

SCHEDULE 18 - OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION AND RISK ASSESSMENT

HEALTH AND SAFETY SPECIFICATION

NOTSI PV PROJECT

FOREWORD

This Health and Safety specification has been compiled under the guidelines of the Occupational Health & Safety Act no.85 of 1993 and amended Construction Regulations. Huge emphasis is placed on the requirements of Construction Regulation 2014, the Occupational Health and Safety Act and the Baseline Risk Assessment that form the basis of this specification. Contractors are encouraged to not only read these two documents in isolation but must consider the By-Laws Relating to Community Fire Safety, the relevant National Building Regulations SANS Codes 10400 and the Disaster Management Act 57/2002. Should there be any contradiction between the document and the Act; the Act shall take preference except where explicitly stated. Similarly, where this document is silent on a specific Health & Safety requirement, the Act and all relevant legislation shall be used as the minimum requirement.

Should you be unclear about anything set out in this document, please contact this office.

Ensuring you of our best intentions and service always

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1. INTRODUCTION AND BACKGROUND

1.1 Background to The Health and Safety Specification

The Construction Regulations (February 2014) places the onus on the Client to prepare a preconstruction Health and Safety specification, highlighting all risks not successfully eliminated during design, setting standards for Health and Safety during construction phase. The Health and Safety Specification will be based on the findings of the Baseline Risk Assessment.

1.2 Purpose of The Health and Safety Specification

To assist in achieving compliance with the Occupational Health and Safety Act 85/1993 and the promulgated Construction Regulations (February 2014) to reduce incidents and injuries. This specification shall act as the basis for the drafting of the construction phase Health and Safety plan by the Principal Contractor.

The specification sets out the requirements to be followed by the Principal Contractor and their Contractors so that the Health and Safety of all persons potentially at risk may receive the same priority as other facets of the project e.g. Cost, program, environment, quality etc.

2. HEALTH AND SAFETY SPECIFICATION

2.1 Scope

This specification covers the requirements for mitigating incidents and injuries at the Notsi Solar PV Project.

Scope of works as per the Client Design:

- 400/132 kV Artemis Main Transmission Substation (MTS)
- 15km, 132 kV overhead powerline from Artemis (MTS) to 132 kV Masego substation
- 132kV Masego substation
- 132/33 kV Facility Substation
- 620MWp solar PV facility comprising:
- ~900,000 solar PV modules
- 474 inverters across 79 inverter transformer stations
- Single-axis tracking PV module mounting structures
- Internal gravel roads
- O&M building
- Site offices and facilities
- Laydown areas

Additional Activities but not limited to:

- Contractor Site Establishment
- Site clearance
- Demolition works
- Excavations
- Crane operations
- Landscaping
- Civils

- Temporary Works
- Working at Heights
- Public Safety- Relevant precautions to be taken (Hoarding/Physical Barriers, signage etc.)
- Storage/control of Hazardous Chemical Agents
- Use of Temporary Access
- Unforeseen activities
- LV/MV/HV electrical works
- Working at heights (power line installation)
- Rigging
- Heavy machinery (civils, drilling/piling rigs)
- Mechanical works (heavy loads/ pinching/ cutting)
- Snakes etc.
- Heat/dehydration
- Health & Safety Specification for Commissioning Activities

2.2 Provision for Health & Safety Cost

The Principal Contractor and their contractors shall make adequate provision for the cost of Health & Safety Measures during the construction process as required by the Construction Regulation 5(1)(g) and must allow for (but not limited to) adequate funds for at least a competent Health and Safety Manager and one Full-time Safety Officer, until all activities have been completed including Night Work if applicable, Equipment, Signage, Training for all relevant personnel, PPE, Edge Protection, Safe Access, Emergency/Rescue and Equipment, on site monitoring, adequate supervision, adequate welfare facilities and Occupational Medicals.

3. INTERPRETATIONS

3.1 Application

This specification is a compliance document drawn up in terms of the South African legislation including all relevant South African Standards and where applicable, International Standards and is therefore binding. It must be read in conjunction with all relevant legislation, regulations and by-laws.

3.2 Definitions

The definitions as listed in the Occupational Health and Safety Act 85/1993 and Construction Regulations (February 2014) shall apply.

4. MINIMUM ADMINISTRATIVE REQUIREMENTS

4.1 Construction Work Permit and Notification to the Department of Employment and Labour

The appointed CHSA shall inform the Provincial Director of the Department of Labour in writing as per the Annexure 1 in terms of CR 3.

Every Principal Contractor shall furnish the H&S Agent with the following documentation for inclusion in the construction work permit application:

1. Completed Annexure 1 of Construction Regulation 3(2)
2. Health and Safety Plan, including site specific Risk Assessments
3. Principal Contractor Appointment Letter
4. Construction Manager Appointment

5. Construction Manager Competency
6. Construction Health and Safety Officer Appointment
7. Construction Health and Safety Officer Competency & SACPCMP Registration
8. Letter of Good Standing
9. CIDB letter of Registration
10. Company Profile including list of projects and values
11. Health and Safety Specification acknowledgement Letter
12. Principal Contractor Cost of Health and Safety- Full Breakdown

The Construction Work Permit must be clearly displayed at the site entrance and site office.

Should any of the team members identified in the construction work permit application documentation change, the H&S agent shall be notified immediately, and attributing documentation shall be provided immediately upon request.

Note: Should Direct Contractors be appointed, each contractor shall Notify the Department of Labour of their Intent to commence with construction work and place stamped proof on file.

4.2 Assignment of Contractor's Responsible Persons to Manage and Supervise Health and Safety on Site.

The Principal Contractor shall submit management and supervisory appointments as well as any relevant Appointments in writing (as stipulated by the OHS Act and Construction Regulations), prior to commencement of work. Proof of competency must be included.

Construction Manager shall be full time on site, and an Alternate Competent Construction Manager to be available on site, when the Construction Manager is not on site. These appointments must be in writing.

The Principal Contractor shall ensure that competent Construction Supervisors and where applicable that assistant construction supervisors are appointed in writing. Note: This shall apply to all contractors.

Section 8 (OHS Act 85/1993) General duties of employers to their employees

“ensuring that work is performed, and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and”

Management and supervision of construction work

8. (7) “A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site”.
- (8) “A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor contemplated in sub regulation (7), and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation”.

4.3 Competency of Principal Contractor Responsible Persons

The Principal Contractors' competent persons for the various risk management portfolios shall fulfil the criteria as stipulated under the Definition of Competent in accordance with the Construction Regulations (February 2014). Proof of competence for the various appointments must be included prior to start of work.

4.4 Compensation for Occupational Injuries and Diseases Act (COIDA) 130 Of 1993

All Contractors shall submit a valid Letter of Good Standing from their Compensation Insurer-FEM or Compensation Commissioner to the Client's Representative as proof of registration before they commence work on site. Note: Contractors shall submit proof of registration to the Principal Contractor before they commence work on site. This requirement also applies for all sub-contractors.

Note: A client must ensure before any work commences on a site that every Principal Contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993);

A Principal Contractor must ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;

4.5 Occupational Health and Safety Policy

The Contractor and their Contractors shall submit a Health and Safety Policy signed by their Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented by the Company / Contractor. The Contractor and their Contractors shall confirm communication of the policy to all of their respective employees.

4.6 Health and Safety Organogram

The Principal Contractor shall submit an organogram with contact numbers, outlining the Health and Safety Site Management Structure including the relevant appointments / competent persons. In cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram shall be updated when there are any changes in the site Management Structure and must be site specific. Contractors to provide organogram to the Principal Contractor as part of their HSE File submission for approval.

4.7 Preliminary Hazard Identification and Risk Assessment

The Principal Contractor and their contractors shall develop Risk Assessments and Method statements by a competent person for the risk that they foresee during construction.

All Risk Assessments shall be conducted by the appointed Risk Assessor/Team PRIOR to start of any work. This shall apply to all contractors

The Principal Contractor shall ensure that a competent Risk Assessor is appointed in writing and shall be Full Time on site for the duration of the project. The Principal Contractor to provide a 14-day Look Ahead Hazard Identification Risk Assessment (HIRA) for upcoming activities before they are encountered on a bi-weekly basis and forward an electronic copy to the appointed Health and Safety Agent. Contractor to ensure that provision is made should physically impaired/challenged employees be employed.

Furthermore, the Principal Contractor and their contractors to ensure that Daily Safe Task Instruction (DSTI) are conducted prior to any activity with proof placed on file. Planned Task Observations (PTO) should also be conducted. Contractors may use their own Formats/Templates. DSTI/PTO shall be inspected for effective implementation and employees must be fully involved in this process and conversant with the DSTIs/PTO. Failure to implement Daily will result in activity suspension until corrected.

Note: The DSTI's shall consist of Hazard Identification with control measures and must be task specific. This applies to all contractors and must be readily available upon request. Planned Tasked Observations shall be conducted as often as possible but at least monthly to ensure the effectiveness of their existing and current control measures. Contractors may use their own Formats/Templates

The following is a site-specific source of risks that have been identified but is not limited to and must as a minimum, be appropriately addressed by the Principal Contractor in their Health & Safety Plan with Control Measures but is not limited to:

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Site Establishment

- Site needs to be Properly Demarcated/Fenced
- Offloading of containers/site office
- Secure / Safe Storage of Material, Plant & Equipment
- Ablution Facilities
- Adequate Eating & changing facilities
- Vehicle Access to Site
- All site containers and structures to be earthed
- Location of existing Services
- Provisions to be made for at least 2 health & safety notice boards
- Dealing with existing structures
- Provision for drinking water for all staff
- All Access points to site to be secured (PSIRA certified security)
- CoC for temporary electrical supply
- Safe Access i.e. Entry and Exit Points for all Deliveries with adequate control measures is required,

Hoarding & Access Control

- Appropriate security guards in place / contractor to inspect areas daily and report to Project Manager regularly.
- Public Liability / Access Control / Compliance to Section 9
- Electronic access control system to be put in place during construction works
- Site needs to be Properly Demarcated/Secured
- Relevant Construction Warning Signage to be displayed
- Security to be placed on site at all times
- All security personnel to be PSIRA certified
 - Grade B for supervision
 - Grade D for access control
- Calibrated Alcohol testers to be made available at all entrances to site. Provision to be made for Annual Calibration of Alcohol testers
- All security personnel to be trained on the use of alcohol testers.
- Daily inspections with proof placed on file

- All site personnel must be in possession of valid induction card stating their name and expiry date of medicals
- Hoarding/Fencing to be in line with approved Drawings
- Security to be placed on site if possible/where applicable (Cable Laydown)
- All employees shall have ID copies readily available
- The Principal Contractor must liaise with landowner on a continual basis to facilitate the movement of animals as and when required.
- The Principal Contractor shall ensure the entire site compliment is informed of the electrification of the site fencing at least 5 days prior to the completion of the fence.
- COC shall be made available for all electrical fences.

Public Liability

- Contractor to ensure all safety measures and material storage are stacked safely during the installation period
- Effect of Construction Work on members of the public and existing property e.g.
- Noise Control
- Dust Control
- Temporary lighting
- Relevant signage
- Hazardous Chemicals

Protecting of Persons Affected by Construction (Section 9 of the OHS Act 85/1993)

- Risk Assessments and Method Statement to be provided and communicated to relevant parties.

