

**MOKOLO AND CROCODILE
WATER AUGMENTATION PROJECT
PHASE 2 (MCWAP-2)**

TENDER NO 054/2024/PMID/MCWAP2/RFB

**PART C3.1
SPECIFICATION**

SECTION 2

OCCUPATIONAL HEALTH AND SAFETY

PART C3.1 SPECIFICATION

SECTION 2 OCCUPATIONAL HEALTH AND SAFETY

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SECTION 2

OCCUPATIONAL HEALTH AND SAFETY

2.1 GENERAL

This Section is based on the latest Occupational Health and Safety Specification of the Employer. (Reference: Version 04 dated 29/07/2021). In terms of Sub-clause 5(f) of the Construction Regulations, it describes the Occupational Health and Safety requirements of compliance to which the Principal Contractor/Contractor is to adhere in relation to the scope of works described in Section 1. The Contractor shall institute systems that are safe and provide and maintain construction equipment and tools that are safe and in a good state of repair.

This Section shall be read in conjunction with all the other Sections of the modular Specification, the Conditions of Contract and the Bill of Quantities. Health and safety shall be fully integrated in all operations and functions performed under this Contract.

The Contractor shall take full responsibility for the prevention of unhealthy and unsafe working conditions and practices and for the promotion of a healthy Site and safe working practices on the Site in so far as such conditions and practices affect his employees and any other persons while present on the Site.

The Contractor shall comply with the Occupational Health and Safety Act (Act No 85 of 1993) (the "OH&S Act") and its regulations, the Compensation for Occupational Injuries and Diseases Act (COIDA), (Act 130 of 1993) and, for work within borrow pits the Mine Health and Safety Act, (Act 29 of 1996) and regulations.

Nothing specified in the Contract Documents shall relieve the Contractor of his obligations and responsibilities with regard to Occupational Health and Safety (OH&S), and he shall, in terms of Sections 8 and 9 of the OH&S Act, prevent such conditions as may be prejudicial to the safety and welfare of his employees or of other persons while present on the Site from occurring on the Site.

The OH&S Plan to be drawn up by the Contractor shall be based on the results of the OH&S baseline Risk Assessment, issue based Risk Assessments conducted by him, and comply with this Section. The Contractor may not commence construction work (including Site establishment) until this OH&S Plan has been approved by the Employer.

This OH&S Specification, the Contractor's OH&S Plan as well as the Occupational Health and Safety Act, Act 85 of 1993 and its relevant Regulations shall be available on Site for inspection by all workers, employees, inspectors and any other persons entering the Site of the Works.

2.1.1 Definitions, Abbreviations and References

2.1.1.1 Definitions

The definitions as per the relevant OH&S Act and the latest applicable Construction Regulations apply unless indicated to the contrary. The definitions in terms of the FIDIC Conditions of Contract differ in some aspects from those in the Act and the Construction Regulations.

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For the purposes of this Contract, the following revised and supplementary definitions shall apply to clarify the interpretation such differences and supplement project specific requirements:

- a) **“Agent”** means in terms of Construction Regulations, a competent person who acts as a representative for a Client. The definition is supplemented with the following Client specific requirements: TCTA generally includes an officer representing TCTA who has been assigned a safety portfolio. The “Agent” / “Health & Safety Agent” shall be registered and in good standing with the SACPCMP as a Pr.CHS Agent or his/her assistant shall be registered and in good standing with the SACPCMP as a Construction Health and Safety Manager (CHSM). A construction health and safety officer (CHSO) shall not be permitted to act on behalf of the client as an “Agent” / “Health and Safety Agent”. Candidate Pr.CHS Agents (Can. Pr.CHS Agents) and Candidate Construction Health and Safety Managers (Can.CHSM) shall only be allowed to function under the direct supervision of the registered Pr.CHS Agent; they shall not be permitted on site alone.
- b) **“Client”** means any person for whom construction work is being performed. In the context of this document, TCTA is the Client in terms of Construction Regulation (CR) 5. In terms of FIDIC terminology, the Client is referred to as the Employer.
- c) **“Construction Health and Safety Manager (CHSM)”** means a competent person, as registered and in good standing with the SACPCMP in the designation as a CHSM, responsible for the management of Health and Safety and the coordination, administration and management of Health and Safety related resources on a construction site. This is a key functional appointment as per the construction contract (FIDIC). In the event of Construction Health and Safety Managers not meeting the SACPCMP registration requirement due to international roots, the proposed resource will have to meet the SACPCMP registration criteria and have to be approved by TCTA or its Health and Safety Agent. In such a case, the person must apply to register with the SACPCMP immediately upon acceptance and submit proof of registration with the SACPCMP within six months.
- d) **“Construction Health and Safety Officer (CHSO)”** means a competent person, as registered and in good standing with the SACPCMP in the designation as a CHSO, responsible for the implementation of Health and Safety, directly reporting to the CHSM. Legal appointment in terms of Construction Regulation 8(5).
- e) **“Construction Manager”** means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site. Legal appointment in terms of Construction Regulation 8(1).
- f) **“Construction Supervisor”** means a competent person responsible for supervising construction activities on a construction site. Legal appointment in terms of Construction Regulation 8(7).
- g) **“Construction Work Permit”** means an official compliance control document issued in terms of Construction Regulation 3.
- h) **“COVID-19”** means Coronavirus Disease 2019.
- i) **“Fall prevention equipment”** means equipment used to prevent persons, tools or machinery from falling from a “fall risk” position, including personal protective equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment.
- j) **“Hazard”** means a source of or exposure to danger (source which may cause injury or damage to persons or property).
- k) **“Hazardous Chemical Agent” (HCA)** means any toxic, harmful, corrosive, irritant or asphyxiate substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

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- l) **“Hazard Identification, Risk Assessment and Risk Control” (HIRA)** means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

m) **Injury Definitions**

The definitions of injuries as per the Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COIDA) apply unless defined otherwise for this Contract.

- **“Injury”** means any wound or damage to the body resulting from an event in the work environment. The following are examples of injuries:

A cut, puncture, laceration, abrasion, fracture, bruise, contusion, chipped tooth, amputation, insect bite and electrocution. Sprains and strain injuries to muscles, joints and connective tissues are classified as injuries when they result from a slip, trip, fall or similar accident.

- **Types of injury cases:**

i. **Fatality Case:**

Means Injury resulting in a fatality.

ii. **Lost Workday Case:**

Means injury resulting in the injured person not being able to work for the next calendar day(s), regardless of whether the employee was scheduled to work on those days or not. The time needed before the person can return to work is determined by a doctor.

iii. **Recordable injury/ Case Definition:**

Means injury that complies with one or more of the following:

a. **Restricted Work:**

Restricted work occurs when, as the result of a work-related injury or illness:

- The employee was kept from performing one or more of the routine functions of his or her job, or from working the full workday that he or she would otherwise have been scheduled to work; or
- A physician or other licensed health care professional recommends that the employee not perform one or more of the routine functions of his or her job, or not work the full workday that he or she would otherwise have been scheduled to work.

b. **Recordable Illnesses:**

Means illness case as diagnosed by an Occupational Health Practitioner. Examples include:

- Work-related cancer.
- Chronic irreversible disease (i.e. silicosis or byssinosis).
- Noise induced hearing loss.

c. **Medical Treatment:**

Means the management and care of a patient to combat disease or disorder beyond first aid. Medical treatment does not include:

- Visits to a physician or other licensed health care professional solely for observation and counselling.

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- Conducting diagnostic procedures such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes.
- d. First Aid injury :
- Means injury that is treated with basic first aid measures, although this might be done by a medical practitioner. This also includes pinched fingers, bruises etc., that may not require any treatment.
- n) **“Mobile Plant”** means any machinery, appliance or other similar device that is able to move independently, and is used for the purpose of performing construction work on a construction site. In terms of FIDIC terminology this is referred to as **Equipment**. Contractor’s Equipment is defined in Sub-clause 1.1.5.1 of the Conditions of Contract.
- o) **“Person day”**. For the purpose of reporting on Health and Safety matters a person day is defined as per the Construction Regulations. For the purpose of managing the Contract the definition of “day” is per Sub-clause 1.1.3.9 of the Conditions of Contract or as supplemented in the Particular Conditions of Contract.
- p) **“Risk”**. For the purpose of managing Health and Safety “Risk” it means the probability or likelihood that a hazard can result in injury or damage.
- q) **“Vulnerable Employee”** means any employee, as contemplated in the Department of Health Guidelines –
- With known or disclosed health issues or comorbidities or any other condition that may place the employee at higher risk of complications or death than other employees if infected with COVID-19 or another HBA; or
 - Above the age of 60 years who is at a higher risk of complications or death if infected.

2.1.1.2 Abbreviations

The following list of abbreviations are relevant:

ACM	Asbestos Containing Material
AIA	Approved Inspection Authority
AIDS	Acquired Immune Deficiency Syndrome
ALARP	As Low as Reasonably Possible
AMD	Acid Mine Drainage
BRA	Baseline Risk Assessment
CHSM	Construction Health and Safety Manager
CHSO	Construction Health and Safety Officer
CLO	Community Liaison Officer
COID	Compensation for Occupational Injuries and Diseases
COP	Code of Practice
COVID	Corona Virus Disease
CR	Construction Regulation
CV	Curriculum Vitae

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CV&MP	Construction Vehicle and Mobile Plant
DEL	South African Department of Employment & Labour
DIFR	Disabling Injury Frequency Rate
DSTI	Daily Safe Task Instruction
ECO	Environmental Control Officer
ECSA	Engineering Council of South Africa
EMP	Environmental Management Plan
HBA	Hazardous Biological Agents
HCA	Hazardous Chemical Agents
HIRA	Hazards Identification & Risk Assessment
HIV	Human Immunodeficiency Virus
HSE	Health, Safety & Environment
H&S	Health and Safety
H&S Rep	Health and Safety Representative
IOD	Injury on Duty
IMS	Integrated Management System
JSA	Job Safe Analysis
LDV	Light Delivery Vehicle
LME	Lifting Machinery Entities (As per Driven Machinery Regulations: 1988; Regulation 18 (5))
LMI	Lifting Machine Inspector (As per Driven Machinery Regulations: 1988; Regulation 18 (5)) (Registered with ECSA)
MCF	Medical Certificate of Fitness
MCWAP	Mokolo Crocodile Water Augmentation Project
MML	Maximum Mass Load
SDS	Safety Data Sheets
NCR	Non-Conformance Report
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
PC	Principal Contractor
PPE	Personal Protective Equipment
Pr.CHSA	Professionally Registered Construction Health and Safety Agent.
PTO	Planned Task Observation
PTW	Permit to Work
R-A	Radioactive
SACPCMP	South African Council for Project and Construction Management Professions

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SAHRA	South African Heritage Resources Agency
SANS	South African National Standards
SANAS	South African National Accreditation System
SASOM	South African Society of Occupational Medicine
SDS	Safety Data Sheets
SWP	Safe Work Procedure
TCTA	Trans-Caledon Tunnel Authority
VFL	Visible Felt Leadership
FC	Fatality Case
LWDC	Lost Workday Case
RC	Recordable Case
FAC	First Aid Case
LOCC	Loss of Consciousness Case
RWC	Restricted Work Case
TC	Transfer to another job Case
MTC/MTBFAC	Medical Treatment beyond First Aid Case
RI	Recordable Illnesses
RCR	Recordable Case Rate
WBGT	Wet- Bulb Globe Temperature

2.1.1.3 References

The following documents are referenced:

- SHE Guideline 5-43-1 Rules for Contractors on Site.
- Compensation for Occupational Injury and Diseases Act, 130 of 1993.
- Explosives Act, 15 of 2003.
- Occupational Health and Safety Act, 85 of 1993.
- Hazardous Substances Act, 1973 (Act No. 15 of 1973) (Regulations Relating To Group Iv Hazardous Substances).
- Asbestos Abatement Regulations, 2002 [GN R.116 10/11/2020].
- Construction Regulations, 2014 [GN R.84 07/02/2014].
- Driven Machinery Regulations, 1988 [GN R.295 1988].
- Electrical Installation Regulations, 2009 [GN R.242 2009].
- Electrical Machinery Regulations, 1988 [GN R.1593 1988].
- Environmental Regulations for Workplaces, 1987 [GN R.2281 1987].
- Explosives Regulations, 2003 [GN R.109 2003].
- Facilities Regulations, 2004 [GN R.924 2004].

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- General Administration Regulations, 2003 [GN R.929 2003].
- General Machinery Regulations, 1988 [GN R.1521 1998].
- General Safety Regulations, 1986 [GN R.1031 1986].
- Hazardous Biological Agents Regulations, 2001 [GN R.1390 2001].
- Regulations for Hazardous Chemical Agents, 2020 [GNR.280 of 29 March 2021].
- Lead Regulations, 2002 [GN R.236 2002].
- Lift, Escalator and Passenger Conveyor Regulations, 1994 [GNR.797 1994].
- Major Hazard Installation Regulations, 2001 [GN R.692 2001].
- Noise Induced Hearing Loss Regulations, 2003 [GN R.307 2003].
- Pressure Equipment Regulations, 2009 [GN R.734 of 15 July 2009].
- Mines Health and Safety Act 1996.
- Amended Mines Health and Safety Act 74 of 2008.
- Disaster Management Act, Act 57 of 2002 and associated regulations.
- Code of Practice: Managing Exposure to SARS-COV2 in the Workplace 2022 – Department of Employment and Labour, 22 June 2022 Ergonomics Regulations 2019.
- Asbestos Abatement Regulations 2020.

When reference is made to a Code of Practice, Specification or Standard, the reference shall be taken to mean the latest edition or replacement at time of tender of the Code, Specification or Standard; including addenda, supplements, modifications and revisions thereto. Where a previous version is intentionally used, it will be indicated as such. Where reference is made to a Code, Specification or Standard that has subsequently been withdrawn and not replaced, the intended content will remain relevant unless confirmed otherwise in writing by the Engineer.

2.1.2 Construction Work Permit

In compliance with the requirements of Construction Regulation 3, the Client will apply for a construction work permit once the principal Contractor is appointed, in time to provide a copy to the Contractor before the planned work commencement date.

The principal Contractor shall keep a copy of the construction work permit contemplated in sub-regulation (1) in the Occupational Health and Safety File for inspection by an inspector, the Client, the Client's authorised agent, or an employee. A copy of the Construction Work Permit will also be displayed at the entrance to the construction site.

After award of the Contract, but before commencement of Site establishment and construction work, the Contractor, who intends to carry out any construction work other than work contemplated in regulation 3(1), shall in terms of Construction Regulation 4, notify the appropriate Provincial Directors of the Department of Labour in writing of such intended construction work. The notification must be done in the form of the pro forma included under Annexure 2 of the Construction Regulations.

One copy of the notification form must be submitted to the Client and one copy kept on Site in the Health and Safety File, available for inspection by inspectors, Employer, Engineer, employees and other persons on Site.

2.1.3 Project Background and Scope of Works

The background of the project and scope of works are covered in Section 1 of the Specification.

2.1.4 Occupational Health and Safety Specification

In terms of the Construction Regulation 5(1)(b), the Client (Employer) has compiled an OH&S Specification for this project. In compliance with the requirements of Construction Regulation 5(1)(f), the above specification has been integrated in the Construction Contract.

2.2 OH&S PLAN

2.2.1 Introduction

The Contractor shall prepare the OH&S Plan in terms of Regulation 7(1) and this Section 2.

In order for the Employer to approve the OH&S Plan, the Contractor shall demonstrate to the Employer that he has a suitable and sufficiently documented OH&S Plan as well as the necessary competencies, experience and resources to perform the construction work safely. No Site establishment or construction work shall commence before receipt by the Contractor of approval of the OH&S Plan.

The OH&S Plan shall be submitted to the Employer within 7 days after the Date of the Letter of Acceptance, but no later than 45 days (30 days plus 15 days to prepare the CWP application) before the planned Commencement date.

Upon the Employer's approval, the Contractor shall immediately implement the OH&S Plan and any amendments, and keep it in operation for the full duration of the Contract.

2.2.2 Preparation of the OH&S Plan

The Contractors SACPCMP Registered Construction Health and Safety Manager (Definitions - 3(6)) with the assistance of the Construction Manager CR 8(1) shall prepare, implement, and administer the Contractor's Health and Safety Plan.

The Health and Safety Plan shall be in writing and shall be submitted to the Employers Health and Safety Agent for review and approval. The Health and Safety Plan shall be drafted in accordance with the Health and Safety Plan Check Sheet, included in Annexure 2/8, and shall comply with this Contract including:

- Project Site Rules and Requirements, and applicable law relating to workplace health, safety and environmental standards. Any proposed amendments or revisions to the Contractor's Safety Plan is submitted to the Employer for acceptance.
- The Health and Safety Plan shall provide a systematic method of managing hazards according to the risk priority and shall include all mobilisation and site set-up activities.
- The Health and Safety Plan will be audited for completeness by the Employers Health and Safety Agent using the checklist included in Annexure 2/8.

The Health and Safety Plan shall be at least "accepted with comments" by the Employers Health and Safety Agent BEFORE permission will be granted to the Contractor to mobilise to site.

Activities with a cost implication must be costed in terms of the BOQ.

2.2.3 Contents of an OH&S Plan

The OH&S Plan shall include at least the following:

2.2.3.1 Legal and Site-Specific Requirements

The Contractor shall develop, implement, and administer a Health & Safety Plan. The OH&S Plan shall be submitted to the Employer-within 7 days after the Date of the Letter of Acceptance, but no later than 45 days (30 days plus 15 days to prepare the CWP application) before the planned Commencement Date. No Construction Work/ Site Establishment may commence on site without the written permission of the Health and Safety Agent. Included in the written permission shall be a copy of the DEL Construction Work Permit.

The Contractor shall sign the construction permit application within seven (7) calendar days of the contract being awarded.

The Health and Safety Plan shall demonstrate management's commitment to health and safety and shall include, but not be limited to, the following minimum auditable elements:

- a) The Contractors' Health and Safety Policy. **(OH&S Act - Section 7)**
- b) How health and safety responsibilities are assigned to different roles within the organisation. Identification of role of Safety Coordinator, and on-site managers. **(OH&S Act - Section 8, Construction Reg.8)**
- c) Selection, placement and training procedures, including induction and ongoing training in 'Basic Safe Work' and Occupational Health & Safety training for newly hired or promoted supervisors. **(OH&S Act - Section 8)**
- d) Occupational Health & Safety communications and meetings, including daily safe task instructions and project health and safety meetings. **(OH&S Act - Section 13, 19 & 20)**
- e) Assessment of sub-Contractors and Service Providers, including requirements for Health & Safety Plans.
- f) Safety awareness promotions.
- g) Nomination of personnel to carry out health and safety inspections. The task may be shared with other duties and provided within the resources of individual gangs and may be rotated.
- h) Contractor senior management involvement with Company's staff in consultative processes and daily management Health and Safety walkabouts.
- i) Occupational Health & Safety Workplace Environment, including provision for monitoring employee exposures to noise, dust, etc. **(OH&S Act – Environmental & Facilities Regulations)**
- j) Rules and regulations including health and safety procedures the Contractor has in place for recurring work activities.
- k) Personal protective equipment rules. **(OH&S Act – General Safety Regulation 2,** including the PPE required in terms of managing the HBA / COVID-19 risk)
- l) Control of dangerous and hazardous agents. **(OH&S Act – Hazardous Agents Regulations)**
- m) System of hazard identification and risk control, such as Risk assessments, Daily Safe Task Instructions and communication. **(OH&S Act – Section 8, Risk Assessment, Construction Reg.9)**
- n) Design control (if applicable). **(OH&S Act – Section 10 & Construction Regulation 6)**

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- o) Verification procedures including: **(OH&S Act - Section 8)**
 - i) Monthly internal health and safety audits (including the main Contactor and Sub-Contractors) to ensure compliance with Health & Safety Plans.
 - ii) Daily site safety inspections and audits. The auditing role may be shared with other duties or provided within the resources of individual groups. The role may be rotated.
- p) Inspection of plant, tools and equipment prior to introduction to site and at least monthly thereafter (Plant and Equipment On-boarding Procedure and record keeping).
- q) Accident/incident reporting, recording, investigation and analysis, which ensure that corrective action, are taken and this action is communicated to report initiators. **(OH&S Act – General Administrative Regulations 8)**
- r) Evacuation and emergency planning. **(OH&S Act – Environmental Regulation for Workplaces 9)**
- s) Traffic management ensuring safe passage for pedestrians on separate pathways.
- t) Rehabilitation procedures that encourage an early return to work.
- u) Record keeping, including details of what is kept and for how long.
- v) Managing HBA / COVID-19 on site Code of Practice: Managing exposure to SARS-CoV-2 in the workplace of 2022 Work Place Plan or similar procedures – 24 June 2022.
- w) Aspects with a time implication must be costed according to the BOQ.

2.2.3.2 Hazard Identification, Risk Assessment and Risk Control

- a) The development of a project/work scope and activity risk profile identifying and considering, safety, health and environmental hazards and exposures, for example, rigging, working at height, welding, confined spaces, delivery Contractors, unloading materials and equipment from trucks, hazardous substances, etc.
- b) How controls to manage risks identified within the risk profile will be formalised and implemented.
- c) Personal Protection Equipment.
- d) The hazard identification and risk assessment process for specific operations and activities and for new activities identified after the development of the project/work scope and activity risk profile. (Considers methodology, expert advice and selection of participants).
- e) The process to be used to review the effectiveness of risk controls.
- f) Workplace hazard inspections.
- g) The implementation of a safety observation (behaviour audit) and coaching process conducted as a minimum by persons in leadership roles.
- h) Method by which daily activities will be assessed for hazards and controls defined before work commences.
- i) Contractor will carry out inspections and maintain requests for the identification of and implementation of inspection and maintenance controls for plant, mobile plant, equipment and tools requiring formal management, including and not limited to:
 - i) Mobile cranes.
 - ii) Tower crane/s and cable tower crane/s.
 - iii) Vehicles.
 - iv) Boatswain's chair or similar rope access work.

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- v) Scaffolding.
- vi) Hoists and winches.
- vii) Lifting gear.
- viii) PPE.
- ix) Ladders.
- x) Pressure vessels.
- xi) Elevated work platforms (e.g. MEWPs).
- xii) Man hoists.
- xiii) Explosive powered tools.
- xiv) Portable electrical equipment.
- xv) Confined spaces.
- xvi) MSDS Register and Information.
- xvii) Authorised Isolators and Lock holders.
- j) Process for identifying, developing and communicating site rules and standards.
- k) Control of dangerous and hazardous substances.

2.2.3.3 Policies Mandated by the Employer

TCTA will require all Contractors on the project to comply with and/or achieve the objectives of the following:

- a) Health & Safety Policies and Standards.
- b) Health & Safety practices and procedures.
- c) Safety Management System and procedures.
- d) The Project Health and Safety Management Plan.
- e) TCTA or the TCTA's Health and Safety Agent's Safe Operating Procedures evolving from project risk assessments and included in the project Safety Management Plan and the Project Site Rules.

2.2.3.4 Injury Management

- a) Processes to ensure employees are medically fit and suited to perform their functions safely.
- b) An incident reporting and investigation structure including root cause establishment and corrective action taken.
- c) Experienced / trained investigators on all projects.
- d) A process to review the effectiveness of incident investigation action plans.
- e) The conducting of first – aid needs and emergency response risk assessments.
- f) A return-to-work program (restricted duties).
- g) A rehabilitation programs.
- h) Trauma counselling.
- i) Processes to ensure the appropriate authorities are notified in the event of a reportable incident.

2.2.3.5 Health and Safety Communication and Consultative Processes

- a) How project leadership will ensure all personnel are kept regularly up to date with Health and Safety information and how prompt feedback will be given to personnel for issues they raise. For example, hazard reports.
- b) The establishment and maintenance of a consultative process for the duration of the project.
- c) Daily pre-start discussions that encourage staff and leaders to try to anticipate and pre-empt potential hazards within the day's activities along with "Toolbox" meetings and project safety meetings.
- d) Implementation of improvement programs that encourage and recognise personnel suggestions to enhance Health and Safety on site.
- e) Health and Safety publicity and awareness programs. For example, competitions and lifestyle improvement (hygiene, alcohol abuse awareness etc.).
- f) Attendance at site safety meetings (minimum every three months) by Project Manager, Safety Manager and Safety Representatives. (To be elected and appointed per work area and discipline and comply with the **Act Section 17 & 18**).
- g) Activities with a cost implication must be costed in terms of the BOQ.

2.2.3.6 Education, Training and Competency

- a) Identification of the competencies required by employees along with selection, placement and any training requirements.
- b) Identification and implementation of the process that will be used to ensure that employees hold the required competencies.
- c) The identification of minimum core and Health and Safety skills required by persons in leadership and supervisory roles.
- d) Identification, assessment and management of hazards.
- e) The development of a training and development plan that ensures personnel attains the desired skills and is also able to monitor refresher-training requirements.
- f) Mechanisms to review the effectiveness of training where appropriate.
- g) A site induction and orientation system that includes specific site issues and requirements and compliments the General Induction.
- h) Methodology for briefing personnel on new or changed standards, site rules and or procedures, particularly after absence from site.
- i) Compliance with The Employers training and competency requirements.

2.2.3.7 Measurement and Review

- a) Health and Safety performance reviews with all site personnel by their supervisors at monthly intervals.
- b) Schedule of site inspections and audits involving persons in leadership roles.
- c) Leadership participation and review of significant incidents.
- d) Schedule of reviews of the Health and Safety Plan implementation progress.
- e) Schedule of external safety audits of the project.

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- f) Scheduled reviews after the completion of potentially high-risk activities on site.
- g) Provision for monitoring of employee's exposure to noise, dust etc.
- h) Inspection and acceptance of plant, equipment, tools etc. **prior** to introduction to site and regularly thereafter.
- i) Activities with a cost implication due to external service provider's involvement, must be costed in terms of the BOQ.

2.2.3.8 Health and Safety Alignment Meetings

Prior to work commencing, the Contractor shall participate in a Kick-Off Health and Safety review and alignment session with the Employer and the Health and Safety Agent. The purpose of this review and alignment session is:

- To compare the contents of the Contractor's Health and Safety Management Plan and the Project Health and Safety Specification.
- To facilitate a consistent approach to Health and Safety issues.
- To ensure specific Health and Safety risks are addressed prior to commencement.
- To align all parties on the program Health & Safety Goals, expectations, and requirements pertaining to Health & Safety.
- To arrange training to the Contractors Site Management team regarding Construction Safety Leadership.
- Provide information on the Employers specific Health & Safety Site Rules and Requirements.

The Contractors' Project Manager and Project Sponsor or equivalent, and Senior site representative, site leadership shall attend the above meetings, alignment and training sessions. The meetings, alignment and training sessions will be conducted prior to the Contractor commencing activities on the Site, including mobilisation and site set-up activities.

The Contractor shall not commence any site activities until written acceptance (at least "accepted with comments") of the Contractor's Health and Safety Plan is obtained from the Employer or the Health & Safety Agent.

The principal Contractor is also responsible for qualifying all Sub-Contractors in terms of compliance with health and safety requirements. The Client retains the right of refusal of using a sub-contractor if said contractor does not meet the requirements of this specification and related legislation. The Contractor shall keep a list up-to-date and shall provide monthly updates to the status of Sub-Contractors engaged by the principal Contractor.

2.3 OH&S FILE

The OH&S file, opened in terms of Construction Regulation 7(1)(b) shall be kept on Site at all times. This shall be a file or other permanent record containing information on aspects of the Contract that will be necessary to ensure the OH&S of any person who may be affected by the construction work.

The Contractor shall appoint a suitably qualified person to prepare the file and to keep it up to date for the duration of the Contract. The file shall include the information prescribed in Annexure 2/4, as a minimum.

The Health and Safety File shall be handed over to the Client on completion of the Contract. It must contain all documentation handed to the Contractor by any Sub-contractors together with a record of all drawings, designs, materials used (CR. 7(1)(i) and other similar information concerning the completed Contract.

2.4 HAZARD AND RISK MANAGEMENT

Prior to the commencement of the work, including mobilisation and site set-up activities, the Contractor shall demonstrate to the satisfaction of TCTA or TCTA's Health and Safety Agent that the Contractor has performed hazard identification and risk assessment of the Work, and of the associated equipment and facilities, to meet the requirements of the Contract. The Contractor shall be responsible and accountable for ensuring that effective procedures and assessment systems are in place so as to control hazards and so mitigate risks to as low a level as shall be acceptable and to meet all the Health and Safety management requirements under this Contract.

2.4.1 Project Specific Hazards

TCTA or TCTA's Health and Safety Agent shall present a Baseline Risk Assessment identifying specific project related hazards and risks with applicable control measures. The Contractor shall take cognisance of the identified hazards and risks when preparing their tender bid. The Contractor shall be responsible for the further identification of all hazards and risks associated with the project including task and issued based hazards and risks.

2.4.2 Hazard and Facility Review Studies (RAMBO)

The Contractor shall ensure that Hazard Identification studies shall be incorporated into the Contractor's Design Management Plan and scheduled at appropriate stages of the design process.

The Contractor shall make available suitably qualified and experienced personnel to participate in these studies. TCTA and/or TCTA's Health and Safety Agent will also participate. The Contractor shall be required to provide all input data for the conduct of the studies.

The Contractor shall be responsible for the implementation of the study findings and shall carry out any modifications to design or plant required by the outcomes of the studies.

TCTA has made all reasonable efforts to ensure that the safe and clean design input information provided shall be complete and correct. However, this means that the Contractor will have to provide design risk assessments for TCTA, their design team and the site Engineer to review before any contractor design is erected, installed or commissioned.

2.4.3 Hazard Identification and Risk Assessment Workshops

The Contractor shall conduct, with appropriate personnel, Construction Safety Studies to identify the detailed methodology and related hazardous activities, in particular those with potentially catastrophic consequences such as multiple and single fatalities, of the Contractor's Site installation work scope, for example crane operations and positions, lift sizes, work at height locations, confined spaces locations, work near operational plant, hot work, hazardous substances and dangerous goods being used, working in close proximity, adjacent or over courses, excavations or in pump or machine rooms lower than the natural ground level or river / watercourse level where the prospect of flooding exist, etc.

The Contractor shall also conduct, with appropriate personnel, Preliminary Hazard Assessment (PHA) workshops to identify the work methodology and related hazardous activities, in particular those with potential for fatality or serious injury, of tasks and activities related to particular work packages or locations. In all circumstances the objective of these Risk Management Processes (ref: SANS/ISO 31000:2009/2018 Risk Management Standard's RMP model) will be to eliminate hazards or otherwise reduce risks through the hierarchy of controls.

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Where the PHA workshop identifies that administrative controls (procedural controls) have to be used to reduce the risk to an acceptable level, then the Contractor's work crew or individual if it is a one person task, shall carry out a Job Hazard Analysis (RA) of the task or activity, which will result in a Work Instruction for routine tasks and activities or the documented RA for non-routine, one-off or changing tasks and activities. RA's will be reviewed by the Contractor prior to starting work each day or shift, and Work Instructions prior to starting work each week.

A five stage hazard identification (define job, identify hazards, assess risk, control risk, monitor) and risk assessment process will be implemented by the Contractor for commissioning and start-up activities, conducted on all system commissioning and live testing operations, activities and tasks prior to introducing hazardous energy and/or materials.

