PARTICULAR SPECIFICATION C3.3.1

OHS: OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

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C3.3.1 OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

OHS-1 DEFINITIONS

In this document the following expressions shall bear the meanings assigned to them below:

Client means the **TCTA** (as defined by Construction Regulation 1) for whom construction work is being performed and/or undertaken;

Construction Regulations means the Occupational Health and Safety Act's, No 85 of 1993, Construction Regulations that came into effect on 07 February 2014;

Occupational health and safety plan means a sufficiently documented plan to the standards of TCTA, which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;

Occupational health and safety specification means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working, visiting, passing, staying and/or working close to the construction site and/or other applicable areas such as site camp;

OHSA means the Occupational Health and Safety Act, No 85 of 1993, as amended and its Regulations;

Engineer means TCTA's agent who acts as a representative for a TCTA in providing professional services for the Engineering and Construction Management for the overall work, which shall also include the professional Engineer or professional certified Engineer as referred to in the Construction Regulations who shall also be obliged to carry out as part of the contract, with TCTA, geotechnical field investigations which includes work classified as construction work or excavation work in Construction Regulations 1;

Principal Contractor means an employer, as defined by Section 1 of the OHSA who performs construction work, i.e. civil, building, electrical or mechanical work, and is appointed by TCTA to be in overall control and management of the construction site and works;

Contractor means an employer (as defined in Section 1 of the Occupational Health and Safety Act) who performs construction work and includes Principal Contractors;

Designer means the Engineer in all instances except when designs are the Contractor's designs for which the term refers to the Contractor;

Construction Work means any work in connection with:

a) The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
b) The construction, erection, maintenance, demolition or dismantling of any bridge, dam, tunnel, canal, road, railway, runway, sewer, river or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling or any similar civil engineering structure or type of work.

Construction Work Permit means a document issued in terms of Construction Regulation 3.

Construction vehicle means a vehicle used for means of conveyance for transporting persons or material or both such persons or material, as the case may be, both on and off the construction site for the purposes of performing construction work.

Structure means-

a) Any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, tunnel, wall, mast, tower, tower crane, bulk mixing plant, pylon, surface and underground tanks, river, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
b) Any falsework, scaffold or other structure designed or used to provide support or means of access during construction work; or
c) Any fixed plant in respect of construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling.

Temporary Works means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction.

Medical Certification of Fitness means a certificate in the form of Annexure 3 of the Construction Regulations, valid for one year, issued by an occupational health practitioner, whom shall be registered with the Health Professions Council of South Africa.

Each employee on site shall be in possession of a valid MCF. These surveys will be conducted as per the requirements of the Occupational Health and Safety Act no 85 of 1993 and subsequent amendments, performed by a service provider that will be appointed by the Engineer and be issued in the form of Annexure 3 of the Construction Regulations. These tests will include a chest X ray where applicable, but will not include psychological assessment to work at heights (SAPFI). Depending on the outcome of the radiation testing as specified in **OHS-5.51** (Biological Monitoring) in this document, employees might be subjected to blood tests in order to determine and monitor radiation exposure. Depending on the employee's medical risk profile and designation, additional tests might be required, but as a minimum, the following must be included:

- Baseline audiometric screening test that meets Instruction 171 requirements for quality control purposes. Monitoring audiometry may be done on employees who can produce valid baseline audiograms
- Visual screening including, but not limited to:
- Depth perception and colour blindness tests for at risk employees.
- Urine multi drug screens. Employees found to be cannabis positive will have a confirmatory test to exclude possible drug interactions. (Employees who are found to be positive will not be allowed on site)
- Full Occupational History
- Open circuit lung function testing that meets required SANS Standards
- Physical examination by a registered Occupational Health Practitioner.

- Drivers and operators must meet SASOM requirements for fitness to drive/operate a LDV / machine and be certified by a registered Occupational Medical Practitioner. Gamma GT blood tests will be done on all drivers and operators at the pre-placement medical, these costs are for the Contractor.

- Employees working at heights will be in possession of the SAPFI psychological assessment to work at heights certificate as recognised by the Department of Labour.

- A medical certificate of fitness may be issued, where certain conditions as specified by the occupational health/medical practitioner, are required to be met before an employee is permitted to work or where certain activities have been precluded either temporarily or permanently. Contractors shall provide a documented process for managing those employees who are issued with a certificate of fitness with restrictions.

- Employees who are in possession of a valid Chest X ray performed within 4 months of the commencement of the project will not have to undergo a repeat X ray but must be able to produce the films on examination

- Medical Surveillance will be repeated on an annual basis on all site employees or at greater frequencies as determined by assessed risk and hazards exposure. The Occupational Medical Practitioner will be responsible for the submission of all records to the relevant Governmental Department/s on an annual basis.