Electrical Work

Electrical work may only be undertaken after the mandatory isolations and permits have been obtained and all required safety measures are in place. Live commissioning may only be undertaken by trained and competent Contractor's personnel who are authorised and supervised, by competent personnel provided by the Contractor, and, if so identified, the Client and professional team.

- Contractor to provide full method statement and risk assessment when working on live electrical Cables. Must be communicated to all staff prior to the activity.
- Stringing of solar cable
- All Staff must be provided with the relevant Personal Protective Equipment (PPE)
- All required Personal Protective Equipment must be worn
- Lock out procedures
- Permit system to be implemented to enter electrified fields
- Existing services are not anticipated (green fields)
- Identification of Unknown services e.g. Cable Detection, if applicable.

Pre-Commissioning Checks

- Approved switching program / permit issued
- Commissioning risk assessment completed and signed
- Toolbox talk conducted with commissioning team
- Drawing of area/Section/Building
- Single Line Diagrams
- Commissioning Risk Assessment completed, approved, signed and communicated

Isolation & Safety Preparations

- Circuit breaker(s) / switchgear opened and racked out
- Lock-out and tag-out devices applied
- Voltage presence tested with approved tester
 - Equipment, Correct Identification
 - Phasing & Verification
 - Phase rotation checked and recorded
 - Continuity tests performed and documented
 - Functional Testing
 - Control circuits verified
 - Protection relay settings confirmed
 - Interlocks tested and verified
 - Energisation & Monitoring
 - System energised under controlled conditions
 - Monitoring for abnormal conditions performed
 - Initial load tests carried out and results recorded

Provisions to be made for weekly inspections on all temporary electrical installations (Db boards) in the site camp in accordance with Construction Regulation 24 (d).

Civil work

- Excavation & Compliance to Construction Regulation 13 and 10
- Persons/Equipment falling into Excavations- Control measures required
- Access to excavations to be provided
- Risk Assessment and method statement to provide for works in excavation areas.
- Edge Protection
- Construction Vehicles/Mobile Plant
- Compliance to Construction Regulation 23
- Bulk Earth Works and Layer Works
- Working alongside a road (internal or otherwise)
- Road Cleaning to be maintained on a regular basis where needed
- Procedure to identify underground HV/Electrical Cables including unknown services
- E.g. Cable Detection (if applicable)

Troxlers and Nuclide devices

- Full Compliance to Section 3A of the Hazardous Substances Act 15 of 1973
- Provision made for the conveyance of Nuclide devices around site
- Provisions for signage
- Provisions made for emergencies (damaged or broken Troxlers)
- Competence and Appointments
- Provisions made for adequate storage
- Calibration Certificates
- Demarcation and control of testing areas
- Leak Test Certificates
- Nuclide permits to be displayed

Crane Management System (i.e. All Cranes)

- Competency and Medical Certificates of Operator
- Load Test Certificates
- CR 23 and Driven Machinery Regulations (2015) must be adhered to
- Relevant Inspections conducted by an LMI/LME as per DMR 18 (2015).
- Rigging studies and/or lift plans to be provided as and when required.

Traffic Management Plan to include but is not limited to i.e.

- Delivering of Material and Equipment
- Plan to be Monitored and Reviewed at least every 30, as the building program/activities changes after any incident
- Principal Contractors to provide sufficient Bins / Bags at all times and must be removed on a regular basis or as and when needed. All employees working in or close to the road to wear Hi-Viz vests at all times
- Competent Flagmen/Spotters shall be provided and readily available to assist with all Deliveries. Adequate control measures required
- **Traffic Layout.** To be updated by the appointed **Full time Traffic Safety Officer** as and when required and submitted to the Client agents for approval.
- The Traffic Management Plan must be approved by the Project Manager and as required, the Traffic Chief as per the National Road Traffic Act, No. 93 of 1996. The Traffic Safety Officer must have training as per SAQA Unit Standard 14561 or similar.
- **All traffic accommodation signage and Layouts shall be in line with Chapter 13 of the South African Road Traffic Signs Manual.**
- Special safety awareness sessions shall be conducted regarding the safe transport of employees at least weekly with proof placed on file. All drivers who will driving on gravel roads routinely shall be required to undergo at least defensive driving training (**internal or external training with proof of competency placed on file**)
- All vehicles to be fitted with safety belts and the use of safety belts on and off site is mandatory.
- The Principal Contractor should ensure that the Client's Road Safety Rules is incorporated into their Traffic Management Plan (See ANNEXURE D – ROAD SAFETY RULES).

Note: No road may be closed without the Client/Principal Agents' approval.

Lifting and Installation Procedures

- Principal Contractor to submit Full Method Statements of their lifting and installation procedures e.g. manually or mechanically.
- All lifting equipment to comply with Driven Machinery Regulation (2015)
- Guide Ropes shall be used as far as reasonably practicable when conducting lifts.
- Operations to assist with possible uncontrolled loads especially during inclement weather and restricted areas.
- All work areas shall be adequately demarcated with spotters' present
- Competent Banksman/Riggers shall assist with lifting operations
- All lifting equipment/lifting tackle and machinery shall comply with Driven Machinery Regulation 18 (2015)
- List of Lifting Machines to be available
- List of lifting tackle to be made available.
- Lifting plans
- Rigging requirements
- Lifting machine load testing and examination
- Lifting tackle inspections

- Competent and appointed operators
- Man, baskets may only be used where it is not reasonably practicable to provide a safer means of access, such as scaffolding or mobile elevated work platforms.
- Each man basket must:
 - Be designed, constructed, and certified for the purpose of lifting persons.
 - Have a valid load test certificate issued by a competent person.
 - Display the safe working load (SWL) clearly and not exceed this limit.
 - Be fitted with a fall protection anchorage point for each occupant.
 - Be securely attached to the lifting machine using certified lifting tackle.
- The lifting machine used must have:
 - An automatic safe load indicator (SLI) or rated capacity limiter.
 - A valid test and inspection certificate in compliance with DMR 2015.
 - An operator who is trained, competent, and medically fit.
- Before use:
 - A pre-use inspection of both the man basket and lifting machine must be carried out and recorded.
 - A risk assessment and method statement (RAMS) must be approved by the appointed competent person.
- No person may ride in a man basket during lifting, lowering, or slewing unless it is specifically designed for that purpose and under strict supervision.
- Emergency rescue arrangements must be in place prior to commencement of work.

Plant & Machinery

- Principal Contractor to provide designated area should any plant and machinery be parked at night, with drip trays.
- Plant to be fully secured to avoid possible unauthorized access. Adequate lighting required as and when needed
- Safe Access required for all operations including deliveries
- All plant operators to be appointed in writing with proof of competence placed on file
- The Principal Contractor shall maintain a register of all Mobile Plant on site.

Note: All operators shall be in possession of a valid License to Operate the respective machinery and are certified competent.

Working at Heights

- Principal Contractors and their contractors to compile a Site-Specific Fall Protection Plan in Line with CR 10.
- A Principal contractor must ensure that all unprotected openings in floors, edges, slabs, hatchways, and stairways are adequately guarded, fenced, or barricaded or that similar means are used to safeguard any person from falling through such openings;
- No person is allowed to work in a fall risk position, unless such work is performed safely as contemplated above and fall prevention and fall arrest equipment are approved as suitable and of sufficient strength for the purpose for which they are being used, having regard to the work being carried out and the load, including any person, they are intended to bear; and securely attached to a structure, life line or plant, and the structure of plant and the means of attachment thereto are suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and person who could fall, and fall arrest equipment is used only where it is not reasonably practicable to use fall prevention equipment. Ironman FAS system are not considered satisfactory and may not be used.
- Fall Protection Plans shall include all activities conducted in a "fall risk" position as
- Defined by Construction Regulation (2014).

Scaffolding and Working at Heights

- Principal Contractors and their contractors to compile a Site-Specific Fall Protection Plan in Line with CR 10
- The Scaffolding must comply with SANS 10085:1-2024 and CR 16.
- Process to Remove Equipment, Tools Scrap, Material etc. to and from Elevated Positions.
- System to Protect Persons / items or material falling through Ceilings or any elevated positions/areas.
- Design Drawings to be provided by a competent person
- Daily inspections to be conducted or prior to use and recorded
- No Trestles will be allowed on site as per SANS 10085-1:2024.

Temporary Works (Including possible bracing and shoring of excavations)

- The Principal Contractor shall comply with CR 12, CR10 and CR 13
- Competent Temporary Works Designer to be appointed in writing
- Erecting and Stripping of Temporary Works
- Design Drawings issued by a competent person
- Casting of Concrete
- Adequate Edge Protection
- Temporary Work Structures shall be inspected and signed off by a competent person prior to concrete pour and before the stripping of any temporary works structures.
- Daily Inspections to be conducted
- The Principal Contractor shall provide proof of competency for all Designers, Inspectors and Erectors

Hot Works

- Hot work permits to be obtained from the Principal Contractor before commencement of any hot work activity.
- Principal Contractors and their contractors to ensure that Fire Equipment and adequate precaution measures are in place when grinding, welding / hot works etc. including PPE, demarcation, weld screens
- Hot work permits to be issued once the area has been inspected by a responsible person and declared safe. (Note- All permits shall be valid for one (1) working day)
- Compliance to GSR 9
- Compliance with CR 25 & 29

Unplanned collapse of Material or structures- Contractor to provide control measures

- Principal Contractor to assess all work areas prior to start of work. Structure to be inspected
- Principal Contractor to provide full method statement and risk assessment
- Structure to be inspected periodically by a competent person to render the structure safe.
- The structure to be maintained in such a manner so that it remains safe for continuous use.
- Records of inspections and maintenance are to be kept on file and must be made available on request to an inspector.
- Contractor to provide full method statement and risk assessment
- Note: Principal Contractor and all contractors must comply with Construction Regulations (CR) 11.

Waste Management Plan/System to be implemented

- Principal Contractors to provide sufficient Bins / Bags always and must be removed on a regular basis or as and when needed.
- Rubble shall not be allowed to accumulate on site and shall be removed at regular intervals
- All hazardous material to be stored separately and must be disposed of at an authorized landfill site.
- Proof of Disposal to be provided.

Structural Steel

- Principal Contractor to submit Task Specific Method Statements and Task Specific Risk Assessments of their lifting and installation procedures e.g. Manually or Mechanically.
- Full compliance with CR 9, 10, CR 23 and DMR 18 (2015)
- Guide Ropes shall be used as far as reasonably practicable when busy with all lifting operations to assist with possible uncontrolled loads especially during inclement weather and restricted areas.
- Only competent persons to conduct operations
- Task Specific Fall Protection & Rescue Plan (Employees assisting in the rescue of a person should be competent in Rescue at Height Training aligned with SAQA 229995).
- All work areas shall be adequately demarcated with spotters' present
- Structural steel to be assembled and finished on the ground as far as possible before being lifted into place
- **Compliance to the Driven Machinery Regulations (2015)**

Safe Use of Portable Electrical Equipment

- Electrical Drilling Machine
- Angle Grinder
- High Pressure Equipment
- Any Other Equipment used by Principal Contractor

Temporary Flammable Liquid Storage

- Principal Contractor to ensure that adequate ventilation is provided with Relevant Signage and Fire Precautions provided. Principal Contractor to ensure that adequate ventilation is provided with Relevant Signage and Fire Precautions provided.
- Adequate Fire Equipment to be readily available.
- Compliance with all relevant legislation and regulations including the Community Fire Safety By-law Compliance and CR 25 and CR 29
- Bulk fuel installations shall only be used once signed off by the relevant authority.