The Contractor's Site Management Representatives, supervisory personnel, technical experts as required, and work force personnel directly involved will participate in these hazard and risk assessment processes, and the findings documented. TCTA, and/or the TCTA's Health and Safety Agent shall attend the workshops / studies. At these workshops/studies the Contractor's methodology may be reviewed task by task, potential hazards identified, and actions agreed on to mitigate risk.

2.4.4 Risk Assessment of Plant and Equipment

Risk assessments of plant and equipment shall be undertaken and documented before arrival at site and after major service, after modification, and before use in an unusual operating mode. They are undertaken by a suitably qualified and experienced person and shall be reviewed and signed by the Contractor Project Manager or Equipment Supervisor.

Such risk assessments for equipment mobilising to Site shall be reviewed and accepted by TCTA, or TCTA's Health and Safety Agent prior to the equipment arriving at Site, and shall consider, where applicable, potential for entanglement in moving parts, crushing or striking by moving or falling objects, cutting or stabbing by sharp objects, high pressure fluids, electrical shock or burns, burns from hot or cold surfaces, slips, trips and falls, ergonomic design of access and egress (3 points of contact to be maintained), seating, vibration, noise, exhaust fumes, etc. The identification of hazards should consider normal operations, abnormal or unusual operations, maintenance, and servicing operations. Particular attention shall be given to fall protection attachment points when there shall be a requirement to work over 2 metres above the ground (servicing earthmoving equipment for example).

The Contractor shall implement and comply with OH&S Act - Electrical Machinery Regulation 9, electrical machinery in hazardous locations, as applicable.

The Contractor shall ensure that all plant, equipment, power, and hand tools brought onto the site by the Contractor or his sub-Contractors are:

- Appropriate for the type of work to be performed.
- Approved, inspected, tested, numbered, and tagged (if appropriate) in accordance with Occupational Health & Safety Statutory regulations and TCTA rules, before importation onto the site.
- Properly maintained in accordance with manufacturer's recommendations (OEM requirements).
- Placed on register and checked at least monthly and or more frequent as required by required Legislation and or TCTA rules.
- All plant, equipment and tools users shall be sufficiently trained to visually inspect the safety condition of the item before use and be able to decide not to use any item they observe to be defective.

2.4.4.1 Construction Plant and Equipment

The Contractor shall implement and comply with OH&S Act - Electrical Machinery Reg. 9, Driven Machinery Reg. 1 – 20, Electrical Machinery Regulations and Electrical Installation Regulations.

The Contractor shall supply, at his cost, all items of plant and equipment necessary to perform the work and shall maintain all items in good order and condition.

Should any plant or equipment become inoperable for a period considered by TCTA or TCTA's Health and Safety Agent to be harmful to the progress of the work, the Contractor, on TCTA or TCTA's Health and Safety Agent's instructions, shall remove the unserviceable plant or equipment and replace it with similar serviceable plant or equipment at no cost to TCTA.

No item of plant or equipment delivered to site for this Contract shall be removed from the site prior to the completion of the Contract without the written approval of the TCTA or TCTA's Health and Safety Agent.

TCTA or TCTA's Health and Safety Agent reserves the right to inspect items of plant or equipment brought to site by the Contractor for use on this Contract. Should TCTA or TCTA's Health and Safety Agent form the opinion that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, TCTA or TCTA's Health and Safety Agent shall advise the Contractor in writing and the Contractor shall forthwith remove the item from the site and replace it with a safe and adequate substitute. In such cases, the Contractor shall not be entitled to extra payments or extensions of time in respect of delay caused by TCTA or TCTA's Health and Safety Agent's instructions.

2.4.4.2 Standard and Proforma Registers

As standard project procedures, the Contractor shall be expected to:

- Set up an initial set of registers.
- Complete the registers for each piece of plant, tool and equipment brought onto site.
- Maintain a complete, continuous and comprehensive inspection and service history in these registers.
- Ensure at least monthly inspections are done and recorded for all plant, tools and equipment by a competent person.

Activities with a cost implication due to external service provider's involvement must be costed in terms of the BOQ.

2.4.5 Safety Method Statements

The Contractor shall submit Safety Method Statements to TCTA or the TCTA's Health and Safety Agent for approval prior to the task commencing (the Contractor shall factor in at least Ten (10) working days for a Safety Method Statement review, this does not necessarily mean that approval will be within Ten (10) working days as amendments may be required and the Method Statement resubmitted for review). Safety Method Statements are to be submitted before or with the Risk Assessment and prior to the work commencing or on request of TCTA or the TCTA's Health and Safety Agent.

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Acceptance of a Safety Method Statement by TCTA or TCTA's Health and Safety Agent shall not relieve the Contractor of responsibility for ensuring full compliance with Contract specifications and conditions. Specific Work Method Statements may also be required by legislation. Note: an approved Safety Method Statement cannot be used on site without the corresponding Approved Risk Assessment.

The Contractor shall record the Safety Method Statement on the TCTA or TCTA's Health and Safety Agent format (Annexure 2/2). The Task Items listed in the Safety Method Statement shall tie up exactly with the task items being assessed in the Risk Assessment document.

The Safety Method Statement shall detail in a step-by-step and methodical manner how the task is to be done from beginning to the end and shall indicate what tools/equipment will be used at each stage and/or how the work area is to be accessed.

2.4.6 Critical Hazard Management Plan

Where the Contractor identifies a Critical Hazard, that is one that has the potential to cause multiple fatalities and the exposure shall not be an isolated occurrence, it shall develop a Critical Hazard Management Plan to control the risk. These Plans shall be submitted to TCTA and TCTA's Health and Safety Agent for review and be entered in the Site Risk Register. Journey hazards to and from the Site should be included.

The plans shall periodically review (every four months) for applicability and suitability.

The following list contain potential Critical Hazards (but not limited to) that the Contractor shall include: (It remains the Contractor's responsibility to investigate and identify additional Critical Hazards)

- a) Flooding.
- b) Main Road Crossings.
- c) Interfacing of Construction Vehicles with Public vehicles and Farmers on farmland and shared access road.
- d) Telecommunication Lines.
- e) Lightning.
- f) Extreme Temperatures.
- g) Low Water Road Crossings.
- h) De-construction of existing Fences, Centre Irrigation Pivots and associated Infrastructure, Pump Houses and associated Infrastructure, Electrical Services, Fencing etc.
- i) River Stream Diversions.
- j) Working in, over or adjacent to Water Courses.
- k) Lifting Operations.
- l) Deep excavations (>3 m) for structures and some valve chambers.

2.4.7 Risk Assessments

As described above, prior to the commencement of each work activity, or as requested by TCTA or the TCTA's Health and Safety Agent, a Risk Assessment (RA) is completed, documented and submitted to the TCTA or the TCTA's Health and Safety Agent for approval prior to the task commencing (the Contractor shall factor in at least Ten (10) working days for an RA review, this does not necessarily mean that approval will be within Ten (10) working days as amendments may be required and the RA resubmitted for review).

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The purpose of the RA shall be to identify all potential hazards associated with the Work and the Work environment, assess the risk these hazards present and then to provide risk control action that deals with those hazards, as well as providing to the workforce involved in the particular work activity, details of any hazards and the proposed controls.

The Contractor shall propose the RA process and shall record the RA on the TCTA or TCTA's Health and Safety Agent format (Annexure 2/1, as attached), considering the requirements below. The documented RA and/or resulting Work Instruction shall be completed by the work crew and job supervisor, and at least one team member shall be skilled and experienced in the RA / risk assessment process. Completed RA's shall be available for review by the work crew, TCTA and the TCTA's Health and Safety Agent upon request.

The Risk Assessment shall:

- a) Describe the operation to be performed in the sequence of the basic job steps.
- b) Identify the hazards or potential hazards at each step.
- c) Identify the possible consequences for each hazard at each step.
- d) Assess the Initial Risk Score that each hazard presents (Probability x Severity x Frequency), the total score will be used to identify the Risk Ranking/Priority Factor. Once control measures have been considered and implemented, a Revised (or Residual) Risk Score shall be allocated to each hazard.
- e) Identify the Site Rules that apply.
- f) Describe how the hazard shall be controlled such that the residual risk is as low as reasonably practicable (ALARP) and shall be acceptable to the work crew (remembering that PPE shall be the last resort and elimination and engineering controls shall always be considered first).
- g) Identify the related Work Instruction if appropriate.
- h) Be reviewed prior to each shift.
- i) Be acknowledged by way of signature of all personnel involved in the work activity.

Should the Contractor's appointed Risk Assessor continually submit sub-standard Risk Assessments, this would indicate that the Risk Assessor lacks the knowledge and experience required, the TCTA or TCTA's Health and Safety Agent reserves the right to ask that the appointed Risk Assessor shall be replaced with a more competent and experienced Risk Assessor.

The sub-Contractors shall also comply with competency, content and format requirements of the Risk Assessments as listed above. It is the Contractors responsibility to review and approve their sub-Contractors Risk Assessments to the same standard as TCTA or TCTA's Health and Safety Agent would review it to. TCTA or TCTA's Health and Safety Agent reserves the right to inspect the sub-Contractors risk assessments and if found to be sub-standard then those tasks affected by the sub-standard risk assessments will be stopped until the risk assessments are amended to a satisfactory level.

In order to ensure compliance with the Construction Regulations, the Contractor will be required to carry out the following three forms of Risk Assessment:

2.4.7.1 Baseline or Datum Risk Assessments

The Contractor will be required to carry out a Risk Assessment before the commencement of construction activities. This "baseline" or "datum" Risk Assessment will form part of the Contractor's health and safety plan. The risks and hazards to which persons, Plant, vehicles and facilities may

be exposed during the construction should be identified and evaluated. Measures to reduce or control these risks or hazards should be defined during this assessment. The effectiveness of the measures defined and the baseline Risk Assessment prepared shall be monitored and reviewed from time to time to ensure that it remains relevant and accurate.

2.4.7.2 Issue Based Risk Assessments

The Contractor will be required to carry out separate Risk Assessments during construction of the Works when methods and procedures are varied, for example when:

- a) Designs are amended;
- b) New machines are introduced;
- c) Plant is periodically cleaned and maintained;
- d) Plant is started-up or shut-down;
- e) Systems of work change or operations alter;
- f) Indents or near-misses occur; or
- g) Technological developments invalidate prior Risk Assessments.

2.4.7.3 Continuous Risk Assessments

The OH&S Act specifically requires that employers shall provide and maintain working environments that are safe and without risk to health. The general awareness of hazards needs to be raised as work ethic to maintain a safe and risk free environment on an on-going basis. This is achieved by continuous Risk Assessments, the most important form of Risk Assessment that takes place as an integral part of day-to-day management.

Examples of continuous Risk Assessments include:

- Regular audits;
- Maintaining general hazard awareness; and
- Pre-work Risk Assessment.

In addition, the Contractor shall ensure that all Sub-contractors conduct Risk Assessments for their scope of work. These shall be placed in the Contractor's OH&S file and form part of the Risk Assessments of the Contract.

The Risk Assessments shall identify and evaluate the risks and hazards that may be expected during the execution of the Works, and shall include a documented plan(s) of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The Risk Assessment shall be available on Site for inspection by inspectors, Employer, Engineer, Sub-contractors, employees, trade unions and OH&S committee members, and must be monitored and reviewed periodically by the Contractor.

The Contractor shall, emanating from the Risk Assessments, the requirements of this Section, the OH&S Act and its Regulations and other applicable legislation and standards compile a set of OH&S rules for the Site which rules shall be applied on Site and included in induction and other training.

2.4.8 Unsafe Operations

If the Contractor believes that the work cannot be safely undertaken or that continuance of the work may result in unsafe conditions, it shall immediately cease the operation until a safe method of work has been identified. The Contractor shall at all times make every effort to control or overcome the cause, or minimise the effect of, any unsafe condition.

2.4.9 Work in Operating Areas

When the Contractor is working in close proximity to operating cranes, roads, access ways or other equipment and a safety hazard has been identified, the Contractor shall provide safety watchers as necessary or as directed by TCTA or the TCTA's Health and Safety Agent and shall provide, erect and subsequently dismantle all the required barriers, flags, wheel stops, buffer stops, flashing lights or other safety equipment to enable its operations to proceed in a manner which satisfies TCTA or the TCTA's Health and Safety Agent. At all times, defined access ways are to be kept clear of objects or obstructions which could cause injury to personnel or damage to equipment or plant.

The Contractor warrants that the Contract rates and prices include for all safety watchers (spotters or look-outs), signs, lights, barriers, traffic barricades, protective shielding and the like required for the protection of personnel, plant and construction operations.

2.4.10 Hazardous Materials

The Contractor shall set out its policy for the use, transportation, handling and storage of fuel and hazardous materials taking into account the legislative requirements.

The Contractor shall ensure that all hazardous materials and waste products are disposed of in accordance with applicable laws and regulations and the Environmental Management Specification for the project, published by TCTA or in the absence of any relevant law, regulation or procedures, in accordance with sound safe practice.

The Contractor should obtain the manufacturer's or supplier's Safety Data Sheet (SDS) for the hazardous materials to be used on site, which describes the various safety and hazardous properties risks related to the hazardous material (see Hazardous Chemical Agents Regulations, Regulation 14A).

2.4.11 Hierarchy of Control

The Contractor shall ensure that all risk and hazard controls are applied in accordance with the 'Hierarchy of Control' methodology.

Control measures to eliminate or minimise the risk shall be considered and implemented in the following order of priority:

- (1) **Elimination** of the hazard shall be the main objective.

If this is not possible, prevent or minimise exposure to the risk by one or a combination of:

- (2) **Substitution** - substituting a less hazardous material, process or equipment.
- (3) **Isolation** - isolating the hazard from the person or the person from the hazard.
- (4) **Engineering** - redesigning equipment or work processes.

(5) **Administration** - introduce administrative controls.

As a last resort, when exposure to the risk is not (or cannot be) minimised by other means.

(6) **PPE** - identify and use appropriate personal protective equipment.

2.4.12 Management of Change

The Contractor shall develop a Procedure and system to manage the change process. This Procedure and system shall address the required processes to ensure that proposed changes do not give rise to unacceptable risk to health, safety, assets and/or the environment.

The change management process shall aim to ensure the following:

- a) Changes are identified and recognised.
- b) Careful consideration shall be given to managing the Risks associated with any change.
- c) Due diligence can be shown to have taken place.
- d) A reduction in the number of unsatisfactory or unnecessary changes.
- e) Involvement of the right people in the change process.
- f) All statutory requirements are met.

The change management controls shall apply having regard to the fact that change may be planned, sudden or gradual.

2.4.13 Construction Regulation 9

In addition to TCTA's Risk Assessment requirements above, the Contractor shall implement and ensure compliance with Construction Regulation 9.

2.5 OCCUPATIONAL HEALTH AND HYGIENE

2.5.1 Fitness for Duty

The Contractor shall ensure that personnel under its control and authority comply with the requirements of the Fitness for Duty Policy and are bound by its disciplinary provisions, regarding the possible effects of:

- a) General level of personal fitness and/or medical conditions.
- b) The consumption of alcohol.
- c) The use of other drugs (prescription, pharmaceutical or illicit).
- d) Fatigue.
- e) Stress.

2.5.2 Alcohol and Other Drugs

The Contractor shall ensure that personnel under its control and authority do not at any time, during the performance of the work, take or work under the influence of any alcoholic and/or other drug other than for bona fide medical reasons or other proper reasons that have been approved in

advance and in writing by TCTA or TCTA's Health and Safety Agent. The measures to be taken by the Contractor shall include a drug test prior to such personnel starting work on the site. The Contractor shall ensure that personnel under its control and authority comply with the Project site program of random testing for alcohol and other drugs.

2.5.3 Health Assessments and Health Monitoring

The Contractor shall ensure that all the Contractor's personnel are healthy and medically fit for their respective assignments and shall certify the same to TCTA or TCTA's Health and Safety Agent if so requested. The Contractor shall be responsible for pre-placement and exit medicals and ongoing health assessments.

The Contractor shall ensure that operators of mobile equipment undergo "fit for work" medical examination every 1 year and crane operators engaged in lifting man boxes every 5 years. This medical shall be to certify that the medical practitioner has examined the operator and formed the opinion that the operator shall be free from deafness, defective vision, epilepsy, heart disease, and any other infirmity likely to cause the operator to lose control of the machine being operated.

The Contractor shall be responsible for the medical welfare of its own employees, servants and their families.

All medicals to include the annexure 3 form as per the Construction Regulations 2014, signed and stamped by the occupational medical practitioner.

Entrance medicals, annual medicals and exit medicals must be costed in terms of the BOQ.

2.5.4 Personal Hygiene

The Contractor shall ensure that its personnel and Sub-Contractor's personnel shall maintain high standards of hygiene in connection with the performance of the work.

The Contractor shall maintain all work areas in a clean and tidy state and shall promptly and appropriately dispose of waste material.

Shaded resting and eating areas are to be provided in close proximity to the work areas with toilets and washing facilities and are to be kept in a clean, tidy manner and are positioned away from contaminants and hazards to the satisfaction of TCTA or the TCTA's Health and Safety Agent and comply with all statutory requirements.

Due to the nature of this site no eating and drinking may take place outside the designated eating or office area facilities are to be made easily available for persons to wash hands when leaving the construction area and entering the construction site offices.

Due to the COVID-19 pandemic, it is now important to promote hygienic practices by frequently disinfecting and/or sanitising all the regularly hand-touched contact surfaces of the work places, accommodation, ablutions and other welfare facilities to reduce the possibility of contact with COVID-19 virus "droplets" that infect such surfaces allowing transmission of COVID-19. All personnel should wash and/or sanitise their hands before hand-touching their faces or eating, drinking or smoking.

2.5.5 Cleaners, Solvents and Hazardous Materials

No chemical, which shall be potentially hazardous, shall be brought onto the Site without the prior acceptance of TCTA or the TCTA's Health and Safety Agent.

The Contractor shall submit to TCTA and TCTA's Health and Safety Agent a Safety Data Sheet (SDS) with its request for acceptance of each hazardous substance the Contractor proposes to use at the Site.

The Contractor shall ensure that all necessary transport, storage and usage precautions are taken and that safety equipment, including antidotes, if necessary, are available on the Site. Compliance will also at all times be maintained with the requirements of the Environmental Management Specification for the project.

2.5.6 First Aid Services

The Contractor shall implement and comply with OH&S Act General Safety Regulation 3. The Contractor shall provide a qualified person and first aid equipment to give first aid attention on the site near the work face at all times where the Contractor shall be carrying out work on the site. The minimum qualification shall be that provided by the St John's Ambulance Brigade or as prescribed in the **OH&S Act – General Safety Regulation 3**.

The Contractor shall provide and maintain first aid equipment on the Site. The equipment shall be to a standard as laid down by the Statutory Regulations.

2.5.7 First Aid Boxes

To be provided with contents as per site specific risk and at least with the minimum legal requirements. Boxes shall be provided in all working areas and maintained. A first aid kit to be provided in all vehicles. Record to be kept, in an appropriate register of all treatment done. (**SABS 1186** approved signs to indicate location of first aid boxes)

2.5.8 Emergency Numbers

Lists with emergency numbers to be posted at phones in every office and Safety Information Boards across the project. Provide workers with stickers to place inside their hardhats with emergency numbers printed on stickers. All Supervisors / Foreman shall be issued with the emergency numbers that shall form part of the project's emergency response plan and procedure.

2.5.9 Smoking and Vaping

The Contractor shall not permit smoking or vaping at the site except within designated smoking areas selected in accordance with applicable laws, rules, regulations, and policies.

Hand washing facilities need to be provided at smoking designated areas as the use of a high percentage alcohol-based sanitiser could be a fire risk while smoking.

2.5.10 Sun Protection

The Contractor shall ensure that all personnel are protected in sunlight by the use of long sleeve shirts, long trousers, brims to safety helmets, UV factored sunscreen and shade structures. **No Short pants permitted.**

The Contractor shall conduct training and awareness sessions with its workforce, advising on the risks of working in the heat and dehydration and the precautions to be taken including an acceptable fluid intake depending on conditions. The Contractor shall ensure that adequate water shall be available to its workforce at all times.

2.5.11 Working Hours

The Contractor shall be responsible for the administration of the working hours of its employees and Sub-Contractors. Maximum working hours per day and minimum rest times between shifts shall be specified in the Contractor's Health and Safety Management Plan and shall comply with the requirements of Sections 7 and 9 of the Basic Conditions of Employment Act, Act 75 of 1997.

2.6 AUDITS

In terms of Construction Regulation 7(1)(c)(vii) the Contractor shall ensure that periodic internal site audits and document verification are conducted at intervals mutually agreed upon between the principal Contractor and any sub-contractor, but at least once every 30 days.

In terms of Construction Regulation 5(1)(o) and (p) the Health and Safety Agent shall ensure that:

- Periodic external health and safety audits and related document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days; and
- A copy of the Health and Safety audit report contemplated in paragraph (o) is provided to the principal Contractor within seven days after the audit.

2.7 SUB-CONTRACTOR OH&S MANAGEMENT

2.7.1 Sub-Contractor's Health and Safety Management Plan

The Contractor shall ensure that all its Sub-Contractors have written Safety Management Plans in place and implemented that are of a standard suitable for the type of activity being undertaken, which address the hazards involved with the particular work activity, and which support the Contractor's accepted safety management approach. The Contractor shall ensure these Plans are in place before allowing sub-Contractors to mobilise to site. Sub-Contractor Safety Management Plans shall include management of transport and delivery Contractors entering the site delivering materials and/or equipment.

Activities with a cost implication must be costed in terms of the BOQ.

2.7.2 Sub-Contractor's Health and Safety File

The Contractor shall, review and ensure that each and every sub-Contractor has a comprehensive health and safety file and that there is a formal approval system in place. Records of all approvals to be kept and made available on request.

All Contractors appointed by the Contractor shall be deemed a sub-Contractor and as such all the required documentation shall be required. This will apply to all providers appointed by the Contractor for whatever reason.

2.7.3 Working Together for a Safe Site

The Contractor and its Sub-Contractors shall actively participate in any programs and/or activities designed to improve the Health and Safety performance on the project.

The Contractor shall:

- a) Provide every Sub-contractor with a copy of this OH&S Section and a copy of his documented OH&S Plan or relevant sections thereof;
- b) Ensure that all Sub-contractors and their employees are committed to the implementation of this OH&S Plan;
- c) Require of the Sub-contractors that they provide him with an OH&S plan for the work that the Sub-contractor is going to execute on the Site; and
- d) Compile abbreviated copies of the OH&S Plan (in English and any other relevant languages) and display these on notice boards in areas where workers congregate so that they are aware of their rights and responsibilities. In this regard, the contents of the OH&S Plan must form part of the worker's induction training syllabus.

2.8 TRAINING AND COMPETENCY

2.8.1 Contractor Personnel Competency and Responsibility for Health and Safety

Prior to the commencement of the work, including mobilisation and site set-up activities, the Contractor shall provide current documentation to the satisfaction of TCTA or the TCTA's Health and Safety Agent verifying that the Contractor's and Sub-Contractor's personnel are competent and have the appropriate qualifications, job skills and training as required by this Contract and applicable laws.

The Contractor shall ensure that all his employees and his Sub-Contractors' employees working on the site are adequately trained in the type of work to be performed, are trained in relevant procedures and have the appropriate qualifications, certificates and tickets, and are under competent supervision. Records are to be maintained on site of appropriate training and qualifications of all employees by each Contractor.

The Principal Contractor shall verify that any training service provider is registered with SAQA to present the required modules.

The Principal Contractor and all contract employees are holders of current certificates or licenses, where the operation being performed requires such (for example, Crane Drivers Certificate, Riggers and Scaffolders Certificate, Welding Certificate, etc.). All to be in compliance with Legislation, National Qualification Framework Act, 2000: Act No 67 of 200 (e.g. SAQA, CETA, HWSETA or similar registered course as applicable) or applicable industry standard where legislation does not prescribe or have registered courses to meet the requirements.

Certificates of training and/or a letter from 16 (2) certifying a person's competency and test of competency is submitted at the induction centre for each employee as well as a man/job specification.

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Note: No certificates that are not aligned to unit standards will be accepted. The course providers shall be accredited course providers, and the certificates issued shall be accredited wherever unit standards exist. The following list of courses must be costed for and presented based on the operational requirements and identified risks of the project:

- a) Legal Liability.
- b) First Aid Level 1.
- c) Confined Space.
- d) Fire Fighting.
- e) Health & Safety Representative.
- f) Hand tools.
- g) Electrical Power Tools.
- h) Working at Heights / Fall Protection Planner.
- i) Basic fall arrest.
- j) COID Act.
- k) H.I.R.A – Hazard Identification and Risk Assessment.
- l) Incident Investigation.
- m) Basic Rigging and Slings.
- n) Flagsman / Banksman.
- o) Scaffold Erecting and Dismantling.
- p) Induction.
- q) Risk Assessment Review Site Specific.
- r) Permit Training.
- s) HBA / COVID-19 Training.

Proof of the following minimum Health and Safety Training is required before any work may commence:

- a) Construction Safety Manager, NADSAM or equivalent, SAMTRAC and be registered with SACPCMP as a CHSM with at least 8 years construction safety experience. (shall submit registration documents to the TCTA's Health and Safety Agent for approval)
- b) Construction Safety Officer (CR8.5) – SAMTRAC (or equivalent – approved by the TCTA's Health and Safety Agent) and at least 5 years construction safety experience and 2 years working at heights experience. Shall be registered at SACPCMP as a CHSO.
- c) Risk Assessor (CR9.1) - to have completed a SAMTRAC (or equivalent) and SAQA Accredited Risk Assessors (HIRA) course or equivalent.
- d) Management and Supervisory personnel and foreman (All Section 16(2), CR8(1), CR8(2), CR8(7), CR8(8) appointees) – Supervisor's Safety course – (IRCON 24-hour course or equivalent), HIRA, Legal Liability and Construction Regulations 2014, designated person to be approved by TCTA) and a certificate of competency as required by regulations regarding competency.
- e) Workforce – (Basic Health & Safety Training).

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- f) Trained, elected and appointed Safety Representatives per area in the following ratio: (**OH&S Act - Section 17 &18 and General Administrative Regulations 6 and 7**):
- Up to 50 people on site = 1 Representative.
 - And 1 for every 50 or part thereof thereafter.
- g) Trained and appointed First Aiders per area in the following ratio; (**OH&S Act – General Safety Regulation 3**) at least each team's First Aider to hold a **Level 3** certificate taking the remoteness and distance of the MCWAP-2 Project into consideration and be on site fulltime:
- Up to 50 people on site = 1 First Aider.
 - And 1 for every 50 or part thereof, thereafter.
 - If the First-aider is deployed on a work at heights job task site, he/she shall be work at heights trained to be able to provide treatment at heights.

When teams are working in separated areas TCTA or the TCTA's Health and Safety Agent may instruct the Contractor to appoint First Aiders and Safety Representatives per work area regardless if less than fifty people are working in an area.

The Contractor is responsible for offloading all deliveries of materials, equipment, etc. delivered to the site, including the competence of transport and delivery Contractors entering the site.

Generally, all equipment operators will be required to be re-assessed, using the equipment provided and, in the conditions, existing on site, in relation to heavy vehicle/light vehicle operation and interactions.

The Contractor represents and warrants that its supervisors are competent and have been trained and advised in writing that they are responsible, and have accepted and acknowledged such responsibilities in writing, for ensuring that the work is performed in accordance with all applicable laws, rules and regulations, good working practices, and any additional guidelines and/or operating standards provided to the Contractor by TCTA or TCTA's Health and Safety Agent.

The Contractor shall, develop a Personal Safety Action Plan for each key staff member that lists actions to be taken and responsibilities. These plans are regularly audited by the Contractor's Project Manager. The Contractor's Project Manager will have his Personal Safety Action Plan audited by TCTA or the TCTA's Health and Safety Agent.

The Contractor shall at TCTA or TCTA's Health and Safety Agent's request, provide TCTA or TCTA's Health and Safety Agent with organisation charts, specifying the areas of safety responsibility of supervisors. The Contractor's Supervisors shall assess and assure themselves that employees under their control have adequate skills and training to carry out their tasks and will not be permitted to perform tasks for which they have not been adequately trained.

The Contractor's and/or Sub-Contractor's employees shall, where required by legislation and where accredited courses are available, be the holders of current relevant Government Department Certificates or Permits where the operation being performed requires such certification, for example:

- a) Fitters.
- b) Welders.
- c) Boiler makers.
- d) Blasters.
- e) Crane and Hoist Drivers.

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- f) Crane Chasers, Banks man, Doggers.
 - g) Riggers (Qualification and Experience Specific to level of rigging required).
 - h) Scaffolders.
 - i) Plant Operators.
 - j) Winch Drivers.
 - k) Explosive Tools Operators.
 - l) Demolisher.
 - m) Electricians.
 - n) Plumbers.
 - o) Gasfitters.
 - p) Trade Assistants.
 - q) Steel fixers.
 - r) Carpenters.
 - s) Concrete Finishers etc.

The actual list will depend on applicable regulations regarding competency.

Contractors and Sub-Contractor's employees carrying out the following designated tasks require specific authorisation by TCTA or TCTA's Health and Safety Agent, i.e.:

- Operation of mobile equipment including cranes and work platforms.
- Slinging of loads from, and the direction of movement of loads by, cranes and other lifting devices.
- Erection and dismantling of scaffolding in excess of 4.5 metres in height.
- Driving light vehicles, buses, trucks, etc.
- Supervising Excavations deeper than 1.5 m.
- Working in confined Spaces (e.g. in chambers, vessels, pits, pipes, low oxygen environments, etc.).

The Contractor shall request authorisation of persons nominated to perform these tasks, with 2 weeks' notice, and shall support that request with copies of competency certificates, including driving license, and relevant medical certification, copies of log books or work experience that can be verified, and a written statement attesting to the fact that the employee is competent to perform the nominated function. Note that medical examinations for drivers and crane operators are specific to the trade. Copies of all such evidence of competence are logged in a Register maintained by the Contractor. The Contractor shall provide electronic copies of such Register/s to TCTA or the TCTA's Health and Safety Agent upon request.

TCTA or the TCTA's Health and Safety Agent may at any time conduct a task observation as to the ability of any operator of equipment or person carrying out a nominated specific task, to carry out that task in a safe and competent manner. If TCTA or the TCTA's Health and Safety Agent is of the opinion that the person is not "currently competent", that person shall cease work immediately, undergo the necessary retraining or be removed from that activity. Retraining is at the Contractor's expense.

The training indicated above must be seen as the minimum requirement, but must be informed by the risks identified and the method statement of the contractor.

2.8.2 Training

2.8.2.1 Induction in Health and Safety

Comply with: OH&S Act - Section 8.

The Contractor shall verify that any training service provider is registered with SAQA to present the required modules.

The Contractor shall ensure that no employee of the Contractor or its Sub-Contractors, including transport and delivery Contractors entering the site delivering materials and/or equipment, shall proceed to enter the Site or any operations area until they have received all training required under applicable laws and regulations, including, but not limited to, work activity inductions and the site-specific induction. This Project induction has a “life” of 12 months, after which re-induction is required.

The Contractor is to create induction packs for all persons to be inducted, which will at a minimum consist of the following:

- a) Copy of medical certificate of fitness with annexure 3. (Clearly Indicating that the respective employee is fit for the specific task/tasks to be performed)
- b) Copy of Identity document.
- c) Legal appointment letter (where applicable).
- d) CV (Where applicable).
- e) Drivers licence (where applicable).
- f) Certificates of training (where applicable).