- The cost of these medical surveillance programmes will be for the Contractor and should include biological monitoring for identified heavy metals and radiation levels, once the project is underway.

- All site employees will require an exit medical certificate prior to leaving site, copies of the exit certificates to be retained in the Contractors' health and safety file.

Mobile Plant means machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site.

Occupational Hygiene means the anticipation, recognition, evaluation and control of conditions arising in or from the workplace, which may cause illness or adverse health effects to persons. (Including, but not limited to – noise, vibration, dust, HCS, ventilation, etc.).

Reportable Incidents means all incidents as described under Section 24 and Section 25 of the Occupational Health and Safety Act No 85 of 1993.
Lost Time Incident means all lost time incidents will include the following:

- Fracture

- Where a person is booked off for a full shift (excluding the day of incident)

- Operations and hospitalisation

- Light duty

Light duty means all incidents were the injured person cannot resume the position that he/she was appointed for. This will also be classified as a Lost Time Incident.

OHS-2 ABBREVIATIONS

AIA – Approved Inspection Authority
CLO – Community Liaison Officer
COP – Code of Practice
CR – Construction Regulation
CV – Curriculum Vitae
HCS – Hazardous Chemical Substances
HIV – Human Immunodeficiency Virus
H&S – Health and Safety
H&S Rep – Health and Safety Representative
IOD – Incident On-Duty
JSA – Job Safety Analyses
LDV – Light Duty Vehicle
MCF – Medical Certificate of Fitness
MML - Maximum Mass Load
MSDS – Material Safety Data Sheets
NCR – Non Conformance Report
OHS – Occupational Health and Safety
PC – Principal Contractor
PPE – Personal Protective Equipment
PTO – Planned Task Observation
PTW – Permit to work
SACPCMP - South African Council for Project and Construction Management Professions
SANS – South African National Standards
SASOM – South African Society of Occupational Medicine
SWP – Safe Work Procedure
TCTA – Trans-Caledon Tunnel Authority

TMP – TRAFFIC MANAGEMENT PLANOHS-3 INTRODUCTION

In terms of Construction Regulation 5 (1) (a) and (b) of the **OHSA**, TCTA is required to compile baseline risk assessment and a suitable, sufficiently documented and coherent site specific occupational health and safety specification for any intended project and provide such specification to prospective tenderers/bidders.

In terms of Construction Regulation 5 (5) TCTA appoints an Agent to act on its behalf in fulfilling its health and safety obligations during the engineering and construction stages of the project.

The agent will manage the health and safety on the construction project on behalf of TCTA and must be registered with the South African Council for Project and Construction Management Professions (SACPCMP) before 07 August 2015.
This specification has as objective to ensure that the Contractor entering into a contract with TCTA for the services, ensures that construction work is undertaken in accordance with the **OHSA** and Construction Regulations, as further elaborated in these specifications.

Where this specification refers to “the Act” it shall be taken to mean the **OHSA** and the respective Regulations of the Acts.
This document defines roles, obligations and duties for the Contractor regarding health and safety on the entire project. Please take note that in the case were sub-Contractors are appointed the same

requirements as for Contractors will be applicable. The Principal Contractor will take overall responsibility for the Contractor and all appointed sub-Contractors.

Compliance with this document does not absolve the Contractor from complying with any other minimum legal requirements and the Contractor remains responsible for the health and safety of his employees, those of his mandataries as well as any persons coming on site or on adjacent properties as far as it relates to the construction activities.

In addition to the above, the Contractor shall ensure Safety, Health and Environment are integrated with each other within the Safety, Health and Environment Plan.

OHS-4 SCOPE

The occupational health and safety obligation by the Contractor on this project entails:

- Prepare health and safety plan based on the specification herein included and the OHSA for field work or similar work which falls under the definition of such as included in Construction Regulation 1. TCTA will evaluate the health and safety plan to ensure compliance with Construction Regulation 5 that stipulates that TCTA may only appoint a Contractor who has the necessary competencies and resources to carry out the work appointed for safely.

OHS-5 GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS

OHS-5.1 Health and Safety Aspects of Designs

(a) Designer's Responsibilities

The designer of a structure must:

- Ensure that the applicable safety standards incorporated in the Construction Regulations under section 44 of the Act are complied with in the design;
- Take the TCTA's Health and Safety Specification into consideration;
- Inform the Client and its Engineer in writing of any known and anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- Refrain from including anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials;
- Take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimise the risk;
- The designer of temporary works must ensure that-
    - All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
    - The design of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the

contractor

- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads caused by temporary works and any imposed loads are clearly indicated in the design.

(b) Hazard analysis of scheme

The Contractor shall study the complete construction requirements for ensuring a healthy and safe working environment with particular emphasis on **OHSA** as applicable. He shall address any climatic influences and external and internal influences affecting construction activities such as quarry operations and construction processes. The outcome of the hazard identification process shall be included in the risk assessment and identification of the project.