Emergency Preparedness

- Emergency Evacuation Plan with Relevant Emergency Numbers, including contact numbers of key personnel (Site Management and Relevant Contractors) emergency layout
- Revision of Emergency Plan
- Sufficient number of workers are Trained (Competent) in the use of Fire Extinguishing Equipment.
- Principal Contractor to ensure that an emergency team is appointed.
- Emergency assembly point to be established with the relevant signage displayed.
- Air horn/alarm/siren to be provided on site

Dust Control

- Principal Contractor to provide a procedure with adequate control measures to control dust.
- All personnel exposed to dust shall be provided with adequate PPE specific to their task.
- All contractors to assess possible exposure to harmful silica dust. All employees exposed to harmful silica dust shall be provided with FFP 2 masks based on assessment.

Noise Control

- Controls to be put in place to restrict excessive noise during peak periods
- Compliance to Noise Induced Hearing Loss Regulation.
- PPE to be provided to limit noise exposure to below 85 Db

Manual and Mechanical Handling

Contractor to ensure that ergonomics are taken into account when providing control measures for all physical activities.

Health Hazards

- Biological Hazards
- Polluted water
- Working with cementitious material
- Dust
- Noise
- Vibration

Environmental Hazards

- Working with fuel, lubrications and other chemicals
- Working near drinking water supply
- Working near animals (Snakes)
- All surveyors shall be provided with snake gaters.
- Snake gaters shall be provided to employees based on prevailing site conditions.

Additional Activities foreseen on site

- Piling
- Change in Design Procedure
- Process to move equipment, tools, scrap material, etc. to and from elevated positions.
- Use of Temporary Access
- Installation of UPS.
- Tiling
- Fire detection
- Unforeseen activities

Principal Contractor and their contractors to ensure that the risk assessments, as well as other risks identified by them, are reviewed at least every 30 days, after any incident and as the risk changes are recorded and communicated to all relevant parties with proof placed on file- CR 9.

Note: All reviews must be signed off by the appointed Risk Assessor.

All identified risks and hazards must be based on a documented method (method statements) Furthermore, the Principal Contractor and their contractors shall provide a Monitoring and a Review Plan including a Risk Register indicating all activities.

Note: Principal contractor must ensure as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in a risk assessment.
The Principal Contractor shall comply with all relevant Environmental Requirements as and when needed

4.8 Fall Protection Plan:

Definitions

- a) **"fall protection plan"** means a documented plan, which includes and provides for—all risks relating to working from a fall risk position, considering the nature of work undertaken;
the procedures and methods to be applied in order to eliminate the risk of falling; and
a rescue plan and procedures;
 - b) **"fall risk"** means any potential exposure to falling either from, off or into;
 - c) **"fall arrest equipment"** means equipment used to arrest a person in a fall, including personal equipment, a body harness, lanyards, deceleration devices, lifelines or similar equipment;
 - d) **"fall prevention equipment"** means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guardrails, screens, barricades, anchorages or similar equipment;
- Working at heights includes any work that takes place in an elevated position. The Principal Contractor and their contractors must submit a risk/task-specific Fall Protection Plan in accordance with Construction Regulations 10.
 - The Fall Protection Plan must be job specific, be reviewed at least every 30 days, as the risk changes, and after any incident. Contractors to ensure that medicals are provided for all persons exposed to elevated positions.
 - All employees working on heights must have a Medical Certificate issued by an Occupational Health Practitioner (OHP) in the form of an Annexure 3

A fall protection plan must include

- a risk assessment of all work carried out from a fall risk position and the procedures and methods used to address all the risks identified per location;
- the processes for the evaluation of the employees' medical fitness necessary to work at a fall risk position and the records thereof;
- a programme for the training of employees working from a fall risk position and records thereof;
- the procedure addressing the inspection, testing and maintenance of all fall protection equipment; and
- a rescue plan detailing the necessary procedure, personnel and suitable equipment required to affect a rescue of a person in the event of a fall incident to ensure that the rescue procedure is implemented immediately following the incident.

4.9 Health and Safety Officer 8(5) (Full-time)

The Principal Contractor shall appoint Full-Time Safety Officer(s) on site until all activities have been completed including Night Work if applicable with proof of competency to be attached to each appointment. The number of safety officers appointed shall be dictated based on a ratio of 1:50. **E.g. 1 – 50 employees will constitute the appointment of 1 safety officer. 51 employees on site will constitute the appointment of 2 Safety Officers.**

One H&S Officer shall be registered at CHSM level and be appointed as the Full-time CHSM.

Note: The Safety Officers shall be registered with the South African Council for the Project and Construction Management Professions (SACPCMP) with proof provided in the form of a SACPCMP Registration Letter.

Note: The use of Candidate safety officers will be accepted, however, it will not add to the requirement of the Fully Registered CHSO ratio of 1:50.

This applies to all contractors and their sub-contractors

“No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor”

Core Responsibilities:

- Support management to ensure compliance with legal and other requirements.
- Advise management and facilitate the obtaining of relevant permits.
- Support management to monitor and enforce the HSSE Program.
- Support on the implementation of project HSSE objectives and ensure set targets achieved as per requirement.
- Coordinate with and report HSSE activities to the HSSE Manager and Construction Manager.
- Assist in the project HSSE supervision and in the development, implementation, and monitoring of job hazard analysis for subcontractors.
- Provide HSSE orientation and regular follow-up training to all workers on site.
- Assist on coordination of contractor HSSE personnel and processes (i.e., emergency procedures, LOTO, etc.).
- Assist on the review and approval/acceptance of contractor HSSE documentation.
- Maintain HSSE records and documentation i.e., incident investigation reports, training records, etc.
- All work permits are issued, up to date and suited to activity before work commences.
- Ensure that the risk assessments are in place for all tasks and updated should the work scope changes.
- Assist on the establishment of communications systems encouraging worker participation in identifying and correcting HSSE hazards.
- Ensure adherence to traffic and other site safety rules.
- Conduct regular HSSE inspections and audits as required by the HSSE Program.
- Investigate all accidents including near misses and make recommendations to eliminate future occurrences.

Note: “No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied

that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor”,

Note: The Safety Officers shall be registered with the South African Council for the Project and Construction Management Professions (SACPCMP)

4.10 Occupational Medicals

The Principal Contractor to ensure that all his or her employees including all appointed contractors have a valid medical certificate of fitness specific to the construction work to be performed and issued by an Occupational Health Practitioner in the form of an Annexure 3.

Note: Expiry Dates of all medicals shall be clearly displayed on all induction cards

The Principal Contractor shall maintain a digital tracking register of all Employee Occupational Medical expiry dates as a means of control.

Failing to comply shall result in the relevant employees being stopped without compensation to protect the Client in terms of CR 5

4.11 Health and Safety File (HSF)

The Principal Contractor/s and their contractors shall, in terms of CR 7(1), maintain the HSF on site always. The HSF is a file with permanent records containing information on aspects of the construction project - which will be necessary to ensure the health and safety of any persons who may be affected by the construction work.

The HSF must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractors and the agreements between the parties and details of work being done.

The Principal Contractors shall appoint a suitably qualified person to prepare the HSF and to keep it up to date for the duration of the contract.

4.12 The HSF Shall Include At Least The Following Information but is not limited to,

- Permit/Notification of Construction Work (CR 4.)
- Copy of OHSA (updated) (GAR 4.)
- Proof of Registration and good standing with a COIDA Insurer (CR 5(1)(j) (The Principal Contractors shall submit a letter of good standing with the compensation Insurer, at the tender stage).
- Occupational Health & Safety Plan agreed with client including the underpinning Risk Assessment/s & Method Statements CR 9(1)
- A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (CR 7)
- Appointment/Designation forms
- Designs/drawings including scaffolding and form work (Temporary Works)
- Registers
- Inductions

The HSF/Soft Cope shall be handed over to the Client on completion of the contract. It must contain all the documentation as set out above, or as instructed, as well as any handed to the Principal Contractor by any subcontractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project.

4.13 Health and Safety Representative(s)

The Principal Contractor and their Contractors shall ensure that competent Health and Safety Representative(s) are appointed under consultation and trained to carry out their functions as soon as the total workforce has reached a number of 20 employees or more. Should the Principal Contractor and their contractors have less than 20 employees, then the accumulative number of employees working on site shall apply. The appointments must be in writing. The Health and Safety Representative shall carry out regular inspections at least monthly, keep records and report all findings to the Responsible Person forthwith and at Health and Safety meetings.

Note: The Principal Contractor and their contractors shall ensure that all certificates provided are issued by an accredited service provider as required by the National Qualification Framework Act 67/2000.

The number of representatives for each contractor shall be as per Section 17 of the OHS Act 85/1993, but as a minimum, The Principal Contractor shall appoint at least one competent Health and Safety Representative on the project.

4.14 Health and Safety Committees

The Principal Contractor shall organize at least monthly Health & Safety meetings. Minutes and records shall be kept. Principal Contractors Health & Safety representative(s) and responsible person shall attend this meeting. Principal Contractor to ensure that all Contractor Representatives attend these meetings.

The committee meeting agenda shall include as a minimum the following:

- Health & Safety Moment
- Attendance
- Tracking Health & Safety training
- Roles of each member of the committee (First meeting)
- H&S representative inspections report minutes
- Accidents, incidents, and investigations
- Injuries on duty
- Latest H&S Agent and client report discussion and allocation of responsibilities
- General discussion on contractor monthly H&S meetings

Note: These meetings shall be conducted regardless how many contractors are appointed. The Principal Contractor representatives shall be expected to attend the client consolidated H&S meeting when instructed.

4.15 Health and Safety Training

4.15.1 Induction

All contractors shall ensure that employee details are forwarded to the Principal Contractor and arrangement is made for induction at least 7 days prior to arriving on site. All employees reporting for induction shall provide the following proofs:

- A valid occupational medical fitness certificate in the form of an Annexure 3
- Proof of contractor induction
- All access cards must display expire dates
 - Proof of communication

- Risk Assessment
- Company policies and procedures
- Training certificate(s) and legal appointments as required

Principal Contractor shall ensure that all (including site visitors etc.) undergo site- specific induction presented by a competent person and proof placed in the Safety File prior at start of work. All employee cards shall be issued with unique numbers and shall display at least the following information: employee name, Occupational medical expiry date, contractor name, date of induction.

All personnel must be easily identifiable and in possession of an induction card kept on their person at all times.

4.15.2 Awareness

The Principal Contractor shall ensure that, on site, toolbox talks take place at least once per week. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the Health and Safety file. All Principal Contractors have to comply with this minimum requirement. Contractors to ensure that the discussion is recorded on file (Topics with notes)

4.15.3 Health and Safety Site Rules

The Principal Contractors must develop a Set of Site-Specific Health and Safety Rules that will be applied to regulate the Health and Safety aspects on Site. Security and Access control must be included in the rules and those non-employees or visitors will not be allowed on site unaccompanied.

The site rules will be conveyed in the Safety Induction and Cardinal rules will be agreed upon with the Client.