TCTA, TCTA's Health and Safety Agent and Engineers team shall be required to present the following:

- Copy of ID.
- Copy of medical certificate of fitness with annexure 3.
- Where necessary copies of certificates e.g. working at heights etc.

The Contractor is to prepare and present a copy of their induction to TCTA and TCTA's Health and Safety Agent for review and approval. Their induction is to be in the form of a video presentation which will be used for all inductions on site and at a minimum this will detail the site layout, specific operation areas, hazards, restricted areas and emergency procedures. The presenter will give details of any additional hazards that may be present on the day of induction e.g. blasting.

The Contractor will prepare a visitor's induction video for site visitors that will be on site for less than three consecutive days, unless the person is on site to perform construction activities then a full induction shall be required.

Where a Contractor's employee or Sub-Contractor has been absent from the project for more than 21 consecutive days, re-induction shall be required.

The Contractor shall also prepare and present to all its employees its own Contractor Induction, explaining the Contractor's Safety Management Plan, the Contractor's Rules, the obligations imposed by the Occupational Health and Safety Act and Regulations, the Project Safety booklet, as well as a Site-specific induction, which shall as a minimum consist of an introductory briefing explaining the nature of the work, the general hazards which may be encountered during the operation, and the particular hazards attached to their own function within the operation and how these hazards shall be identified and accounted for.

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The Contractor shall ensure that all its employees and the employees of its Sub-Contractors working on-site are adequately trained in the type of work to be performed and are trained in relevant procedures and have the appropriate qualifications, certificates and tickets and are under competent supervision. Records are to be maintained of appropriate training and qualifications.

Where there is a SAQA unit standard available that shall be deemed to be the minimum required standard. Should there be no SAQA unit standard then industry best practice shall be the standard. The Contractor shall ensure that all its personnel and its Sub-Contractor's personnel receive a copy of the Contractor's Health and Safety training manuals or handbooks relevant to their jobs which shall detail Health and Safety code and conduct, personal safety protection, emergency Health and Safety response and personal health conduct. The Contractor shall provide TCTA and TCTA's Health and Safety Agent with details of ongoing training programs and shall provide TCTA and the TCTA's Health and Safety Agent with all related revisions during the term of this Contract. The Contractor shall provide programs for the above to overcome any language, literacy or comprehension impairments.

A full day shall be set-aside for Induction and production of appropriate photo identification badging of all employees.

Prior to induction all employees shall undergo a pre-employment medical examination (If required) and found fit for duty. A copy of the certificate of fitness shall be presented for permanent record at the induction centre and kept at site offices for permanent record to be transferred to TCTA on project completion. Employees found with health conditions and need to receive chronic medication, shall be monitored as to the effect that medication are taken.

Employees shall not have access to the site until they have completed this induction. The Contractor shall keep a record of all inducted personnel.

Before commencing work the following induction-training courses are attended:

- Contractors' job specific Induction.

Proof of job specific induction signed by Inductor and trainee shall be submitted at the induction centre before a badge shall be issued.

In addition to the basic safe working practices induction, the Contractor shall ensure that all his employees and those of his sub-Contractors are inducted in site-specific safety issues.

The Contractor shall ensure that badges and exit medical certificates are submitted to TCTA site representative when people are demobilised; failure shall result in withholding of final payment until exit medical certificates are received and or a penalty of R1500.00 shall be paid for every exit medical not submitted.

Contractors should ensure exit medical and badges are received before final payment of employees.

All local community labour employed on this project shall provide a copy of their ID and at the contractor's expense, undergo the medical, induction, job tasks and site procedures training.

Local community labour employed on this project, at the expense of the contractor, shall be provided with the required PPE for the site access and job tasks they will be required to perform on site.

2.8.3 Emergency Procedures

The Contractor shall ensure that all personnel on the Site, including visitors, are properly instructed in the Site emergency response procedures. Drawings and plans, indicating emergency equipment and escape routes shall be displayed on notice boards and other places as may be required.

The Contractor shall ensure that **prompt medical support** shall be available at all times.

The Contractor shall upon contact award engage with the emergency services, Hospitals and SAPS based in the closest major towns in closest proximity of the total project to determine and establish appropriate response measures. These arrangements shall include the possibility of air medivac for critical cases to advanced medicinal facilities.

Contractor with the assistance of the TCTA or the TCTA's Health and Safety Agent establish and agree on an upstream and downstream effective early warning flood system.

Rescue teams to be trained to a level that include water rescue.

The Contractor shall submit a comprehensive emergency plan considering all possible scenarios.

2.8.4 Isolation Procedure Training

The Contractor shall comply with and train their employees in the Site requirements in relation to Hazardous Energy Isolation. The level of training shall be dependent on the position and responsibilities of the employee.

No person who has not been properly trained and assessed as competent will be allowed to isolate any item of equipment or plant.

Furthermore, sections of the pipeline excavation and laying project work is adjacent to and/or within some Eskom powerline servitudes, so the Eskom powerlines isolation and working within an Eskom servitude will be performed in relation to and in compliance with both Eskom's and the Contractor's isolation procedures.

2.8.5 Contractors Health and Safety Management Handbook

The Contractor shall develop a Health and Safety Management Handbook that will summarise the requirements of the Contractor's Health and Safety Management Plan and Contractor's Rules. The document shall be in a format that can be issued to all employees at inductions and prior to that employee commencing work on site and shall be maintained for reference by all employees. TCTA's Health and Safety Agent shall approve the format and contents of the Handbook prior to its issue.

The Contractor shall ensure that each employee acknowledges receipt of the Contractor's Health and Safety Management Handbook by way of signature. The Contractor shall be responsible for producing these records of signature and acknowledgement if audited.

Where reading skills and/or language is an issue with the workforce the Contractor shall propose an alternative to the above, maintaining the intent of the above, for acceptance by the TCTA's Health and Safety Agent.

2.9 SAFE SYSTEMS OF WORK

2.9.1 Typical Activities Requiring Safe Work Procedures (SWP's)

Guidelines of typical construction activities for which SWP's shall be provided before starting work on site by the Contractor (to be attached to Risk Assessments).

- Site establishment, Firefighting and evacuation, Rubble and refuse removing, Stacking and storing, Housekeeping, Loading and off-loading of vehicles, etc.
- Construction work involving excavation safety, demolition work, working at heights, confined space entry, working with or handling Hazardous Chemical Agents, lifting loads, etc.

2.9.2 General

Work areas – benches, containing of sparks, Barricading and handrails, Safe Access and egress, Evacuation and emergency procedures, Backfilling and compacting, Shuttering and Form work, Lifting and rigging, Steel fixing, pouring of concrete and floating, Elevated work, Use of ladders, Roadwork and Fuelling of machines, etc. all could be safety risks.

Work Area exposure risks - it is possible that wildlife in the form for Fauna (snakes, bees, ticks, game, predators, insects, dogs, etc.) and/or Flora (poisonous plants, dead and snagged trees, thorn bushes, etc.) can cause injury that could need safety procedures to urgent medical attention guidelines.

2.9.3 Scaffolding

Design, Erection, and Dismantling in accordance with SANS 10085 or Scaffolding Engineers design.

The Contractor shall provide a scaffolding procedure detailing how the Contractor will manage access scaffolding and the following shall be to be included in the plan.

- a) Managing of the scaffolding requests.
- b) Certification of the scaffold to be handed over.
- c) Inspection of the scaffolding.
- d) Documentation shall be one booklet per item below and shall be in triplicate copy:
 - i) Scaffold request.
 - ii) Scaffold Handover certificate.
 - iii) Scaffold inspection register.
 - iv) Scaffold site instruction (for altering scaffolding).
 - v) Scaffold record of all scaffolding on site and dismantlement's.
- e) Overall management of the ordering of material, storage on site and laydown areas.
- f) Staffing plan including CV's certificates and appointments.
- g) Scaffold shall be declared unsafe for use during rain and irrespective of recorded millimetres of rain on a given day until it is inspected and declared safe for use by the competent Scaffold Inspector.

2.9.4 Activities per Discipline

Civil, Structural, Pipefitting, Mechanical, Electrical, Instrumentation, Bricklaying, Roofing and cladding, Installation of cable racks, Cable pulling, Work in confined spaces, Stock keeping and control, Grit blasting, Demarcation and other pipeline construction activities identified, may require safe work procedures, depending on the level of risk assessed in the baseline risk assessment.

People activities like:

- Grinding, welding, jack hammer operations, operating of machines, cutting, compacting, crane operating, manual handling and excavating, etc. amongst others, will require safe work procedures.

2.9.5 Personal Protection and Safety Equipment

The Contractor shall implement and comply with OH&S Act – General Safety Regulation 2 and the prescribed requirements of the Code of Practice: Managing Exposure to SARS-COV2 in the Workplace 2022 – Department of Employment and Labour, 22 June 2022. .

Safe Systems of work to address specific PPE requirements over and above the minimum requirements as per the Site Rules taking into account items of PPE that might not be compatible with the user or with other PPE (e.g. if the user has spectacles and shall be required to wear a full face respirator, the spectacle arms will break the seal and will not provide the required protection). PPE shall be also to be seen as the last resort and engineering controls should be put in place whenever possible.

Symbolic signs (To comply with SANS 1186) indicating the use of PPE shall be placed at entrance to the construction site.

2.9.5.1 Standard PPE

All Contractors' personnel at the site, including visitors, shall use the following minimum personal safety equipment at all times and shall comply with relevant SABS/EN/EC codes:

- a) Safety head protection with chin strap (Hard hat: SANS 1397:2003 / EN 397:1995).
- b) Safety footwear with steel toe protection.
- c) Safety glasses with side shields.
- d) Hand Protection as required.
- e) Long trousers.
- f) Long-sleeved shirts with cuffs and collars and reflective taping as required.
- g) High visibility Reflective Vests.
- h) Hearing and respiratory protection as required.
- i) Suitable protective clothing (Overalls for all employees conducting physical working).

Personnel exposed to noise levels exceeding 85dB(A) for any period of time or where signs indicate hearing protection shall be required to wear (**SANS 1451** approved) hearing protection. Note: NIHL (noise induced hearing loss) assessment should be conducted, where appropriate, by a competent person (Registered Occupational Hygienist) and recommendations and control measures followed.

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Other personal protection items such as gloves, face shields, leather spats, safety harnesses, aprons or other such items may be specified for use by legislation, the Scope of Work, TCTA or TCTA's Health and Safety Agent. Personal Protective Equipment shall also be worn, if recommended by manufacturers or suppliers of proprietary products or equipment.

The following list provides a further guideline, but must be informed by the risk assessment and the method statement for the project:

- a) Gumboots.
- b) Safety Goggles.
- c) Full Face Shields.
- d) PVC Gloves.
- e) Dust masks as requested by HBA / COVID-19 protocols as well as other operational requirements.
- f) Leather Welding Aprons.
- g) Welding Helmets.
- h) Rain suits.
- i) Leather Gloves.
- j) Overalls.
- k) Spats.
- l) Safety Vests.
- m) Full Safety Harnesses.
- n) Life Jackets.
- o) Life Buoys.

All personnel engaged in maintenance and operational activities shall use the minimum personal protection applicable at the site.

PPE shall be issued to all workers free of charge (unless otherwise damaged or lost by the employee) and a record of issuing shall be maintained (including but not limited to; employees name, date of issue, item issued, employee signature, issue officer signature, etc.).

Training shall be provided to all employees to ensure they know how to use and maintain their PPE. Training should include but not limited to: Cleaning of PPE, Hygiene, Correctly Putting PPE on, Inspection of PPE, Health Risks associated with the task, identifying when PPE is spent (i.e., reach saturation point/no longer functioning as it should) or broken, etc.

2.9.5.2 Specific PPE

The Contractor shall provide and ensure usage and compliance with the following minimum PPE requirements for site work:

- a) **SABS/EN/EC** approved hard hats and hard hats with fixed side knobs for welding and grinding operations.
- b) Approved and appropriate overalls.

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- c) Wearing of impact Safety Spectacles with side shields are compulsory on site and in workshops at all times. Prescription glasses shall comply with the same standard or cover impact safety spectacles is worn over them.
 - d) Front flip goggles to be used for gas cutting.
 - e) Double Eye-Protection:
 - i) Welding – Impact Spectacles and Welding Hood.
 - ii) Grinding – Impact Spectacles and Full-Face Visor.
 - iii) Cutting – Impact Spectacles and Full-Face Visor.
 - iv) Reaming – Impact Spectacles and Full-Face Visor.
 - f) Specific PPE:
 - i) Welding – Spats/Apron/Yoke/Respirator (Metal - Knee pads for welders in kneeling positions).
 - ii) Grinding – Spats and Apron.
 - iii) Gas Cutting - Spats and Apron.
 - iv) Boots / Shoes – “Fram” safety boots or equivalent.
 - v) Gumboots – Steel cap toe.
 - vi) Earplugs (**SANS 1451** Approved) – Noise zones exceeding 85 dB(A) (Including grinding/compacting etc.).
 - vii) Nuisance Dust – Dust Masks – FFP1 minimum.
 - viii) Asbestos – FFP2 minimum.
 - ix) Grit Blasting – Airline Hood.
 - x) Spray Painting – Airline Hood (Confined Spaces) /Canister type mask.
 - g) Applicable Gloves to be worn for all Hand Operations:
 - i) Termination of cables – glass cutting gloves.
 - ii) Using a Stanley knife - Glass cutting gloves.
 - iii) Welding – Welding gloves etc.
 - iv) Gas/Argon – Cutting/Welding.
 - v) Gloves for artisans and helpers.
 - vi) Manual Handling – standard gloves.
 - h) Respiratory Protective Equipment (RPE) and Breathing Apparatus (BA):
 - i) Only SABS/EN/EC rated equipment to be supplied.
 - ii) Shall be provided as per Risk Assessment requirements based on Time Weighted Averages (TWA) and Workplace Exposure Limits (WEL).
 - iii) Shall be provided as advised by an Occupational Hygienist, after they have considered the exposure risks on site.
 - iv) Where possible, after considering exposure risk and cost factors, the most effective RPE for the situation should be used.
 - v) Specific training shall be provided to all employees who use the RPE/BA for the use and maintenance of RPE/BA. Training shall include but not be limited to: Cleaning of RPE/BA, Disposal of RPE/BA items or filters/cartridges, Hygiene, Correctly Putting PPE on, Inspection of PPE, Health Risks associated with the task, identifying when PPE is spent (i.e. reach saturation point/no longer functioning as it should) or broken, etc.
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i) Issue, Replacement and Control of PPE.

A dedicated person shall:

- Control the issue and replacement of equipment.
- Keep an up-to-date register, with signatures of the recipients, as proof of having been issued with such equipment free charge.
- A basic concept of swop replacement of the old PPE for new PPE should be considered to avoid PPE litter on site.

***PPE and Related Safety Requirements at to be issued for free by Contractor.**

2.9.5.3 Other Equipment required to manage Health and Safety on the project

Other safety equipment required would include amongst others guide ropes to control pipes and other equipment during lifting operations, alarm canisters for emergency evacuation, and safety posters as required for awareness programmes. Below is a list of items that should be considered, that must be informed by the risk assessment, the method statement and the contractor's health and safety plan.

- Transport for SHE Department.
- First Aid Boxes.
- Fire Extinguishers.
- Rotating Lights.
- Two Way Radios.
- Antenna and Installation.
- Safety DVD.
- Set of Safety and Health Posters.
- Orange Road Cones.
- Snow Netting.
- Rebar Caps.
- Traffic Road Signs.
- SHE Department Stationary.
- Computer Rent.
- Alcohol Meter.
- Red Flags.
- Lockout locks and calipers.
- Notice Board.
- Traffic Road Signs.
- SHE Observation Booklets.
- CELL Phones.
- Lightning Detector.

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- Chocks.
- Lanyards.
- Safety Awards.
- Radar Speed meter.
- Eyewash bottles.
- Respirators.
- Safety Signage.
- Overhead Projector.
- Gas and Oxygen Detectors.
- Delineators.
- Lamination Machine.
- OHS Act, COID Act, Basic Conditions of Employment Act, Labour Relations Act, Employment Equity Act.
- Metal Whistles for Banks man.

2.9.6 Working on Live Electrical Equipment / Sub-Station

The Contractor may not allow any work on live electrical equipment.

2.9.7 Requirements when Off-loading Vehicles

The Contractor shall ensure that drivers and/or their assistants, who are required to assist with the off-loading of material and/or equipment, are provided with the following minimum Personal Protective Equipment:

- Hard hat.
- Safety boots / shoes.
- Gloves.
- Glasses.
- High Visibility Reflective Vest.

2.9.8 Work where there is a fall risk

The Contractor shall implement and comply with Construction Regulation 10.

The Contractor shall:

- Submit a Fall Protection Plan to the TCTA's Health and Safety Agent for approval, before any elevated work commence.
- Parachute type harness with shock absorber and double lanyard to be provided for all elevated work above a 4m fall height and without a shock absorber on the lanyard or a fixed line work positioning lanyard for <4 m fall height work to avoid "bottom out" fall incidents.

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- Ensure that:
 - i) All tools in elevated positions shall be attached to lanyards and be attached to either the person or structure.
 - ii) Equipment in elevated positions is tied back to the structure.
 - iii) No loose items in elevated positions. E.g., Bolts and nuts shall be in pouches, not paper boxes.
 - iv) Overhead work allowed only if the area below has been barricaded in accordance with TCTA barricading requirements.
 - v) Competent riggers place safety anchors and lifelines on register and check them daily before use and records findings in the said register.

Note: Employees shall be attached by at least one lanyard of the safety harness/climbing harness at all times when conducting elevated/fall risk work.

2.9.9 Structures

The Contractor shall implement and comply with Construction Regulation 11.

2.9.10 Barricading and Edge Protection Requirements

The Contractor shall implement and comply with OH&S Act – General Safety Regulation 13 (I).

The Contractor shall ensure that:

- All openings and edges are barricaded with solid barricading to withstand an impact of at least 120 kg.
- Barricading to be so secured as to prevent movement of damage by wind.
- Only solid barricading covered with Orange “Snow Netting” and or TCTA approved equivalent barricading shall be allowed to be used as barricade.
- Solid barriers to prevent persons falling into them shall protect openings in floors, stairwells, staircases, open-sided buildings, and any structure in the course of erection, where dangerous openings exist.
- Contractors shall pre-plan the delivery of floor grating, stair treads, landings, and handrails to ensure safe access and protection for persons working on structures.
- Barricading shall be tagged, placed on register, maintained, and inspected daily – The owner of the barricade’s name and mobile number shall appear on the tag.

All handrails and fencing shall comply with TCTA Standards. They are provided around all holes or openings to prevent any person being injured because of a fall. A Solid framework with Plastic Barricading Netting attached to it shall be required.

Where it is impracticable to provide fixed guard railing, effective removable barriers shall be provided at all unguarded openings in guard railing or floors and shall always be maintained in position until the hazard no longer applies.

Note: Danger tape will not be accepted as barricading!
The use of danger tape shall not be permitted on site.

2.9.11 Working in Existing Operations

Work carried out such that no interference is caused to other construction work being carried out on the site and no claims for delays are brought about by the nature of the work shall be approved by TCTA.

Any work which requires section of the Plant to be taken out of operation with resultant interruption to production and/or other construction activities shall be carried out in the absolute minimum of time and be on the basis of the Contractor working around the clock (within legal parameters) for the duration of such work. The times when work of this nature can be carried out are as arranged with TCTA.

2.9.12 Permit to Work

The Contractor shall develop and implement a permit to work system.

The permit shall list specific conditions and hazards involving the specific task.

2.9.13 Overhead and Underground Services**2.9.13.1 Site Assessment and Demarcation**

At project start-up, a pre-work survey shall be performed on the project to determine the position of all electrical and other overhead and underground services. Once identified, the specific location and type of services, i.e., overhead or underground / power or other, shall be clearly identified on the Project Map and on a Site-Specific Project Traffic Management Plan. Both shall be submitted to the TCTA's Health and Safety Agent for review.

Exclusion Zones shall be Identified and clearly indicated on the Project Map and Site-Specific Project Traffic Management Plan.

During project start-up, the contractor shall ensure that all overhead and underground powerlines on the project are clearly demarcated using visible signage. Exclusion Zones shall be clearly demarcated at the same time.

Power line heights to be measured by non-contact measuring device.

"Goal Posts" shall be positioned on the project where plant and equipment cross underneath overhead powerlines and other services.

Signage, "Goal Posts" and demarcation to be constructed to international standards and the design shall be reviewed and approved by TCTA's Health and Safety Agent prior to installation.

2.9.13.2 Procedure for crossing underneath overhead powerlines and other services

Communication of all crossing points permitted on the project, the project map and the Site-Specific Project Traffic Management Plan shall be communicated to all Plant Operators and Drivers. Written records shall be kept.

All Plant shall have their height limit detailed inside the cabin in a conspicuous location so that the operator can easily reference it when approaching a crossing point.

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Plant and Mobile equipment are not permitted to cross underneath or drive adjacent to overhead power lines provided that the free space / gap between the two is less than the permitted distance determined by Utility Owner/ESKOM.

Height Restrictions and site protocols shall be communicated to all Suppliers and Service Delivery Operators in writing before coming to site.

Abnormal Loads / Flatbed trucks are to be escorted on and off site.

2.9.13.3 Procedure for working in close proximity to powerlines

Construction work shall not take place within 20 metres from any power line where equipment is at risk of making contact with the power lines. Equipment in this category is typically, but not limited to, as follows:

- Tipper Trucks.
- Articulated Dump Trucks (ADT's).
- Excavators.
- Front End Loaders.
- Mobile Cranes.
- TLB's.
- Concrete Pump Trucks.

In case of any part of any construction vehicles as mentioned above are at risk of entering within the 20 m distance from the powerlines, the contractor is to physically confirm the distance and confirm that the 20 m distance will be able to be maintained throughout the operation.

In case of construction work taking place using the above equipment, just outside the 20-metre limit space, clear barriers or signage, shall be erected to serve as a visual warning system to the operators of such equipment. A Trained Spotter, equipped with a whistle or air horn together with red and green reflective paddles, during daytime, or re-chargeable orange traffic glow-sticks during night work, shall be positioned in the area to direct plant and mobile equipment operators.

2.9.13.4 Procedure for working within exclusion zones using equipment that IS NOT at risk of coming within the free space

In cases where construction is required within an exclusion zones, such activities can only be performed with equipment that is not at risk of coming within the Free Space as determined by the Utility Owner/ESKOM. The clearances for each item of plant or mobile equipment shall be verified prior to the activity taking place. This verification needs to take into account the level(s) of the ground surface, the height of the power line and the relevant dimensions of the plant item.

In this case a Permit is required that is approved by the Construction Manager, Utility Liaison Officer, the Construction Health and Safety Manager and the Utility Representative. The following pre-requisites are required for Permit approval:

- A specific issue-based risk assessment for the specific location and task.
- Current surveys of ground level and power line heights.
- Safety method statement for the specific location and task.
- Construction Supervisor to be at the specific area for the entire duration of the task (i.e. if he/she leaves for whatever reason, work shall cease until he/she returns).

2.9.13.5 Procedure for working within exclusion zones using equipment that IS AT RISK of coming within the free space

In case of it being unavoidable to work outside the Exclusion Zone, and where equipment is required that has the potential to come within the exclusion zone, a permit to work shall be obtained from the Construction Health and Safety Manager, approved by the Construction Manager, the Utility Liaison Officer and the Utility Representative. The Utility Liaison Officer shall make arrangements to ensure that the power line is de-energised by the Utility Owner and safeguarded – to be double checked by the Construction Manager and or Construction Health and Safety Manager.

In this case the following pre-requisites are required for Permit approval:

- Approval or Permit by the Utility Owner.
- A specific issue-based risk assessment for the specific location and task.
- Current surveys of ground level and power line heights.
- Safety method statement for the specific location and task.
- Construction Supervisor to be at the specific area for the entire duration of the task (i.e. if he/she leaves for whatever reason, work shall cease until he/she returns).

Once construction work is completed, the area shall be cleared of all employees and plant by the Supervisor of the specific work area, and the responsible Utility Owner shall arrange that the power line is re-energised.

The person authorised to re-energise the power line shall first ensure that the area is evacuated and safeguarded before the power line is re-energised.

2.9.13.6 Emergency Procedure when equipment comes into contact with powerlines

In the case where equipment comes into contact with a live power line, no person is permitted to touch the relevant equipment. This equipment shall be regarded as “live”.

Secure area around “live” equipment and place a guard to warn bystanders (20 metres).

Should there be any power lines laying on the ground the area shall be isolated (20 metres).

Immediate arrangements shall be made with the Utility Owner for the power line to be switched off, take note of any possible ring feeds (only safe when conductors are earthed).

The operator of the equipment that touches a live power line may not leave the piece of equipment, unless another emergency, such as a fire forces him to do so. In such a case he/she shall jump from the equipment without touching the ground and the equipment at the same time.

After the area has been safeguarded and the line de-energised the equipment shall be removed away from the line.

Precautionary measures regarding equipment that are equipped with rubber tyres:

- Park equipment in a safe place and lockout.
- Isolate, 20 to 30 metre radius.
- Place no entry boards around the equipment (place a guard if necessary).
- Equipment shall remain in isolation for at least 24 hours.

Reason:

- A chemical reaction takes place in the tyres when electrical current flows through the tyres.
- This reaction causes heat retention that can lead to tyre failure (bursting).
- After the 24 hour “rest” period temperature readings of the tyres shall be taken.
- Provided that the temperature reading is normal, the head of the workshop shall inspect the tyres and decide if the equipment is suitable for production.

The Utility Owner shall ensure that all damages to the line are repaired and notify the Contractors Utility Liaison Officer that it is safe to resume work.

The following people shall be informed of the above-mentioned incident:

- Emergency Services.
- Head Power Supply (ESKOM, Municipality or Other).
- HSE Personnel.
- Utility Liaison Officer.
- Site Manager.
- TCTA’s Resident Engineer.
- TCTA’s Health and Safety Agent.
- Immediate Supervisors.

2.9.13.7 Communication with Utility Owners

The Contractor shall appoint a Utility Liaison Officer who shall ensure communication with the Utility Owner is effective and maintained.

The Utility Liaison Officer shall be the Construction Health and Safety Manager, or someone of similar seniority as negotiated and approved by the TCTA Health and Safety Agent.

Any Damages found or caused by the Contractor/ Project Activities shall be reported immediately to the Utility Owner through the appointed liaison officer so that repairs can be conducted.

The Contractors Utility Liaison Officer shall request that Utility Owners notify the Contractor of any routine maintenance or repairs as scheduled by the Utility Owner. Start and End times and dates to be provided by the Utility Owner.

Note: TCTA’s Health and Safety Agent will verify implementation and compliance during site inspections and audits.

2.9.14 Lock-out Procedures

Note: Lockout procedures involves the formal isolation of all energy sources (e.g. electrical - live and static, mechanical motion (kinetic,) thermal, potential (i.e. pneumatic, hydraulic, static, stored), chemical reaction energy and gravity so that a contact energy exposure incident is not possible.

The Contactor shall develop and implement lock out procedures. The Contractor shall co-ordinate with TCTA and TCTA's Health and Safety Agent.

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An entirely separate set of procedures cover the requirements for lockout shall be developed and implemented by the Contractor, commissioning, start-up and hand over of the completed works shall be implemented.

A Safety Clearance Certificate shall be necessary for commissioning of all machinery and equipment, together with a Permit to Work and Lock-out Procedure.

To ensure the safety of persons working in operating plant areas, the Contractors' Safety Co-ordinator shall be responsible to ensure Compliance with:

- Lock-out procedure.
- Instructing all workmen concerned in its application and implementation.
- Instructing the appointed Contractors Supervisors in the issue of applicable permits.
- Daily checking of permits and where applicable, a formal shift permit handover procedures.
- Distributing information and communicating any other permit system required, for example, for work to be carried out on HT equipment, roof work, excavation, demolition, hazardous areas etc.

The Contractor shall be required, but not limited, to comply with the lockout procedures in the following circumstances:

- Executing tie-ins to existing Operating plant.
- Working near live equipment (e.g. the Eskom powerlines and working in their servitudes).
- Start-up and commissioning of electrical equipment and electrically driven machinery.
- Working on live pipelines, confined spaces, hydraulic and gas fire protection system equipment.

(a) Electrical / Mechanical Lock-out Procedure

Appointment of a competent person and compliance with OH&S Act – Regulations regarding a Certificate of Competency.

- **Purpose:** -To ensure that all plant and equipment being put into operation shall be done so in an orderly manner to safeguard all personnel involved in the commissioning process.
- **Procedure:**
 - i) The Contractor's 16(2) assignee shall nominate and appoint a competent person as the responsible person for energising and isolating equipment in response to requests from holders of work permits.
 - ii) TCTA and TCTA's Health and Safety Agent shall approve a competent person for the duty of managing the "Permit to Work" system which shall entail the stages of issue, revocation and completion.
 - iii) All electrical control panels are to be locked by the Contractors' appointed person with padlocks having two keys for the series.
 - iv) The Contractor shall provide padlocks and lockout tags (With the user's name displayed on the tag).
 - v) The Construction Manager CR8(1) and the Contractors' appointed person would be the sole custodian of these keys.

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- vi) The Contractor shall provide a sufficient number of padlocks; each with a unique key, for his artisans who shall be requesting permits for working on equipment.
 - vii) These padlocks and keys are numbered for the permit holder's identification.
 - viii) The Contractor shall ensure that multi locks are available for his staff to cater for multiple lockouts.
 - ix) The Contractors Construction Manager CR8(1) shall provide a sufficient number of tags that are to be attached to the padlocks at the point of isolation by the person working on that piece of equipment.
 - x) These tags shall indicate that the equipment shall be locked out and bears the name and permit number of the holder.
 - xi) Permit to workbooks shall contain three copies, first copy for retention by the person carrying out the work on equipment, second copy to be in the hands of the Contractors responsible person and a fixed third copy for the records.
 - xii) Permit holders are to enter the names of their assistants in the register and after briefing them on the nature of the work and the dangers involved, they are to sign the register to this effect in the spaces provided.

For the first stage of commissioning, involving rotation testing of electric motors, the Contractors responsible person shall:

- Energise the motor on receipt of a permit from the electrical technician;
- Isolate and lock out for adjustments to be made;
- Re-energise for further testing; and
- Isolate and lock out on completion.

The electrical technician shall maintain radio contact with his assistant at the local isolator to ensure that no persons are in the immediate vicinity of the equipment to be test-run.

After making adjustments he shall again test-run the unit and, if correct, sign off the permit and remove his tag and padlock.

The second stage involves cold commissioning of the equipment, and the Contractors responsible person shall:

- a) Verify that it is the correct equipment as specified on the permit.
- b) Isolate the piece of equipment and ensure that it shall be de-energised.
- c) Attach his lock and tag to a multiple locking device.
- d) The permit holder, having witnessed the isolation, shall:
 - i) Physically test that the equipment shall be correctly isolated;
 - ii) Sign the permit to this effect;
 - iii) Inform his workers of the nature of the work and hazards involved;
 - iv) Complete and sign the Worker's Register and attach to the permit;
 - v) Attach his lock and tag to the multiple locking device; and
 - vi) Hand the second copy of the permit and worker's register to the Contractor's responsible person.