The process shall be undertaken at every incidence of design change taking into consideration previous observations during the hazard identification process.

(c) Health and Safety during Construction

The Contractor shall provide an appropriate level of expertise and the frequency of inspections to ensure compliance regarding the Construction Regulations and other obligations as required by the OHSA. Processes shall be placed to ensure that the design intent, specifications, drawings and general contractual requirements are being met to ensure all his general obligations with particular regard to health and safety including the provision of adequate personal protective clothing, the maintenance of a safe working environment and adequate means of evacuation and treatment in emergencies.

The Designer will carry out inspections during construction to ensuring compliance with the design and to stop any construction work that is not in accordance with the design. The Designer will also during his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the TCTA and a copy thereof to the contractor.

OHS-5.2 Hazard Identification and Risk Assessment (Construction Regulation 9)

This section shall apply to all cases where the Contractor undertakes, as a deliverable under the contract, work classified in Construction Regulation 1 as Construction Work which shall include but not limited to geotechnical field investigations.

(a) Risk assessments

Attachment 2 of this specification contains a list of risk assessment headings that have been identified

as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is only offered as assistance to the Contractor intending to tender for the applicable works. It therefore remains the overall responsibility of the Contractor to consider all applicable risks and pro-actively undertake risk assessments and implement appropriate risk mitigation measures.

(b) Development of risk assessments

Every Contractor performing construction work, shall before the commencement of any construction work or work associated with the aforesaid construction work and during such work, ensure that risk assessments are undertaken by a competent person, appointed in writing, and the risk assessments shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 7 (1) (a).

The risk assessments shall include, at least:

- the identification of the current as well as emerging risks and hazards to which persons may be exposed to;
- the analysis and evaluation of the risks and hazards identified;
- a documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;
- a plan to monitor the application of the SWPs; and
- a plan to review the risk assessments as the work progresses and changes are introduced or incidents occurred which requires the re-evaluation of the processes/risk mitigation.

Based on the risk assessments, the Contractor must develop a set of site-specific occupational health and safety rules that will be applied to regulate the occupational health and safety aspects of the construction. These rules will not replace the already identified rules in this specification.

The baseline risk assessments, together with the site-specific occupational health and safety rules, must be submitted to the Engineer before mobilisation on site commences.

Despite the risk assessments listed in **Attachment 2**, the Contractor is required to conduct a baseline risk assessment and the aforesaid risk assessments must be incorporated into the baseline risk assessment. The baseline risk assessment must further include the SWPs and the applicable method statements based on the risk assessments. **Attachment 2** must be incorporated into the Baseline risk assessment to be submitted with the Health and Safety Plan.

Hazard identification and risk assessments must be undertaken whilst SWPs must be developed for all out-of-scope work.

(c) Review of risk assessments

The Engineer is to review the hazards identified, the risk assessments and the SWPs at each production planning and progress report meeting as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes.

Should an incident occur the SWPs and all other applicable processes shall be re-evaluated to ensure that the mitigation measures are still applicable and appropriate and if not a revision of the risk assessments, shall be undertaken.

The Contractor will provide the Engineer and all other concerned or affected parties with copies of any changes, alterations or amendments as soon as possible but within 14 calendar days of such changes.

The Contractor will review and approve all his sub-contractor's risk assessments prior to the commencement of the related activities.

(d) Identified hazards on site

Hazards were identified on site, which includes, but are not limited to:

- Veld fires
- Working in areas with shallow water table, rivers and wetlands
- Dust
- "Live" structures i.e. water storage or supply systems
- Theft
- Wildlife, especially endangered species and snakes
- Uneven or unstable structures and/or land
- Rain
- Mud
- Sunburn
- Deep excavations on confined spaces Public gathering at entrance gate looking for employment and business opportunities, and riots
- These hazards must be identified in the PC baseline risk assessment, with effective control measures identified. All identified control measures needs to be implemented prior to work commencing.
- Drowning
- Vehicle & Traffic
- Confined space

(e) Baseline risk assessment

The PC will compile a baseline risk assessment. The Engineer will assist the Contractor on the finalization of the baseline risk assessment. The PC baseline risk assessment will be based on a 5 point methodology, identifying the following:

- Risk rating before any controls
- Current control measure,
- Any additional risk mitigation measures required (Risk mitigation plan)
- Risk rating after control measure

- Risk assessment team members
- This risk assessment will include all health risks.
- The risk assessment will be approved by the Client, prior to any work commencing.