The following should also be incorporated in the site rules:

- Do not enter any area without authorisation
- Do not attempt to interact with any farm animals should they be encountered
- No loitering
- Do not enter any area without authorisation
- No hunting of animals of any kind.
- No open fires shall be allowed on site

4.15.4 Competence

In accordance with the Construction Regulation the Principal Contractors shall appoint, in writing, competent persons (in addition to the Construction Managers – CR 8 (1)(2) & Construction Supervisor/s-8(7)(8) responsible for supervising construction work for the following work situations that may be expected on the site of the works, as applicable to the project.

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to manage and supervise at the same time the construction work on all the work situations for which he/she has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Principal Contractors from any of his responsibilities to comply with all requirements of the Construction Regulations.

Note: The Principal Contractor and their contractors shall ensure that all certificates provided are issued by an accredited service provider as required by the National Qualification Framework Act 67/2000 and the South African Qualifications Authority (SAQA).

The Principal Contractor shall assess all work areas on a regular basis and ensure that sufficient Supervision is present at all work areas.

4.16 Environmental

It is the Contractor's responsibility to stay within the parameters of his/her activities and to execute said tasks within the applicable regulated Norms and Standards. It is the responsibility of the Contractor to:

Report to the Client/Principal Agent any environmental incidents, e.g. hazardous substances spillage, damage to vegetation, public complaints, etc.

4.17 Mandatory Agreement

A duly signed mandatory form also referred to as 'OHS Act section 37.2' must be obtained from the client. **It must be signed and returned to the client by the Principal Contractor at least 10 days prior to commencement of construction work.** The Principal Contractor must ensure that all its contractors have completed a similar document and a proof of such signed documents is submitted to the client for reference purposes.

Full Compliance to the client Environmental Management Program and all applicable permits and authorisations. The contractor shall take all reasonable measures to protect the environment in terms of Section 28 of the National Environmental Management Act.

5. GENERAL RECORD KEEPING

The Principal Contractor and their Contractors shall keep and maintain Health and Safety records to demonstrate compliance with this Specification, with the OHS Act 85/1993, and with the Construction Regulations (February 2014). The Principal Contractor and their contractors shall ensure that all records of incidents / accidents, emergency procedures training, inspections, audits, etc. are kept in a Health and Safety file held in the site office.

The Principal Contractor must ensure that every contractor keeps and maintains its own Health and Safety file and must be readily available at all times. (The file must include the Contractor's health and safety plan).

These records are crucial for inclusion in the Principal Contractors' consolidated health and safety file for handover to the Client on completion of construction work.

6. HEALTH AND SAFETY AUDITS, MONITORING AND REPORTING

The Client's Health & Safety Agent shall conduct monthly Health and Safety audits/inspections with follow up audits of the work if needed. Operations including a full audit of physical site activities as well as an audit of the administration Health and Safety. The Health and Safety Agent may conduct unannounced visits as and when needed.

Principal Contractor to provide a Corrective Action Plan within 3 days for all non-compliances noted in the Audits conducted by the Client's Health and Safety Agent. Note: An electronic copy must be sent to the Client Representative including the appointed Health and Safety Agent.

Note: This Plan shall include proof that all non-compliances have been rectified and an electronic copy shall be sent to the Client Representative including the appointed Health and Safety Agent as proof of items closed out

The Principal Contractor and their contractors are obligated to conduct similar audits on their Contractors. Detailed reports of the audit findings and results shall be reported on at all levels of project management meetings.

Copies of the reports shall be kept on file and must be readily available for inspection. The Principal Contractor must audit their Contractors at least every 30 days and keep records of these audits in their Health and Safety files and must be available on request.

The Principal Contractor shall conduct continuous audits where contractors fail to comply and not only every 30 days including a procedure for continuous monitoring of all contractors

The Principal Contractor shall provide at least one Consolidated/Comprehensive Sub-contractor Audit every 30 days with proof placed on file.

6.1 Internal Audits/Inspections

The Principal Contractor's safety manager/safety officer must conduct weekly inspections/audits with a detailed report. A copy of these inspections/audits must be placed on file for perusal by the Health and Safety Agent. These audits/inspections shall include photographic evidence and must be closed out ASAP. Urgent items to be rectified immediately

Note, these reports shall include photographic evidence.

7. EMERGENCY PROCEDURES

The Principal Contractor/s shall submit a detailed Emergency Procedure and Evacuation Plan with assembly point and contact details in the case of any emergency. The procedure shall detail the response plan including the following key elements:

- List of key competent personnel; Details of emergency services;
- Actions or steps to be taken in the event of the specific types of emergencies; Information on hazardous material/situations.
- Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, bomb threats, major incidents/accidents, impact with troxlers, etc.
- Adequate Signage to be displayed for easy evacuation
- Clear and obstruction free access routes
- Community/Civil Unrest
- Emergency drills shall be conducted at least 4 times per annum

The Principal Contractors shall advise the Client, Agent, Engineer and all relevant authorities forthwith, of any emergencies, together with a record of action taken. This shall be confirmed in writing as soon as possible after the incident.

A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and available to site personnel. These procedures shall form part of the OHSF. The Principal Contractor to ensure that the relevant staff is trained to perform such duties as required by the OHS Act. All emergency procedures must be monitored on a regular basis and must be in line with the building program.

The Emergency/Evacuation plan and routes must be revised on a regular basis for all employees and contractor (including staff) should any unforeseen event take place during the implementation phase/s of the project. Contractor to assess all activities to ensure this is implemented with proof placed on file. Evacuation Drills must be conducted as and when needed. Contractor to assess all activities to ensure this is implemented with proof placed on file.

Note: Principal Contractor to liaise with the client responsible person and ensure that all Emergency and Rescue Procedures are in line with the clients and or land owner requirements/procedures

8. FIRST AID BOXES AND FIRST AID EQUIPMENT

The Principal Contractor and their Contractors shall appoint in writing First Aider(s). The appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. All Contractors with more than 5 employees shall supply their own first aid box. Principal Contractor with more than 10 employees shall have trained, certified first aider on site at all times & First aid Box adequately stocked always.

Principal contractor shall maintain a fully fitted site ambulance with paramedics for the duration of construction works including a dedicated first aid room

9. ACCIDENT / INCIDENT REPORTING AND INVESTIGATION

Occupational Accidents and Incidents are to be categorized into first aid, medical treatment, lost time injury, reportable and fatal as defined below:

Category	Definition
Lost time injury	An employee who has an accident at work and loses productive work time is defined as a lost time injury (LTI). Only when the injured employee is unable to perform regular their regular work activities, takes time off for treatment, or is given reduced work obligations while recovering is an injury termed an LTI.

First Aid	Injury due to a work-related incident requiring first aid treatment within the scope of a trained first aider and the contents of a first aid kit. First aid injuries do not require treatment by a Health Professional. The following are regarded as first aid injuries: • Cuts • Abrasions • Bruises • Burns • Sprains
Medical Treatment	Injury due to work related incidents requiring treatment outside the scope of a first aider. Medical treatment cases require treatment by a Health Professional.
Fatal	A work-related incident which results in Death of an employee on site
None Work Related	All incidents of origin outside the project and are not linked to any activities carried out in the project.
Restricted Work Case	An injury during working hours causing an individual to be given an alternative job assignment or reduced work, but no absence beyond the day of the incident. The injury may have required medical treatment.
High Potential Incident	An incident where under slightly different circumstances the most serious probable outcome is a Major loss
Reportable	As defined by Section 24 of the Occupational Health & Safety Act 85 of 1993; 1. Each incident occurring at work or arising out of or in connection with the activities of persons at work, or in connection with the use of plant or machinery, in which, or in consequence of which- a) any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed; (a) a major incident occurred; or

	(b) the health or safety of any person was endangered and where- (i) a dangerous substance was spilled; (ii) the uncontrolled release of any substance under pressure took place; (iii) machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or (iv) machinery ran out of control, shall, within the prescribed period and in the prescribed manner, be reported to an inspector by the employer or the user of the plant or machinery concerned, as the case may be. b) In the event of an incident in which a person died, or was injured to such an extent that he is likely to die, or suffered the loss of a limb or part of a limb, no person shall without the consent of an inspector disturb the site at which the incident occurred or remove any article or substance involved in the incident therefrom: Provided that such action may be taken as is necessary to prevent a further incident, to remove the injured or dead, or to rescue persons from danger.
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When reporting injuries to the Client, these categories shall be used. All contractors must investigate and report on the 8 categories of injuries to the Client at least monthly. Client will be notified of any incidents and supplied with a written notification report within 24hours. The Client will be supplied with an investigation report within 7 days after the incident including lessons learned implemented. Incidents to be investigated and detailed on an Annexure1 template (General Administrative Regulations) and forward a copy of the investigation report to the Client forthwith.

All incidents reportable in terms of the provision of Section 24 of the OHS Act 1993 must be reported to the local Department of Employment of Labour in the prescribed manner.

No construction works to take place where the incident occurred until the incident investigation has been concluded.

The Principal Contractor and their contractors must report all injuries to the Client in the form of a spreadsheet, which includes all contractor injuries/incidents including near misses,

property damage and man-hours worked for the month as well as the cumulative total. This report must be done monthly and must form part of the Principal Contractor's progress report.

Note: Principal Contractor must provide an Incident Register and must record all incidents when applicable Furthermore, the contractor shall liaise with the Client prior to any communication with any source of Media.

10. HAZARDS AND POTENTIAL SITUATIONS

The Principal Contractor shall immediately notify the Client and Client's Health & Safety Agent of any hazardous or potentially hazardous situations that may arise during the performance of construction activities.

11. PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

The Principal Contractor shall ensure that all workers are issued and wear but is not limited to i.e. hard hats (with chin straps if working at heights or in windy conditions or otherwise determined necessary in terms of a task specific risk assessment), protective footwear, Hi-Viz vests and overalls. The Principal Contractor and their Contractors shall make provision and keep adequate quantities of SANS approved PPE on site at all times.

Contractors to provide control measures should employees continuously fail to use the prescribed PPE.

The contractor shall supply a PPE matrix with all Job categories and required PPE to the Client agents for approval. Hard hat colour code matrix to be implemented to identify safety officers, visitors, first aiders and supervisors and general workers. Contractors to provide control measures should employees continuously fail to use the prescribed PPE.

Note: the client will remove any person from the construction site who is working without necessary personal protective equipment and/or clothing. Worn or tattered personal protective clothing will not be permitted on the premises

Specialised PPE (HV works)

Description	HRC	Specification	Colour
Hard hat with chin strip	1	1000V insulated	White
Face shield	0	Arc flash face shield	Any colour
Safety glasses	0	Clear or tinted	Any colour
Reflective vests	0	Arc flame retardant with reflective straps	Neon yellow
Trousers	1	Arc flame retardant with reflective straps	Fatigue
Safety shoes (Unauthorized)	1	1500V insulated steel-toe cap or composite	Black
Safety shoes (Authorized)	0	20kV insulated steel-toe cap or composite	Black

12. OCCUPATIONAL HEALTH AND SAFETY SIGNAGE

The Principal Contractor shall provide adequate on-site OHS signage. Including but not limited to: “no unauthorized entry”, “report to site office”, “site office”, and “hard hat area”. Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. Access routes, entrances to structures and buildings, scaffolding and other potential risk areas / operations. All Contractors to adhere.

Speed limit signage shall be posted on all access roads and internal roads

Note, adequate signage required for e.g. Drinking/Not Drinking Water/Effluent Water etc.