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- e) After completion of the work, the permit holder shall remove all tools and equipment and leave the area in a neat and tidy condition.
- f) The permit holder shall sign all copies of the permit and workers register to the effect that his work is complete, and remove his tag and lock from the isolator.
- g) If work continues over more than one shift, a worker shall remove his tag and lock at the end of the shift.
- h) If another person is to work on the machine, he shall follow the same lockout procedure.
- i) If a permit holder does not remove his lock after the shift, and does not report to work the following day, the Construction Manager CR8(1) shall be the only person authorised to remove his lock and energise the equipment after ensuring that it shall be safe to do so.
- j) At the first stage of cold commissioning TCTA's commissioning team takes over control of the plant and shall follow a similar lock-out procedure but shall utilise their own plant documentation, padlocks and tagging system.

Note:

- Fire Extinguishers are available at all points of grinding, cutting and or welding.
- Welding earth clamps to be attached to the workface only.
- The Contractor shall provide shield and fire blankets for all welding activities.

2.9.15 Alterations to Existing Facilities

All necessary alterations to existing details and connections between new and existing details is carried out by the Contractor, including the making good of existing details on the completion of the work.

Where openings are left, due to the removal of access platforms, handrails, or steel work or where new details have not been installed, the Contractor shall fabricate and install temporary solid handrails until the permanent structure shall be erected.

All temporary connections and the like are carried out in conformance with all regulations to ensure safe operation and passageway for all personnel.

2.9.15.1 Protection of Equipment

The Contractor shall be responsible for covering up any equipment placed in danger of damage from his operation, for example cables or other combustible equipment, with a flameproof material before Oxy-cutting, grinding and welding.

The Contractor shall ensure that all equipment shall be properly protected against damage or deterioration during all phases of construction, in accordance with equipment suppliers' recommendations.

The Contractor shall accept his custody liability for his equipment on site.

2.9.16 Work in Operating Areas

When the Contractor working in close proximity to operating cranes, roads, railways, in confined spaces or uses other equipment and a safety hazard exists, the Contractor shall:

- Provide safety watchers as necessary or as directed by the TCTA's Representative.

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- Provide, erect and maintain all the required barriers, flags, and wheel stops, buffer stops flashing lights or other safety equipment to enable his operations to proceed in a manner which satisfies TCTA's Safety Regulations.
- Remove all such protective devices once the hazard has been removed or on completion of the work.

The Contractor shall at all times keep defined access ways clear of objects or obstructions which may endanger the health, safety or welfare of personnel or cause damage to equipment or plant.

The Contractor shall provide any temporary protective shielding required for the protection of construction activities from nearby operations or persons, at his expense.

The relevant permits are obtained prior to undertaking any work. In addition to this, the Contractor shall advise the TCTA's Representative immediately prior to commencing work in the area.

Where the work shall be carried out in hazardous zones or where there is a danger of producing combustion in adjacent flammable materials, the Contractor shall provide a dedicated fire watch for job site control, including management and implementation of preventative action.

Where the work shall be carried out in hazardous zones, like the confined space welding within pipes or where there is a danger of producing welding vapours or similar gasses and/or low oxygen workplaces, the Contractor shall provide dedicated Safety Watch staff for job site control, including management and implementation of preventative action.

Remember for all work done in live plant / Sub Station/s or Pump Station/s the Contractor's supervisors shall obtain a permit to work from TCTA's operational control with a TCTA Representative present.

2.9.17 TCTA Operations

Concurrently to the principal contractor, other contractors will also operate on the project. Contractors may need to use the same access roads. The contractor establishing the access road will remain in control of such and will remain responsible for traffic control for that road, unless otherwise agreed with the TCTA Project management team or TCTA's Health and Safety Agent. Irrespective of which contractor is in control of the road, any other users of the road, irrespective of contractors or local civilians, will comply with the traffic rules as stipulated in this specification.

2.9.18 Piling and Grout Hammer Operations

All piling and grout hammer machinery, core/dynamic drilling machinery and an attachment shall comply with legal requirements and a pre-inspection shall be done by the Contractor's operational manager and it shall be reviewed by TCTA or TCTA's Health and Safety Agent prior commence doing any piling, soil test, dynamic compaction or ground improvement. Each piece of equipment shall have a valid operator's competency certificate, latest inspection log registers a copy of steel cables certificate. A copy of risk assessments and safe operating procedures for each specific operation. Prove that every employee has been trained to risk assessment and safe operating procedure. Special care shall be taken when working in the vicinity of pile driving equipment. The Contractor shall develop a specific Safe Work Procedure taking his detailed Emergency Response Procedure and Plan, and Rescue Plan into consideration for piling operations in the riverbed and in close proximity of the river banks.

The Area shall be properly barricaded according to TCTA standards.

2.9.19 Plant Isolation Procedures

A strict isolation and permit system involving the use of Danger and Out-of-Service Tags and, in some circumstances, locks, applies on TCTA's premises.

2.9.20 Working of Moving Equipment

Never work on a crane, conveyor table or other machinery without securing permission.

Work shall not be started until the Contractors' personnel have placed Danger Tags and controlled access.

2.9.21 Compressed Air

Compressed air shall **NOT** be used for any purpose other than that for which it shall be provided. Do not use compressed air to remove dust from clothing.

NEVER direct a stream of compressed air at your body or that of any other person - it may enter the body and cause serious injury or death.

Locking wires or other suitable approved devices are to be used to prevent accidental uncoupling of compressed air hoses.

Do not disconnect air hoses until sure that the supply valve shall be closed and the pressure in the hose has been released.

Hoses to be orderly routed and elevated, if required, to prevent tripping hazards.

2.9.22 Oxygen, Acetylene and LPG Cylinders

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 9 and SANS 10087.

Contractors shall establish satisfactory storage areas (Fenced, shaded, approved surface and all necessary signs posted) for oxygen, acetylene and LPG. Gas cylinders. Oxygen, acetylene and LPG cylinders shall be stored (separate) and in an upright position.

When moving cylinders from place to place, keep them from being knocked over or falling. Before moving a cylinder without a suitable truck or trolley, close the cylinder valve and remove the regulator. Only use special approved cylinder crates/cradles. Do not transport cylinders with magnet cranes. Never use cylinders as rollers, even if they are marked 'empty'.

Make sure that cylinders do not come in contact with electrical circuits, e.g. welding leads. Never strike an arc on a cylinder.

Do not store cylinders in hot places. If possible, do not use cylinders in hot places. Do not let cylinders get hot; avoid standing them in direct sunlight if possible. Before you begin a job in a hot area check to see that your cylinders are protected from overheating. Keep your cylinders far enough away from cutting work to stop sparks or hot slag reaching them. If it is necessary to work where cylinders become hot or warm, move them to a cool area as soon as you finish the job.

As with compressed air use oxygen **only** for the purpose for which it shall be provided. Do not use oxygen in pneumatic tools or tyres as an explosion may occur.

Oxygen cylinders should be stored at least 6 m away from other flammable gas cylinders.

Flashback arrestors to be fitted on torch and cylinders.

Empty cylinders to be marked as such and removed daily to approved storage areas. Cylinders shall only be allowed on site in an approved trolley, properly secured and with a 1,5 KG Dry powder fire extinguisher attached to the trolley.

2.9.22.1 Storage of Gas Cylinders

- a) Storage areas should whenever possible be well clear of buildings.
- b) Gas Cylinders shall be stored in a fully enclosed Steel Storage Cage, with lockable opening/door, with Steel Mesh Sides and Tin Roof, well ventilated, protected from inclement weather (can have tin cladding on the sides to prevent ingress of inclement weather), and shall have a concrete base.
- c) A protective covering shall be provided.
- d) Adequate ventilation shall be provided.
- e) Storage areas shall be kept free from all combustible materials, no other materials are to be stored in cylinder enclosure.
- f) Full cylinders are kept apart from empty cylinders so that it shall not be necessary to open valves to check whether cylinders are empty or full. Mark empty cylinders clearly and store in space provided.
- g) Cylinders shall always stand upright; special stands are to be used for cylinders and the cylinders shall be chained separately in an upright position.
- h) Cylinders shall be stored in rows with aisles in-between for easy removal in event of fire.
- i) For security and ventilation purposes, a wire mesh fence should surround the storage area. Keep the enclosure locked.
- j) All danger signs are prominently displayed at storage area, e.g.:
 - No Smoking;
 - No Cell phones; and
 - No Naked Flames.
- k) Adequate firefighting equipment shall be available (to be determined by a Fire Assessment).
- l) Oxygen and acetylene should be stored separately (at least 6 m apart):
 - The storage should be clearly marked;
 - Oxygen - Full Oxygen;
 - Oxygen - Empty Oxygen;
 - Acetylene - Full Acetylene; and
 - Acetylene - Empty Acetylene.
- m) Flammable and oxidising gasses shall not be stored together; greases and oils shall never be allowed to come in contact with Oxygen.
- n) If electrical lighting shall be required, it should be of an approved type and comply with SANS 10108.

2.9.23 Recognised Walkways

When walking through the Site or to personal work area use recognised thoroughfare. Don't take short cuts. The Contactor shall ensure that No-Go Zones are clearly indicated and communicate such to all employees and visitors.

2.9.24 Commissioning of New Installation

The Contractor shall implement and comply with OH&S Act – Electrical Installation, Driven Machinery, Electrical Machinery and General Machinery Regulations.

Notice boards are erected clearly stating which items of plant have been made 'LIVE'. The information on these notice boards shall be for general guidance to persons working about the area and warns of increased hazards. As soon as any item of plant shall be notified as being 'LIVE' commissioning procedures shall apply.

2.9.25 Explosive Actuated Fastening Devices

The Contractor shall implement and comply with Construction Regulation 21.

Explosive actuated fastening tools may only be used when prior written permission is granted by TCTA and TCTA's Health and Safety Agent.

2.9.26 Welding, Cutting, Grinding and Heating

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 9.

Contractors shall instruct employees in the safe use of welding equipment. Cutting and welding work shall be carried out in accordance with General Safety Regulation 9.

Non-combustible or flameproof shields to protect employees from direct rays and air-borne particles shall shield arc welding, cutting, and grinding operations.

Electrode holders or welding guns shall be maintained in good order, and when they are to be left unattended, the electrodes are to be removed and the holders shall be placed or protected so that they cannot make electrical contact with employees or conducting objects.

All arc-welding cables are properly maintained and completely insulated. There shall be no repairs or splices within 3 metres of the electrode holders, except where splices are insulated equal to the cable. Defective cable shall be repaired or replaced. The earth cable shall be connected to the workplace.

Fuel gas hose and oxygen hose shall be of an approved type, be easily distinguishable and shall not be interchangeable. Hoses are inspected at the beginning of each day and shall be repaired or replaced if defective.

Gas shield welding in a confined space is a safety risk due to the shield gas (carbon dioxide, argon or similar gas) displacing breathable oxygen, leading to fatalities. A full positive pressure breathing apparatus or a positive pressure breathing airline would be required as a safe confined space entry ventilation requirement, with an attached rescue lifeline and confined space rescue observer posted.

2.9.26.1 Hot Work

- a) Hot work permit to be obtained before job starts.
- b) Falling sparks and/or hot cuttings to be contained.
- c) Fire Blankets and Fire Extinguishers shall be at hand.
- d) Ensure not to carry out any hot work, cutting and/or grinding in the vicinity of flammable liquids.
- e) Protect rubber lined vessels / tanks etc.
- f) Combustible floors shall be wetted down, covered with damp sand or fireproof sheets.
- g) All wall and floor openings covered.
- h) Containers / Pipes purged of Flammable vapours.
- i) Fire watch shall be provided.
- j) Area to be inspected after hot work has been completed.
- k) Fire watch to stay in place for at least 30 minutes after operation.
- l) Warn all Employees working under hot work process.

Ensure adequate fire extinguishers, where appropriate, Mobile Water supply with Water Spray / Pressure available, at all times during Hot work Operation.

Harmful gases are given off when doing certain types of welding work and the Contractor shall provide a positive-pressure breathing apparatus or positive - pressure breathing airline when welding, cutting or heating:

- Zinc, lead, cadmium, mercury, or beryllium bearing based or coated materials in enclosed spaces.
- Stainless steel with inert-gas equipment.
- In confined spaces.
- Galvanised steel.
- Where an unusual condition can cause an unsafe accumulation of contaminants.

Proper protective equipment to prevent exposure of personnel shall be provided.

No welding or cutting shall be undertaken where hot metal or sparks can fall onto walkways, work areas, cable ladders, electrical equipment, etc. Before welding or cutting is started, fire retardant blankets are placed to arrest such hot metal or sparks. Particular attention shall be taken when working above cables that are not adequately covered.

Use an approved type flint gun for lighting of torches. Do not use matches, rope wicks or other smouldering materials.

Hoses shall be deflated before cutting torches are cleaned and nozzles not rubbed against gloves. During welding operations, the earth lead shall be attached to the work area and never such that the earth shall be established through equipment bearings or through clearance gaps of any sort. Welders and other people executing hot work shall not wear any jewellery and or carry cigarette lighters on their person.

All welding machines are earthed, receive power through an approved earth leakage and fitted with an approved voltage reducer. A certificate to be kept on register.

2.9.27 Electrical Equipment

The Contractor shall implement and comply with Construction Regulation 24 and OH&S Act - Electrical Installation Regulations.

2.9.27.1 Electrical Installations and Machinery on Construction Projects

The Contractor shall ensure that:

- a) A suitably competent person is or persons are appointed to manage and inspect the construction work temporary distribution boards and electrical equipment and appliances used during the contract period. (CR 24 and EIR 5(4))
- b) All electrical installations carried out on the site are in accordance with the Electrical Installation Regulations. For permanent or temporary installation, as appropriate. In addition, electrical installations shall comply with TCTA's Electrical Standard Specification.
- c) Connections are not made to any power supply without the prior written approval of TCTA or TCTA's Health and Safety Agent and where an isolation shall be required that an isolation permit has been obtained and the isolation procedure associated to the permit has been followed correctly.
- d) All electrical installations are inspected by TCTA and TCTA's Health and Safety Agent (or their nominee) to ensure that the installation complies with the statutory regulations applicable to the site and TCTA's Safety Regulations.
- e) All electrical machines and appliances provided by the Contractor for his own use on the site are in a serviceable condition.
- f) Power tools used on the site are protected by residual current devices approved by TCTA or TCTA's Health and Safety Agent and are double insulated.
- g) All extension cords, portable tools and electrical plant supplied at a voltage above 32 volts are inspected tested and tagged by a licensed electrician at regular monthly intervals. Details of inspections and tests shall be kept in logbooks available for inspection by TCTA or TCTA's Health and Safety Agent.
- h) Where natural lighting shall be inadequate, artificial lighting is to be provided in all work areas, access ways and for rescue equipment. Compliance with OH&S Act - Environmental Regulation 3 and Annexure E to the regulations.
- i) Portable lights have adequate stability and are fitted with a mechanical guard to protect the lamp.
- j) Temporary festoon lighting shall be of the 'double insulated' type and shall be supported at least 2.5 m above the floor, if possible.
- k) Hand lamps shall be of the 'all insulated' type.
- l) All temporary light fittings are supplied from more than one final sub-circuit, with the supply from a residual current device, extra low voltage source or an isolating transformer.

Any installations deemed unsatisfactory by TCTA or TCTA's Health and Safety should be removed by the Contractor at his expense.

The Contractor shall obtain approval from TCTA or TCTA's Health and Safety Agent and also from Eskom for any work within any Eskom powerline servitude area before any of his employees or sub-Contractors commence work within three (3) metres (Note: Eskom's distance requirement could be >3 m) of high-tension wires, or where there is a possibility of equipment coming close to

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and/or touching a power source and shall provide suitable protective insulating barriers. Applications to Eskom are anticipated for their electrical isolation of their power lines to permit contractors to excavate the pipeline trenches and for laying the pipeline. For the erection of scaffolding, the distance shall be five (5) metres.

Only authorised persons may enter electrical Contractor houses, motor rooms, switch rooms, control rooms, pump stations or cable ducts. Should the Contractor require entering such places to carry out work, he shall first obtain permission from TCTA or TCTA's Health and Safety Agent and obtain a valid permit to work.

The Contractors' employees required to enter such electrical spaces "authorised persons", with the names entered in TCTA's Authorised Persons Register, after receiving approval from TCTA or TCTA's Electrical Supervisor (where applicable), or they are accompanied by an authorised person who shall supervise the placement of Danger Tags and Out-of-Service Tags, as well as electrical isolation permit.

Before commencing work on the site, the Contractor shall provide the following information to TCTA or TCTA's Health and Safety Agent:

- Number of electrical machines and appliances to be placed in service on the site.
- Nameplate data of each electrical machine and appliance.
- Approximate total time the machines and appliances are in service to complete the Works.
- The Contractor shall be responsible for the effective protection of his own electrical equipment from the weather and from possible mechanical damage.

The Contractor shall be required to inspect electrical equipment as follows:

- Supply cabling distribution boards, fixed lighting and portable appliances on a monthly basis.
- Extension leads, welding machines, compressors, pumps and hand portable tools on a weekly basis.

Such inspection(s) are to be performed by an appropriately qualified electrician and a report submitted to TCTA and TCTA's Health and Safety Agent, in accordance with the following:

a) Frequency of Testing:

The Contractor shall test and tag all the Contractors' and Sub-Contractors' electrical equipment and leads monthly, as follows:

i) Colour Code:

Contractors shall ensure the tagging and colour coding of all tools and equipment.

Colour code a different colour for each month as follows:

January - Red	July - Blue
February - Blue	August - Green
March - Orange	September - Red
April - Green	October - Yellow
May - White	November - Orange
June - Yellow	December - White

ii) Details of the Tag:

The tag shall be a plastic self-adhesive tag unable to be re-used, as approved by the Construction Manager CR8(1), and shall be capable of being marked with the following information:

- Test date.
- Inspection number.
- Testing agent.
- Owner.
- Plant number.
- Type of equipment.
- Record Book.

An up-to-date record book shall always be maintained and be available for inspection by TCTA and TCTA's Health and Safety Agent.

The record book shall contain full details, as identified in the tag, and shall list, in addition, the following:

- License number and signature of the electrician carrying out the test.
- Comments on the results of the test and details of any repair work.

Note: All electrical appliances shall be fed through an approved and tested earth leakage device.

Activities with a cost implication due to external service provider's involvement must be costed in terms of the BOQ.

2.9.28 Working at Heights on Platforms, Scaffolding and in Cradles

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 6 and Construction Regulation 10.

Where personnel are required to work in any area not guarded for fall protection, which has a fall risk, either above or below ground, permanent fall protection equipment shall be utilised by the personnel. Fall protection includes:

- Safety harnesses and double lanyards (with the correct hook attached to the lanyard, e.g. Pylon type hook for scaffolding, or lifeline hook for lifelines, etc.).
- Safety harness used above a 4 m fall height should be of the fall arrest device type, while safety harnesses used below 4 m should be without a fall arrest device in the lanyard to avoid possible "bottom out" fall impact incidents".
- Approved lifelines, be it Static Lifelines, Retractable Lifelines, etc. (installed and certified by a competent and suitably qualified person as per applicable SAQA unit standards). Lifelines shall be sufficient for the work carried out and shall consider the hazards of the task and numbers of employees to be attached at any given time.
- All harnesses shall comply with **SABS/EN/EC** Standards and shall be in a good state as inspected using a comprehensive inspection checklist and shall be "in-date" as per manufacturing guideline.

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- All employees working at heights shall have their cell phones and /or music devices switched off to ensure the worker's concentration is retained on performing the job task safely. A cell phone can be switched on and used for making emergency assistance calls.

This work at height requirement also applies to Riggers erecting steelwork and Scaffolders erecting scaffolding. Riggers shall at all times be permanently connected to adjacent steelwork through fall protection equipment. (Double lanyards to be used)

All persons working in a fall risk position, be it from scaffolding, formwork / false work, support work, roof work, deep excavations, etc. shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998 with IWH accreditation on the certificate). The supervisor of the work relating to the fall risk area shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 and 229995 with IWH accreditation on the certificate). Fall protection plans shall be prepared by a person found competent in Fall protection planning (SAQA unit standard 229998, 229995, 229994).

A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan and as determined by the type of working from a fall risk position that is being conducted on site) shall be available at all times on site. The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 229998 with IWH accreditation on the certificate) that shall be able to take charge and conduct a rescue if required.

Note: To be implemented in conjunction with the requirements for Elevated Work and in conjunction with the Fall Protection Plan.

2.9.29 Work Platforms

The Contractor shall ensure that all working platforms, be they permanent, temporary or portable, 1.5 metres or more in height, shall be fully decked, including toe boards, and fully hand railed. Where it is not practical to have handrails or there is a need to work outside handrails, the use of an approved safety harness, with lanyard attached to a secure anchorage shall be required.

2.9.30 Suspended Scaffold Platform

The Contractor shall implement and comply with OH&S Act - Construction Regulations 17.

Suspended platforms may only be used on site with prior written approval from TCTA or TCTA's Health and Safety Agent.

A Contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

2.9.31 Crane Cradle – (Man Cages)

The Contractor shall implement and comply with OH&S Act - Driven Machinery Regulation 2015, section 18(8), and Lift Escalator and Passenger Conveyer Regulations.

- The Contractor shall ensure that every Man Cage or similar device shall be securely suspended and shall be constructed in such a manner to prevent any occupant from falling there from.

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- The Contractor shall ensure that an inspection shall be carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out daily prior to use."

No user of machinery shall require or permit any person to be moved or supported by means of a lifting machine fitted with a cradle (man-cage) unless approved for that purpose by an Inspector from the local Department of Employment & Labour.

Should the use of such equipment be necessary for reaching otherwise inaccessible places, the Contractor shall advise the Safety Co-ordinator of the equipment required and produce a certificate of approval from the Chief Inspector from the local Department of Employment & Labour.

Cradle shall comply with the specifications of Health & Safety Act and the design engineer and approved By the Department of Employment & Labour and reviewed by TCTA and TCTA's Health and Safety Agent on site.

TCTA and TCTA's Health and Safety Agent shall be advised **well beforehand** of the intention to use such equipment on site so that TCTA and TCTA's Health and Safety Agent can plan for inspection.

TCTA and TCTA's Health and Safety Agent shall approve any cradle before use.

The Contractor shall:

- Provide a copy the approve design engineers drawing for the Department of Employment and Labour.
- Each employee within the cradle shall wear approved safety harnesses and attached by a lifeline / sling to an anchorage point, which does not form part of the cradle.
- Ensure that personnel in the cradle shall always have their feet on the floor and remain within the cradle.
- Ensure that each employee within the cradle shall wear approved safety harnesses and attached by a lifeline / sling to an anchorage point, which does not form part of the cradle.
- Provide appropriate means of communication shall be provided for people in the cradle.
- Provide copies cradle specifications and load test certificate.
- Each cage shall be fitted with an information plate to indicate the maximum weight and number of persons to be lifted.
- Cradles and cranes to be used, shall be inspected every time before use and the findings recorded.
- Provide and ensure taglines are used to stabilise the cradle.
- Provide copies of welding X-Rays.

2.9.32 Scaffolding

The Contractor shall implement and comply with OH&S Act - SANS 10085 and Construction Regulation 2014: Regulation 16.

Scaffolding may only be erected, dismantled and altered under the supervision of the Contractors competent appointed person (Approved training certificate to be submitted).

The scaffold erector and scaffold supervisor or scaffold inspector may not be the same person.

The rule on scaffolding is that it shall be 100% compliant to SANS 10085.

Guard rails (minimum of 950 mm above the working platform and any gap between the top rail and the intermediate rail should not exceed 470 mm) and toe boards are provided on all outer edges and ends of all scaffolding where a person or an object can fall.

Ladders to be staggered every 3.0 m inside scaffold frame with safe landing platform and a trap door fitted on the working platform.

A Tagging scaffolding management system shall be used by the Contractor to ensure that scaffolding erected on Site complies with the provisions of Legal, SANS and TCTA rules. Contractors shall use SGB and or similar type TCTA approved tags and shall implement a three (3) tag approach (Green (Scaffolding is 100% compliant with SANS10085 and no Double Lanyard Safety Harness is required), Orange (Scaffolding is not fully Compliant with SANS10085 and a Double Lanyard Safety Harness with the appropriate lanyards for the task shall be used) and Red (scaffolding is not to be used/ scaffolding is being altered and no other work is being performed on it)).

Erected Scaffolding shall not be moved manually, hoisted by crane or by any other means. If scaffolding needs to be moved, then it shall be dismantled and erected in the correct position.

Contractors' qualified, competent and appointed scaffold inspectors (Training certificate to be submitted for review and approval by the TCTA's Health and Safety Agent), shall carry out inspections of their scaffolding whenever the scaffolding has been modified, damaged or altered in any manner or form, and otherwise at least every Seven (7) calendar days during the period that the scaffolding is on site and after inclement weather, to be captured on register and the tag.

The TCTA's Representative will carry out random compliance audits. Such activities shall in no way relieve the Contractor of his responsibility for ensuring that his scaffolding shall be safe for use.

Where complex / technical and/or unusual scaffolding shall be required in hazardous locations, liaison with the TCTA's Health and Safety Agent shall be required, before undertaking such work, because a competent Temporary Works Designer CR12(1) may be required to be appointed in writing, who shall be a structural engineer as registered with the Engineering Council of South Africa (ECSA) and shall have relative experience, and who shall design, inspect and sign off on the scaffolding before it may be used.

All persons working on scaffolding shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998 with IWH accreditation on the certificate). The supervisor of the scaffolding work shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 and 229995 with IWH accreditation on the certificate). A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that is being conducted on site) shall be available at all times on site. The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999 with IWH accreditation on the certificate) that shall be able to take charge and conduct a rescue if required.

2.9.33 Formwork / False Work / Temporary Works and Support Work

The Contractor shall implement and comply with Construction Regulation 12. The competent temporary works designer shall be to be appointed in terms of CR12 (1). Furthermore, all formwork / false work / temporary works and Support Work shall be designed, inspected and approved by the appointed temporary works designer CR12(1) who shall be a professionally registered structural engineer with the Engineering Council of South Africa (ECSA) and shall have relevant experience with the scope of work being undertaken.

2.9.33.1 Temporary Works Designer CR12(1)

The Temporary Works Designer CR12(1) appointment may be split in to:

- (1) Design Only; and
- (2) Inspect and Approve only.

Temporary Works Designers CR12(1) appointment, as mentioned above in point 1 and 2, the requirement shall be the same, i.e. the person shall be a professionally registered structural engineer with the Engineering Council of South Africa (ECSA) and shall have relevant experience with the scope of work being undertaken.

The Contractor shall submit the Temporary Works Designer CR12(1) curriculum vitae along with certificates of competency, including the ECSA certificate, to TCTA and TCTA's Health and Safety Agent for review and approval. Only once the Temporary Works Designer CR12(1) Appointment has complied with this specification and has been formally approved, in writing, by TCTA and TCTA's Health and Safety Agent shall the Temporary Works Designer CR12(1) be able to act in this capacity on the project.

2.9.33.2 Temporary Works Supervisor CR12(2)

The contractor shall appoint a Temporary Works Supervisor CR12(2) to supervisor the form work / false work / temporary works and support works on the project. The Temporary Works Designer CR12(1) shall approve, in writing, the competency of the Temporary Works Supervisor CR12(2) before the Temporary Works Supervisor CR12(2) may act in this capacity on site.

2.9.33.3 General

All formwork / false work / temporary works and support work must be managed, inspected and controlled in terms of CR12.

All persons working on formwork / false work / temporary works and support work shall be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998 with IWH accreditation on the certificate).

The Temporary Works Supervisor CR12(2) of the formwork /false work / temporary works and support work shall be trained at a minimum Accredited Fall Arrest and Basic Rescue (SAQA Unit Standard 229998 and 229995 with IWH accreditation on the certificate).

A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that shall be being conducted on site) shall be available at all times on site.

The site shall have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999 with IWH accreditation on the certificate) that shall be able to take charge and conduct a rescue if required.

2.9.34 Ladders (Portable)

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 13A.

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All ladders used on the site shall be constructed and used in compliance with the OH&S Act and Regulations.

Ladders, which provide access to a working platform, shall extended at least one metre above the platform where it provides access and shall be secured to prevent slipping.

Timber ladders shall not be painted other than with clear preserving oils, clear varnishes, or clear plastics.

Scaffolding Ladders shall only be used on scaffolding as part of the scaffold.

The users of ladders shall be suitably trained to perform a visual safety assessment of the ladder's condition before being used.

Ladders, which are in a damaged condition, shall not be used and shall be labelled accordingly and removed from the Premises.

All Ladders shall be numbered, logged in a register, and inspected monthly.

A ladder in use shall be held by an assistant or shall be properly tied down. No person shall be permitted to stand on the last rung of the ladder (ladders with red steps at the top indicate that that step shall not be stood on).

People climbing on ladders shall be trained to and use the 3-points of contact safety climbing method.

2.9.35 Suspended Loads

The Contractor shall implement and comply with OH&S Act - Driven Machinery Regulation 18.

Contractors and their employees shall keep out from under suspended loads, including excavators, and shall not stand between a load and a solid object where they might be crushed if the load should swing. They shall not pass or work under the boom of any crane or excavator.

Contractors and their employees shall ensure that crane loads are not carried over the heads of any workmen.

When lifting concrete kibbles or containers with a hinged lifting bail, the crane hook shall be moussed, or the load suspended by means of a sling. This to prevent disengagement of the bail from the hook on occasions when the weight of the kibble is accidentally taken on formwork, etc.

Guide ropes to be used to prevent loads from swinging.

2.9.36 Working Overhead

Articles falling from heights can cause serious injuries. Employees working overhead shall ensure that materials and tools are properly secured to prevent articles falling.

"MEN WORKING ABOVE" signs are displayed in the appropriate places.

Where there is danger of falling material, fence off the area in danger. Material shall not be thrown from aloft but shall be lowered in a safe manner - use a securely fixed rope to lower it.

No overhead work shall be allowed.

2.9.37 Roofing and Cladding

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 10.

The Contractor shall provide safe access for gaining access on to the roofs.

The Contractor shall provide ladders, scaffolds, man-cage or, elevated work platforms for this purpose.

Where possible the roof designs should have designated safety anchor points provided for safe access purposes.

A lifeline, consisting of a steel wire rope – the diameter calculated to suit the span and the number of persons attached to it – is to be erected on the ridge of the structure, using a mechanical device, e.g. turnbuckle, for tensioning the wire rope. The lifeline is to be erected / installed, placed on register and checked daily by a suitably qualified, competent and appointed person.

The crew working on the roof shall be tied with nylon rope to the lifeline via their safety harnesses to allow them freedom of movement for placing the roof sheets or retractable safety lifeline devices could be used.

No work shall be permitted during rain or when wind speeds exceed 30 Kmph (8.33 m/sec) – **This shall be only a guide it shall also depend on Risk Assessment and working conditions.** Normally about half this wind speed is a comfortable work at heights wind speed. (I.e. when the top edge of a flag flies at a 45° angle from the flagpole)

The Responsible Person shall enforce this with the delegated authority on site.

Bundles of roof sheeting stacked on the roof shall conform to the following:

- Only sufficient bundles to be stacked on the roof to meet immediate needs – other bundles to remain stacked on the ground until required.
- Bundles of sheeting to be secured by means of 20 mm steel strapping applied with a strapping tool.
- Securely tied to the rafters so as to prevent sheets being blown from the roof during high winds.
- No material may be stored on the roof over weekends and holiday periods.

Side and gable cladding to be erected by means of a swing scaffold attached to the roof truss extensions as specified by the manufacturer – no makeshift arrangements shall be permitted. Depending on the side and gable height a MEWP could be considered for this purpose.