OHS-5.3 Legal Requirements

All Contractors entering into a contract with TCTA shall, as a minimum, comply with the:

- OHSA and a current, up-to-date copy of the OHSA and its Regulations must be available on site at all times;
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 (COID Act) as amended. The Contractor will be required to submit a letter of registration and "good-standing" from the Compensation Commissioner or compensation insurer before being awarded the contract. The letter of good standing must be current at all times during the contract. Principle Contractors shall be responsible for ensuring that all sub Contractors comply and that all persons on the project are covered by Compensation Insurance. This will include the registration of any Joint Ventures and use of Labour Brokers
- A current, up-to-date copy of the COID Act must be available on site at all times; and

OHS-5.4 Structure and Responsibilities

OHS-5.4.1 Overall supervision and responsibility for occupational health and safety

(a) The Contractor appointed in terms of Construction Regulation 5(1) (k) is responsible to implement and maintain the occupational health and safety plan approved by the Engineer, and ensure implementation of plans submitted by Contractors on the Project.

(b) The construction manager and assistant construction manager(s) appointed in terms of Construction Regulation 8(1) and 8(2) are responsible for managing the construction work and in specific to ensure that all work undertaken comply with the requirements of the OHSA, its Regulations and these specifications.

(c) The construction manager shall be full-time on site and in his absence an alternate must be appointed. Further, the construction manager shall not manage any construction site other than the Tunnels or Ash river construction site.

OHS-5.4.2 Operational responsibilities for occupational health and safety

In carrying out his duties the Contractor shall appoint designated competent employees and/or other competent persons as required by the Act.

The Contractor shall make the necessary appointments during construction. This list below shows the minimum requirements and is therefore not exhaustive.

Appointment description	Appointment required in terms of
Assistant construction manager	Construction Regulation 8(2)
Blasting supervisor	Explosives Regulation 12 and Construction Regulation 13(2)(k)
Bulk mixing plant supervisor	Construction Regulation 20
Bulk mixing plant operator	Construction Regulation 20
Confined space supervisor	General Safety Regulation 5
Construction vehicle, mobile plant and machinery supervisor	Construction Regulation 23
Construction welfare facilities supervisor	Construction Regulation 30
Construction work supervisor	Construction Regulation 8(7)
Demolition work supervisor	Construction Regulation 14(1)
Drivers of construction vehicles and operators of plant	Construction Regulation 23
Electrical installation and appliances inspector	Construction Regulation 24
Emergency, security and fire coordinator	Construction Regulation 29
Excavation supervisor (including piling)	Construction Regulation 13
Fall protection plan developer	Construction Regulation 10
Fall protection supervisor	Construction Regulation 10
First-aiders	General Safety Regulation 3
Fire-fighting equipment inspector	Construction Regulation 29
Hazardous chemical substances supervisor	Construction Regulation 25 and Hazardous Chemicals Substances Regulations 10
Housekeeping supervisor	Construction Regulation 27
Incident investigator	General Administrative Regulation 9
Ladder inspector	General Safety Regulation 13(a)
Lifting activity supervisor/ Master rigger	Driven Machinery Regulations
Lifting machines and equipment inspector	Construction Regulation 22 and Driven Machinery Regulation 18
Occupational health and safety committee	OHSA Section 19
Occupational health and safety officer	Construction Regulation 8(5)
Occupational health and safety representatives	OHSA Section 17
Person responsible for machinery	General Machinery Regulation 2
Portable electrical equipment inspector	Electrical Machinery Regulation 9
Rigger	Driven Machinery Regulations
Risk assessor	Construction Regulation 9(1)
Scaffolding supervisor	Construction Regulation 16
Scaffolding inspector	Construction Regulation 16
Scaffolding erector	Construction Regulation 16
Stacking and storage supervisor	Construction Regulation 28 and General Safety Regulation 8(1)
Structures supervisor	Construction Regulation 11
Subordinate construction work supervisor	Construction Regulation 8(8)
Suspended platform supervisor	Construction Regulation 17(1)
Suspended platform inspector	Construction Regulation 17(8)(a)

Appointment description	Appointment required in terms of
Suspended platform performance tester	Construction Regulation 17(8)©
Temporary works designer	Construction Regulation 12(1)
Temporary works supervisor	Construction Regulation 12(2)
Traffic safety officer	OHSA Section 9(1)
Vessels under pressure supervisor	Vessels under Pressure Regulations
Welding supervisor	General Safety Regulations 9
Working on, over or next to water supervisor	Construction Regulation 26

These appointments must be in writing and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with the appointees.

Copies of appointments must be submitted to the Engineer together with concise CV's of the appointees as part of the Contractor's health and safety plan and if appointed, copies of the appointments included in the occupational health and safety file. All appointments must be approved by the Engineer and any changes of appointees or appointments must be communicated to the Engineer and agreed upon before being implemented.