13. CONTRACTORS

The Principal Contractor shall ensure that all Contractors appointed by them comply with this Specification, the OHS Act 85/1993, and Construction Regulation (February 2014). The Principal Contractor may only appoint a contractor after approving the contractor's health & safety plan with proof placed on file.

The Principal Contractor must audit each of its Contractors at least monthly (30 days), with audit reports filed in the health & safety file on site. The audit must include an administrative assessment as well as a physical inspection of the contractor's health & safety system.

The Principal Contractor must stop any Contractor from carrying out construction work that is not in accordance with the Principal Contractor's or Contractor's health & safety plan or if there is an immediate threat to the health and safety of persons.

The principal contractor shall take all reasonable steps necessary to ensure co-operation between all Contractors to enable each of those Contractors to comply with the provisions of these regulations;

The Principal Contractor must ensure that their Contractors are registered and in good standing with a recognized compensation fund or with a licensed compensation insurer prior to work commencing on site;

The Principal Contractor must ensure that potential Contractors submitting tenders have made provision for the cost of health and safety measures during the construction process; The Principal Contractor shall discuss and negotiate with their Contractor the contents of the health and safety Plan and shall finally approve that plan for implementation;

14. NO-GO AREAS

Principal contractor and their contractors to avoid all no-go areas and ensure that all relevant parties/employees and visitors are adequately informed. These areas will be identified by the Client.

15. PHYSICAL REQUIREMENTS

15.1 Existing Structures/Roads/Walkways

Any adjacent structures/roads/walkways that that may be affected by work must be considered in the planning process. Precautionary measures must be detailed and applied to prevent damage, uncontrolled collapse of existing structures and/or loss to property and persons during the entire construction phase.

15.2 Edge Protection and Penetrations

The Principal Contractor and their contractors must ensure that all exposed edges and openings are guarded and demarcated at all times until permanent protection has been erected.

The Principal Contractor has the following options when contemplating the protection of openings:

- The Principal Contractor must prepare a barricading procedure for the Site for approval by the client. Note: Danger tape shall not serve as edge protection.
- The Principal Contractor shall provide adequate control measures to avoid Falling Objects
- External façade scaffold with fully boarded platform with a handrail.
- Any other suitable means of protection may be used that will prevent a fall.
- Timber to be nailed on all penetrations, alternatively any other means of protection may be used that will prevent a fall.

The Principal Contractors' risk assessment must include these items. E.g. all other openings and areas where a person may fall.

Note: Danger Tape and shade cloth shall not serve as edge protection. Furthermore, the Principal Contractor shall provide adequate control measures to avoid Falling Objects especially at all walkways

15.3 Roof Work

All roof work must be conducted in accordance with construction regulation 10. A fall protection plan must be prepared by a competent person who should evaluate and revise at least every 30, after any change in activity or after an incident occurred. Rescue Plan to be provided including methodology and key personnel to perform such rescue.

The plan must include the following but is not limited to i.e.

- All employees shall be in possession of Working at Heights Training issued by an Accredited Service Provider as per the SAQA requirements and all relevant Unit Standards
- How the roof work was planned/Method Statements
- That the roof workers are competent (trained, experienced, knowledgeable)
- Life lines (Proof of Certification) and anchor points (Load Tested) are provided and installed by a competent person and with proof placed on file
- That no Roof work is carried during inclement weather or where conditions are hazardous to workers.
- That fragile material/areas are demarcated, and signs posted;
- That suitable platforms are provided where fragile materials exist;

- That there are suitable and sufficient guardrails or barriers and toe boards or other similar means of protection to prevent the fall of any person, material or equipment.
- Rescue Plan
- All employees exposed to heights must be declared medically fit by an Occupational Health Practitioner. (Annexure 3)

Note: The Principal Contractor and their contractors shall ensure that all life lines are certified and all Safety Harnesses shall be inspected daily by a competent person with proof of inspections placed on file.

Furthermore, The Principal Contractor and their contractors shall ensure that Double Lanyard with Scaffold/Pylon Hooks as a minimum requirement

All Safety Harnesses shall be inspected on a Daily basis by a competent person and recorded at least monthly with proof of inspections placed on file

15.4 Cranes (all) including Crane Management Plan

The Principal Contractor and all Contractors shall ensure that lifting machinery and tackle is inspected before use and thereafter in accordance with the Amended Driven Machinery Regulations (2015) and Construction Regulation 23. There must be competent lifting machinery and lifting tackle inspectors who must inspect the equipment daily or before use, taking into account that:

- Contractors to carefully plan when crane work is required.
- All lifting machinery and tackle must carry a load test certificate and must have an inspector register.
- All lifting machinery and tackle have a safe working load clearly indicated,
- Regular inspections and servicing are carried out
- There is proper supervision in terms of guiding the loads that includes a trained banksman/rigger to direct lifting operations and check lifting tackle,
- Rescue Plan to be provided
- **The Principal Contractor to provide an updated Lifting Inventory and must include all lifting equipment and machinery with proof placed on file clearly indicating the inspection dates**

Note: Records are kept of inspections and of service certificates conducted by an approved LMI/LME

The operators are competent as well as physically and psychologically fit to work and in possession of a medical certificate of fitness to be available on site.

15.5 Construction Vehicles

Construction Vehicles and Mobile Plant shall be inspected by the Principal Contractor 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 OHS Act and Regulations. The Principal Contractor shall ensure that all such plant complies with the requirements of the OHS Act 85/1993 and Construction Regulations (February 2014).

Construction Vehicles and Mobile Plant (CV & MP) to be:

- of acceptable design and construction
- maintained in good working order
- used in accordance with their design and intention for which they were designed

- Operated/driven by trained, licensed competent and authorised operators/drivers. No unauthorised persons to be allowed to drive or operate CV & MP
- Operators and drivers of CV must be in possession of a valid medical certificate declaring the operator/driver physically and psychologically fit to operate or drive CV
- fitted with adequate signalling devices to make movement safe including reversing
- excavations and other openings must be provided with sufficient barriers to prevent CV from falling into same
- inspected daily before start-up by the driver/operator/user and the findings recorded in a register/log book
- No loose tools, material etc. is allowed in the driver/operator's compartment/cabin nor in the compartment in which any other persons are transported (PDP required when transporting employees)

Note this shall apply to all vehicles capable of seating 12 persons (including the driver)

- CV used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported
- Operators to be issued with Personal Protective Equipment as required and identified by the Risk Assessments
- Only licensed and road worthy vehicles will be allowed on the public roads
- Principal Contractor to provide designated area should any plant and machinery be parked at night. Plant to be fully secured to avoid possible unauthorized access.
- Adequate lighting required as and when needed
- Vehicle access permit to be displayed on every construction vehicle. Any visitor vehicles to the site, to be issued with a temporary vehicle permit and number to be displayed.
- No person may ride on a CV except in a safe place provided by the manufacturer for this purpose.
- The construction site must be organized to facilitate the movement of CV so that pedestrians and other vehicles are not endangered.
- Traffic routes are to be suitable, sufficient in number and adequately demarcated. CV left unattended after hours adjacent to roads and areas where there is traffic movement must be fitted with lights reflectors or barricades to prevent moving traffic coming into contact with the parked CV. In addition, CV left unattended after hours must be parked with all buckets, booms etc. fully 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
- CV must never be left running and unattended. Disciplinary measures will be implemented.
- Workers employed adjacent to, or on public roads must wear reflective safety vests All CV inspection records must be kept in the OH&S File.
- "CR 23. (2) A contractor must ensure that—
- the traffic routes are suitable for the persons, construction vehicles or mobile plant using them, are sufficient in number, in suitable positions and of sufficient size;
- every traffic route is, where necessary, indicated by suitable signs
-

Note, The Principal Contractor and their contractors shall ensure that adequate control measures are provided should the Refuel Mobile plant on Site

15.6 Hazardous Chemical Agents (HCA)

The Principal Contractor and their contractors working with Hazardous chemical agents shall copies of all the Safety Data Sheets (SDS) and this to be kept on site in the Health and Safety

File. Risk Assessments to be compiled. First Aider to have copies of SDS. Safety Data Sheet issue date should not be older than 5 years.

All hazardous waste shall be disposed of at an authorised landfill site and proof of disposal shall be provided upon request. Employees shall be provided with suitable PPE including Respirators as and when needed. Adequate control measures shall be taken to avoid exposure to employees and members of the Public.

15.7 Housekeeping & Stacking of Materials

Housekeeping

Housekeeping shall be maintained daily, and all walkways and access routes shall be kept clear and obstruction free. The Principal Contractor shall comply with CR 27.

External and internal roads shall be kept clean at all times and there shall be safe walkways at all times. Demarcated rubble areas, etc.

Stacking & Storage

The Principal Contractor shall ensure that there are sufficient appointed stacking supervisors and all materials and equipment are stacked and stored safely. Double handling of material should be avoided and for this purpose, pallets and other stacking options should be used.

No stacking outside site hoarding area, blocking of entrance/ exists to site, walkways on site, etc. Stacking of materials shall be clearly demarcated.

15.8 Civils Work

Principal Contractor to ensure that they comply with Construction regulation 23 and that the following is undertaken during civil work:

- A competent site supervisor to be on site at all times.
- Plant and equipment inspected daily and registers kept.
- All operators of plant and vehicles trained, competent and physically and psychologically fit. Certificates to be put in Health & Safety File.
- Workers that are working close to the traffic to be visible and wear hi-viz vests during the day and reflective vests during night times.
- Adequate safety signage to be posted ahead of any work area in the road. (If Applicable)
- All signage, including delineators to be maintained and kept clean at all times.
- The required PPE must be worn at all times (Hard hats, safety shoes, overalls, etc.)
- Risk assessments to be conducted on all activities.
- Public Road Cleaning to be maintained on a regular basis

15.9 Excavations, Shoring, Dewatering or Drainage

The Principal Contractor and any relevant Contractor shall make provision in their tender (for bracing, shoring, dewatering and or drainage if applicable) of any excavations as per this specification.

The Principal Contractor shall make sure that:

- Excavations/trenches are inspected before every shift, after blasting, after unexpected fall of ground, after substantial damage of supports, and after rain. A record of these inspections must be kept;
- The location and nature of all existing services must be established before trenching operation is undertaken. Existing services are not anticipated.

- Safe work procedures have been communicated to the workers;
- The safe work procedures are enforced and maintained by the Principal Contractor's and Contractors' Responsible Persons at all times;
- Safe access/egress is provided to all levels;
- No load, material, plant or equipment is placed or moved near the edge of any excavation or trench which may undermine the stability of the same unless adequate steps are taken to prevent the sides from collapsing;
- The barrier shall be at least orange plastic webbing of 1m height (day and night) with delineators and orange traffic lights for night time; Where excavations are deeper than 1.5m solid barricading must be implemented.
- All excavations next to existing buildings to be carefully monitored during such an operation.
- The contractor shall comply with all the requirements as set out by legislation and shall include but is not limited to CR 10, CR 13, Section 8 and 9 of the OHS Act 85/1993
- Permit to be provided by competent person prior to entering the Excavation

Furthermore, the Principal Contractor and their contractors shall ensure that the excavated sides are battered and include considering dewatering/creating site run offs during winter.

15.10 Erosion and Sedimentation Control

The Contractor shall take all reasonable measures to limit erosion and sedimentation due to the construction activities and shall, in addition, comply with such detailed measures as may be required by the Scope of Work.

Where erosion and/or sedimentation, whether on or off the Site, occurs, rectification shall be carried out in accordance with details specified by the Engineer.