2.9.38 Pneumatic Tools and Compressed Air

The Contractor shall implement and comply with OH&S Act - Driven Machine Regulation 14.

May only be used on site with prior written approval from TCTA or TCTA's Health and Safety Agent.

It shall be illegal for a pneumatic tool to be operated by using a compressed gas cylinder. Pneumatic equipment shall only draw supply from mobile air compressors or from compressed air lines installed within the premises after gaining permission from TCTA or TCTA's Health and Safety Agent.

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When using the interlocking type of connection of an airline, connectors shall be secured with wire clips through holes provided to prevent accidental disconnection.

Compressed air shall not be used for general cleaning purposes or be used to blow down dirty clothes on people.

The compressors should be regularly "blown down" to expel accumulated water condensate and its corrosion of the compressor tank and undergo legislation required 3-yearly pressure testing.

2.9.39 Radio-Active Sources

The Contractor shall implement and comply with the Hazardous Substances Act, 1973 (Act No. 15 of 1973) (Regulations Relating to Group IV Hazardous Substances)

The anticipated types of radioactive sources involved includes testing, X-ray equipment and the radioactive isotopes in ground density test equipment.

This equipment may not be utilised on site without written permission from TCTA and TCTA's Health and Safety Agent. All statutory requirements and testing methodology shall be adhered to.

- a) Radiation operators certified and appointed.
- b) All radiation equipment must be registered and a valid leak test certificate must be submitted.
- c) All R-A test / X-ray personnel shall wear meters and film badges.
- d) Warning signs and lights to be posted at all R-A test / X-ray activities.
- e) Sources shall be stored and transported according to legal requirements.
- f) All Contractors shall be informed of the R-A test / X-ray activities.
- g) Driver and vehicle (Vehicle equipped with Radioactive signage) shall have the required permits to convey the R-A test / X-RAY Equipment.
- h) The R-A test / X-ray work may only commence with a valid permit to work. The permit will be valid for one and one section only.
- i) The R-A test / X-ray areas to be barricaded and flagged with radio-active identification markers as per legal requirements.
- j) A storage facility exclusively designed according to the legal requirements to store the Troxler instrument/s on the project shall be provided and managed and controlled by the Lab Manager.
- k) Before commencing with R-A / X-rays tests, TCTA and TCTA's Health and Safety Agent shall be notified.

2.9.40 Conveyors (Where applicable)

The Contractor shall ensure his employees and those of his Sub-Contractors do not attempt to cross conveyors they shall use the safe crossover bridges or subways.

Riding on conveyor belts shall be forbidden and an emergency pull-cord stop device shall be provided and accessible along the conveyor's length, as applicable.

2.9.41 Riding on and Operating Equipment

The Contractor shall ensure his employees and those of his Sub-Contractors do not ride upon or attempt to operate cars, elevators, cranes or other moving equipment unless authorised and licensed to do so.

2.9.42 Fire and Emergency Equipment (Site)

The Contractor shall provide and maintain all fire and emergency equipment.

The Contractor shall conduct a fire risk assessment of the site and provide suitable fire extinguishers in size, type and number for the risks identified.

The Contractor shall ensure all personnel familiarise themselves with locations of fire equipment in the vicinity of their work site. Work areas are clear, at all times, of any material, which could fuel a fire. A thorough inspection shall be made of the area at the end of any working period to ensure that no material shall be left at the work site or any situation left in such a manner that a fire or accident could result (All machines to be turned off at main switches, and cylinders to be close and hoses deflated).

The Contractor shall provide for a firefighting team and a means for the team to fight large fires so as to ensure rapid response for any fire emergency.

Electric welding, Oxy-welding or cutting, or any other fire hazardous equipment is not to be used inside or adjacent to electrical switch room, control room, cable duct, any electrical equipment or cables without the permission of TCTA and TCTA's Health and Safety Agent.

The Contractor shall supply all fire extinguishers for his work as required on the site during the construction phase. Fire extinguishers are not to be used for any purpose other than their intended use.

The Contractor shall ensure that his fire team personnel are trained in the use of fire extinguishers to a minimum of an accredited Level 1 Fire Fighting course.

All contractor staff should be made aware of the "PASS" fire extinguisher use method.

The objective for providing fire extinguishers will be to standardise on the type and make to eliminate confusion during emergencies.

2.9.43 Confined Space Work

The Contractor shall implement and comply with OH& S Act - General Safety Regulation 5.

Enclosed space work necessitates a Confined Space Permit. This may only be obtained from the authorised person nominated in writing and after approval by TCTA and TCTA's Health and Safety Agent.

The responsibility for safe procedure, both at the time of entry and during the entire operation of entering and working in confined spaces, rests with the Contractor. The Contractor shall ensure that adequate steps have been taken to eliminate or control hazards. Before working in an area which contains dust, the area shall be to be ventilated and hosed down to settle and dampen the dust.

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The Contractor shall provide all necessary equipment to manage confined spaces, including all necessary monitoring and rescue equipment (such as tripods, breathing equipment and the like).

The Contractor shall ensure all persons working in a confined space or managing entry to a confined space are appropriately trained.

Compulsory - Continuous monitoring, trained rescue teams, radio communication (intrinsically safe) and adequate ventilation and resuscitation equipment.

Activities with a cost implication due to external service provider's involvement, must be costed in terms of the BOQ.

2.9.44 Excavations, Trenches and Floor Openings

The Contractor shall implement and comply with Construction Regulation 13 OH&S Act.

The Contractor shall ensure that all excavation work shall be carried out under the supervision of a competent person who has been appointed in writing and who can identify excavation stability risks and can apply the necessary safety measures to mitigate those risks.

All handrails and fencing shall comply with Guidelines and legal requirements as set out in paragraph 5.10 Barricading shall be provided around all holes, trenches or openings to prevent any person, livestock or wildlife being injured as a result of a fall.

The Contractor shall submit a detailed method of how he intends to manage and safeguard the pipeline trenches on the project.

Where it is impracticable to provide fixed guard railing, effective removable barriers are to be provided at all unguarded openings in guard railing or floors and shall be maintained in position at all times until the hazard no longer applies.

When excavations are necessary across roadways, approval shall be sought from TCTA and TCTA's Health and Safety Agent.

Where necessary a comprehensive traffic management plan including all the required signage according to SARTSM and COTO Oct 2020 shall be provided and approved by TCTA and TCTA's Health and Safety Agent

Some road excavation detours will be avoided by performing pipe jacking across under the road reserves and bridge abutments.

All intended work, i.e. trenching across roadways, pipe jacking or any other construction work that might have an influence on the road surface or the road's integrity, road users, authorisation shall be obtained from TCTA prior to the intended work and the TCTA's Health and Safety Agent reserves the right to inspect the area and documentation prior to approval being granted. Such activities shall be recorded in the Contractor's detailed project Traffic Management Plan and submitted to TCTA and TCTA's Health and Safety Agent for review and approval.

Warning signs and flashing warning lights at night shall be provided in suitable positions to warn any persons approaching the area of the location and extent of any excavation.

Personnel shall report any unusual conditions that may be found, such as underground power lines, pipelines, sewers or inconsistent materials, immediately to TCTA and TCTA's Health and Safety

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Agent and, if a risk to personnel or public safety shall be involved, stop all work until approval to continue be granted by TCTA or TCTA's Health and Safety Agent.

Safe access and egress to be provided and sides battered or shored to the satisfaction of TCTA and TCTA's Health and Safety Agent.

All excavations shall be on register and inspected daily before work commences and after inclement weather by the Contractors appointed competent person, declared safe and his findings noted in the said register.

Note: The excavation topsoil and usable spoil stockpiles, the contractor's access road, and the excavation trench (with or without battered back sidewalls) and the pipe laydown area shall remain within the 40 m corridor.

2.9.45 Noise

The Contractor shall implement and comply with OH&S Act - Environmental Regulation 7 and the Noise Induced Hearing Loss (NIHL) 2003 Regulations.

TCTA needs to meet statutory requirements on limitation of noise emitted by machines and equipment. When Contractors personnel are required to operate such equipment, noise levels at the operator position shall not exceed an equivalent level of 85-dB(A) during normal working conditions. Employees working in the vicinity shall not be subjected to an equivalent continuous level of 85-dB(A) during normal operating conditions. Comply with time periods and PPE requirements where applicable.

The sound level at any works boundary caused by mobile equipment shall not exceed the night-time background level pre-existing the operation of the equipment. At no time shall the noise emission of the equipment cause the sound level at the nearest residence to exceed 40-dB (A). Sound levels shall be measured in accordance with SANS 10083, with due allowance being made for tonal or impulsive components. A plot plan of project or plant shall be used to identify the measuring points with date, time and frequency duration of measurement.

Symbolic safety signs, warning employees re the hazard of noise in the area, shall be erected at all entrances to the area and in a position where it shall be clearly visible.

Activities with a cost implication due to external service provider's involvement, must be costed in terms of the BOQ.

2.9.46 Abrasive Blasting and Spray Painting

The Contractor shall implement and comply with OH&S Act Hazardous Chemical Agents Regulation 11.

Abrasive blasting and spray painting is considered an unlikely project or site requirement at present.

The Contractor, prior to performing any shot or abrasive blasting operations on the site, shall:

- Obtain written permission from TCTA or TCTA's Health and Safety Agent.
- Comply with any direction from TCTA or TCTA's Health and Safety Agent as to the suitability of proposed blasting site, prescribed times of blasting operations, wind conditions or other considerations that TCTA or TCTA's Health and Safety Agent may deem appropriate.

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The Contractor shall not commence any spray-painting operation on the site without the written approval of TCTA or TCTA's Health and Safety Agent.

TCTA or TCTA's Health and Safety Agent may conduct an Environmental Impact Audit of the Contractors' proposed operation and the Contractor shall comply with any direction by TCTA or TCTA's Health and Safety Agent in relation to the Contractors' spray-painting operation.

Painting work shall be carried out in such a manner that airborne particles of paint are contained on the immediate work area.

Any damage caused by such paint particles to privately owned vehicles parked or passing adjacent to the site shall be the Contractors' responsibility and all cost involved in repairing and making good such damage shall be to the Contractors' account.

Pressure test certificates, where applicable, shall be produced for every sand blasting pot.

2.9.47 Ventilation

The Contractor shall implement and comply with OH&S Act - Environmental Regulations for Workplaces, Regulation 5.

For any job, which generates excessive dust or fumes (for example welding), an effective exhaust system shall be used. Specific ventilation measures shall be implemented to ensure ventilation meets the minimum requirements when working inside pipes. No person will be allowed inside a pipe unless the air quality has been measured.

The construction roads are anticipated to be mainly gravel based and so road traffic will generate dust which is likely to require dust damping.

The prevailing wind are west and east orientated, so the dust generation is anticipated to blow across the south to north pipeline route.

2.9.48 Lighting

The Contractor shall implement and comply with OH&S Act – Environmental Regulations for Workplaces, and Schedule E of the Regulation.

Where natural lighting is inadequate, artificial lighting shall be provided in all work areas, access ways and for rescue equipment.

Portable lights shall have adequate stability and be fitted with a mechanical guard to protect the lamp.

Temporary festoon lighting shall be of the 'all insulated' type and be supported at least 2.5 m above the floor if possible.

Hand lamps are of the 'all insulated' type.

Illumination checks are to be performed for night-time work to check conformance to minimum light requirements.

Emergency lighting, when working during night-time, for safe evacuation when dark shall be installed according to requirements and shall illuminate during power failures.

2.9.49 Stacking Material

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 8.

Stacking to be neat and safe.

Before stacking any material, the Contractor, sub-Contractor or their employees shall consult TCTA nominated Engineer for allocation of a stacking area.

The 40 m wide pipeline corridor is likely to present stacking, spoil stockpiles, road access, pipeline trench and pipe laydown space conflicts which will need careful contractor project planning.

2.9.50 Ergonomics and Manual Handling of Materials.

Contractors shall ensure Ergonomics is taken into account with all processes, procedures and actions taking place on the Project. The Contractor's Baseline Risk Assessment and all other risk assessments must consider ergonomics for all situations. The Contractor will comply with all the requirements of the Ergonomics Regulations 2019 of the OHS Act 85 of 1993.

Contractors shall ensure that no employee shall be required or permitted to lift or move by hand any heavy object that is likely to cause a risk of injury. Any manual handling and lifting will only be allowed once a task risk assessment has been completed and signed off by the responsible manager.

Adequate PPE shall be issued and used if required.

2.9.51 Heat Stress

The Contractor shall implement and comply with OH&S Act - Environmental Regulation for Workplaces, Reg. 2 (4).

To prevent heat stress illness, the Contractor shall plan suitable rest breaks for all employees and Sub-Contractors exposed to excessive ambient or radiant heat.

The Contractor shall ensure that enough clean cold drinking water is available in close proximity of each respective work area where employees can refill their individual containers.

Drinking water employee allocations during a hot environmental exposure amounts to providing some 600 ml of drinking water per person per hour.

2.9.52 Explosives

Comply with Explosives Act 26 of 1956.

Explosives shall not be brought onto the site or be used without the express permission of the TCTA and TCTA's Health and Safety Agent.

Explosives or detonators shall not be stored on the site.

Detonators and other explosives shall never be carried in the same box.

The provisions of all relevant Acts and Regulations are strictly observed.

2.9.53 Blasting Requirements

The Contractor shall ensure that:

- a) Blasting activities are carried out under the supervision of a competent person with at least five years practical experience in blasting who has been appointed in writing.
- b) A method statement and risk assessment shall be developed in accordance with all applicable explosives legislation, by an appointed person, who shall be certified as a competent person in the use of explosives and provided to TCTA and TCTA's Health and Safety Agent within three (3) workings days prior to blasting taking place.
- c) The necessary permits are in place for the transportation and use of explosives.
- d) Provision has been made for lightning protectors.
- e) Every lightning protection system is examined and tested by a person with sufficient knowledge, training, and experience in lightning protection.
- f) Access to the blasting area shall be strictly restricted.
- g) No smoking or hot work shall be allowed close to explosives or the blasting areas.
- h) Reasonable steps are taken to prevent damage to structures in the vicinity of the blasting area.
- i) Any other industry required safety measures are considered and implemented, specifically taking the construction site's specific requirements into account including the removal of any surplus explosives off the site.
- j) The Contractor shall undertake pre-blast inspections at all structures in the vicinity of the blast. Adjacent landowners shall also be notified at least 24 hours in advance prior to each blast.
- k) Cognisance shall also be taken of the possibility of flying blasted rocks or other loose objects rolling from heights to other areas adjacent to the blast. Relevant mitigation measures to be provided in the Blasting Plan to be submitted for approval.
- l) Some project areas are environmentally sensitive (e.g. Bat Cave, dolomite bedrock, areas, etc.) so the shallow excavation refusals will require hard-excavation or non- explosive, but expansion rock breaking method to be deployed rather than explosives blasting methods.
- m) The mine quarry on the hill top and hill side above the proposed weir site location has quarry spoil waste dumps which under severe mineral winning blasting and/or site rock blasting could cause a possible waste dump collapse and land slide into the Weir dam area, causing a water flood event over the weir and downstream. **The stability of the quarry waste dumps need assessment.**

Note: Where a blasting incident has occurred all blasting operations shall be suspended until the investigation has been completed.

2.9.54 Crane Requirements

The Contractor shall implement and comply with Construction Reg. 22 regarding Tower Cranes and OHS Act Driver Machinery Regulation 18. Cognisance should be taken by the Contractor with regards to SACAA application in terms of obstacle markers for Tower Cranes.

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As a minimum, the following shall apply for the erection, dismantling, operation and maintenance of the Tower Crane/s:

- a) The Weir wall construction is planned to be served by a cable crane with towers, each on either side of the weir wall ends, which will also require erection, dismantling, operational and maintenance planning.
- b) The Project design also allows for Gantry cranes over the HLPS and LLPS pump station's pump house bays and an A-frame crane serving the Abstraction rock and sediments catchment sluice gates area.
- c) The Contractor shall ensure / provide TCTA or TCTA's Health and Safety Agent with:
 - i) Pre-Erecting Information required for both cranes:
 - Tower and Cable Crane Details:
 - Model.
 - Winch Capacity.
 - Jib Radius.
 - Load @ Radius.
 - Under hook Height.
 - Fixing Arrangements.
 - Rail Pitch / Pad Pitch.
 - Tower Crane Number.
 - Undercarriage Number.
 - Tower and Cable Crane Information:
 - Foundation / Undercarriage Loading Data.
 - Cranes Foundation Design:
 - Design shall be signed by a Competent Designer – Shall have relevant experience and shall be registered as a Professional Engineer with the Engineering Council of South Africa (ECSA).
 - Design Issued to TCTA and TCTA's Health and Safety Agent for Approval.
 - Cranes Foundation Construction:
 - Cast in Anchors – Level – Survey Report.
 - Pads: Surface of Slabs all in Same Plane – Survey Report.
 - In the event of Rail Going Cranes:
 - Mean Track Gauge – Survey Report.
 - Position of Rail in Plain View – Survey Report.
 - Height of Rail (Longitudinal Gradient) – Survey Report.
 - Relative Height of Rail (Lateral Gradient) – Survey Report.
 - Relative Cant Angle of Rails – Survey Report.
 - Rail Head Can't Deviation – Survey Report.
 - Grouting Completed.
 - Limit Switch Stickers Available.

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- Electrical Power Supply:
 - Distribution Board.
 - Electrical feed/s Connected.

The Crane Erector shall acknowledge that the Foundations have been Handed Over in a Satisfactory Condition.

The following Checklists / Documents shall be available, inspections performed, and detailed records kept:

- Detailed Risk Assessment for the Erection and Dismantling of the Tower and/or Cable Crane.
- Emergency Preparedness and response.
- Tower and Cable Crane Mechanical Checklist.
- Tower and Cable Crane Electrical Checklist.
- Tower and Cable Crane Daily Inspection Checklist.
- Weekly Foundation Survey Checklist.

All Contractors shall adhere to the following before any Crane shall be allowed to operate on Site:

- No Crane shall be used at arrival on Site before copies of all documentation have been handed over to TCTA or TCTA's Health and Safety Agent and the Crane has been checked by the competent TCTA nominated Engineer.

2.9.54.1 Crane Test Certificate

The Certificate shall not be older than 3 (three) months, and shall cover the following:

- a) Ropes.
- b) Hooks.
- c) Slew Brakes.
- d) Outriggers and Pads.
- e) Boom and Guides or cable towers and guides.
- f) Anti-Two-block Device.
- g) Load Indicating System.
- h) Boom OH and Save Wheels Condition or cable towers and slave wheel conditions.
- i) Crane Brakes and Air System.

Copies of all documentation shall always be kept in the Crane.

All Cranes shall be fitted with the following Safety Devices - As per the Occupational Health and Safety Act, Act 85 of 1993 (Driver Machinery Regulation 18) including TCTA's revised best practice):

- A Brake or other device capable of holding the maximum mass should the power fail, or which shall be such that it shall automatically prevent the uncontrolled downward movement of the load when the raising effort is interrupted; and

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- A Limiting device which shall automatically arrest the driving effort when:
 - i) The Hook or Load attachment point of the Power-Driven lifting machine reaches its highest safe position.
 - ii) In the case of a Winch Operated lifting machine with a lifting capacity of 5000 kg or more; the load shall be greater than the rated mass load of such machine.
 - iii) The two pump houses gantry cranes serve two ground floor levels so the hook cable unwind drums shall have limit controls to avoid drum cable over winds on reaching the 2 ground levels.

2.9.54.2 Driven Machinery Regulation 18.(9)

No user shall use or permit any person to use a Jib-Crane with a lifting capacity of 5000kg or more at a minimum Jib radius, unless it shall be provided with:

- A load indicator that shall indicate to the operator of the Jib-Crane the mass of the load being lifted, provided that such a device shall not require manual adjustment from the application of the load, to the Jib-Crane, until the release of the load.
- A Limiting Device which shall automatically arrest the driving effort whenever the load being lifted shall be greater than the rated mass load of the Jib-Crane.

2.9.54.3 Driven Machinery Regulation 18.(11)

The user shall ensure that every lifting machine shall be operated by an Operator specifically trained for a particular type of lifting machine; provided that in case of fork lift trucks with a lifting capacity of 750 kg or more, and Jib-Cranes with a lifting capacity of 5000kg or more at minimum Jib-radius; the user shall not require or permit a person to operate such lifting machine unless the operator shall be in possession of a certificate of training, issued by a person or organisation approved for the purpose by the chief inspector.

2.9.54.4 Mobile Crane near Power Lines

Due to the project requirement of working next to and within Eskom powerline servitudes, specific Eskom permissions will need to be applied for and obtained before any crane working permission/s to work near any Eskom powerlines is obtained.

No mobile cranes are to be used near overhead power lines until TCTA or TCTA's Health and Safety Agent has been notified and provided safe access conditions and a valid permit to work shall be obtained.

Mobile cranes are effectively earthed when working in the vicinity of electrical wires.

Secondly the long pipe sections being crane lifted along powerline areas will also need to be earth strapped due to the powerline Electro-Magnetic Forces (EMFs) involved.

Assume that all electrical equipment and wires are live and avoid them.

For further requirements on "Overhead and Underground Services" see Section 2.9.13 of this specification.

Activities with a cost implication due to external service provider's involvement, must be costed in terms of the BOQ.

2.9.55 Usage of Skyjacks and Material Hoist (Builder's Lift)

- No Skyjack shall be used before the Jack has been inspected and passed by TCTA and TCTA or TCTA's Health and Safety Agent.
- The Test Certificate, no older than three (3) months shall be produced.
- The Safe Working Load shall be clearly displayed.
- The Operators shall make use of Safety belts / Harnesses at all times.
- Only trained, competent and appointed persons shall operate Skyjacks.
- Proof of Training and Training program shall be submitted.
- No person shall stand of the Handrails of a Skyjack.
- When a Skyjack shall be not operational, it is stopped, no lower than three (3) metres above ground level. The Operator shall make use of a ladder to get in and out of the Skyjack. The ladder shall be removed to safekeeping when stopped and not in use.
- The Power supply shall be disconnected when not in use thus preventing unauthorised use.

2.9.56 Material Hoists

The Contractor shall implement and comply with Construction Regulation 19.

2.9.57 Water Environments

The Contractor shall implement and comply with Construction Reg. 26.

Notably the Contractor shall provide:

- Provisions to prevent persons falling into water (Solid Barricading).
- Provisions shall be made for rescuing a person in danger of drowning (Qualified Lifesaver, Lifesaving procedure specific to the location and access/egress of the body of water).
- Lifejackets shall be provided to all employees who are exposed to the risk of drowning by falling into the water. Supervision is required to ensure Life Jackets are worn and that procedures and control measure are implemented.
- Lifebuoys shall be positioned at strategic points for rescue purpose, both at the weir and balancing reservoirs as they are commissioned and filled.
- All access to waterbodies shall be controlled, this will include at the balancing reservoirs area especially as they are commissioned and filled.

Note: No swimming allowed in any rivers, streams, dams or reservoirs.

2.9.58 Motor Fuel and Flammable Liquids

The Contractor shall implement and comply with OH&S Act - General Safety Regulation 9 and Temporary storage of flammable liquids on construction sites Construction Regulation Reg.25.

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Contractor's proposals to store fuel on site shall have written approval from TCTA nominated Engineer and the TCTA Health and Safety Agent. The amount of fuel allowed to be stored shall depend on site conditions and Statutory Regulations.

Storage areas to be provided with a bund wall to contain 110% of the maximum volume of the container. Drip trays of sufficient size to be provided at tap of points.

Storage tanks are to be clearly marked with a "Flammable Liquid, No Smoking and No naked Flame" signs and be clearly marked to indicate contents of the tank.

Adequate numbers of dry chemical fire extinguishers, each with a minimum capacity of 4.5kg, shall be provided, installed, and maintained.

Before a machine is refuelled, the motor shall be stopped. Refuelling shall take place at designated safe areas and appropriate warning signs installed.

Inform the Fire Chief of the local Authority for recommendations of storage facilities.

2.9.59 Fuel Storage (Petrol and Diesel)

May only be on site with prior written approval from TCTA.

The Contractor shall ensure that:

- a) Storage should be well clear of buildings.
- b) Storage areas shall be kept free from all combustible materials.
- c) All danger signs are prominently displayed e.g.
 - i) No Smoking;
 - ii) No Cell Phones; and
 - iii) No Naked Flames.
- d) Adequate Fire Fighting equipment shall be available.
- e) Diesel tanks shall be installed in a bunded area; bunded area shall be able to contain 110% of tank capacity.
- f) Bund walls shall be plastered on the inside.
- g) Bunded area shall have a solid concrete / cement floor.
- h) Bunded area shall have a sump and functional metal drain valve.
- i) Loading/Fuelling bay shall be a solid concrete base with a spillage trench leading to a spillage sump to contain any spillages.
- j) All equipment shall be bonded to earth.
- k) All electrical lighting and fuel pump equipment are of an approved flameproof type.
- l) No other material/equipment shall be stored in the bunded area.

Fuel Bowsters:

- A Fire and Rescue Permit shall be obtained for any Fuel Bowser Trailers with a capacity of 1000 litres or more by the end user prior to the bowser being allowed on site.
- Fuel Bowsters to be road worthy, have a valid licence disk, be fitted with a 4.5 kg DCP (ABC category) Fire Extinguisher and comply with all signage requirements.

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- Transportation of Dangerous Goods requirements will be applicable for any Fuel Bowser with a capacity of 1500 litres or more.
- All documentation shall be provided to the TCTA's Health and Safety Agent prior to any Fuel Bowser being allowed on site.

2.9.60 Hazardous Material**2.9.60.1 Flammable Liquids**

The Contractor shall implement and comply with Construction Reg. 25 regarding use and temporary storage of flammable liquids on construction sites.

2.9.60.2 Hazardous Substances

The Contractor shall implement and comply with the OH&S Act - Hazard Chemical Agents Regulations 10.

Hazardous agents are any substance, agent or materials specified in statutory regulations as being hazardous.

Prior to any hazardous substances being brought onto the site or produced on the site, the Contractor shall supply TCTA and TCTA's Health and Safety Agent with the following:

- a) Safety Data sheets (SDS) in accordance with the requirements of the OH&S Act – Regulations for Hazardous Chemical Agents.
- b) Proposed arrangements for safe storage.
- c) Purpose for bringing the hazardous substance onto the site.
- d) Proposed methods for handling / usage.
- e) Proposed method of disposal.
- f) Proposed method of transportation.
- g) Risk assessment with specific reference to compatibility with other chemicals.

The information shall be to be provided at least two (2) working days prior to the expected commencement on site.

TCTA or TCTA's Health and Safety Agent shall only approve the use of any hazardous substance after receiving a copy of the Safety Data Sheet for the substance from the Contractor. Such substances are not to be brought onto the site until TCTA or TCTA's Health and Safety Agents approval has been received by the Contractor.

The Contractor shall ensure that all-necessary usage and storage precautions are taken and that safety equipment, including antidotes, if necessary, shall be available on the site.

Note: Cleaners, Solvents and Hazardous Materials are not to be stored with flammable liquids

2.10 INCIDENT MANAGEMENT

2.10.1 Incident Reporting System

The Contractor shall implement and comply with OH&S Act - General Administrative Regulations 8 and 9.

The Contractor shall have an accident and incident reporting system that shall be compatible with the TCTA's standards and all applicable statutory requirements. Any incident or "near miss" involving TCTA, the TCTA's Health and Safety Agent, the Contractor it's Sub-Contractor's or any third party's personnel, property, plant or equipment, shall be verbally reported immediately to TCTA or the TCTA's Health and Safety Agent, whether or not injury to personnel or damage to property or equipment resulted. A brief written report stating the known facts and conditions and including a preliminary assessment of most likely consequence potential of the incident in the circumstances shall be provided to TCTA or the TCTA's Health and Safety Agent by the end of the shift.

The Contractor shall be reminded that this Incident reporting system does not exempt the Contractor from providing accident reports required by Statutory Authorities, in particular, the Contractors' responsibility for reporting accidents in accordance with the requirements of the **OH&S Act and Compensation of Injuries and Diseases Act**.

Contractors shall complete and keep record of the GAR Annexure 1 as required by legislation.

2.10.2 Serious Incidents

For any serious incident involving a fatality, or permanent disability, the incident scene shall be left untouched until witnessed by a representative of the Police. This requirement does not preclude immediate first aid being administered and the scene made safe.

Refer to Section 2.8.3 Emergency Procedures.

Any serious incident (injury accident or occupational disease case) shall be reported to the Department of Employment & Labour Inspectorate, as per OHS Act sections 24 and 25 respectively, to TCTA and TCTA's Health and Safety Agent.

2.10.3 Incident Report and Close Out

The Contractor shall investigate the causes of all work accidents and significant incidents and shall provide TCTA or the TCTA's Health and Safety Agent with the results of the investigation and recommendations on how to prevent a recurrence. A formal root cause investigation process for all high potential incidents shall be followed.

The written report shall include:

- Date, time, and place of non-conformance.
- Detailed description of non-conformance.
- Type of injury (if any).
- Medical treatment provided (if any).
- Persons involved.
- Corrective action to prevent recurrence.

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TCTA or the TCTA's Health and Safety Agent shall have the right to designate a representative to participate in the investigation at TCTA or the TCTA's Health and Safety Agent's sole discretion.

Where the results of any investigation are not completed and issued to TCTA or the TCTA's Health and Safety Agent within 24 hours from the time of occurrence, the Contractor shall supply to TCTA or the TCTA's Health and Safety Agent a written update every 24 hours, of the progress and results of the investigation until such time as the incident report has been fully completed and issued to TCTA and TCTA's Health and Safety Agent.

Where required by Statutory Requirements the Contractor shall be responsible for incident reporting to the appropriate Authority.

2.10.4 Corrective Action

The Contractor shall:

- Ensure all hazards, incidents, and accidents, including near misses, are investigated fully, and documented.
- Take corrective action to eliminate the cause of the incident or accident to prevent recurrence.
- Review inspection and audit reports to identify areas of improvement.

For the purposes of this specification, a Health & Safety incident shall be taken as an incident involving harm or potential harm to any employees of the Contractor, the community, Sub-Contractor and/or the work environment, or where the physical wellbeing of a person, the community or the work environment has been placed at risk, e.g. a near miss.

2.10.5 Injury Management

The aim of injury management is to ensure appropriate and adequate medical treatment shall be provided to injured employees to enable a quick and efficient return to the workplace.

Paramedic services to be made available for serious incidents within 10 minutes.

Medical doctor shall be to be nominated by the Contractor has been nominated for the Project to which the Project medical staff will refer all injured employees requiring medical assistance in the first instance. If the Contractor does not wish to utilise the services of the Project doctor the Contractor shall make alternative arrangements and TCTA and TCTA's Health and Safety Agent is to be notified in writing of the doctor to be used. The treatment of injured personnel will not be compromised, and the immediate needs will be referred as required by the Project paramedics.

The doctor shall be briefed on the commitment by the Contractor to injury management, alternative duties, and early return to work programs and rehabilitation.

Effective injury management shall commence immediately after the accident has occurred and shall include:

- Counselling of the patient.
- Referral to the nominated medical practitioner via the Project First Aid Centre (where required).
- Follow up, including personal off-Site visits by the Contractor (where required).
- Provision of off Site personal, family and social assistance where required.
- Formal assessments of employee capabilities prior to return to work.
- Provision of alternate meaningful duties, where appropriate.