The Contractor must, provide an organogram of all sub-Contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

OHS-5.4.3 Designation of occupational health and safety representatives (Section 18 of the OHSA)

Where the Contractor employs more than 50 persons (including the employees of sub-Contractors and its supervisors) he shall appoint one occupational health and safety representative for every 50 employees or part thereof. General Administrative Regulation 6 requires that the election, appointment and subsequent designation of the occupational health and safety representatives be executed in consultation with employee representatives or employees. (Section 17 of the OHSA as well as General Administrative Regulation 6 and 7 refer).

Occupational health and safety representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation, as well as the time frame for which he/she is appointed.

OHS-5.4.4 Duties and functions of the occupational health and safety representatives (Section 19 of the OHSA)

The Contractor must ensure that the designated occupational health and safety representatives conduct a weekly inspection of their respective areas of responsibility, using a checklist, and report thereon to the Engineer.
Occupational health and safety representatives must be included in accident and/or incident investigations.

Occupational health and safety representatives must attend all occupational health and safety committee meetings.

OHS-5.4.5 Appointment of occupational health and safety committee (Section 20 of the OHSA)

The Contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives, management and a representative of TCTA who shall act as the chairperson without voting rights. The members of the occupational health and safety committee must be appointed in writing and copies of the appointments included in the occupational health and safety file. The ratio of management representatives may not exceed the ration of safety representatives

The occupational health and safety committee must meet as a minimum on a weekly basis and consider, at least, the following agenda items:

(i) Opening and welcome.

(ii) Members present, apologies and absent.

(iii) Minutes of previous meeting.

(iv) Matters arising from the previous meeting.

(v) Planned tasks for the coming week.

(vi) New machinery / equipment on site

(vii) Occupational health and safety representatives' reports.

(viii) Incident and/or accident reports and investigations.

(ix) Incident, accident and/or injury statistics.

(x) Other matters.

(xi) Endorsement of registers and other statutory documents by a duly authorised representative of the Contractor.

(xii) Close and next meeting.

OHS-5.5 Mandatories

The Contractor shall comply with the relevant sections of the Construction Regulations when he appoints sub-Contractors and each sub-contractor must have an approved health and safety file onsite.

OHS-5.6 Administrative Controls and the Occupational Health and Safety File

OHS-5.6.1 The occupational health and safety file (Construction Regulation 7(1)(b)

As required by Construction Regulation 7(1)(b), the Contractor and other Contractors will each keep an occupational health and safety file on site containing the following documents as a minimum:

(i) Notification of construction work (Construction Regulation 4).

(ii) Updated copies of the OHSA and its Regulations as well as the COID Act (General Administrative Regulation 4).

(iii) Proof of registration and good standing with the Compensation Commissioner or a COID Insurer (Construction Regulation 5(1)(j))).

(iv) Occupational health and safety plan agreed with TCTA including the underpinning risk assessment(s) and method statements (Construction regulation 7(1)(a)).

(v) Copies of occupational health and safety committee meetings and other relevant minutes.

(vi) Designs and/or drawings [Construction Regulation 7(1)(e)] where applicable.

(vii) A list of Contractors (sub-Contractors) including copies of the agreements between the parties, proof of good standing with the Compensation Commissioner or COID Insurer, and the type of work to be undertaken by each Contractor (Construction Regulation 7).

(viii) Appointment and designation forms as per the site organogram.

(ix) The following registers:

- Accident and/or incident register (Attachment 1 of the General Administrative Regulations);
- Access control registers;
- Internal site access registers (to confirm safe access ways are ensured on a daily basis);
- Occupational health and safety representatives inspection register;
- Construction vehicles and mobile plant inspections by controller;
- Confined space access control register;
- Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
- Designer's inspections and structures record;
- Inspection and maintenance of explosive powered tools;
- Inspection of electrical installations (including inspection of portable electrical tools, electrical equipment and other electrical appliances);
- Excavation inspection registers;
- Handtool inspection registers;
- Fall protection inspections;
- First-aid box content;
- Record of first-aid treatment;
- Fire equipment inspections and maintenance;
- Record of hazardous chemical substances kept and used on site;
- Ladder inspections;
- Machine safety inspections (including machine guards, lock-outs etc.);
- Inspection registers and logbooks for lifting machines and –tackle (including daily inspections by drivers/operators);
- Master Lifting Machines and Equipment Register (showing all calibration, load test and inspection dates and expiry dates);

- Inspections of scaffolding;
- Inspections of stacking and storage;
- Inspections of structures;
- Temporary works inspection registers;
- Vessels under pressure inspections;
- Pneumatic tools inspection registers;
- Inspections of gas cutting equipment; and
- Inspections of welding equipment.

(x) All other applicable records.

(xi) Signed contract with the Client.

(xii) Site organogram specifying H&S responsibilities.

(xiii) CV's and competencies of all H&S responsible personnel.

(xiv) Medical certificates of fitness for all personnel on site.

(xv) Exit certificates for all employees leaving site.