Where erosion and/or sedimentation occur due to the fault of the Contractor, rectification shall be carried out to the reasonable requirements of the Engineer, at the Contractor's cost.

The Contractor shall ensure that the Municipality storm water system is kept free from sediment arising from the Works.

Any runnels/channels or erosion channels developed during the construction period or during the vegetation establishment period shall be backfilled and compacted, and the areas restored to a proper condition. Stabilisation of cleared areas to prevent and control erosion shall be pro-actively managed by the Contractor.

15.11 High and Low Voltage Electrical Installations

Should high voltage electrical lines/fencing be present on the site perimeter, the Contractor must take extra caution and demarcate as far as reasonably practicable. These demarcations must be maintained for the duration of the construction work. The minimum safety clearances as per Electrical Machinery Regulations must be adhered to.

Principal Contractor must ensure that a lock-out procedure is adhered to by his/her employees whenever required.

The Principal Contractor must ensure that safety measures stipulated in the Electrical Installation Regulations, Machinery Regulations, General Machinery Regulations and Construction Regulations are adhered to at all times.

All installations must comply with SANS 10142 & the regulations of the OHS Act 85/1993 and Construction Regulation 24.

The Principal Contractor and their contractors must ensure that prior notice is given to Local Authority Electrical Department of any work involving electrical installation.

The Principal Contractor must ensure that a lock-out procedure is provided and must be adhered to by his/her employees whenever required. The Principal Contractor must ensure that safety measures stipulated in the Electrical Installation Regulations, Machinery Regulations, General Machinery Regulations and Construction Regulations are adhered to at all times. All installations must comply with SANS 10142, the regulations of the OHS Act 85/1993, Construction Regulation 24 and Electrical Installations Regulation.

The Principal Contractor shall ensure that they tie/connect into existing electrical systems without interruption as far as reasonably practicable
All temporary electrical installations must be inspected at least weekly with proof placed on file.

15.12 Permits

All relevant permits must be obtained from Local Authority (where needed) before any demolition and construction work commences.

A permit system to be established for the following but not limited to:	Person responsible for the issue/close out of permit
Hot work	Safety manager /officer
Entering Eskom controlled areas	Construction Manager
Entering deep excavations	Appointed Excavation Supervisor
Entering confined spaces (where applicable)	Confined space supervisor
Entering energised sections of the solar plant	Commissioning Manager

The Contractor will also ensure that a procedure for permit to work will be implemented for performance, testing and commissioning. This system will replace, in designated testing areas, the work permit system implemented for the construction.

The permit procedure must cover:

Permit to Dig: Yes

Permit to Enter Excavations: Yes

Permit to Work with Electricity: Yes

Hot Works Permit: Yes

Permit to Work under Commissioned Power Lines: Yes

Permit to Work across roads with Overhead Lines: Yes

Permit for work in restricted areas: Connections to sub stations.

Temporary Works: Yes

15.13 Access Routes

On the Site and, if so required, within such distance of the Site as may be stated by the Client/Principal Agent, the Contractor shall control the movement of all vehicles and construction equipment, including that of his suppliers, so that they remain on designated

routes, are distributed so as not to cause an undue concentration of traffic, and that all relevant laws are complied with.

In addition, the movement of such vehicles and construction equipment shall be planned and operated to minimise disruption to regular users of the routes.

As far as possible the Contractor shall use existing access routes. Damage to existing access roads because of construction activities shall be repaired to the satisfaction of the Engineer, using material like that originally used. The cost of the repairs shall be borne by the Contractor. Any directional signage required by the Contractor for the purposes of directing the movement of his own vehicles and construction equipment (or that of his subcontractors or suppliers) must be of a design and in a location approved by the Client/Principal Agent. Directional signage may not be erected in such a manner that it interferes with sight lines or pedestrian movement.

15.14 Plant and Machinery

15.14.1 Pressure Equipment Regulations

The Principal Contractor and their contractors shall comply with the Pressure Equipment Regulations and SANS 10087, 10238 etc. including but is not limited to,

- Providing competency and awareness training to the operators,
- Providing PPE or clothing,
- Inspect Equipment regularly and keep record of inspections,
- Provisions made to protect the integrity of all pressurised cylinders on site.
- Providing appropriate firefighting equipment (Fire Extinguishers) on hand.
- Correct storage of cylinders
- All flash back arrestors shall be serviced in accordance with SANS 10238 with proof placed on file.

15.14.2 Fire Extinguishers and Firefighting Equipment

The Principal Contractor shall provide adequate, regularly serviced fire-fighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted up as required. All fire extinguishers to be handled and inspected by competent persons in compliance with CR 25 & 29.

The Principal Contractor to provide a Fire Risk Assessment.

Note: The Principal Contractor shall ensure that sufficient and suitable storage is provided for all flammable liquids, solids and gases.

The Principal Contractor shall ensure that sufficient number of workers is trained in the use of Fire Equipment.

15.14.3 Hired Plant and Machinery

The Principal Contractor shall ensure that any hired plant and machinery used on site is safe for use. The necessary requirements as stipulated by the OHS Act 85/1993 and Construction Regulations (February 2014) shall apply. The Contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the Health and Safety file. All relevant Contractors must ensure the same.

15.14.4 General Machinery

The Principal Contractor shall ensure compliance with the amended Driven Machinery Regulations (2015), which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing, and training those who operate machinery.

15.15 Portable Electrical Tools

The Principal Contractor and their contractors shall ensure that the use of all portable electrical tools follows relevant legislation.

The Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in safe working order. Regular inspections and toolbox talks must be conducted to make workers aware of the dangers and control measures to be implemented e.g. Personal protection equipment, guards, etc.

A competent person to undertake routine/daily inspections and records are kept. Only authorized trained persons to use the tools, the safe work procedures to apply. Awareness training to be carried out and compliance enforced at all times, and PPE and clothing are provided and maintained.

Note: All power tools shall be inspected by the Authorised Operator on a daily basis with proof placed on file.

15.16 Piling

The Relevant Contractor must include the following in their Method Statements/Risk Assessments

- Fall protection;
- Machinery – operation and control;
- Noise;
- Exposed openings and protection of openings;
- Impact vibration.

15.17 Welding Equipment

- Only authorized / trained persons to use the equipment.
- Welder using correct PPE - eye/ face/foot/body/respirator.
- Flashback arrestors fitted at cylinders and gauges when using gas welding equipment.
- Fire prevention methods to be applied.
- Where electric arc welders are used, equipment only to be used in a dry area, protected from wetness.
- All welding to be carried out in designated area, where not applicable welding screens to be used.
- Demarcation and signage
- Task Specific Risk Assessments and Method Statements Required
- Hot Work Permits to be issued

16. PUBLIC AND SITE VISITOR'S HEALTH AND SAFETY

Both the Client and the Principal Contractor have a duty in terms of the OHS Act 85/1993 to do all that is reasonably practicable to prevent members of the public and site visitors from

being affected by the construction activities. Site visitors must be briefed on the hazards and risks they may be exposed to and what measures are in place or should be taken to control these hazards and risks. A record of these inductions must be kept on site in accordance with the Construction Regulations.

Fixed and adequate site hoarding (Physical Barriers), which is agreed upon with the Client, must be provided.

Principal Contractor to ensure that no unauthorized persons enter the construction area by implementing access control measures.

17. NIGHT WORK

Where work is required to be done during the night, and approved by the Client/Principal Agent, the Contractor shall make adequate provision for additional lighting.

The Contractor shall also make sure that this additional lighting is provided such that it does not interfere with the general traffic. Adequate lighting/illumination to be provided where required with backup generators. Security to be provided as and when needed. All emergency procedures to be in place. Adequate PPE to be provided for all employees e.g. Hi-Viz Vests. Note: Principal Contractor to ensure that Adequate Supervision is provided including Health and Safety

18. OCCUPATIONAL HEALTH

Exposure of workers to occupational health hazards and risks is common in any work environment, especially in construction. Occupational exposure is a major problem and Principal Contractor must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards.

18.1 Noise

Tasks identified where noise exceeds 85 dBA. All reasonable steps to be taken to reduce noise levels at the source. Hearing protection to be used where noise levels cannot be reduced below 85dBA.

The specification of hearing protection shall be in line with the noise levels of the area and the level of noise reduction provided. E.g. most properly fitted ear plugs provide a reduction of noise between 15 – 30 decibels. Should the decibels measure in a work area be higher than 115 dB, ear muffs to be provided to be provided in addition to the ear plugs.

18.1.1 Noise Induced Hearing Loss

Where noise is identified as a hazard the requirements of the NIHL regulations must be complied with and the following must be included / referred to in the Health and Safety Plan:

- Proof of training with regards to these regulations.
- Risk assessment
- Medical surveillance programme established and maintained for the necessary employees.
- Engineering methods considered
- Admin control (number of employees exposed) considered
- Personal protective equipment considered/decided on

18.2 Dust

Principal Contractor to ensure that employees working with grinders, drills, etc. are always issued with dust masks and dust exposure to be minimized. Suitable measures to be implemented by the Principal Contractor to ensure that members of the public are not detrimentally affected by such activities.

Dust control to be by means of wetting as and when required.

All persons spotting drilling activities to be equipped with an appropriate dust mask to prevent silicosis. The Principal Contractor to risk assesses site conditions to determine appropriate PPE.

18.3 Heat and Cold

The Principal Contractor shall ensure that the working temperatures on site are closely always monitored.

All employees shall be provided with PPE and other clothing to ensure safety at all times of the year. The Principal Contractor shall also set maximum temperature thresholds for both heat and cold.

implemented by the Principal Contractor to ensure that members of the public are not detrimentally affected by such activities.

18.4 Welfare Facilities

The Principal Contractor to provide at least one sanitary facility for every 30 employees on site, including changing facilities & hand washing facilities. Safe and adequate sheltered eating areas must be provided for all employees including contractors. Waste bins must be strategically placed and emptied regularly. Safe and clean storage areas must be provided for workers to store personal belongings and personal protective equipment.

Eating areas shall be suitably shaded and kept neat and clean at all times. In addition, eating areas shall be kept void of any construction materials and or tools.

Due to the nature of the project, the Principal Contractor shall facilitate the movement of portable toilets around site to ensure that employees are always within 100 meters from a toilet facility. No employee will be allowed to urinate outside of a toilet on site.

Note: Contractors shall ensure that employees are segregated from Building Material, Tools etc. when using the same stores/containers etc.

Principal Contractor and their contractors shall familiarise themselves with the local municipalities water restrictions and provide control measures to avoid water wastage and compliance with all water restrictions

18.5 Waste Management

Principal Contractor must implement their waste management in line with the provisions of NEMA and NEMWA.

- Rubble to be stored neatly in bags/bins and collected as needed.
- Principal Contractors to provide sufficient Bins / Bags at all times and must be removed on a regular basis or as and when needed.
- All hazardous material to be stored separately and must be disposed of at an authorized landfill site. Proof of Disposal to be provided
- Rubble shall not be allowed to accumulate on site and shall be removed at regular intervals
- Adequate storage is required for all Cement Bags and Hazardous Substances
- Spill Kits to be readily available

- The Principal Contractor shall implement a Recycling Program and shall recycle all material as far as reasonably practicable including separation of material and general waste.