2.11 SITE MANAGEMENT/ MONITORING

2.11.1 Notices

The Contractor shall provide TCTA or the TCTA's Health and Safety Agent Copies of any notices, correspondence or directions of whatsoever nature issued by any relevant Government Authority concerning Health and Safety within 8 hours of the dispatch and/or receipt of such notice, correspondence or direction, and shall immediately comply with same.

2.11.2 Incorporation of Documents into Contract

The Contractor shall comply with all Site Rules/Site Instructions issued to it by TCTA or TCTA's Health and Safety Agent, which are by this reference incorporated into and made part of this Contract.

2.11.3 Interpretation of Safe Working Instructions

The Contractor shall implement and comply with OH&S Act - Section 8 (2) (j).

If any site personnel are in doubt as to the meaning of any safe working instructions, they shall consult their supervisor who issued them or the site office of TCTA or TCTA's Health and Safety Agent.

2.11.4 Emergency Response Manual

The Contractor shall provide TCTA and TCTA's Health and Safety Agent with both electronic and hard copies of the Contractor's Emergency Response Manual that sets out its procedures for fire, spill response, rescue from heights and other relevant emergency response procedures prior to commencing Site activities. These procedures shall be approved by TCTA's Health and Safety Agent.

2.11.5 Emergency Drills

The Contractor shall conduct emergency response drills (including, but not limited to, fire, rescue, and spill drills) to test the effectiveness of its emergency procedures and equipment, and the knowledge and proficiency of all response personnel. The timing of such drills shall be agreed and shall be the responsibility of the Contractor after consultation with TCTA or the TCTA's Health and Safety Agent. The Contractor shall report the test results to TCTA and TCTA's Health and Safety Agent if requested and as required by any regulatory agency.

2.11.6 Fire Fighting

The Contractor shall prominently publish, in all relevant languages for all areas of operation under its control, the procedures to be carried out in the event of fire.

The Contractor shall train all employees in the procedures to be followed in the event of a fire and/or a fire alarm. This should include training the employees on the "PASS" fire extinguisher use method.

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Contractors shall familiarise themselves with locations of fire equipment in the vicinity of their work site. Work areas are clear, at all times, of any smouldering material which could fuel a fire. A thorough inspection shall be made of the area at the end of any working period to ensure that no smouldering material shall be left at the work site or any situation left in such a manner that a fire or accident could result.

Electric welding, oxy-welding or cutting, or any other fire hazardous equipment shall be not to be used inside electrical switch rooms, control rooms, cable ducts or adjacent to any electrical switch room, control room, cable duct or adjacent to any electrical equipment, cables or conveyor belts without the permission of TCTA or the TCTA's Health and Safety Agent.

The Contractor shall supply all fire extinguishers for its work as required by the statutory regulations governing the Site. Fire extinguishers are not to be used for any purpose other than their intended use.

(a) Fire Precautions on Construction Sites

In addition to the guidelines above the Contractor shall implement and comply with Comply with: Construction Regulation 29.

(b) Good Housekeeping plays a major role in Fire Prevention

The Contractor shall ensure that:

- All Flammable / Combustible material shall be removed on a Daily basis.
- The minimum amount of Flammable Liquids (Petrol, Thinners and Paint) is brought on to Site.
- All required Safety signs shall be posted if any work shall be carried out with any Flammable / Combustible materials i.e. NO SMOKING, NO CELL PHONES, NO NAKED FLAMES and NO UNAUTHORISED ENTRY.
- Supervisors do constant and regular inspections to ensure adherence of Procedures.

(c) Fire Fighting and Training

It shall be the responsibility of the Contractor to ensure that supervisory staff and all persons involved in grinding, cutting or welding shall be familiar with firefighting procedures and the use of firefighting equipment. This training should include informing the employees of the "PASS" fire extinguisher use method.

The Contractor to ensure that there shall be adequate firefighting capacity considering the types of fires and the location of the nearest adequately equipped emergency services.

(d) Maintenance

All Fire Extinguishers shall be:

- Conspicuously numbered.
- Entered in a register.
- Visibly inspected monthly by a competent person.
- Inspected at least every six (6) months by an accredited supplier.
- Results entered in the register and signed.

(e) Damaged Equipment

Fire extinguishers with damaged or broken seals are to be returned to an accredited supplier for re-charge / repair. Details are entered in the register.

(f) High Fire Risk Areas

Cognisance shall be taken of the fact that certain areas might be designated as High Fire Risk Areas on account of the large number of rubber-lined, polyurethane and Fibreglas components etc. present. As such, additional precautions must be instituted to ensure that strict control shall be exercised over all grinding, cutting and welding operations being carried out in these areas.

2.11.7 Safety Equipment

The Contractor shall ensure that all its safety equipment shall be regularly maintained and tested, that it shall always in a serviceable condition, and that the Contractor's personnel and its Sub-Contractor's personnel are instructed, trained, competent and, where required, certified in the use of such safety equipment. The safety equipment shall comply with all applicable laws, rules, and regulations.

2.11.8 Weather Precautions

The Contractors' Emergency Response Manual shall include procedures for adverse weather conditions (high winds, flooding, storm surge, lightning, etc.). In the event of impending adverse weather or other conditions, the Contractor, in consultation with TCTA or TCTA's Health and Safety Agent shall decide whether to institute such precautionary measures in connection with the carrying out of the work, for example emergency temporary bunding, tie down of cranes and partly installed structures, evacuation from site, etc.

In case of work stoppage due to flooding the contractor will not be allowed back onto flooded areas until a proper risk assessment of the situation was done and the TCTA project manager, contractor site manager and TCTA's Health and Safety Agent agrees that the situation is safe to resume work, taking into account the possibility of vehicles getting stuck in the recently drained areas.

2.11.9 Vehicles**2.11.9.1 Access to Site**

The Contractor shall issue and control the issue of site permits for all vehicles.

The Contractor shall develop and implement a colour coded display system for all vehicles this shall be to be issued for all vehicles.

Day visitors shall be issued with a colour coded tag at the gate on arrival this will distinguish to what areas the person may enter with their vehicle. E.g. site offices, deliveries etc. The areas shall have a matching colour coding sign. Any vehicle found in an area without the correct colour tag shall be removed or the person issued with the correct tag.

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All the Contractor's vehicles, Contractors supplied vehicles, suppliers and delivery vehicles shall be fitted with an in-vehicle monitoring system to monitor the way the vehicle shall be used. This includes the Contractor's management team.

A weekly report shall be to be made available to TCTA and TCTA's Health and Safety Agent and all transgressors are to be disciplined, on their third offence they are to be removed from the project.

Gates may be used by light vehicles with valid permits and shall only be used for heavy vehicle movements with the prior written consent of TCTA.

Vehicles and mobile equipment shall not be permitted entry to the premises without the written approval of the Construction Manager CR8(1).

The Contractor shall issue senior supervisory personnel with gate passes permitting access to the site for nominated private vehicles.

TCTA reserves the right to search any vehicle on the site or when entering or leaving the site, whether privately owned or otherwise.

The Contractor shall be solely responsible for the safety and security of any of his vehicles (including private vehicles) on the site.

TCTA shall deny access to the site of any driver and/or vehicle not issued with a gate pass and/or failing to comply with TCTA safety requirements.

A current maintenance logbook shall be required for all cranes and large plant equipment and shall be available for inspection at any time by TCTA or TCTA's Health and Safety Agent. The logbook shall be in the cabin of the said crane, plant equipment or vehicle. Cranes may only enter site after submission of relevant documents and when tested and approved by TCTA or TCTA's Health and Safety Agent, and relevant authorisation shall be issued.

Drivers of all construction self-propelled mobile equipment shall always carry a valid appointment with them.

Whenever entering the works, the Contractor shall supply to the Main Gate, a list of all equipment and materials being brought on site, which shall be checked prior to entry being permitted. The list shall be retained and used for checking the equipment and materials being taken out of the gate when the Contractor is leaving the works.

2.11.9.2 Vehicle Drivers

The Contractors vehicle drivers shall:

- a) Comply with all safety, direction and speed signs and drive-in accordance with the provisions of TCTA Health and Safety Specification and the Contractors site traffic rules.
- b) Drivers may not drive while communicating by voice, text or video on their non- hands-free cell phones.
- c) Ensure that vehicle loads are properly secured and loaded onto vehicles.
- d) Not divert from designated routes or travel on unsealed roads/areas without the prior written approval of TCTA and TCTA's Health and Safety Agent.
- e) Obey all instructions given by Security/Emergency Services Officers.
- f) Ensure that vehicles are not overloaded.

- g) Ensure all passengers are buckled up were seat belts are provided.
- h) Ensure passengers are not transported on the back of open load area vehicles, (e.g. bakkies) or together with loaded materials.
- i) Traffic fines will be for the driver.

2.11.9.3 Licensing of Vehicle Drivers

Unlicensed persons shall not be permitted to control vehicles on the premises.

The Contractor shall not permit his employees or employees of his Sub-Contractors to operate equipment or mobile plant without appropriate appointment. (To be carried by driver at all times)

2.11.9.4 Registration of Vehicles

All vehicles used by the Contractor on the premises are roadworthy and registered by the appropriate Traffic Authority.

All vehicles used by the Contractor on the premises are maintained to standards of the National **Road Traffic Act, Act 93 of 1996, as amended**.

The Contractor shall provide evidence to TCTA or TCTA's Health and Safety Agent that all mobile cranes, forklifts, front-end loaders, back hoes, elevated platforms, road vehicles or mechanical equipment of any kind, which shall be used in complying with the Contractors' obligations under this Contract, comply with the requirements of the **Occupational Health & Safety Act 85/1993** and regulations and of the National **Road Traffic Act, Act 93 of 1996, as amended** prior to that equipment being brought onto the premises.

In the event the equipment is not owned by the Contractor, the Contractor shall be still responsible for ensuring all conditions are complied with by all of his Sub-Contractors or hire companies.

2.11.9.5 On-Site Vehicles

Owing to heavy traffic operating in and through the construction site and in the interest of general safety only the minimum necessary number of Contractors vehicles shall be permitted on site.

When not travelling through the site the Contractors haulage vehicles or cranes are to be parked within his site lay down area. Only the Site Manager's personal vehicle shall be permitted to park in the Site Offices area.

All cars are parked on site are parked at the owner's/Contractors' own risk!

2.11.9.6 Accidents

In the event of an accident on site in which The Contractor's employee is involved, the employee shall remain at the scene until TCTA or the TCTA's Health and Safety Agent, the Contractor's Health and Safety Manager or the Police arrive on the scene to assess the situation, or until TCTA or the TCTA's Health and Safety Agent, the Contractor's Health and Safety Manager or the Police authorises the employee to leave the scene, unless the employee needs to be evacuated for medical attention.

2.11.9.7 Vehicle Safety

In order to maintain a “Zero Tolerance” Policy in the use of self-propelled equipment the following rules shall be adhered to at all times on Site or any other plant.

As far as driving / operating of any self-propelled vehicle / equipment on site TCTA requires that the driver / operator of such equipment shall be appointed in writing by the Contractors Construction Manager CR8(1) and confirm that the person has attained the age of 18 years and:

- Does not suffer from defective sight or hearing or any other infirmity, mental or physical, likely to interfere with the efficient discharge of his duties.
- Has completed a satisfactory course of training; and has been found competent or in possession of a driver's license issued by a provincial authority for which authorisation shall be granted.

2.11.9.8 Rules

Traffic rules and signs such as speed signs; stop signs shall be obeyed at all times.

Maximum speed limit to and from site as indicated on the national routes.

2.11.9.9 Dirt Road

Light motor vehicle (LMV) speed limit 60 km p/h.

Heavy motor vehicle (HMV) speed limit 40 km p/h.

As a result of the large amount of heavy equipment and other vehicles in operation on site all vehicles / equipment; drivers / operators shall adhere strictly to all rules and regulations.

Should any person be stopped for not adhering to regulations, his permit shall be withdrawn, and he shall not be able to carry on with his normal duties. The driver of the vehicle shall be responsible for the safety of his passengers in or on the vehicle.

- a) No passengers are allowed to be on the back of any vehicle in motion or sit on the sides of the vehicle or having any part of his body hanging over the side of the vehicle whilst in motion.
- b) No passengers are allowed in or on the back of a vehicle with any unsecured load.
- c) Under no circumstances shall any person try to secure any load manually whilst the vehicle is in motion. Loads on the vehicle shall be properly secured before the vehicle shall be allowed to move.
- d) No passengers are allowed to sit on top of the load.
- e) The 2-man rule shall be always applied. Only 2 persons (the driver and one passenger) are allowed in front of an LDV.
- f) No passengers are allowed on mobi-lifts, elevated work platforms (EWP), mobile cranes, tractors, fork trucks or dumpers or on trailers behind vehicles.
- g) No vehicles are left with the engine running or the keys in the ignition, if the drivers leave the vehicle unattended.

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- h) Should the load be moved and transported by means of a mobi-lift, guide ropes shall always be in use. Persons guiding the load are not allowed between the lift and load, and the load shall, under no circumstances obscure the view of the driver. The mobi-lift shall travel at a slow walking speed.
- i) In the event of an accident on site in which The Contractor's employee is involved, the employee shall remain at the scene until TCTA or the TCTA's Health and Safety Agent, the Contractor's Health and Safety Manager or the Police arrive on the scene to assess the situation, or until TCTA or the TCTA's Health and Safety Agent, the Contractor's Health and Safety Manager or the Police authorises the employee to leave the scene, unless the employee needs to be evacuated for medical attention.

2.11.9.10 Transportation and Securing of Loads**(a) Long and Wide Loads**

When transporting long and wide loads, the Contractor shall ensure compliance with the Road Traffic Regulations. TCTA and TCTA's Health and Safety Agent shall be notified so those necessary requirements can be made where an escort may be necessary and so that the appropriate entrance can be arranged.

(b) Securing of Loads on Vehicles

It shall be unacceptable that a person is injured, or property damaged as a result of loads being transported on site without appropriate securing.

(c) Principles

- Any load-carrying vehicle shall be loaded, secured and driven in such a way so as to prevent injury to any person, or damage to any property.
- The vehicle should be suitable for the type and size of the load.
- The load shall be correctly positioned on the vehicle.
- The load-securing equipment and vehicle restraint structures shall be strong enough for their intended purpose and shall be functional.
- Loads shall be restrained to prevent unacceptable movement.
- The driver shall consider the changes in the vehicle's stability, steering and braking characteristics influenced by the load.

(d) What Truck Drivers Shall Do

- Secure the loads according to the "Principles" as detailed above.
- If unsure, seek advice before proceeding.

(e) What Dispatch Points Shall Do

- Check that the load has been restrained correctly before the truck shall be allowed to leave.

Note: Nobody may ride on the back of any vehicle loaded or otherwise.

2.11.10 Commencement of Work

Prior to the commencement of any site work not covered by the baseline risk assessment, the Contractor shall consult with TCTA and TCTA's Health and Safety Agent regarding the work to be conducted and regarding instructions relating to any special or unusual safety procedures that are to be followed.

The Contractor shall not commence work on a particular item or area of the Site until TCTA and TCTA's Health and Safety Agent has provided the appropriate "authority to commence work".

2.11.11 Notifications**2.11.11.1 Electrical Work (Power Supply)**

The Contractor shall submit to TCTA or the TCTA's Health and Safety Agent and the Power Authority, in writing, notification of completion of any power supply system electrical work prior to power being supplied. No further work shall be undertaken without the written acceptance of TCTA or the TCTA's Health and Safety Agent and the Power Authority. All electrical work shall be carried out in accordance with the relevant statutory requirements. The Site Construction Manager CR8(1) and the Master Electrician shall approve all electrical work before being energised.

2.11.11.2 Plumbing Work

The Contractor shall submit to TCTA or the TCTA's Health and Safety Agent, in writing, notification of completion of any plumbing work prior to water being supplied. No further work shall be undertaken without the written acceptance of TCTA or the TCTA's Health and Safety Agent. All plumbing work shall be carried out in accordance with the relevant statutory requirements.

2.11.12 Completion Inspection

On completion of any work on Site the Contractor shall notify TCTA or the TCTA's Health and Safety Agent and conduct a final inspection to ensure that all items and areas of plant are left in a safe, clean, and operational condition.

This completion Inspection process is also required after the contractor/s have departed and environmentally rehabilitated their former camp sites.

2.11.13 Housekeeping

The Contractor shall implement and comply with Construction Reg. 27.

The Contractor shall maintain all work areas in a tidy state, free of debris and rubbish. Unless directed otherwise, the Contractor shall dispose of all debris, rubbish, spoil and hazardous waste off site, outside TCTA's property in a designated and authorised area or facility. The Contractor should make itself aware of the TCTA's waste management plan and collection and disposal arrangements and align its waste management program accordingly.

In cases where an inadequate standard of housekeeping has developed and compromised safety and cleanliness, TCTA or TCTA's Health and Safety Agent has the right to instruct the Contractor to cease work until the area has been tidied up and made safe. Neither additional costs nor extension of time to the Contract shall be allowed as a result of such a stoppage. Failure to comply shall result in site cleaning by another Contractor at the cost of the non-complying Contractor.

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The Contractor shall carry out regular safety/housekeeping inspections at least weekly to ensure Maintenance of satisfactory standards. The Contractor shall document the results of each inspection and shall maintain records for viewing by TCTA or TCTA's Health and Safety Agent.

At the time that the Contractor establishes site facilities and permanently mans the site, or at an alternative time agreed between TCTA, TCTA's Health and Safety Agent and the Contractor, the Contractor shall assign dedicated housekeeping crews.

These crews shall assist in maintaining a clean and safe working environment by patrolling the Contractors' work area (including TCTA site offices, lay down areas and construction site) and performing such duties as ensuring that scrap material, general refuse, rubble and other forms of unwanted materials are removed from the site within four (4) hours of generation.

Housekeeping crews shall also actively assist in creating and maintaining a safe work environment by being aware of unsafe conditions, bringing these conditions to the attention of appropriate personnel, and by direct intervention through tasks such as ensuring leads and hoses are placed in a manner which avoids the creation of trip hazards or potentially unsafe conditions.

Note: No shift may commence without and/or before proper housekeeping shall be in place.

2.11.14 Maintenance

All equipment and structures both fixed and temporary are to receive regular maintenance, at intervals no longer than that recommended by the manufacturer or by legislation, under a planned maintenance system to ensure the safety of personnel who are responsible for operating the equipment.

The Contractor shall maintain copies of all current tests and maintenance certificates relating to cranes, lifting beams, pulley blocks, lifting gear and slings, and shall make them available to TCTA or the TCTA's Health and Safety Agent upon request. No lifting beam or spreader bar shall be used unless a current Certificate of Inspection shall be available and the SWL shall be stamped on the equipment.

2.11.15 Defect Reporting and Correction

Where defects are identified during any routine inspection, pre-start check or during operation or use of any tools, equipment, motor vehicle, structure, etc. it shall be immediately reported for repair and the tools, equipment, etc. appropriately tagged to identify the defect and to limit further use until repairs have been completed and re-inspection carried out. Such defect reports are in writing.

2.11.16 Contractor Health & Safety Documentation

The Contractor shall be required to supply to TCTA Health & Safety documentation as indicated in this Specification and as directed by TCTA or TCTA's Health and Safety Agent throughout the Contract.

2.11.17 Electricity

The Contractor shall implement and comply with OH&S Act's Electrical Installation Regulations and OH&S Act's Construction Reg.24.

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All electrical installation shall be carried out by an appointed and qualified ticketed electrical installation electrician. The Contractor shall keep a record of his approval of the installation. The electrical installation shall be approved by a Master Electrician.

Temporary electrical installations shall be inspected on a weekly basis by a competent person and registers of such inspections shall be kept.

2.11.18 Wearing of Short Trousers/Pants on Site (Prohibited)

Long trousers / pants shall be worn in the construction areas or in any workshop in the project's Interested Area, next to the HLPS site, or at lay down area/s.

2.11.19 Intoxicating Liquor or Drugs

The Contractor shall implement and comply with OH&S Act's – General Safety Regulations 2A, 2C and General Administrative Regulation 10 (re inquiries).

Any person found on the site or attempting to enter site, in possession of or consuming intoxicating liquor or illegal drugs or considered unfit for work from the apparent influence of intoxicating liquor or illegal drugs (including cannabis or its derivatives) or prescription drugs, shall be removed from the site.

The contractor shall hold an inquiry into the offending party's behaviour and apply disciplinary procedures as deemed appropriate, before any site access may be or is re-granted.

2.11.20 Access Control

The Contractor shall comply with TCTA access control systems applicable to the project areas as well as specific to the construction site areas.

Failure to comply with these requirements shall be viewed as a major safety breach requiring disciplinary action of removal from site and/or suspension without payment.

The Contractor shall ensure that access control system records all persons entering and exiting the works area.

This is particularly applicable due to the site accesses COVID-19 screening requirements.

2.11.21 Trespass

The Contractor and his employees shall not trespass on any land outside the limits of the site, as determined by TCTA or TCTA's Health and Safety Agent and shall ensure that all fences are maintained during the Contract. If instructed by TCTA or TCTA's Health and Safety Agent, the Contractor shall remove from the site any employee who offends against the provision of this clause.

The Contractor and his employees are required to work only in the specified construction areas and access to these areas shall be only by routes specified by TCTA or TCTA's Health and Safety Agent.

2.11.22 Visitors to Site

Visitors to the site are required to comply with site-specific safety induction prior to being allowed access to site. Visitors are required to conform to the Site PPE requirements and should arrive at site with the appropriate PPE. All site visitors will also have to be COVID-19 screened before accessing any site.

The Contractor shall refer all applications for site inspections to TCTA or TCTA's Health and Safety Agent. The Contractor shall not arrange inspections by visitors to the site without the prior approval of TCTA or TCTA's Health and Safety Agent.

The Contractor, at TCTA or TCTA's Health and Safety Agent direction, may allow casual visitors, who will be on site for less than one (1) day, access to the site without attending an induction, providing that, for the full period the visitor is on site, the visitor remains in the care and custody of a person who has been properly inducted and who understands and applies the site safety rules.

2.11.23 Construction Welfare Facilities

The Contractor shall implement and comply with Construction Reg. 30, the Facilities Regulations and SANS 10400, as applicable.

These facilities shall be suitably maintained and kept in a hygienic condition, including the regular and necessary HBA / COVID-19 sanitising and disinfecting of the infection risk contact surfaces.

2.11.24 Emergency Evacuation

The Contractor shall implement and comply with OH&S Act – Environmental Regulation for Workplaces, Reg. 9.

The Contractor shall establish and implement an emergency evacuation procedure in line with the Site Specific Emergency Plan and ensure that in the event of fire, explosion, flooding etc. all staff leave their place of work at the sound of the fire gong or siren and proceed to a safe area demarcated for the purpose, away from offices and stores buildings. The Contractor shall provide a siren markedly different from that of other established contractors or works.

The area so selected shall be demarcated and the relevant "Assembly Point" sign displayed. An evacuation route diagram shall be visibly displayed in all buildings.

An Emergency Evacuation Procedure shall be drawn up; all staff members and Contractors given awareness training and participate in regular evacuation drills.

The procedure shall be submitted to TCTA and TCTA's Health and Safety Agent.

2.11.25 Health & Safety Personnel Roles and Responsibilities

Contractors Site Construction Health and Safety Manager:

- a) Implement and maintain the Health and Safety Management Plan on site. Communicate Plans to Sub-Contractors and ensure compliance to the Health and Safety Management Plan.
- b) Advise the Site Management team on health and safety issues and suggested solutions.

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- c) Report directly to the Contractor's Construction Manager CR8 (1) and act on his authority regarding health and safety issues.
 - d) Promote a culture in which health and safety shall be the prime concern and shall never be compromised.
 - e) Promote the involvement of all employees and Contractors in improving health and safety.
 - f) Focus on and establish a culture of the elimination of unsafe acts, and rectification of unsafe conditions quickly, by Management and supervision.
 - g) Ensure self and others health and safety awareness at all times.
 - h) Facilitate and participate in all Contractor's and Sub-Contractor's accident / incident investigations.
 - i) Ensure that all incidents are thoroughly investigated to avoid re-occurrence.
 - j) Ensure that all involved Contractors personnel prior to commencement of any work complete Risk Assessments (RA) and Daily Safety Task Instruction (DSTI). Then, by a review process, verifying that the development process shall be appropriate, communicated and understood by the users and subsequently complied with by means of at least two daily site inspections.
 - k) Ensure safety management information (SMI) boards are erected in each working area, and the following minimum information shall be displayed – Method Statement, Risk Assessment, DSTI, Construction Manager CR8(1), Construction Supervisor CR8(7), First Aider, Fire Fighter, and Health and Safety Representative(s). Contractors should consider erecting SMI boards at their accommodation sites for site H&S communication purposes.
 - l) Coordinate all health and safety induction training requirements and conduct site specific induction for TCTA and Contractor Management and Supervision.
 - m) Coordinate site accesses and security.
 - n) Coordinate and implement comprehensive daily incident reporting by management, supervision, foremen and Construction Health and Safety Officers.
 - o) Compile and present a weekly health and safety report to include: Incident trend analyses and preventative measures. Injury trend analysis and preventative measures. Contractors and Sub-Contractors Planned Tasked Observations for week ahead, DSTI quality and effectiveness. Management walkabouts including participation and findings. High risk activities for the week ahead. Risk Assessment plan for week ahead, based on the construction plan. Statistics for previous week regarding man-hours, complement, RA's completed, induction and medicals (entry and exit). Estimates for week ahead regarding, complement, RA's, induction and medicals (entry and exit).
 - p) Conduct a Bi-weekly internal Contractor and Sub Contractor audit to ensure implementation and continuous compliance with the Safety Management Plan and legislative compliance. Record findings and issue action sheets for deviations to include an action close out plan and report.
 - q) Accompany injured people to doctor/hospital and ensure prompt treatment and return to work. Report all Incitements in a timely manner in the case of a medical treatment/Lost Time Injury cases immediately (telephonic) to the Project Health and Safety Manager and follow it up with an initial Incident Notification and Significant Safety Occurrence (SSO) report before the end of shift and a complete investigation within 24 hours.
 - r) Coordinate and ensure the pre-check and recording thereof for all tools, plant and equipment.
 - s) Final check and sign of RA's before submitting to TCTA or TCTA's Health and Safety Agent for approval.
 - t) Implement and maintain the Occupational Health and Safety Act No.85 of 1993 and its regulations.
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2.11.26 Risk Assessments (RA's)

- To be completed **one week** before the execution of a task and submitted to TCTA and TCTA's Health and Safety Agent for approval, to avoid delays. (See Annexure 2/1 for the required document that shall be used)
- Each Contractor shall submit a RA plan that will also include a monitoring and review plan.
- Attach **Safe Work Procedures** and **Safety Method statements** (See Annexure 2/2 for the required document that shall be used) to Risk Assessments.
- Each Supervisor to communicate Job specific Risk Assessments to every person involved on the job, and workmen shall sign acknowledgment the communication of and understanding the risks related to the job and preventative measures and controls.
- **General and or Generic Risk Assessments will not be accepted.**

RA Team to consist of the Contractors' Construction Manager CR8(1), Specific Task Construction Supervisor CR8(7), and Specialists executing the job, Construction Health and Safety Officer CR8(5) and TCTA or TCTA's Health and Safety Agent.

2.11.27 Daily Safe Task Instructions (DSTI's)

- Each Contractors' Supervisor and Foreman shall, daily, before work commences, inspect his work area, and complete the checklist part of the DSTI. (See Annexure 2/3 for the required document that shall be used).
- Complete the DSTI regarding tasks for the shift, specific hazards and specific precautions and refer to and discuss the precautions and controls of the relevant Risk Assessments.
- Discuss the DSTI with his team.
- The supervisor and his team shall then sign the DSTI acknowledging communication thereof.
- If the scope of work or job changes, the DSTI shall be revised and communicated before commencing with any changes to the scope of work or jobs.

2.11.28 Planned Task Observations (PTO)

- Each Construction Manager CR8(1) shall conduct 1 PTO per month on the Construction Supervisors/ Staff under his/her control (See Annexure 2/7 for the required document).
- Each Construction Supervisor/Foreman shall complete and submit at least one PTO daily. (See Annexure 2/7 for the required document).
- When sub standards are identified Risk Assessments and Safety Method Statements shall be revised and communicated again to discuss and rectify non-standard actions with employee(s).

2.11.29 Management – Visible Felt Leadership (VFL)

The Construction Manager CR8(1), Assistant Construction Managers CR8(2), Construction Health and Safety Manager, Construction Health and Safety Officer(s) CR8(5), Construction Supervisors CR8(7) per area, shall conduct and record a Visible Felt Leadership checklist twice a week. (See Annexure 2/5 for the required document that shall be used).

2.11.30 Health and Safety Experience Board

The Contractor shall provide a Health and Safety Experience board, to be approved by TCTA and TCTA's Health and Safety Agent, displaying:

- a) Department of Employment & Labour Construction Permit Number.
- b) Contractor's Logo.
- c) TCTA Logo.
- d) Manpower.
- e) Lost Time Injury Frequency Rate – LTIFR.
- f) Disabling injury frequency rate – DIFR.
- g) Man-hours.
- h) Incidents and injuries.

2.11.31 Safety Management Information (SMI) Notice Boards

The Contractor shall provide Safety Management Information notice boards (SMI boards) in each working area per foreman, and the following shall be posted:

- a) DSTI.
- b) Relevant Approved Task Specific Risk Assessments.
- c) Relevant Approved Task Specific Method Statements.
- d) Weekly Safety Report.
- e) Emergency Procedure.
- f) Construction Managers CR8(1) Photo and Contact Details.
- g) Supervisors CR8 (7) Photo and Contact detail.
- h) First Aiders' Photos and Contact details.
- i) Fire Fighter's Photos and Contact details.
- j) Health and Safety Representatives' photos and contact details.

2.11.32 Site Specific Health and Safety Rules and Requirements

The Contractor shall provide, ensure implementation and comply with the following Site-Specific Health and Safety rules and requirements:

- Safe **Access and Egress** to and from work areas.
- Good **Housekeeping** and Stacking Practices – continuous cleaning and clearing of work platforms after every shift. No work to commence before complying.
- Safe and orderly routing of **welding cables, electrical extensions and air hoses**. Elevated out of walkways on temporary hooks / racks.
- **Rigging Studies** for all heavy and/or difficult lifts.
- No lifting in **windy conditions** exceeding 30 km/h (8.33 m/sec). (This is only a guide – it will also depend on Risk Assessment/Rigging study/Shape mass and Size of load and the capability of the Crane to be used!)