(xvi) LDV, Machinery and equipment pre-site inspections approved by the Engineer.

(xvii) Weekly H&S Meeting minutes.

(xviii) Client H&S meeting minutes.

(xix) Weekly Man-hours Worked.

(xx) Incident Register and incident investigation reports.

(xxi) Monthly audit reports.

(xxii) Planned Task Observations.

(xxiii) Job Safety Analyses.

(xxiv) Pre-use inspection check lists.

(xxv) Machinery, LDV and equipment maintenance schedule.

(xxvi) Baseline Risk Assessment and activity specific risk assessments.

(xxvii) Proof of all site training (Site induction training, Visitor's induction training, manual handling training etc.).

(xxviii) Daily alcohol testing results.

(xxix) Copies of first aider's certificates minimum level two.

(xxx) Proof of safe disposal of HCS (e.g. fluorescent lights, asbestos etc.).

TCTA will conduct an evaluation of the Contractor's occupational health and safety file on a monthly basis during the monthly OHS audits.

OHS-5.7 Occupational Health and Safety Goals and Objectives and Arrangements for Monitoring and Review of Occupational Health and Safety Performance

The Client upholds a principle of "Zero Injury" on projects it implements. The Contractor shall aim to achieve the maximum results from measures implemented on all work fronts of the Project. The Contractor is required to maintain Recordable Case Rate statistics on the project and report on a monthly basis **(See Attachment 3).**

OHS-5.8 Notification of Construction Work (Construction Regulation 4)

The Principal Contractor must notify the Department of Labour of the construction work and comply with Construction Regulation 3: Application for a Construction Work Permit.

A copy of the notification, application of a construction work permit and the permit must be held on the occupational health and safety file and a copy must also be forwarded to TCTA for record purposes.

OHS-5.9 Training, Awareness and Competence

The contents and syllabus of all training required by the OHSA and Regulations must be included in the Contractor's occupational health and safety plan.

OHS-5.9.1 General Induction Training

All members of the Contractor's site management as well as all the persons appointed as responsible for occupational health and safety in terms of the Construction and other Regulations will be required to attend a general induction session.
All employees of the Principal and other Contractors must be in possession of proof of general induction training.

All subsequent and newly appointed employees must also be subjected to the induction training as soon as possible after the appointment but prior to starting working on site.

OHS-5.9.2 Site Specific Induction Training

The Contractor will be required to develop a project specific induction training course based on the risk assessments for the work on this Contract and train all employees and other Contractors on these aspects.

All employees of the Principal and other Contractors must be in possession of proof that they have attended a site-specific occupational health and safety induction training at all times.

The PC will be responsible to develop site specific induction training, which will also include, but not

limited to the following information:

- Approved Traffic Management Plan
- Approved Baseline Risk Assessment
- Manual Handling Training
- Codes of Practices / Safe Work Procedures
- Fall Protection Plan
- Reporting of Injuries on Duty
- Possible health hazards to which they may be exposed and the prevention thereof
- Site specific rules
- Code of conduct on site
- Planned Task Observations
- Job Safety Analyses
- The training content will be approved by the Engineer prior to presentation. Record of this training will be kept in the site Health and Safety file. The PC will also be responsible to ensure that no person is allowed on site, without the induction training.

OHS-5.9.3 Visitors Induction Training

The PC will be responsible for the development and presentation of visitor's induction, which will be approved by the Engineer prior to presentation. This induction presentation will include, but are not limited to the following:

- Site requirements for visitors
- PPE required
- Guide
- No go areas
- Reporting of hazards and risks
- Man and machine interaction
- Hazards on site with the identified control measures

No visitor will be allowed to be on site without a permanent guide, who will be a permanent site employee. Visitors will be uniquely identified.

OHS-5.9.4 Other training

(1) All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid proof of training and competency.

(2) All employees in jobs requiring training in terms of the OHSA and Regulations must be in possession

of valid proof of training.

(3) Occupational health and safety training requirements (as required by the Construction Regulations and as indicated by the occupational health and safety specification and the risk assessment(s)), i.e.:

(a) General induction (Section 8 of the OHSA);
(b) Site and job specific induction, including visitors (Sections 8 and 9 of the OHSA);
(c) Site and project manager;
(d) Construction supervisor;
(e) Occupational health and safety representatives (Section 18 (3) of the OHSA);
(f) Training of the appointees;
(g) Operators and drivers of construction vehicles and mobile plant (Construction Regulation 23);
(h) Basic fire prevention and protection (Environmental Regulations 9 and Construction Regulation 29);
(i) Basic first-aid (General Safety Regulations 3);
(j) Storekeeping methods and safe stacking (Construction Regulation 28); and
(k) Emergency, security and fire coordinator.