18.6 Alcohol and Other Drugs

The Principal Contractor and their contractors to ensure that no alcohol and other drugs are allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription drugs must inform his/her superior, who shall in turn report this to the Contractor forthwith. Any person suffering from any illness / condition that may have a negative effect on his/her safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith.

Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records. No Smoking is allowed on site.

19. ANNEXURE A- ACKNOWLEDGEMENT OF H&S SPECIFICATION

Acknowledgement of Receipt of the Health and Safety Specification:

I, _____representing

_____ Contractor

Have satisfied myself with the content of the construction Health and Safety Specification and shall ensure that the Contractor and its personnel comply with all obligations / requirements in respect thereof.

_____ Signature of Principal Contractor	_____ DATE
_____ Signature of Client/Client Representative	_____ DATE

COMMENTS:

Compiled by:
Frontline Safety Health & Environmental Consultants

20. ANNEXURE B - APPOINTMENT OF PRINCIPAL CONTRACTOR**Appointment of Principal Contractor**

IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993 & CONSTRUCTION REGULATIONS 2014

CONSTRUCTION REGULATION 5(1)(k)

I, Client Responsible Person,
for..... do hereby appoint:
.....as the Principal Contractor
of.....Project

Responsibilities:

- *Prepare a Health and Safety Plan to comply with the requirements of the Construction Regulation 5(1)(b), and in compliance with the Health and Safety Specification for the Project.*
- *Ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.*
- *Provide all contractors with the required safety specification for their area of responsibility.*
- *Appoint each contractor in writing in accordance with Construction Regulations.*
- *Ensure implementation of the contractor's health and safety plan*
- *Stop contractors from working if not in accordance with the client specification*
- *Provide health and safety information to contractors should their design change*
- *Ensure all contractors are registered and in good standing with the compensation commissioner*
- *Ensure contractors submitting tenders have made provision for health and safety during construction*
- *Ensure risk assessments are conducted & the identified controls are communicated to all employees and visitors.*
- *Ensure Compliance to Occupational Health and Safety Act 85/1993, Construction Regulations 2014, Community Fire Safety Bylaw and Relevant Sans Codes.*

Signature:

Date:

Client / Client Representative

Acceptance

I, hereby accept and acknowledge that I understand the requirements of this appointment.

Signature:

Date:

21. ANNEXURE C - BASELINE RISK ASSESSMENT

BASELINE RISK ASSESSMENT FOR HEALTH AND SAFETY SPECIFICATION: NOTSI 475 MW Solar PV PROJECT				
Activity	Risk Rating	Hazard	Control Measure	Responsible Person
1. Off-loading of Material/ deliveries	H	- Possible fatalities/ injuries - Possible load falling - Public Safety-potential injuries to workers and members of the public	- All work areas to be adequately demarcated-All Activities to done under supervision - Ensure a spotter is available if and when needed. - Once site has been secured it must be maintained to avoid unauthorised. - Site security to be available. - Relevant construction signage to be displayed - Contractors to be aware of live services e.g. electrical cables.	CR 8.1
	M	Possible Collision/contact with property or stationary vehicles, workers and members of the public	- Driver to be in possession of a valid driver's licence. - All notices and signs to be obeyed. Driver to adhere to the speed limits. Employer and Driver to ensure that he is not intoxicated and must be of sober habits.	CR 8.1
2. Site Establishment Carrying of material	M	Possible Contact with fellow employees and results into possible injuries.	- Employees to take caution when walking on site - Employees to keep material as close to themselves or structure as possible to avoid possible contact with persons - Ensure your vision is not obstructed. - Watch your blind spots and get assistance when carrying heavy and large objects	CR 8.1
	L	Possible Falling material and possible foot and body injuries	Operatives to ensure that all material are adequately secured. Appropriate PPE to be worn at all times. Don't carry material in precarious (dangerous) positions so as to obstruct your vision etc.	CR 8.1
	L	Possible Ergonomics /Possible back injuries	Employees to ensure that they use correct bending techniques. Please get assistance when lifting heavy objects.	CR 8.1
3. Off-loading of containers by means of Cranes	H	- Possible fatalities/ injuries - Possible Uncontrolled release of Container and material	- All work areas to be adequately demarcated with relevant signage displayed. - Competent flagman and riggers to be present - Only competent person to execute lifting operations - All operators to have relevant documentation as per CR 23 and DMR 18(2015) - Task Specific Risk Assessments and Method Statement must be readily available and communicated to all relevant persons with proof placed on file - Load test certificates for all lifting equipment and lifting Machinery. - All Contractors to be informed of live services e.g. electrical cables. - Only certified and load tested Lifting Equipment and Machinery shall be used. Lifting equipment shall be of good standard with correct latches etc.	CR 8.1
		Possible Collision with property or stationary vehicles, workers and members of the public	- All work areas to be adequately demarcated with relevant signage displayed. - Competent flagman and riggers to be present	CR 8.1

			- Only competent person to execute lifting operations. - All deliveries shall take place in the designated areas	
		Possible Fall of persons while placing or removing chains from containers	Safe Access to be provided.	CR 8.1
4. Working Close to Public	H	- Possible Fatalities/Injuries - Falling of Persons into manholes - Possible Injuries/ Fatalities	Adequate Site Hoarding and relevant signage required. Adequate demarcation and signage required at all work areas. Principal Contractor to comply with CR 9 and Section 8 and 9 of the OHS Act 85/1993. Spotters to be present	
5. Excavations/ trenches with Plant and Manually	H	- Possible fatalities/ injuries - Possible Electrocution due to unknown electrical cables	- Only Competent Persons to conduct Activities. Task Specific Risk Assessments and method statements to be provided. All contractors to comply with CR 9, CR 10, CR 12, 13 and CR 23. - Way leaves or drawings to be obtained from the Client. Where wayleaves are not available adequate control measures must be implemented e.g. using a Cable Detector to determine the presence of possible services especially electrical cables. - All work to be conducted under supervision	CR 8.1
		Possible Damage to existing services	- Way leaves or drawings to be obtained from the Client. Where way-leaves are not available adequate control measures must be implemented e.g. using a Cable Detector to determine the presence of possible services especially electrical cables. - Only competent persons to excavate. - Compliance with CR 13. - All work to be conducted under supervision	CR 8.1
		Possible Excavation collapse	- Competent persons and contractor to be appointed in writing to supervise excavations. - Daily inspections to be conducted - Adequate bracing and shoring required as and when needed. Plant to stay at least 1m clear of Embankment - Temporary Works Design Drawings required as and when needed and compliance with CR 12	CR 8.1
			Excavation inspected regularly (as per legal requirements) (register completed).	CR 8.1
			Access provided at least every 6 meters.	CR 8.1
			Shoring and bracing whenever necessary in opinion of competent person. Contractor to consult and communicate with the relevant Engineers	CR 8.1
			Backfilling done as soon as practicable.	CR 8.1
			Appropriate personal protective equipment issued.	CR 8.1
			Undertaking to wear signed and wearing enforced.	CR 8.1
			Relevant Signage to be provided and displayed	CR 8.1
		Possible falling of Persons and plant into excavation	- Task Specific FPP by competent person. - Safe Access required for all mobile plant and persons - Designated walkways	CR 8.1
			Physical barrier of at least 1-meter-high must be provided with relevant signage displayed	CR 8.1
			Backfilling to be done as soon as practicable.	CR 8.1

6. Operating of Mobile plant	H	- Possible fatalities/injuries - Possible Colliding with employees, public, possibly fatal. Damage to property	- Only Competent Persons to conduct Activities. Task Specific Risk Assessments to be provided. All operators to comply with CR 13 and CR 23. - Valid Drivers' License required for All operators - Competent person who is medically fit must operate mobile plant. This is also required from hiring companies. - Always be aware of other plant in your area and if the plant comes too close or in your working area rather stop operating and be safe. Never reverse without checking behind you to ensure that it is safe to do so. Operator must be on the lookout for fellow employees and members of the Public coming onto site unnoticed. All plant shall a fully functional reverse buzzer.	CR 8.1
		Vibration of plant can lead to falling objects from bucket	Do not operate loader if there is anyone in the working area. Don't overload loading bucket and ensure that material is adequately secured	CR 8.1
		Possible Risks when plant is stationary - People driving into plant.	Mobile plant must have appropriate lighting and reflectors to identify the location of the plant. Park in designated areas with boom lowered or raised	CR 8.1
		Damage to structure or plant. Loss of Machine	Machine must be locked, and keys taken with operator or given to supervisor to prevent unauthorized person operating machine.	CR 8.1
7. Working with Hazardous Chemical Agents	L	Possible Respiratory problems.	Respirators to be used when spending even short periods of time. Adequate ventilation required. Ensure that all containers are clearly identified when decanting	CR 8.1
		Dermatitis, Skin burns, Skin sensitization	Avoid contact with the skin as far as reasonably practicable. Use barrier cream if possible.	CR 8.1
		Possible Eye injuries	Remove clothing that has been contaminated by wet hazardous Chemical Agents.	CR 8.1
			Wear suitable PPE as listed below. Wash hands thoroughly after contact and use a barrier cream.	CR 8.1
			Follow Safety instructions (SDS) as indicated by the SDS.	CR 8.1
8. Handling and Storage of Flammable material	H	- Possible fatalities/injuries - Possible Explosion/fires Possible	- Principal Contractor shall comply with all relevant legislation and regulations and shall include but is not limited to i.e., CR 9, 25, 29 General Safety Regulation 2B and Section 8 & 9 of the OHS Act. - Task Specific Method Statements and Risk Assessments. Hot work system to be implemented as per the Specification - Store all Hazardous Chemical Agents in the correct categories. Store all flammable material separately. Ensure relevant signage is clearly displayed. Adequate fire extinguishers to be readily available. Fire Risk Assessment to be conducted by a competent person. Hazardous bins to be provided	CR 8.1
		Possible burns to body	- Only competent persons to conduct all activities. - PPE shall be used as the last resort - Adequate Fire Control Required	
9. Electrical Installations	H	- Possible fatalities/injuries - Possible Electrocution, even fatal. - Damage to equipment	- Task Specific Method statements and Risk Assessments required as per CR 9 - Competent contractor to be appointed if necessary. Equipment to be used to detect live/high voltage cables. - Restricted areas to be identified.	CR 8.1

			• All installations must comply with SANS 10142 & the regulations of the OHS Act 85/1993 CR 24 and Electrical Installation Regulations • Toolbox Talks to be conducted on Risk Assessments with declarations / acknowledgement signed daily. • Relevant PPE to be used. Lockout procedures to be provided. Only competent persons to be used with proof of competency to be provided.	
			• CoC must be issued for all electrical installations. • All temporary electrical installations to be inspected at least weekly and prior to use. All cables to be treated as live • Suitable PPE shall be used	CR 8.1
10. Working with Portable Electrical Tools	H	• Possible Contact with moving parts.	• Task Specific Risk Assessments required as per CR 9. Compliance to CR 24. • Only competent personnel should operate these tools.	CR 8.1
			• Machines to be checked before use, guards are correctly fitted and work properly.	CR 8.1
		• Noise above 85DbA	• Employees to be issued with relevant PPE including hearing protection.	CR 8.1
		• Possible Malfunction of Blade	• Blades should be regularly inspected to ensure they are sharp/good condition	CR 8.1
		• Possible Back Injuries	• Employees to be trained on proper lifting and bending techniques.	CR 8.1
11. Working with Hand Tools	M	• Possible Eye injury	• Visual checks must be completed by operatives on tools prior to their use. • Eye protection is to be provided and used whenever work is done using cold chisels or other tools where there is risk of flying particles or other pieces of the tool breaking off.	CR 8.1
		• Possible Injury to hands, feet and body	• Tools are required to be suitable for the purpose for which they to be used. • Open bladed knives, screwdrivers, and other sharp tools are to be carried and used so as not to cause injury to the user or others.	CR 8.1
		• Possible Tripping over tools	• Tools should not be left lying around, they constitute a severe tripping hazard, and they are liable to get damaged.	CR 8.1
12. Lifting Operations	M	• Uncontrolled release of material	• Task Specific Method Statements and Risk Assessments required with proof of communication. • Rescue Plan and task specific Fall Protection Plan required, to be compiled by competent person. • Competent Banksman/Rigger to be readily available	CR 8.1
		• Malfunction of lifts and lifting equipment	• Banksman/Rigger to have signalling device • No person to be under suspended load • No Crane operations when banksman/Rigger is not available or present. Only appointed banksman/rigger to assist with lifting operations.	CR 8.1
			• Load test certificates to be obtained. Competent contractor to be appointed.	

