away from power line, even above raised bed – height</li> <li>Training and coaching</li> <li>Risk assessment to be done</li> <li>Operator shall be trained on blind spot observation</li> <li>The excavator operator to allow and ensure that no truck is overloaded with materials and rocks. To avoid injuries and damages</li> </ul>	6 (M)

36	Trucks and driving around construction zones	Speeding Unsafe behaviour	Injury Disability Fatality	S/H	9(M)	<ul style="list-style-type: none"> <li>No over speeding will be allowed on site</li> </ul>	6 (M)
		Men machinery interface External environment Uneven surface for mobile machineries Weather	Injury Disability Fatality	S/H	9 (M)	<ul style="list-style-type: none"> <li>Employees working in the vicinity of the machinery must approach if from the side not from the rear to allow the operator to see</li> <li>Operators must stop, switch off the machinery when a person is on the exclusion zone of working machinery</li> <li>Provision and use of reflective PPE</li> </ul>	7(L)
38	Influence of adverse weather	Incidents due to strong winds, extreme dust obscuring visibility and rain	Injury Disabling injury Fatality	S/H	6 (M)	<ul style="list-style-type: none"> <li>Weather such as strong wind must be monitored before the operations starts</li> <li>Dust suppression to be controlled by use of water carts</li> <li>Sufficient weather must be insured for safe and quality and priming operation</li> </ul>	3 (L)
39	Set out paver runs and levels (line mark with paint)	Manual handling Entanglement with string line (if construction traffic entangles with string line)	Injury	S/H	6(M)	<ul style="list-style-type: none"> <li>Ensure that extension arm is used with paint to minimise bending of the back</li> <li>Wear eye protection when cleaning spray nozzles</li> <li>Do not wrap string around fingers. Release tension in string line when vehicles crossing</li> </ul>	2 (L)
40	Parking of vehicles and mobile plant	Collision with employees Plants colliding	Injury Death Fatality	S/H	9 (M)	<ul style="list-style-type: none"> <li>All operators must be inducted to ensure safe driving is practised on site</li> <li>Only competent person are allowed to operate plants on site</li> </ul>	4 (M)
41	Layering and bedding	Incorrect manual handling	Injury Back pain	S/H EN	8(M)	<ul style="list-style-type: none"> <li>All employees using equipment must keep the correct posture when performing the work</li> <li>Practise the correct housekeeping strategy</li> </ul>	6 (M)
42	Installation of pipes in trenches	Employee falling in the trench plants falling in the trench	Injury Death Property loss	S/H	4(L)	<ul style="list-style-type: none"> <li>Barricade or highlight all the trenches on site</li> <li>The trenches must meet all standards</li> <li>Back fill after installing the pipers</li> </ul>	3 (L)
		Noise	Injury Disabling injury Fatality	S/H AD	12 (M)	<ul style="list-style-type: none"> <li>Maintain safe distance from edge of drop off (assess and communicate distance during toolbox and site risk assessment meeting)</li> <li>Select low amplitude</li> <li>Use vibrating plates or smaller roller near drop offs</li> </ul>	6 (M)

		Striking people on site  Collision with other plant vehicles				<ul style="list-style-type: none"> <li>• All rollers to be fitted with ROPS</li> <li>• Seatbelts to be worn at all times</li> <li>• For rollers which are not hydrostatically driven</li> <li>• Select correct gear before ascending or descending</li> <li>• Do not attempt to change gear</li> <li>• Do not descend grades with gear in neutral position</li> <li>• Refer to plant noise rating and adopt hearing protection if deemed mandatory</li> <li>• Ensure rotating flashing beacon is on</li> <li>• Do not roll up too close behind paver</li> <li>• Sound horn to warn people of your presence</li> <li>• Always use mirrors and look in direction of travel</li> <li>• When using worker to assist cleaning the drum, always move away from the worker</li> <li>• Activate amber flashing light</li> <li>• Always check mirrors and look in direction of travel</li> <li>• Ensure operators checklist has been completed</li> <li>• Adhere to vehicle movement procedure</li> </ul>	
43	Electrical drilling machine	Incorrect use of the driller	Injury Cuts	S/H	7(M)	<ul style="list-style-type: none"> <li>• Use guarded drillers</li> <li>• Only competent person is allowed to use the driller</li> <li>• Provide training for drilling</li> </ul>	2 (L)
44	Circular saw	Incorrect use Irresponsible use of the circular saw	Injury Cuts	S/H	7(M)	<ul style="list-style-type: none"> <li>• Use guarded or protected circular saw</li> <li>• Provide training for the use of circular saw</li> <li>• Only competent person is allowed to use the circular saw</li> </ul>	6 (M)
45	Generator	Exposure to noise	NIHL TTS	S/H	2(L)	<ul style="list-style-type: none"> <li>• Provide ear plugs or ear muffs</li> </ul>	6 (M)
46	Welding including, but not limited to	Contact with the sparks	Injury Burns Eye irritation	S/H	5(M)	<ul style="list-style-type: none"> <li>• Only competent or experienced person is allowed to weld</li> <li>• Provide training</li> </ul>	6 (M)
47	Flame cutting	Contact with the flame	Injury Buns	S/H	5(M)	<ul style="list-style-type: none"> <li>• Provide safety glasses</li> <li>• Provide training for employee connected to the hazard</li> </ul>	3 (L)
48	Use of LP gas torches and appliances	Contact with the torch flame	Injury Burns	S/H	2(L)	<ul style="list-style-type: none"> <li>• Provide safety glasses</li> <li>• Provide training</li> <li>• Only competent and experienced are allowed to use the torch</li> </ul>	3 (L)
49	Manual handling	Brick masons	Cement dermatitis, awkward postures, heavy Loads	S/H	3(L)	<ul style="list-style-type: none"> <li>• Provide PPE</li> <li>• Avoid carrying loads by hands</li> <li>• Provide training</li> <li>• Test all employees for all possible allergies</li> </ul>	4 (L)