OHS-5.9.5 Awareness and promotion

The Contractor is required to encourage promotion and awareness programmes to create an occupational health and safety culture within project employees. The following are some of the methods that may be used:

- Toolbox talks
- Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as employee “occupational health and safety circles”.

OHS-5.9.6 Notices and signs

The following notices and signs shall, where applicable, be compulsory on the construction site as well as the Contractors’ yards:

Area and/or activity where notice or sign is required	**Notice or sign required in terms of**
Display of notices and signs	General Safety Regulation 2B and SANS Code 1186
Entry	General Safety Regulation 2C(2)
First-aid	General Safety Regulation 3(6)
Toilets and change rooms	Facilities Regulation 2 (5) 4(2)(f)
Storage of flammable materials	General Safety Regulation 4(8)(a)(i) and (ii) (10(e) only applicable to Contractor’s yards)

Area and/or activity where notice or sign is required	Notice or sign required in terms of
Scaffold	SANS 10085-1: 2004
Grinding wheels	Driven Machinery Regulation 8(1)(7)
Machinery	General Machinery Regulation 9 (Schedule D)
Explosive powered tools	Construction Regulation 21(2)(f)
Prohibition on smoking and eating or drinking at the workplaces where high risk substances (FR5 (1)) are stored or handled	Facilities Regulation 6(b)
Non-potable water	Facilities Regulation 7(B)
Excavation work	Construction Regulation 13(2)(l)

OHS-5.9.7 Competence

The Contractor shall ensure that his and other Contractors' employees appointed, are competent and that all training required to undertake the work safely and without risk to health of their or other persons, has been successfully completed before work commences.

The Contractor shall ensure that follow-up and refresher training is conducted on a regular basis as well as the contract work progresses and the work situation or requirements changes.

Records of all training must be kept on the occupational health and safety file for auditing purposes.

OHS-5.9.8 Drugs and alcohol use

The Client has a zero tolerance policy with regards to drugs and alcohol use. The PC will be responsible to conduct daily alcohol testing on each employee on site. Visitors will also be tested prior to going on site. A record of daily testing results will be kept in the H&S file on site. In the case where any person is found to be tested positive for alcohol, the site Engineer and H&S Officer will be informed immediately. Employees who test positive on the hand held breathalyser will be retested after twenty minutes on a machine that is able to give a digital reading, should the reading be over zero again, this person will be escorted off site or taken home.

Although drug testing forms part of the medical surveillance, the PC will be responsible to perform a multi drug test on all employees on site at least once every three months. Records of these tests will be kept in the H&S File on site. No person will be allowed on site or to remain on site if they are found to be tested positive for drugs. These tests will be conducted by the Client appointed Occupational Health Service Provider.

The PC shall identify, implement and maintain a process for the management of drug and alcohol use for visitors, employees, suppliers and sub-Contractors which will comply with the Labour Relations Act Section 8. All Client representatives on site will also be seen as site employees.

OHS-5.10 Consultation, Communication and Liaison

The following arrangements will apply:

a) Occupational health and safety liaison between the Engineer, TCTA the Contractor, and other Contractors, the designer and other concerned parties will be through the occupational health and safety committee. In the absence of a health and safety committee, the Engineer and Contractor will agree on an alternative communication forum to be implemented.

b) In addition to the above, communication may be directly to the Engineer, verbally (followed up in writing within 14 calendar days) or in writing, as and when the need arises.

c) Consultation with the workforce on occupational health and safety matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any.

d) The Contractor will be responsible for the dissemination of all relevant occupational health and safety information to the other Contractors, for example design changes, instructions by the Engineer, exchange of information between, the reporting of hazardous and/or dangerous conditions and/or situations, etc.

e) The Contractor and the Engineer will be required to do site safety audit with TCTA and/or his Health & Safety Auditor on a monthly basis.

f) The principal and other sub-Contractors will be required to conduct toolbox talks with their employees on weekly daily basis and records of these including the topics discussed must be kept on the occupational health and safety file. Employees must acknowledge the receipt of toolbox talks which record must, likewise be kept on the occupational health and safety file.

g) TCTA Health and Safety Auditor and the Contractor will agree on the dates, times and venues of the occupational health and safety meetings.

h) The Contractor`s health and safety plan will be audited for approval prior to work commencing on site and a letter of approval will be submitted as proof by the Engineer`s OHS auditor.

i) The Engineer and the PC shall have an H&S meeting at least once per month. The following appointees from the PC will be required to attend the meeting:
   - The PC's Project Manager
   - The PC's Construction Supervisor
   - The PC's Resident Engineer (if applicable)
   - The PC's H&S Officer
   - The Engineer's Project Manager
   - The Engineer's Resident Engineer
   - The Engineer's site H&S Officer
   - The Engineer's H&S Auditor
   - The Agent

Minutes of these meetings will be kept in the H&S File on site. When possible, this meeting can be incorporated into the Site Meeting.

j) The PC shall ensure cooperation and open communication between all sub-Contractors appointed under him. Construction work must also be programmed accordingly to ensure for this.