13. Working at Heights including but is not limited to Scaffolds and Ladders	M	• Possible fatalities/ injuries • Fall of persons, Possible Death	• Task Specific Fall Protection Plan, Risk Assessments required • PC shall comply with CR 9 and CR 10. • All employees shall be in possession of Working at Heights Training • All work to be done under supervision. • Compliance with Fall Protection Plan. • Rescue kit to be available on site. • PPE to be worn at all times. • Buddy system to be implemented • All employees exposed to heights must be declared medically fit by an Occupational Health Practitioner. (Annexure 3) • Note: The Principal Contractor and their contractors shall ensure that all lifelines are load tested and all Safety Harnesses shall be inspected on a Daily basis by a competent person with proof of inspections placed on file. • Compliance with Fall Protection Plan. • Daily inspections prior to use and to be recorded at least monthly. Compliance with CR 10 and GSR 13A.	CR 8.1
	M	• Possible fall or persons/ injuries /material • Falling/slipping	• As far as reasonably possible, all equipment to be tied to rope. • No Items to be thrown from roof, but to be safely lowered. • No persons to work underneath overhead work area or ground. • No work on open structures at heights in wet weather. • No work on scaffolding during wet conditions.	CR 8.1
14. Scaffold erecting & dismantling	H	• Possible fall or persons/ injuries /material • Possible Falling of persons, Collapse of Scaffold structures and damage property and employees.	• Design Drawings required. Work on scaffolds to be coordinated by appointed scaffold supervisor. • Lanyard to be used when erecting & dismantling scaffolding. (Scaffold erectors) Compliance with SANS 10085-1:2024 and CR 16 • All scaffolding to be inspected daily and after inclement weather and findings recorded in a register. • Fully boarded platforms must be provided at all times • Only those employees who are authorised may be on the scaffold. • Where safe platforms cannot be erected, safety harnesses are compulsory.	CR 8.1
			• Guard rails and toe boards compulsory. • PPE required for persons working on scaffolding: safe shoes; hardhats. Area below to be cordoned off. Platforms to be cleaned on a daily basis. • Only competent erectors to change structure of scaffold. • No overloading of scaffold. PPE used: Safety boots, helmets, overalls.	CR 8.1
15. Temporary Works	H	• Possible fall or persons/ injuries /material • Possible Collapse of Structure	• Task Specific Risk Assessment s and Method Statement Required prior to activity • Compliance with CR 12. • Competent Contractor to be appointed • Temporary Works designer to be appointed • Design drawings to be approved by engineer and must be current	CR 8.1
			• Handover Certificates required Before Concrete Pours and Before Stripping any Temporary Works material (Proof to be placed on file)	CR 8.1

			Task specific risk assessment to be compiled and Formwork to be inspected daily by competent person with proof placed on file	
	H	Falling of Persons/Material/E quipment	- All material to be adequately secured - Task Specific Fall Protection Plan - Adequate Signage and Demarcation required. - Only Authorised persons to enter these areas- erecting and stripping. Area must be declared safe prior to any person entering decks - All RISK assessments and method statements to be communicated with relevant persons (Proof placed on file.)	CR 8.1
16. Piling	H	- Rigging truck overturning - Possible multiple injuries - Possible property damage	- All piling activities must be undertaken under supervision - All piling activities must be done as per the approved method and must consider, existing services, geotechnical studies and above ground soil condition. - All lifting tackle and machinery to be fully compliant with DMR 18. - Only competent lifting machine operators to be used. - Where temporary supports (shoring) are required, it shall be designed by a competent person with proof of drawings placed on file and in compliance with Construction Regulation 12.	8.1
17. LV/MV/HV electrical works	H	- Electrocution - Arc flash - Fire	- Electrical Installation Regulations; lockout/tagout; - Certificate of Compliance (CoC); SANS 10142 compliance	CR 24, EIR, OHS Act Sec 8
18. Working at heights (powerline installation, structures)	H	- Falls - Falling objects	- Fall Protection Plan; - Lifelines tested; - Scaffold inspections; medical fitness (Annexure 3)	CR 10, GSR 13A
19. Rigging	H	- Load drop - Crane collapse	- Banksman present - Method statements - Certified lifting equipment - Exclusion zones	CR 23, DMR 18
20. Heavy machinery (civils, piling rigs)	H	- Crush injuries - Collisions	- Competent operators; - Exclusion zones; - Audible alarms; - Daily inspections	CR 23, CR 12
21. Mechanical works	M	- Pinch points - Burns, - Cuts	- Hot work permits - Guarding of moving parts - PPE (gloves, eye protection)	CR 8(1)
22. Environmental (snakes, wildlife)	M	- Snake bites, - Insect stings - Wildlife encounters	- Snake awareness training - Emergency medical protocols - PPE (boots, gaiters)	OHS Act Sec 8
23. Heat & dehydration	M	- Heat stroke - Fainting - Dehydration	- Provide shade - Water stations - Rest breaks - Heat stress awareness	Environmental Regulations, OHS Act Sec 8
24. Overhead Powerlines (132 kV)	H	- Electrocution (contact with live lines) - Arcing/flash burns - Fire from electrical faults - Damage to plant/equipment	- Conduct an electrical risk survey and mark all 132kV overhead line routes on the site layout. - Install height restriction poles at entry points and access routes. - Display high-voltage warning signage clearly visible at all approach points. - Establish strict exclusion zones beneath and around the powerlines (in line with Electrical	CR 24, Electrical Machinery Regulations, OHS Act Sec 8

			Machinery Regulations and SANS 10280/10142). • Daily briefings for plant operators; include in Toolbox Talks. • No lifting operations or tall equipment (cranes, scaffolds, piling rigs) allowed within the minimum clearance distances for 132kV conductors. • Appoint a competent person to monitor compliance and liaise with Eskom/utility provider if de-energising, shielding, or re-routing is required. • Emergency plan to include 132kV contact procedures (isolation, Eskom contact details, rescue protocols).	
25. Blasting (for foundations & cable routes)	H	• Fly rock causing injuries or fatalities to workers/public • Ground vibration and air blast overpressure damaging structures, utilities, or equipment • Noise exposure above 85 dB(A) • Dust and fumes (toxic gases e.g. NOx) inhalation • Misfires or premature detonation • Fire or explosion during handling/storage of explosives • Unauthorized access into blasting zone • Environmental impacts (flora/fauna disturbance, ground contamination)	• Engage a licensed blasting contractor with competent shot-firers • Approved blasting method statement and shot-firing plan to be in place • Blasting areas to be demarcated and barricaded with exclusion zones and warning signage • Warning sirens and flag personnel to control access • Explosives to be stored, transported, and handled per the Explosives Act and manufacturer's guidelines • Daily inspections and pre-blast risk assessments (including survey of nearby structures and underground services) • Blast mats or controlled charge methods to prevent fly rock • Noise, dust, and vibration monitoring during blasting • PPE: hearing protection, dust masks, eye protection, hard hats, FR overalls • Emergency procedures for misfires and incidents to be in place and communicated • Record all blasts (date, charge, monitoring results)	CR 8.1, Explosives Act, MSHA, OHS Act Sec 8

Note:

The above list is by no means exhaustive and should not be limited to these activities but must cover all activities that forms part of the said construction work. Each activity must be split down to individual tasks and all associated hazards identified and listed in the risk assessment. This ensures that the critical tasks and subsequent critical hazards are not missed.

All Activities are to be re-assessed by the Principal Contractor and their contractors prior to start of work and must be communicated with all relevant employees with proof placed on file

22. ANNEXURE D – ROAD SAFETY RULES

- All vehicle occupants shall wear a seatbelt whenever the vehicle is in motion.
- No driving under the influence of alcohol or drugs.
- Speed limit of 40km/hr on site roads.
- Speed limit of 60km/hr on unpaved (dirt) public roads.
- Reduce driving speed when a vehicle is approaching on the opposite lane.
- Minibus taxis to have a governed speed limit of 100km/hr.
- Any vehicle driving near or close to Heavy Earth Moving Equipment/vehicles, should Stop and ensure they grab the attention of the operator or driver before proceeding.

The following additional rules and measures shall apply to minibus taxis and any other vehicles transporting 12 or more passengers:

- Each taxi Professional Driving Permit (PrDP) is mandatory for all drivers.
- All permanent Taxis and LDV's will have GPS installed.
- All Taxis will have Dashcam installed.
- Weekly GPS reports to be submitted to the Construction Manager for action
- Speed limit of 40km/hr on unpaved (dirt) public roads.
- Minibus taxis shall undergo safety inspections on a weekly basis. (Vehicle service record to also be noted)
- All Taxi drivers to undergo additional on-site yearly defensive driver training
- Every minibus taxi must have an appointed safety representative on board who will monitor and report on compliance with the Road Safety Rules & Measures.
- Anonymous grievance mechanism shall be implemented for reporting of reckless driving
- Every minibus taxi must be fitted with a functioning tracking device.
- Monthly audits must be conducted to ensure effective implementation of Road Safety Rules and adherence to the rules
- A disciplinary and reward programme must be implemented to drive enforcement and improve safety culture
- A dedicated transport safety officer will be appointed for all construction projects

Additional Information/General Notes

- Traffic shall be accommodated with the least delay and discomfort to the public and residents.
- All work operations shall be limited within the site Boundaries unless otherwise stipulated by the Client/Principal Agent
- Where unidentified services are located on site the contractor is to report this immediately to the Principal Agent and is to adequately protect these services until identified and the necessary instruction issued by the Principal Agent.
- Principal Contractor and their Contractors to only use access routes that has been identified by the Client
- Avoid loitering
- Environmental buffer zones and boundaries of the leased land to be clearly communicated.
- The area is quite dry and there is a risk of encountering dangerous animals and reptiles such as snakes. Adequate provisions shall be made for possible encounters with dangerous animals and/or reptiles such as Snakes and scorpions etc.
- All reasonably practicable measures shall be put in place to prevent veld fires as the area is quite dry.
- All Contractors and visitors shall adhere to the specified speed limits, namely 40 Km/h while using the access road and 30km/h while using the internal roads
- Park all vehicles in designated area as provided by the Client (reverse parking only)
- Farm animals might be present during the construction period. The contractor must liaise with the client and/or the farm owner to manage livestock during this time.

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