50	Hard tile setters	Vapour from bonding agents, dermatitis, awkward postures	Weight loss Balance loss	S/H	8(M)	<ul style="list-style-type: none"> <li>Provide training</li> <li>Only competent person is allowed use the tool</li> <li>Induct employees about the correct posture for working</li> </ul>	5 (L)
51	Carpenters	Wood dust, heavy loads, repetitive motion	Lung infection	S/H	5(L)	<ul style="list-style-type: none"> <li>Provide dust mask or the correct PPE</li> <li>Induct and communicate the risk connected to the work to employees</li> </ul>	5 (L)
52	Drywall installers	Plaster dust, walking on stilts, heavy loads, awkward postures	Back pains	S/H	17(S)	<ul style="list-style-type: none"> <li>Provide safety gloves, dust mask, glasses etc.</li> <li>Induct employees about the correct posture for working</li> <li>Use plant for heavy loads as far as possibly practical</li> </ul>	5 (L)
53	Painters	Solvent vapours, toxic metals in pigments, paint additives	Lung infection	S/H	12(M)	<ul style="list-style-type: none"> <li>Provide employees with respirator</li> <li>Test all employees for possible allergies connected to the work</li> </ul>	5 (L)
54	Plasterers	Dermatitis, awkward postures	Skin infection Back and neck strain	S/H	2(L)	<ul style="list-style-type: none"> <li>Induct employees about the correct posture for working</li> <li>Provide training to employees connected the risk</li> </ul>	3 ( L)
55	Plumbers	Lead fumes and particles, welding fumes	Lung irritation Eye strain	S/H EN	7(M)	<ul style="list-style-type: none"> <li>Only competent person is allowed to perform this type of a task</li> <li>Provide glasses and the relevant PPE</li> </ul>	5 (L)
56	Concrete and terrazzo finishers	Awkward postures	Back pain	S/H	8(M)	<ul style="list-style-type: none"> <li>Induct or the employees to take the correct posture performing their work</li> <li>Competent person to perform the task</li> </ul>	3 (L)
57	Paving, surfacing and tamping equipment operators	Asphalt emissions, gasoline and diesel engine exhaust, heat	Lung irritation Lung cancer	S/H EN	13(S)	<ul style="list-style-type: none"> <li>Provide respirator to all employees connected to the hazard</li> <li>Provide training</li> <li>Avoid to remove vegetation unnecessarily, to reduce the amount of emissions in the air</li> <li>Install filters to the exhaust plants where possible</li> </ul>	19 (S)
58	Roofers	Roofing tar, heat, working at heights	Injury Death	S/H	11(M)	<ul style="list-style-type: none"> <li>Use scaffolds to access the roof</li> <li>All employees who perform the task must safety harness</li> <li>Provide training</li> </ul>	8 (L)
59	Demolition workers	Lead, dust, noise	NIHL Silicosis	S/H	21(H)	<ul style="list-style-type: none"> <li>The task can only be performed after the demolition supervisor has given a permission</li> <li>Employees must be in full PPE</li> <li>All plants must keep a safe working distance</li> <li>Only competent person are allowed to operate the plants</li> <li>Earplugs must be provided or ear muffs</li> </ul>	5 (L)

60	Hazardous waste workers	Heat, stress	Heat stress	S/H	4(L)	<ul style="list-style-type: none"> <li>Dumping is only allowed in areas identified the municipality</li> <li>Good practise of waste accumulation must be practised at site</li> <li>Hazardous waste must be neutralised before dumping</li> </ul>	3 (L)
61	Grader, dozer and scraper operators	Silica dust, whole-body vibration, heat noise	Silicosis NIHL Loss of balance	S/H	17(S)	<ul style="list-style-type: none"> <li>The site must be watered regularly for dust control</li> <li>The operator must be provide with full PPE</li> <li>The operators must take time off the plants</li> </ul>	4(L)
62	Demolition work, where applicable	Structure falling on employees Structure damaging property	Injury Disability Fatality Property loss	S/H	13 (S)	<ul style="list-style-type: none"> <li>A competent person must supervise the work</li> <li>Only competent plant operators are allowed to do the work</li> <li>PPE is a must when performing such work</li> </ul>	3 (L)



RISK ASSESSMENT TABLE						
Likelihood		Risk Rating				
5 Almost Certain	The unwanted event has occurred frequently; has a 90% and higher probability of reoccurring	11 Medium	16 Significant	20 Significant	23 High	25 High
4 Likely	The unwanted event has a probability of between 60% and less than 90% of occurring	7 Medium	12 Medium	17 Significant	21 High	24 High
3 Possible	The unwanted event has a probability of between 30% and less than 60% of occurring	4 Low	8 Medium	13 Significant	18 Significant	22 High
2 Unlikely	The unwanted event has a probability of between 1% and less than 30% of occurring	2 Low	5 Low	9 Medium	14 Significant	19 Significant
1 Rare	The unwanted event has never occurred, has a probability of less than 1% of occurring	1 Low	3 Low	6 Medium	10 Medium	15 Significant