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- Prohibiting certain work in **wet conditions** – elevated work, roof sheeting installation, etc.
 - People may not be **transported** on the back of a bakkie and or truck. Never on top of materials.
 - **Elevated work** – Compulsory use of **safe attachment points, Lifelines, Safety Harnesses and Fall Arrestors** including a height rescue system and training of rescuers. To comply with SABS-EN –353-355, 358, 360-365, 795, 813 and SABS033, 1833, 341, 564-567, 892, 1891, 12277 and 4878 -Fall Right SA standards or equivalent – Attached at all times in elevated positions and use of double lanyards.
 - **Scaffolding** to comply with Legal, SANS 10085 and TCTA standards – Tagged to SGB Standards.
 - i) Ladders on inside of frames, staggered every two metres with a safe landing platform.
 - ii) Trap door fitted on working platforms.
 - **Work benches** to be provided for onsite work.
 - Riggers to be identified by means of **high visibility reflective vests**.
 - **Solid Barricading** – Solid frame covered with orange netting – Excavations, Overhead Work, walkways and all Openings.
 - Attaching of Tools and Equipment at heights – use **lanyards**.
 - Wearing of **Gloves** applicable to task and approved eye protection for all activities.
 - Use of **Spacers / Wedges** when fitting equipment.
 - **Shields and fire blankets** to be used for grinding, welding and gas cutting operations to contain sparks.
 - **Fire Extinguishers** – With people when doing hot work, on self-propelled mobile machines and at all fuel driven machines.
 - **Guide ropes** shall be used for all lifts.
 - **Firewatchers** to be posted when commencing hot work in hazard prone areas.
 - Trained/informed **confined space watches** to be posted when confined space entry work is being performed and rescue means are available and being used/applied.
 - **Permits** to be obtained and adhered to.
 - **Excavations:** Provide for shoring, battering back, soil and loose rocks to be 2 metres from edge and approved barricading.
 - **Dedicated flagmen** with illuminating vests to be in control of movement of heavy mobile and earth moving equipment.
 - Submit a **Safety incentive scheme** for approval and provide for the cost for it.
 - Equipment for the Construction Health and Safety Manager(s)/ Construction Health and Safety Officer(s) – **Laptop with CD Rom and USB Ports, scanner-copier-printer, internet connection on and off site and cell phone (Network Provider chosen shall be able to provide a stable signal on site and at the contractor's accommodation facility).**
 - i) Site internet access if an on-line electronic OHS monitoring and reporting system is introduced for this project.
 - ii) Supervisors will need electronic tablets or similar for on-line OHS reporting purposes.
 - The **cradle to grave** principle shall be implemented and adhered to regarding spillage of hazardous and flammable substances.
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- **Voltage reducers** fitted to all welding machines.
- **Concrete buckets** to be fitted with Safety Chains and opening wheels.
- **Earth leakage** units to be fitted to all portable generator sets and welding machines with electrical outlets.
- **Earth moving vehicles** to be fitted with prescribed rotating lights and operated with headlights on. Site vehicles to be fitted with visibility whip aerials and rotating lights. Reverse hooters / back up alarms to be functional at all times.
- **Weatherproof caravan type connections** fitted to all electrical equipment and extensions when used externally in wet conditions.
- **220 mm large Angle Grinders** not to be used, unless fitted with disc safety guard/plate.
- **All cranes** are fitted with: Anti two block cut out devices / Automatic load arrest systems / Automatic load limit devices and indicators/Gear lock on neutral and a waste safety belt.
- **All Self-propelled mobile machines** are fitted with Fire extinguishers and reverse hooters / back up alarms.
- **Flashback Arrestors** at cylinders and torches and proper hose clamps used (gas cutting equipment).
- Correct and safe **manual lifting** operations.
- **Supervision ratio** of foreman to workers – Not > 1:15.
- Two long new **sleeve overalls** with company logo on back to be provided every six months. (or more frequently, if required due to specific task) The Contractor overall colours should be company specific, if possible

2.11.32.1 Hardhat Identification

This shall be a recommended colour coding should the Contractor wish the colour coding can be altered and a colour coding shall be submitted.

- Project and Contractor Management = White.
- Design Team = White.
- Visitors= Purple.
- Foremen and Middle management = Yellow.
- Workers = Blue.
- Security and Safety Officers = Red.
- Direct Contractors = Grey.
- First Aiders = Green.
- Riggers and Banksmen = Orange.

Shaded eating areas with:

- Tables and chairs.
- Hand washing facilities.
- Adequate potable water provided.
- Daily COVID sanitisation/disinfecting of contact surfaces is required.

Portable toilets:

- At a ratio of 1:10.
- To be cleaned daily and maintained weekly as minimum requirement (Daily Inspection Record Required).
- Running water to be available at toilets with soap to wash hands.
- Daily COVID sanitisation / disinfecting of contact surfaces is required.

2.11.33 Fundamental Health and Safety Requirements

Before any work commences, proof of and the following non-negotiable deliverables are required:

- a) Legal liability training of all Construction Supervisors CR8(7) and Construction Managers CR8(1)/ Assistant Construction Managers CR8(2).
- b) Construction Supervisor Safety Training Course (e.g. IRCON or equivalent approved course) for all construction supervisors and Construction Manager CR8(1).
- c) Incident investigation training by Construction Managers CR8(1)/ Assistant Construction Managers CR8(2) and Construction Health and Safety Manager(s) and Construction Health and Safety Officer(s).
- d) Letter of Good Standing with the Workman's Compensation Commissioner/Insurer.
- e) Original of the Construction Work Permit stamped by the Department of Employment & Labour.
- f) Public Liability Insurance.
- g) Competency training certificates of people to execute the job.
- h) A Baseline Risk Assessment (**Contractor's own Baseline Risk Assessment**).
- i) Risk Assessments and Safety Method Statements for every Job / Task.
- j) A Construction plan detailing each activity per job.
- k) Signed legal appointments as required by legislation and industry best practice.
- l) Contractors' Safety Management team – to be interviewed and approved by TCTA's appointed Health & Safety Agent.
- m) All equipment to be on a current register, backed up by relevant test certificates.
- n) A Medical fitness certificate for each employee with Annexure 3 (These shall clearly state the occupation and all relevant exposures indicated) completed per employee. No employee will be allowed on site unless proven fit for the specific work he/she is appointed to do, as indicated by the medical certificate.
- o) Attending of the Contractor's Job Specific Induction.
- p) Health and Safety Management Plan.
- q) Health and Safety File table of contents (to follow order of Safety File Checklist Annexure 2/4).

2.11.34 Non-compliance with the Construction Regulations 2014

The Contractor, both as principle contractor and employer for the execution of the contract, shall ensure that all provisions of the Construction Regulations applicable to the Contract are complied with to the letter.

PART C3.1 - SPECIFICATION

Failure by the Contractor to comply with safety requirements will entitle the Engineer to reduce payment of the relevant Bill of Quantity items and/or order a temporary halt of work within the affected areas until the specified requirements are met, without any extension of time being granted and without any additional payment.

2.12 BORROW PITS AND QUARRIES

The Contractor shall ensure that all required statutory permits are in place in terms of the Mines Health and Safety Act and Mineral and Petroleum Resources Development Act, 2002 and that all personnel are legally appointed prior to commencement of any borrowing operations from designated borrow pits. The Contractor shall ensure that borrow pits are mined, and after completion, rehabilitated in strict accordance with the EMPr. and other statutory requirements.

All borrow pits and quarries shall be fenced (Take Wildlife into consideration) and fitted with a lockable gate that will be locked when the borrow pit or quarry is not in operation or used.

All the non-working faces of the borrow pit will be safely battered or sloped.

An area specific Traffic Management Plan (TMP) will be drafted and submitted to TCTA and TCTA Health and Safety Agent for review and approval. This TMP will also indicate segregation of Heavy Mobile Plant and Pedestrian's in the area. Access Control and Security shall be implemented for the area. Foreman / Supervisor containers (Office Materials) shall not be placed or positioned within or close to the plant areas or inside the borrow pit but shall be located within a specific borrow pit designated management area, within the borrow pit/quarry licenced boundaries.

All applicable requirements of the Mine Health and Safety Act, 1996 as amended, must be complied with during the operation of all borrow pits, with specific reference to:

- a) Sec. 3(1)(a) Manager must be appointed.
- b) Sec. 6 Health and Safety Equipment to be provided.
- c) Sec. 9 Codes of Practice to be compiled.
- d) Sec. 10 Health and Safety training must be provided.
- e) Sec. 11 Hazard identification and risk assessments must be conducted.
- f) Sec. 12 Appointment of an Occupational Hygienist.
- g) Sec. 13 Medical surveillance must be conducted.
- h) Sec. 25 Health and Safety representatives must be appointed.
- i) Mine Health and Safety Act Regulations:
 - i) Chapter 9 Regulations on Mine Environmental Engineering and Occupational Hygiene.
 - ii) Chapter 14 Protection of the surface and the workings.
 - iii) Chapter 17(7) Application to conduct mining operations within 100 metres from buildings, roads, railways or any structure that must be protected, to be submitted to the PI, Limpopo Region.
 - iv) Chapter 23 Reporting of incidents and dangerous occurrences to the PI, Limpopo Region.
- j) Minerals Act Regulations still in force in terms of the Mine Health and Safety Act:
 - i) Reg. 2.5.4. Permission for a Manager to be responsible for two or more mines to be requested from the PI, Limpopo Region.

PART C3.1 - SPECIFICATION

- ii) Reg. 2.13.1 Appointment of an Engineer or 2.13.2 competent person to be in charge of machines, mobile machinery and electricity.
- iii) Reg. 4.17.1 Hearing conservation programmes.
- iv) Reg. 5.8.1, 5.8.2 and Reg. 7.7.1 Use of lifelines at height.
- v) Reg. 5.8.3 Use of Hard hats.
- vi) Reg. 6.3.2.11, 24.1 First Aid equipment.
- vii) Reg. 7.9.1 Open face workings.
- viii) Reg. 7.9.2 Cleaning of edge.
- ix) Chapter 14 Statistical reports to be submitted.
- x) Reg. 20.3.1 Fencing of dangerous places.
- xi) Reg. 20.5 Guarding and fencing of machinery.

2.13 HAZARDOUS BIOLOGICAL AGENTS (HBA) / COVID-19 REQUIREMENTS

2.13.1 Policies and Procedures

The Contractor will be required to compile and submit for review and approval, before establishing site, the following documents based on the requirements stipulated by the Code of Practice: Managing exposure to SARS-CoV-2 in the workplace of 2022 Work Place Plan or similar procedures – 24 June 2022 as amended from time to time as well as the Hazardous Biological Agents Regulations [Gn R 1887 dd 16 march 2022]:

- a) HBA / COVID-19 Policy: To be signed by the Chief Executive Officer 16(1).
- b) HBA / COVID-19 Risk Assessment and Agreement with workers/organised labour in terms of the Vaccination of Employees.
- c) HBA / COVID-19 Prevention and Control Management Plan which will include Procedures on how the Department of Health and the Disaster Management Requirements shall be complied with (to comply with and follow order of Hazardous Biological Agents (HBA) for HBA / COVID-19 Prevention and Control Management Plan Checklist: see attached Annexure 2/10).
- d) The Contractor shall ensure their emergency response plan and first aid procedures to include the requirements of HBA / COVID-19.
- e) The Contractor shall Include HBA / COVID-19 in his Baseline Risk Assessment and Issue Based / Task Specific Risk Assessments inclusive of appropriate mitigating factors.

Various COVID-19 requirements have also been described under various headings within this H&S Specification document, as a guide to contractors.

2.13.2 Waste Management

The Contractor shall develop a specific waste management plan to ensure that all HBA / COVID-19 waste shall be managed in accordance with Bio-Hazard requirements. This includes:

- Disposal of used PPE, gloves, masks etc.
- Disposal of used sanitising cloths, paper towels and containers.

The disposal system shall include but not limited to.

- Containers with Biohazard markings labelled with what is to be deposited.
- Personal bags with a seal for washable masks.
- Contract with Biohazard disposal company.
- Records of all disposals to an accredited waste disposal site.

2.13.3 Prohibitions in terms of HBA

No person may:

- Use compressed air to remove HBAs from any surface or person;
- Eat, drink, smoke, keep food or beverages or apply cosmetics where an HBA is handled or require or permit any other person to eat, drink, smoke, keep food or beverages or apply cosmetics in such a workplace; or
- Leave a controlled area without prior removal of potentially contaminated protective clothing and safety equipment.

2.14 ASBESTOS

The Contractor shall familiarise himself with the Asbestos Abatement Regulations 2020, GNR 1196 of 10 November 2020.

“These Regulations shall apply to every employer and self-employed person who carries out work at a workplace that may expose any person who carries work at a workplace that may expose any person to asbestos dust at that workplace.”

It is possible that the removal of existing farm irrigation water pipelines, from the project's pipeline corridor, could be asbestos or of an asbestos containing material (ACM) and so shall be handled and treated as per the Asbestos Regulations requirements.

All persons potentially exposed to asbestos containing material shall be subjected to a medical surveillance program. This program shall be determined by an Occupation Medical Practitioner, however the periods between medicals shall not exceed 24 months.

2.15 MEASUREMENT AND PAYMENT

Payment for the Contractor's obligations in respect of the OH&S Act and Construction Regulations shall be made through the payment items described in Section 1 – General. The payment items together shall include full compensation for all personnel, costs and incidentals in respect of compliance with and enforcement of the OH&S Section, which shall include for the compilation, presentation, implementation and maintenance of the Site OH&S Plan as contemplated in Regulation 7 of the Construction Regulations.

The specific costing items highlighted in each section of this document, shall be for the Contractor's guidance. The OHS BOQ must be submitted with the tender documents as it will be required for the Construction Work Permit Application.

The Contractor shall ensure that the contents of this specification, and the legislative requirements have been reviewed by a competent person when budgeting.

ANNEXURE 2/1
RISK ASSESSMENT RECORD

Contractors Logo	Health, Safety and Environmental Management System	HIRA No:	001
		Page	Page 1 of 6
	RISK ASSESSMENT RECORD	Revision	00
		Date	

ANNEXURE 1

HIRA NO:		DATE:	
CONTRACTOR:		LOCATION:	
PROJECT NAME:	Mokolo Crocodile Water Augmentation Project Phase 2	START DATE:	
CONTRACT NUMBER:	TCTA 20-041	END DATE:	
BRIEF DESCRIPTION OF WORK/ACTIVITY:			

RISK ASSESSMENT TEAM:			CLIENT APPROVAL:		
Initials & Surname	Principal Contractor	Signature	Approved:	YES	NO
	CR8(1) Appointee		Client - Resident Engineer:		
	CR8(7) Appointee		Signature:		Date:
	CR9(1) Risk Assessor		Comments:		
	CR8(5) CHSM				
	CR8(5) CHSO		Client – Pr.CHSA/ CHSM:		
			Signature:		Date:
Sub-Contractor Name (Where Applicable):			Comments:		
	CR8(7) Appointee				
	CR8(5) CHSO				

Contractors Logo	Health, Safety and Environmental Management System	HIRA No:	001
		Page	Page 2 of 6
	RISK ASSESSMENT RECORD	Revision	00
		Date	

REQUIRED AND EXISTING CONTROL MEASURES: (SUBMIT AND ATTACH TO RISK ASSESSMENT)	AVAILABLE		ADEQUATE		REMARKS
	Yes	No	Yes	No	
Scope of Work (Logical steps on how task / work will be performed)					
Procedures: (WI / SOP / Vendor Spec)					
Training (induction) / Competency certificates? Specific training identified / other (instructions)					
Special permits required (specify)					
Equipment / Tool Registers / Others (specify)					
Code of Practice:					
Other:					

FREQUENCY SCALE	SEVERITY SCALE	PROBABILITY SCALE
Frequent occurrence / daily (3)	Catastrophic (Many fatalities / > 10 Million damage) (8)	Has happened before (3)
It has happened / monthly (2)	Disaster (Fatal injury / > 1 Million damage) (7)	Quite possible (2)
Could occur / yearly (1)	Very Serious (Reportable Accident / > R100,000 damage) (6)	Unusual but possible (1)
	Serious (Disability Injury (LTI) / > R100,000 damage) (5)	
	Important (Non-disabling Injury / > R1,000 damage) (4)	
	Of Concern (Minor injury / > R100 damage) (3)	

RISK RANKING / PRIORITY FACTOR		
If score is 61 to 72	AA	Potentially Catastrophic – action needed immediately.
If score is 49 to 60	A	Potentially Major – action to be taken within 24 hours.
If score is 37 to 48	B	Potentially Serious – action to be taken within 48 hours.
If score is 01 to 36	C	Potentially Minor – action to be taken within 7 days.

logo	Health, Safety and Environmental Management System	HIRA No:	001
		Page	Page 4 of 6
	RISK ASSESSMENT RECORD	Revision	00
		Date	

I, _____, the undersigned responsible person (CR8(1) Construction Manager) for the area related to this Risk Assessment hereby declare that I have explained and ensured understanding of the hazards associated and the necessary precautionary measures that need to be taken with the area and work that is going to be done to the appointed responsible Supervisor/Foreman.

Responsible Person
CR8(1) Construction Manager

I, _____, the undersigned responsible person (CR8(7) appointee) hereby declares that:

- I have after **consultation with my employees**, as far as reasonably practicable, **identified and recorded all the significant hazards and risks** associated with the task that I am to perform with regards to this Risk Assessment.
- I have **determined all measures that needs to be in place** for this task, including changing the organisation of work and design of safe systems of work, necessary to eliminate, control, minimise, or where the risk still remains, provided the necessary personal protective equipment, **and implemented them**.
- I undertake to **periodically review the hazards identified and the risk assessed**, to determine whether further elimination, control and minimisation of risk are possible.
- I have **provided every employee** as part of this risk assessment **with the necessary training, information, instruction or supervision** to enable them to perform their work without risk to his/her Safety and Health.

Signed on _____ (date) at _____ (location)

Employed by _____ (name of company),

Responsible Person
CR8(7) Appointee

ANNEXURE 2/2
SAFETY METHOD STATEMENT FORM

Contractors Logo	Health, Safety and Environmental Management System	HIRA No:	001
		Page	Page 1 of 1
	SAFETY METHOD STATEMENT	Revision	00
		Date	

ANNEXURE 2

Task			
RA Number			
Project	Mokolo Crocodile Water Augmentation Project Phase 2		
Client			
Consultant			
	Subject Matter Expert/ CR8(1)	Client's Pr.CHSA/CHSM	Client's Resident Engineer
Name:			
Signature:			
Date:			

No	LIST SEQUENCE OF ACTIVITIES	HAZARD		RISK	
		Yes	No	Yes	No
1.	Planning				
1.1	Mobilize crew to site.		X		X
1.2	Notify land owner/ client of arrival on site.		X		X
1.3	Conduct tool box talks, site awareness, issue PPE.		X		X
1.4	Instruct staff on method study and risk assessment.		X		X
1.5	Ensure work area available and determine barricaded requirements.		X		X
2.	Inspection				
2.1	Inspect all Tools and record on registers.		X		X
2.2	Inspect all Equipment and record on register.		X		X
2.3	Set up SMI board.		X		X
2.4	Inspect all staff for correct PPE.		X		X
2.5	Inspect Barricading if present.		X		X
3.	Tasks				
3.1	Transporting material and tools to site. Deliver tools, material and personnel to site	X		X	
3.2					
3.3					
3.4					
3.5					
4	Close Out				
4.1	Packing and loading tools and equipment	X		X	
4.2	De-mobilize from site	X		X	

ANNEXURE 2/3
DAILY SAFE TASK INSTRUCTION FORM (DSTI)

Contractors Name**Mokolo Crocodile Water Augmentation Project Phase 2****ANNEXURE 3**

DAILY SAFE TASK INSTRUCTION (DSTI) (CHECKLIST - BEFORE WORK COMMENCES)				
CONTRACTOR:			AREA:	
			DATE:	
DESCRIPTION	TO STANDARD		CORRECTIVE MEASURES	DATE
	YES	NO		
Safe access to work area – clean & tidy				
Sufficient / correct barricading erected				
Electrical equipment in good condition				
Machine guarding adequate				
All tools / equipment pre-inspected				
Safe access & egress available and used				
Scaffolding tagged accordingly				
Gas cutting equipment & hoses				
Correct P.P.E (Utilised & available)				
Safe working platforms for elevated work				
Safe Lifting & Rigging equipment				
SMI board up to date				
Correct PERMITS for application				
PERMITS VALID				
LOCK –OUT REQUIRED AND IN PLACE?				
CORRECT TOOLS & EQUIPMENT AVAILABLE				
NO OVERHEAD WORK ALLOWED				
The above list does not exclude and or wave any other checklist and or legal requirements!				
RISK ASSESSMENT REFERENCE NUMBER:				
TOOL BOX TALK TOPIC:				
CURRENT JOB - LIST MAIN STEPS OF TASK?	WHAT ARE THE HAZARDS – JOB & ENVIRONMENT?		LIST CONTROLS REQUIRED\ IMPLEMENTED?	
Note: <ul style="list-style-type: none"> • If tasks change, this list and the Risk Assessment must be revised before proceeding with new/changed task. • A signed attendance register must be attached to this list. I hereby certify that the above items were checked and all workers under my supervision received a safe task instruction: Responsible Person: (Foreman/Supervisor) Print Name _____ Signature: _____				
CHSM/CHSO (Contractor) Print Name _____ Signature: _____				

Contractors Name**Mokolo Crocodile Water Augmentation Project Phase 2****DSTI CLOSE-OUT
(CHECKLIST – AT END OF SHIFT)**

NO	DESCRIPTION	YES	NO	ACTION REQUIRED
1	Are safe access to work area reinstated			
2	Sufficient and correct barricading erected where required – no floor openings			
3	No tools and equipment left at work place			
4	All tools and equipment inspected end – shift inspection / hot work inspection			
5	Scaffolding tagged accordingly			
6	No gas cutting equipment left at work place			
7	End shift PPE inspection			
8	All material removed from elevated working platforms			
9	Lifting & Rigging equipment correctly stored			
10	Applicable permits signed off			
11	Lock-outs applied with all plant and equipment left at work place			
12	Material neatly and safe stacked At work place / store			
13	Housekeeping in good state			

REMARKS:

Note:

- If tasks change, this list and the Risk Assessment must be revised before proceeding with new/changed task.
- A signed attendance register must be attached to this list.

I hereby certify that the above items were checked IN MY AREA/S of RESPONSIBILITY and the area/s is safe and free of any possible hazards

Responsible Person:

(Foreman/Supervisor) Print Name _____ Signature: _____

Safety Officer (Contractor) Print Name _____ Signature: _____

Contractors Name

Mokolo Crocodile Water Augmentation Project Phase 2
DSTI Communication Register

Name	Sign

Name	Sign

Communicated By: _____ Sign: _____

Position: _____ Date: _____

ANNEXURE 2/4
SAFETY FILE CHECKLIST

ANNEXURE 4

HEALTH & SAFETY FILE REQUIREMENTS

(To be submitted to the Clients H&S Consultant at least 10 working days prior to arrival on site)

		Yes	No	Comments
1.	Notification of Construction Work to the Department of Labour: Document to display required information as per OHS Act No. 85 of 1993 – Construction Regulations Annexure A Must carry the stamp of acceptance from the Department of Labour (N.B. Proof of Fax not accepted, must be stamped).	N/A	N/A	
2.	Construction Work Permit in file as per CR3(6) (only applicable when CR3(1) is applicable to the project).	✓	X	
3.	Valid Letter of Good Standing with FEMA/WCA. Include proof of relevant insurances to carry out work (e.g.: Legal Liability Insurance Certificate).			
4.	Organogram of Reporting Structure: This document must provide all persons appointed in terms of OHS Act No. 85 of 1993 Including contact details. (rev, date, approval)			
5.	Policy Documents:			
	Contractor Health & Safety Policy			
	Contractors Environmental Policy			
	Hazardous Biological Agents (HBA) Policy for COVID-19			
	Substance Abuse Policy.			
	HIV & AIDS Policy.			
	Smoking in the Workplace Policy Statement.			
6.	Principal Contractors Approved Health & Safety Plan correlating with Clients Site Specific Health & Safety Specification (SSHSS).			
7.	Contractors Environmental Management Plan (EMP) correlating with Clients Environmental Specification.			
8.	HBA Prevention & Control Management Plan for COVID-19			
9.	Waste Management Plan & Waste Management Procedure (May be included in EMP).			
10.	Fall Protection Plan (FPP): Should refer to separate FPP File and to be reviewed separately according to the Fall Protection Plan Check Sheet.			
11.	Contractors Site Specific Emergency Plan.			
12.	Site Specific Emergency Contact Numbers.			
13.	List of Sub Contractors to be used (if any sub-contractors are to be used).			
14.	Section 37(2) mandatory agreements between client - contractor and contractor - sub contractor: • 37.2 & 5(1)(k) Agreement with Mandatory (Client to Principal).			

	<ul style="list-style-type: none"> • 37.2 & 7(1)(c)(v) Agreement with Mandatory (Principal to Sub Contractor). 			
15.	<p>Fully completed Appointments (in line with CR2014) of the following but not limited to:</p> <ul style="list-style-type: none"> • Legal Appointment Register • 16.1 - CEO Resolution of Responsibility Declaration Letter. • 16.2 - Delegated Authority • CR8(1) - Construction Manager • CR8(2) - Assistant Construction Manager • CR8(7) - Construction Supervisor • CR8(8) - Assistant Construction Supervisor • CR8(5) - Construction Safety Officer • CR9(1) - Risk Assessor • GAR9(2) - Incident Investigator • CR10(1)(a) – Fall Protection Planner • CR12(1) - Temporary Works Designer • GSR3(4) - First Aid Officer • CR29(i) - Fire Marshal <p>An abbreviated CV and ID of the above appointed persons shall be attached to the appointment.</p> <p>Safety Officer/Construction Manager's SACPCMP Registration.</p> <p>Competency Certificates for safety training courses will also be attached as required in specifications.</p> <p>All other Relevant Appointments as per scope of work.</p> <p>Competency certificates/licences where applicable are to be attached to the appointment.</p> <p>Appointments for all nominated responsible person to conduct monthly inspections on tools and equipment and proof of their competency are required.</p>			
16.	Proof of fire fighting training & list of fire fighting team members. (For smaller projects, only required if hot works is to be conducted. Required on larger projects).			
17.	Detailed Job Category List, including competency training requirements per job category (aligned with CLIENTS minimum requirements) & PPE needs analysis per job category. (For larger projects only).			
18.	<p>Risk Assessment (HIRA) & Safety Method Statement (SMS):</p> <p>HIRA & SMS Register (this should detail submitted risk assessments with a tick and signature column to detail status of HIRA's and SMS's. i.e. approved or declined).</p> <p>Baseline Risk Assessment indicating the full scope of work and risk profile - High risk task inventory registers to be attached.</p> <p>Task Specific HIRA & SMS or initial tasks (Note: Before establishment Principal Contractor must supply what they will start with – Site Establishment, Fencing, Clear & Grub, etc. SWP/SOP/Guidelines (To be generated for each specific task to be performed on the project and submitted for approval).</p>			

19.	3 Week look-a-head plan (rolling horizon). First 2 months risk assessment submission schedule. (not required if all Risk Assessments submitted)			
20.	Copy of Induction Register and Contractors Induction Material.			
21.	Copy of Daily Safe Task Instruction (DSTI).			
22.	Copy of Tool Box Talk Register and Tool Box Talks.			
23.	Tool & Equipment Registers, Provide copies of:			
	Tools and Equipment Inventory List.			
	All relevant Inspection Registers for equipment tool and plant to be used.			
	Proof that issue register system is in place for PPE. (PPE issue record to be attached to PPE Inspection Record to form a PPE pack...One PPE pack per person on site).			
24.	All other statutory registers as required by the OHS Act No. 85 of 1993.			
	Site Logs, Provide a copy of:			
	Visitor Register.			
	Complaints Register			
25.	Site Diary			
	Template of Health & Safety Minutes to be used on site.			
	Template Copy of Contractors Audit Document to be used on the project.			
	Copy of Contractors Vehicle List to detail all vehicles to be used on site (Where applicable).			
28.	Incident Management/Reporting:			
	Contractors Incident Flow Chart and Procedure.			
	Contractors Incident Flash Report Template.			
	Contractors Full Incident Investigation Report Template.			
	Annexure 1 Form			
	WCL Forms: WCL.1(e), WCL2, WCL3, WCL4, WCL5, WCL6, WCL14, WCL22, WCL26 as required by the OHS Act No. 85 of 1993.			
29.	Copies of valid Medicals Certificates of Fitness conducted by an occupational medical practitioner inline with their job description and tasks to be performed on site. Each medical must be accompanied by a completed and stamped Annexure 3 document (for each and every person on site).			
30.	MSDS Register and MSDS documents for materials/chemicals, etc on site. (Where applicable).			
31.	Copy of reference documents:			
	• Signed copy of the Clients Site Specific Health & Safety Specification (SSHSS). Including a signed register of communication to Managers, Supervisors & Safety Officers.			
	• Signed copy of the Clients Environmental Specification. Including a signed register of communication to Managers, Supervisors & Safety Officers (Where available).			
	• Up-To-Date version of the Occupational Health & Safety act 85 of 1993 to be kept on site.			
	• Copy of all relevant Acts & Regulations (e.g. Construction Regulation 2014, General Safety Regulations, COID Act, Basic Conditions of Employment Act, National Road Traffic Act, etc) to be kept on site.			

Contractor:
 Site: Mokolo Crocodile Water Augmentation Project Phase 2
 Contract Number: TCTA 20-041
 Inspected By:
 Date:

On approval of the above mentioned file, contractors will be allowed to mobilise to site. Within four weeks of mobilisation to site, a Baseline Health & Safety Compliance Audit will be conducted and thereafter as specified.

Health & Safety File Approval				
Site Name:		Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2		
Contract Number:		TCTA 20-041		
Contractor:				
Contractors Safety Officer Name:				
Contractors Safety Officer Contact Details:				
H&S File Submitted on:				
H&S File Inspection Number:				
H&S File Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:				
Sign:			Date:	
Reviewed by:				
Sign:			Date:	

ANNEXURE 2/5
VISIBLE FELT LEADERSHIP (VFL)

VFL

(Visible Felt Leadership)

Site Safety Inspection:

(Complete at least one Incident-Group, with it's Specific-Agencies, per inspection and note details of deviation and corrective action on back page.)

Name: _____ I am: Safety____, Supervisor____, Management____. (Tick correct) Date: _____ Company: _____ Project Name: Mokolo Crocodile Water Augmentation Project Phase 2

Incident-Groups	Specific-Agencies	Observation			Incident-Groups	Specific-Agencies	Observation		
		N/A	X	✓			N/A	X	✓
Access & Egress	Uneven/Slippery Surface				Barricading	Erected			
	Safe Access Provided					Maintained			
	Site Access Control					Correct type			
Area Made Safe	Work's made safe				PPE	Used/ Used Correctly			
	Warning signs in place/maintained					In good repair			
	Hazardous work area demarcated					Stock available			
Mobile Plant	Pre-Start inspections				Elevated Work	Tied/ Safe platform			
	Flagman Available					Harness/ Safety belt used			
	Faults					Lifeline in place & used			
	Reckless driving/ speeding					Tools & equipment secured			
Lifting & Rigging	Transporting people/ materials safely				Lock out/ Isolation/ Permits	Ladder safe/ correctly positioned			
	Rigger/ Banksman					Done/ Proof (Electrical/ Mechanical)			
	Lifting tackle (Used/ Condition)					Vehicles switched off when unattended			
Scaffolding	Crane/ Crane Truck (Setup / Condition)				Tools & Equipment	Occupations - Rail & OHTE			
	Tag in place/ signed & valid					In good repair			
	Safe to Use					Used Correctly			
	Access Safe					FFE			
Stacking & Storage	Material condition/ Integrity				Housekeeping	Hot Work Shields			
	No Unidentified Containers					No Litter			
	Safe Stacking					Nails removed from timber			
	Correct Area					Waste Management controlled			
Management Condoning	Dunnage correct				Health & Hygiene	No tripping hazards			
	HSE Documentation completed					Facilities provided/adequate(Ablution/ eating, etc)			
	SMI board up to date					Facilities kept clean			
	Correcting unsafe Behaviour/ Conditions					Sanitation			
Manual Handling	Adhering to requirements				Environmental	Biological hazards identified and controlled			
	Repetitive Motion					No Spills/ Spills controlled			
	Correct Manual Handling/ Lifting					Hazardous materials id/ controlled (eg.Asbestos)			
Perway Activities	Limited to 25kg/ 1/3 body mass					Dust Controlled			
	Level crossings/ spiking				Water Environment	Spill prevention measures in place (eg.Drip trays)			
	Flagmen/ Banners					Awareness program in place			
Other	OHTE					Diving			
						Dredging			
						Working on Barges			

Person who conducted inspection validation(Name):



Sign:

Date:

Reviewed by CR8(5)/CR8(1)/CR8(2)/CR8(7)(Name):

Sign:

Date:

	Interventions -						
	Substandard inspection findings as noted on first page, please elaborate on deviation/ at-risk behaviour observed.						
Date	Time	Company	Area	Description of Incident	Action Taken/ Preventative Measures	Closed Out By:	Date Closed
	Commendation -						
	Safe acts observed/ Worker instructing colleague to correct at risk behaviour/ Workers correcting unsafe condition without being asked.						
Date	Time	Company	Details of Commendation				

ANNEXURE 2/6
FALL PROTECTION PLAN CHECK SHEET

ANNEXURE 6

FALL PROTECTION PLAN (FPP) CHECK SHEET

(To be submitted to the Clients Safety Consultant for approval before work from a fall risk position is granted. The order of the FPP must follow this check sheet)

		Yes	No	Comments
Fall Protection Plan/Policy Document:				
1.	<u>Cover Page Requirements:</u>			
	Company Name.	✓		
	Project/Site Name.			
	Document Date.		X	
	Revision Number.			
	Physical Address of Company.			
	Physical Address of Site.			
	Designated 16.1/16.2: Name, contact details, signature, signature date.			
	Fall Protection Planner CR10.1a: Name, contact details, signature, signature date.			
	Document Compiled By: Name, contact details, signature, signature date.			
	Client Approval: Name, contact details, signature, signature date.			
	<u>Document Format:</u>			
	Header: Company Name and Project Name as minimum (Company Logo advisable).			
	Footer with: Document Number, Revision Number, Document Date and Page Number as a minimum.			
2.	<u>Document Control Page, Table Consisting of Columns for:</u>			
	Revision Number.			
	Section Number. (to record section number that has been changed)			
	Required By. (To enter details of why the change was required).			
	Description (brief outline of changes)			
	Date.			
	Previous Document Authorisation Date.			
	Previous Author/Document Compiler (Name & contact details).			
3.	<u>Table of Contents Page:</u>			
	With Section Numbers, Section Names and Page Numbers for each section.			
4.	<u>Scope:</u>			
	Must details the companies reason for drafting the FPP. (I.e. the identify and evaluate all risks from working in a fall risk position, to identify need to correct procedures and method, etc)			
	Must detail that the FPP is to be implemented and complied with by all divisions of the company and their sub-contractors which are required to work in a fall risk position.			
5.	<u>Introduction:</u>			
	Company must recognise the inherent dangers of			

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		Yes	No	Comments
	performing work in a fall risk position and must details its commitment to controlling the risks.			
	Must detail that the plan will comply and analyse requirements of the OSH Act 85 of 1993 and any Relevant Regulations, applicable national and international standards and Industry recognised standards of good practice.			
	Must detail that the plan will be designed to protect employees under fall risk conditions in line with Construction Regulations (CR10).			
	Must detail that the company will strive to follow applicable national and international best practices.			
	Must detail what the fall risk work being conducted on site will be. (i.e. Ladder work, Roof work, MEWPs, Scaffolding, etc).			
	Can make statement of commitment to purchase legislation to ensure compliance.			
	Must detail that precautionary measures and guidance within FPP will be implemented each and every time work is conducted in a fall risk position.			
	Must detail what the FPP will include: Document Review and Amendments, Worksite Information & Method Statement, Risk Assessment, Designations / Legal Appointment Forms, Training Management, Employee Health Management, Work at Height Equipment Management, Standard Operating Procedures, A Rescue Plan, Emergency & Rescue Procedures, and Communication Declaration & Communication Register.			
6.	<u>Work Site Information must address:</u> Permit to do construction Work (Annexure 1) / Notification of Construction Annexure 2).			
	Detailed what Contact Information will be required? (i.e. work site management, emergency services in local area, etc).			
	What Work Site Contact Information is required. (i.e. Site Management and emergency contact details).			
	What Work Site Location Information is required. (i.e. site name, address, gps coordinates, etc			
	Operation Planning & Method Statement.			
	Applying Work Site Information to the Fall Protection Plan.			
7.	<u>Risk Assessment must address:</u> Construction Regulation 9.1 requirements (i.e. How will you use work site information to design / determine the rest of the fall protection).			
	Qualification and Competency of Risk Assessor. (i.e. What does CR 9.1 say about a risk assessor, and how will you meet this requirement?)			
	Design and layout of Risk Assessment (i.e. identify the requirements for a risk assessment from CR 9.1 and 9.2 and state these requirements to form a part of the risk assessment).			
	Baseline Risk Assessment (i.e. Relevance of a base line risk assessment?).			
	Clients Baseline Risk Assessment & Work Site Induction. (i.e. Interpret CR 5.1(a) and CR9.4 and state how you will consider the client's baseline risk assessment and induction training? What will you do with the records?)			
	Site Risk Assessment & Toolbox Talks (i.e. Who will compile the site-specific risk assessment? Who will communicate it and how? What must happen if it is updated?).			

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		Yes	No	Comments
	Monitor & Review Risk Assessment (i.e. Who will monitor the site for changes in the risk profile. When will the risk assessment be reviewed).			
8.	Appointments/Designations must address:: Fall Protection Plan Management Appointments Required Specific to the Project (i.e. State the duties of all required designations in terms of this Fall protection Plan).			
	<u>Compulsory Fall Protection Plan Designations:</u>			
	16.1 Designation			
	16.2 Designation			
	Fall Protection Planner: CR10(1)(a)			
	Risk Assessor: CR9(1)			
	Site Manager: CR8(1)			
	Site Supervisor: CR8(7)			
	Fall Arrest Rescue Coordinator: CR10(2)(e) and/or			
	Basic Fall Arrest & Rescue Worker: CR10(2)(e) (Dependant on Tasks to be performed).			
	First Aid Officer: GSR 3(1) & 3(4)			
	Incident Investigator: GAR9(2)			
	Fall Protection Officer: CR10(1)(b)&(c)			
	<u>Variable Fall Protection Plan Designations:</u> (Variable means it will be required depending on site specific operations)			
	Assistant Site Manager: CR8(2)			
	Assistant Site Supervisor: CR8(8)			
	Safety Officer: CR8(5)			
	Fall Protection Equipment Inspector/Controller: CR10(2)(d).			
	Basic Fall Arrest Worker/Operator: CR10(2) & 10(4)(b).			
	Rope Access Supervisor: CR18(1)(a)			
	Rope Access Technician/Operator: CR18(1)(c)			
	Rope Access Practitioner: CR18(1)(c)			
	Rope Access System Designer: CR6 & CR18(2)(a)			
	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: CR23(d)			
	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: CR23(d)			
	Scaffolding Supervisor: CR16(1)			
	Scaffolding Team Leader: CR16(1)			
	Scaffold Erector: CR16(1)			
	Scaffold Inspector: CR16(1)			
	Designer: CR6(1), 6(2) & 12(1)			
	Temporary Works Designer: CR6(2) & 12(1)			
	Suspended Platform Supervisor - CR17(1) & 17(10)			
	Suspended Platform Erector - CR17(1) to 17(7)			
	Suspended Platform Operator - CR17(1) & 17(12)			
	Suspended Platform Inspector - CR17(1), 17(9)(10)(11)			
9.	<u>Training Management:</u> (must detail relevant SAQA Unit Standards/ Other Qualifications Required where possible).			
	Competent Person definition as per CR1 to be explained.			

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		Yes	No	Comments
	Fall Protection Planner: US 229998 & 229994			
	Risk Assessor: HIRA US116520 or equivalent			
	Fall Arrest Rescue Coordinator: US 229995; 230000; 229999			
	Basic Fall Arrest & Rescue Worker: US229998 & 229995			
	First Aid Officer: Level 1 or higher accredited course.			
	Incident Investigator: Should have fall arrest training and Incident Investigator Certificate (e.g. RCAT, etc).			
	Fall Protection Officer: Relevant Fall Arrest/Rope Access/etc Training as per site operations being performed.			
	Safety Officer: SAMTRAC or NEBOSH Certificate with SACPCMP Registration as CHSO (Construction Health & Safety Officer) as minimum.			
	Fall Protection Equipment Inspector/Controller: Must be Specific to Equipment Used, Supervisor Level required.			
	Basic Fall Arrest Worker/Operator: US229998			
	Rope Access Supervisor: US229998, 230000, 229996, 229997 & 230001.			
	Rope Access Technician/Operator (Level1): US229998 & 230000.			
	Rope Access Practitioner (Level2): US229998, 230000 & 229996.			
	Rope Access System Designer: US229998, 230000 & 229996 and other relevant Institute for work at heights (IWH) or NQF unit standards as per system to be designed.			
	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: US 243272 & 229998 or IWH-PB NNQF 201303(Basic Fall Prevention Programme for MEWP Practitioners).			
	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: US 243272 & 229998 or IWH-PB NNQF 201303(Basic Fall Prevention Programme for MEWP Practitioners).			
	Scaffolding Supervisor: US 263224			
	Scaffolding Team Leader: US263245			
	Scaffold Erector: US 263245			
	Scaffold Inspector: US 263205			
	Suspended Scaffolding: US 116690			
	Designer: The relevant training/ qualification may include, but is not limited to: <ul style="list-style-type: none"> Fall arrest Technician: 229998, 229995 Fall Arrest Rescue Coordinator: 229995; 230000; 229999 Manufacturer product training Relevant standards training. Mechanical or structural engineering. 			
	Temporary Works Designer: SAQA or Equivalent NQF unit standards as per temporary works to be designed.			
	Suspended Platform Supervisor: US 243271			
	Suspended Platform Erector: US 243271			
	Suspended Platform Operator: US 243271			
	Suspended Platform Inspector: US 243271			
	<u>Work Site Induction Training: Must detail when training is required and what is its relevance in the FPP.</u>			
10.	Health Management:			
	Section must detail:			
	Why is it applicable to work at height?			
	How will the company meet this requirement?			
	Period medical is valid for.			

		Yes	No	Comments
11.	Equipment Management: Relevance of CR10.2(d) must be explained.			
	Relevance of CR10.4(c-i) must be explained.			
	Detail that an equipment inventory will be kept, what the use of the equipment inventory is and how it will be managed.			
	Detail that a Booking in and out form system will be used, why it is important & where copies will be kept for equipment management and use on site.			
	<u>Long Term Inspection Records should detail:</u> <ul style="list-style-type: none"> Inspection period (usually every 3 months) According to what standard will the period be determined (Usually DMR 18.10(e)) What equipment must be included in the inspection. Where the inspection records be kept. 			
	<u>Pre-Use Inspection Records should detail:</u> <ul style="list-style-type: none"> How often must this happen. (Inspected Before Use) Who must do the inspection. (Inspected by the user) What equipment must included in the inspection. Where the inspection records be kept. 			
	<u>Suspect Equipment Management:</u> <ul style="list-style-type: none"> Should Detail what the procedure should be followed if suspect equipment is found (damaged/ suspected to be damaged or compromised in any way). Impact on inventory stock should be considered as well. 			
12.	<u>First Aid Box should detail:</u> <ul style="list-style-type: none"> Why it is important to check the first aid box. Who is responsible for checking the first aid box. 			
	Operating Procedures: Statement regarding how CR10(4) will be complied with.(can include CR10(4) extract).			
	Statement regarding how CR10(5) will be complied with.(can include CR10(5) extract).			
	Fall Arrest Procedures must: <ul style="list-style-type: none"> Name relevant sources of information on standard operating procedures. Mention how this information will be applied in fall protection planning. Detail that Fall Arrest Procedure Information might not be kept in the fall protection plan. Detail where relevant information will be stored. 			
13.	Emergency Procedure:			
	Statement regarding how CR10(2)(e) will be complied with.(can include CR10(2)(e) extract).			
	Fall Arrest Rescue Procedures: Site Specific Fall Arrest Rescue Plan to detail <ul style="list-style-type: none"> What it will be based on. Where the rescue plan will be kept. 			
	Fall Arrest Rescue Procedures: General Rescue Procedure sources may include but are not limited to. Must detail: <ul style="list-style-type: none"> What sources will contain standard rescue procedures (i.e. manufacturer recommendations, training manuals, industry best practices, company specific developed training procedures, client operating procedures, etc). These records must be kept as part of the fall protection plan. 			
	Rope Access Rescue Procedures: Site Specific Rope Access Rescue Plan to detail: <ul style="list-style-type: none"> What it will be based on. Where the rescue plan will be kept. 			
	Rope Access Rescue Procedures: General Rope Access Rescue Procedure sources may			

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		Yes	No	Comments
	include but are not limited to. Must detail: <ul style="list-style-type: none"> What sources will contain standard rescue procedures (i.e. manufacturer recommendations, training manuals, industry best practices, company specific developed training procedures, client operating procedures, etc). These records must be kept as part of the fall protection plan. 			
	First Aid Attention (must detail what the procedure is for applying first aid).			
	Emergency Services, must detail: <ul style="list-style-type: none"> The types of relevant emergency services to be contacted. Where the contact information will be kept (emergency list). When the emergency list should be compiled (before establishing site and that is must be included in the work site information). When to call the relevant emergency services. 			
	Incident reporting, must detail: <ul style="list-style-type: none"> Compliance with the requirements of: <ul style="list-style-type: none"> OHS Act 85 of 1993 section 24.1. General administrative regulations 8 General administrative regulation 9 COID Act 130 of 1993 Statement interpreting these requirements and stating how the requirements will be met. Who will be responsible for reporting incidents and to who. 			
14.	<u>Review and Amendments:</u> Interpret CR10(1)(b) and make a statement regarding how it will be complied with (can include CR10(1)(b) extract). Interpret CR10(3) and make a statement regarding how it will be complied with (can include CR10(3) extract). Review and Amendment, must detail: <ul style="list-style-type: none"> When and Why a Fall Protection Plan must be reviewed. Where the changes will be kept. Who must review and sign off on the amendments. Implementation of Updated Information, must detail: <ul style="list-style-type: none"> How the new info will be implemented. Who will implement it? With what (e.g. Verbal Communication with attendance register, via toolbox talks topic, etc). 			
Fall Protection Appointments (Only look for Relevant Appointments as per Scope Of Work, Signed & Dated with Copy of ID & CV where required):				
15.	<u>Compulsory Fall Protection Plan Designations:</u>			
16.	16.1 Designation			
17.	16.2 Designation			
18.	Fall Protection Planner: CR10(1)(a)			
19.	Risk Assessor: CR9(1)			
20.	Site Manager: CR8(1)			
21.	Site Supervisor: CR8(7)			
22.	Fall Arrest Rescue Coordinator: CR10(2)(e) and/or			
	Basic Fall Arrest & Rescue Worker: CR10(2)(e) (Dependant on Tasks to be performed).			
23.	First Aid Officer: GSR 3(1) & 3(4)			
24.	Incident Investigator: GAR9(2)			
25.	Fall Protection Officer: CR10(1)(b)&(c)			
26.	<u>Variable Fall Protection Plan Designations:</u> (Variable means it will be required depending on site specific operations)			
27.	Assistant Site Manager: CR8(2)			
28.	Assistant Site Supervisor: CR8(8)			
29.	Safety Officer: CR8(5)			
30.	Fall Protection Equipment Inspector/Controller:			

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		Yes	No	Comments
	CR10(2)(d).			
31.	Basic Fall Arrest Worker/Operator: CR10(2) & 10(4)(b).			
32.	Rope Access Supervisor: CR18(1)(a)			
33.	Rope Access Technician/Operator: CR18(1)(c)			
34.	Rope Access Practitioner: CR18(1)(c)			
35.	Rope Access System Designer: CR6 & CR18(2)(a)			
36.	Mobile Elevated Work Platform (MEWP) Practitioner/Operator: CR23(d)			
37.	Mobile Elevated Work Platform (MEWP) Safety & Transport Controller: CR23(d)			
38.	Scaffolding Supervisor: CR16(1)			
39.	Scaffolding Team Leader: CR16(1)			
40.	Scaffold Erector: CR16(1)			
41.	Scaffold Inspector: CR16(1)			
42.	Designer: CR6(1), 6(2) & 12(1)			
43.	Temporary Works Designer: CR6(2) & 12(1)			
44.	Suspended Platform Supervisor - CR17(1) & 17(10)			
45.	Suspended Platform Erector - CR17(1) to 17(7)			
46.	Suspended Platform Operator - CR17(1) & 17(12)			
47.	Suspended Platform Inspector - CR17(1), 17(9)(10)(11)			
Specific Work Site Documentation:				
48.	Organigram, detailing: <ul style="list-style-type: none"> All Relevant Designations Signed by 16(1)/16(2) 			
49.	Method Statements (Including Drawings/Photos/ Diagrams of how the task is to be done)			
50.	Operation Plan, Detailing: <ul style="list-style-type: none"> Team Members Names, Contact Details and Designation Work Site Description Equipment Requirements Areas of concern Prepared by: Name, Sign & Date 			
Work At Height Risk Assessment				
51.	Front Page with the following details: <ul style="list-style-type: none"> RA Number Date Contractors Name Location Sub-Contractors Start & End Date Brief Description of activity (e.g. Fall Protection RA). Risk Assessment Team (Names & Signatures of Relevant People): <ul style="list-style-type: none"> 16(1) or 16(2) CR8(7) CR8(8) CR9(1) CR8(5) CR10(1)(a) Client Approval Section (with space for Names, Signatures, Date, Accepted Yes/No and Comments. Principle Contractor Approval section (if Applicable). 			
52.	Required and Existing Control Measures including: <ul style="list-style-type: none"> Table detailing available and adequate Yes No columns for: <ul style="list-style-type: none"> Scope Of Work Procedures (SOP, guidelines, etc) Special Permits (where required) Equipment/ Tool Registers / Other Codes of Practice Table detailing workings for Risk Ratings/ Ranking & Priority Factors. Must include: 			

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		Yes	No	Comments
	<ul style="list-style-type: none"> ○ Frequency Scale ○ Severity Scale ○ Probability Scale ○ Total combine rating explanation. 			
	Risk Assessment to have identified: <ul style="list-style-type: none"> • Tasks • Hazards • Risks • Risk Ratings (Probability, Severity, Frequency, total score and Risk Ranking) • Preventative Measures • Responsible Person Name and Signature area per task. • Declaration Page of communication signed by 16(1)/16(2) & CR8(7). • Communication Register with names and signatures of all employees that the RA has been communicated to. • Footers of document to detail: Document number, Revision number, Date & Page Number. 			
Training Certificates & Registers				
53.	Training Certificate Register with columns for: <ul style="list-style-type: none"> • Name • ID Number • Type of Training or Unit Standard • Date Certificate Issued • Date Certificate Expires • Signed by CR8(7) or CR8(5) 			
54.	All Relevant Training Certificates to be placed in this section.			
Medical Certificate of Fitness to Work at Height				
55.	Medical Certificate Register with columns for: <ul style="list-style-type: none"> • Name • ID Number • Issued By • Medical Date • Medical Certificate Expiry Date • Signed by CR8(7) or CR8(5) 			
56.	All Medical Certificates including completed, signed and stamped Annexure 3 forms to be placed in this section.			
Inspection Forms, Records & Pre-Use Inspection Register				
57.	Booking In & Out Forms			
58.	Pre-Use Inspection Forms			
59.	Equipment Inspection Forms (Weekly/Monthly)			
60.	Plant Inspection Forms (e.g. MEWPs)			
61.	Long Term Inspection Records/ Fit for Use Certificates (Manufacturer Certifications, or Proof of Recent Purchase, etc).			
Standard Operation Procedures Safe Operating Procedures				
62.	Standard Safe Operating Procedures to be placed in this section can include (but not limited to): <ul style="list-style-type: none"> • Equipment Marking & Storage • Fall Arrest Prevention • Fall Arrest • Rope Access 			
Rescue & Emergency Safe Operating Procedures				
63.	Rescue Safe Operating Procedures to be placed in this section can include (but not limited to): <ul style="list-style-type: none"> • Site Emergency Contact Details • Rescue Information & Suspension Syncope • Scene & Patient Management • Rescue (multiple types of standard rescue covered). 			

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		Yes	No	Comments
	<ul style="list-style-type: none"> MEWP Rescue (where required / specialist rescues as per scope of work). 			
Communication Declaration & Communication Register.				
64.	Communication Declaration Page. <ul style="list-style-type: none"> Declaration of communication by 16(1)/16(2) & CR8(7). Communication Register with names and signatures of all employees that the FPP has been communicated to. 			
<i>On approval of the above mentioned Fall Protection Plan (FPP), contractors will be allowed to mobilise their working at heights team to site to conduct work from a fall risk position so long as the work is inline with the contents of the approved FPP and approved Risk Assessments & Safety Method Statements. Regular inspections and audits will be conducted to ensure the FPP is being complied with.</i>				

Fall Protection Plan Approval				
Site Name:		Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2		
Contract Number:		TCTA 20-041		
Contractor:				
Contractors FP Planner Name:				
Contractors FP Planner Contact Details:				
FPP Inspection Number:				
FPP Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:				
Sign:			Date:	
Reviewed By:				
Sign:			Date:	

ANNEXURE 2/7
PLANNED TASK OBSERVATION (PTO)

ANNEXURE 7

Planned Task Observation (PTO)

DATE : _____	NAME : _____
DEPARTMENT : _____	OCCUPATION : _____
JOB OBSERVED : _____	

Time on this job	Notification	Reason for observation															
_____ years	Told in advance	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 70%;">Six Monthly observation</td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td></td> <td></td> <td>New worker</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>To determine if worker has learned to do job safely and effectively</td> <td></td> </tr> </table>		Yes	No	Six Monthly observation					New worker					To determine if worker has learned to do job safely and effectively	
		Yes	No	Six Monthly observation													
				New worker													
			To determine if worker has learned to do job safely and effectively														
Not told																	

Is there a written standard procedure for this job ?

Did you get understanding & acceptance from the worker on doing this work ?

Yes ☐ No ☐

Yes ☐ No ☐

<p>Could acts / conditions observed lead to</p> <p><input type="checkbox"/> Reduced productivity</p> <p><input type="checkbox"/> Damage</p> <p><input type="checkbox"/> Injury</p>	<p>Loss potential</p> <p><input type="checkbox"/> Major</p> <p><input type="checkbox"/> Minor</p>
---	--

1. Are company Health & Safety rules complied with
2. Is standard procedure for the job followed
3. Is correct personal protective clothing used
4. Is person physically fit for the job
5. Environmental conditions (is there gas, smoke, heat, etc)

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Yes ☐ No ☐

Suggested remedies

<p>Remarks _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<ol style="list-style-type: none"> 1. Start procedure on this job 2. Revise present procedure 3. Different equipment – tools 4. Engineering revision 5. Retraining 6. Additional – better personal protection 7. Placement of worker
--	---

Signature :

- Foreman : _____

- Superintendent : _____

- Manager / Engineer : _____

Observation conducted by : _____	Date : _____
Reviewed with employee : _____	Date : _____
Employees signature : _____	Co. No. : _____
Reviewed by : Supt / Eng / Manager : _____	Date : _____

ANNEXURE 2/8
H&S PLAN CHECK SHEET

ANNEXURE 8

Health & Safety Management Plan Check Sheet				
		Yes	No	Comments
1.	<u>Cover Page Requirements:</u>	✓	X	
	Company Name.			
	Project/Site Name.			
	Document Date.			
	Revision Number.			
	Physical Address of Company.			
	Physical Address of Site/ GPS Co-Ordinates.			
	<u>Designated 16.1/16.2:</u> Name, contact details, signature, signature date.			
	<u>Health & Safety Manager/ Officer (CR8.5):</u> Name, contact details, signature, signature date.			
	<u>Document Compiled By:</u> Name, contact details, signature, signature date.			
	<u>Client Approval:</u> Name, contact details, signature, signature date.			
	<u>Document Format:</u>			
	<u>Header:</u> Company Name and Project Name as minimum (Company Logo advisable).			
<u>Footer with:</u> Document Number, Revision Number, Document Date and Page Number as a minimum.				
2.	<u>Document Control Page, Table Consisting of Columns for:</u>			
	Revision Number.			
	Section Number. (to record section number that has been changed)			
	Required By. (To enter details of why the change was required).			
	Description (brief outline of changes)			
	Date.			
	Previous Document Authorisation Date.			
	Previous Author/Document Compiler (Name & contact details).			
3.	<u>Table of Contents:</u> With Section Numbers, Section Names and Page Numbers for each section.			
4.	Scope			

Contractor:
 Site: Mokolo Crocodile Water Augmentation Project Phase 2
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 Date:

5.	Introduction including: Project Description and Information			
6.	Definitions			
7.	Objectives & Goals			
8.	Policy Statements			
9.	Responsibilities			
10.	Health and Safety Organisational Chart?			
11.	Management			
12.	Legal Requirements addressed?			
13.	Legal Appointments			
14.	Evacuation Planning & Emergency Contact Information			
15.	Emergency and Accident Management			
16.	Health and Safety Induction Training			
17.	Employee/Site Safety Rules			
18.	Medical Certificate of Fitness (Annexure 3) & Medical Surveillance			
19.	Hygiene and Welfare			
20.	Security - Access Control			
21.	Intoxication (Drug and Alcohol Abuse)			
22.	Hazardous Chemical Substances (HCS)			
23.	Stacking and Storing			
24.	Housekeeping			
25.	Fire Prevention & Provisions			
26.	First Aid & First Aid Provisions			
27.	Heat Stress			
28.	Transportation of Employees			
29.	Traffic Accommodation			
30.	Auditing (Internal and Sub-Contractor)			
31.	Work Observations / Inspections of work areas (DSTI's, VFLs, etc)			
32.	Toolbox Talks			

Contractor:
 Site: Mokolo Crocodile Water Augmentation Project Phase 2
 Contract Number: TCTA 20-041
 Inspected By:
 Date:

33.	Inspection Registers/Check Sheets (Tool& Equipment Lists and Checks)			
34.	Documentation Control: <ul style="list-style-type: none"> • Inspections • Incidents • Records • Submission 			
35.	Risk Assessments & Safety Method Statements			
36.	Safe Work Procedures (SWPs), Safe Operating Procedures (SOPs) & Guideline (GLs) Documentation.			
37.	Health and Safety Meetings			
38.	Health and Safety Committees			
39.	Training			
40.	Manual Handling			
41.	Mechanical Aids/ Plant			
42.	Equipment on Site including; Portable Electrical Equipment, Hand Tools, Machinery, etc			
43.	Personal Protective Clothing			
44.	Electrical Requirements including: Lock Outs of DBs, Temporary Electrical Installations, Electrical Installations, etc			
45.	Working at Heights/ Fall Risk Position Work Requirements: Fall Protection Plan, Fall Protection Planner (US:229994), Training Requirements, etc.			
46.	Health & Safety Specification: Is this H&S Plan in line with the Client's Site Specific Health & Safety Specification?			
47.	Site Signage.			
48.	Site Fencing & Barricading.			
49.	Performance, Review & Maintenance of the Plan detailed?			
50.	Communication Register.			
51.	<u>OTHER:</u>			

Contractor:
 Site: Mokolo Crocodile Water Augmentation Project Phase 2
 Contract Number: TCTA 20-041
 Inspected By:
 Date:

Health & Safety Management Plan Approval				
Site Name:		Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2		
Contract Number:		TCTA 20-041		
Contractor:				
Contractors Safety Officer Name:				
Contractors Safety Officer Contact Details:				
HSMP Inspection Number:				
HSMP Approved?	Yes	No	Comments:	
	✓	X		
Inspected By:				
Sign:			Date:	
Reviewed by:				
Sign:			Date:	

ANNEXURE 2/9
BASELINE RISK ASSESSMENT

ANNEXURE 2/10
HBA PCM PLAN FOR HBA / COVID-19

ANNEXURE 10

Hazardous Biological Agents (HBA) for COVID-19 Prevention & Control Management Plan Checklist

The following checklist must be used to determine the requirements of the COVID-19: Work Resumption. This checklist was developed taking cognizance of the NICD, Department of Health and OHS requirements.

The points identified should be addressed by the plan and where not applicable shall be noted.

Item	Checklist item	Adequately Defined & Prepared		Comment
		Yes	No	
1	Document Design			
1.1	Document developer identified?			
1.2	Document specific number?			
1.3	Document revision number?			
1.4	Date of document approval?			
1.5	Document signed by 16.2/ CR 8.1?			
1.6	Pages numbered?			
2	Document Overview			
2.1	Reason for Plan/ Scope			
2.2	Reference documents			
2.3	Workers are to be categorized based on risk			
2.4	Reference and Identification in the "Work to Occupations at risk- including class			
2.5	COVID-19 risks included in Risk Assessment or COVID19 Risk Assessment conducted?			
2.6	PPE Requirements have been identified and are selected as per the standards. Inclusion of additional requirements in the FA Kits			
2.7	COVID-19 Specific emergency contact details available			
3	Plan Content			
3.1	Identification and communication of government COVID-19 level.			
3.2	Appointment of manager responsible for COVID-19 plan implementation (Reg 16.5)			
3.3	Restriction of gathers (number of persons) and number of persons at work (workforce number) defined as per the level.			
3.4	Screening process is defined			

Contractor:

Site: Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2

Contract Number: TCTA 20-041

Inspected By:

Date:

Item	Checklist item	Adequately Defined & Prepared		Comment
		Yes	No	
3.5	Registers of daily contact are available (Employee register)			
3.6	Register of daily screening questionnaire			
3.7	PPE Register (Daily issuing of PPE)			
3.8	Process for an identified worker suspected of infection			
3.9	Access control defined and monitoring method			
3.10	Social distancing defined (1.5m to 2m rule)?			
3.11	Gatherings of no more than 10 people defined?			
3.12	Employee monitoring is defined in particular to self, active and self-active monitoring.			
3.13	Decontamination procedure defined for common areas			
3.14	Selection of chemicals for decontamination			
3.15	Procedure for possible infection.			
3.16	Procedure for reintroduction of isolated or quarantined person into the work place.			
3.17	Investigation into the work place under HBA Reg and Section 24.			
3.18	Management and sterilization of tools and equipment			
3.19	Common property (shared items such as cell phones, pens etc) are restricted.			
3.20	Waste Management defined including the establishment of Bio contractor			
4	Training			
4.1	Reporting structure defined for COVID-19			
4.2	COVID-19 isolation period defined			
4.3	Plan communicated to the employees			
4.4	Register signed			

Contractor:
 Site: Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2
 Contract Number: TCTA 20-041
 Inspected By:
 Date:

COVID-19 Prevention & Control Management Plan Approval				
Site Name:		Specification of Occupational Health and Safety for the Mokolo Crocodile Water Augmentation Project Phase 2		
Contract Number:		TCTA 20-041		
Contractor:				
Contractors CHSO Name:				
Contractors CHSO Contact Details:				
COVID-19 PCM Plan Inspection Number:				
COVID-19 PCM Plan Approved?	Yes	No	Comments:	
	✓	X		
Inspected/ Audited By:				
Sign:		Date:		
Reviewed by:				
Sign:		Date:		