OHS-5.11 Checking, Reporting and Corrective Actions

OHS-5.11.1 Monthly compliance assessment by TCTA (Construction Regulation 5(1) (o))

The Engineer will conduct monthly assessments to comply with Construction Regulation 5(1) (o) and to confirm that the Contractor has implemented and is maintaining the agreed and approved occupational health and safety plan.

This audit will include all sub-Contractors and will be conducted by the Project Health and Safety Lead. The audit will focus on the legal requirements as well as the requirements as stated in the Contractors Health and Safety Plan. The audit date will be negotiated with the PC beforehand. As a minimum, the following people will be required during the time of the audit:

- PC's H&S Officer
- Sub-contractors H&S Officer (if applicable)
- PC's Project Manager / Construction Manager
- Construction Project Manager

The audit report will be issued within 5 working days after the audit. The PC will have 15 working days to correct all minor NCR's identified in the audit. In the case where a major NCR (non compliance with legal requirements or issues endangering people) is identified, this specific task will be stopped immediately, until the NCR is corrected and signed off by the Engineer, Auditor or the Construction Project Manager.

Signed off Audit Reports will be filed in the H&S File on site.

OHS-5.11.2 Other assessments and inspections by TCTA

TCTA reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary. This could include, among others, site safety walks.

OHS-5.11.3 Conducting an assessment

A representative of the Contractor must accompany the Engineer on all assessments and inspections and may conduct his/her own inspection at the same time. Each party will, however, take responsibility for the results of his/her own assessment and/or inspection.

OHS-5.11.4 Contractor's assessments and inspections

The Contractor is to conduct his own internal assessments and inspections to verify compliance with his own occupational health and safety plan and management system as well as the requirements of this specification and the compliance of other Contractors under his/her control. The Contractor must

perform monthly OHS Audits on all of his appointed sub-Contractors working on the project.

OHS-5.11.5 Inspections by occupational health and safety representatives and other appointees

Occupational health and safety representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments for example vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up. The PC must ensure that all registers and checklists used to perform the required inspections are applicable to the tools, equipment and machinery being inspected. All inspection registers and checklists must be co-signed by the relevant supervisor or safety officer on the required completion intervals to ensure they are informed.

OHS-5.11.6 Recording and review of inspection results

All the results of the abovementioned inspections must be in writing, reviewed at occupational health and safety committee meetings, endorsed by the chairperson of the meeting and placed on the occupational health and safety file.

OHS-5.11.7 Reporting of inspection results

The Contractor is required to provide the Engineer with a monthly report providing technical progress updates on issues hereof.

The PC will submit, on a weekly basis, as negotiated with the Engineer site H&S Officer, the following:

A comprehensive list containing:

- Name list of employees on site
- Hours work per employee per day for the week
- Visitor hours per day for the week
- Total man hours worked for the week (including visitors hours)
- A comprehensive list containing:
- Name of each H&S responsible employee
- Number of PTO's / JSA's conducted per person per day for the week (as per appointment requirement)
- Number of pre-use inspections conducted per day for the week
- Number of PC H&S Meetings conducted for the week
- Number of employees who received site specific induction training
- Names of employees that resigned, was dismissed from employment or who has absconded
- Incidents reported for the week, with a description of the incident
- Comprehensive list of all vehicles and machinery on site

OHS-5.11.8 Health and safety committee

A health and safety committee will be established and members appointed to serve on the committee

prior to work commencing on site. Weekly meetings will be held and minutes distributed to the Engineer and Client.

Action by the Contractor will be monitored on deviations to effectively implement remedial steps. The frequency of the meetings can be reduced after consultation with the Engineer. Attendance and participation of Senior Site Management is compulsory during these committee meetings.

OHS-5.11.9 Site Inspections

Site inspections will be conducted, by the Engineer site H&S Officer on a daily basis. He/she will be accompanied by the PC's H&S Officer. NCR's will be corrected immediately or as soon as reasonably practicable. If a NCR cannot be corrected immediately, the PC's Safety Officer will negotiate with the Engineer H&S Officer on a reasonable time for correction.

These inspections will be recorded and signed off by both H&S Officers, after which these records will be filled in the H&S File on site.

OHS-5.12 Incident Reporting and Investigation

OHS-5.12.1 Reporting of accidents and incidents (Section 24 and General Administrative Regulation 8 of the OHSA)

The Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- dies;
- becomes unconscious;
- loses a limb or part of a limb;
- is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

or where -

- a major incident occurred;
- the health or safety of any person was endangered;
- where a dangerous substance was spilled;
- the uncontrolled release of any substance under pressure took place;
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects; and
- machinery ran out of control

The reporting will be to the Engineer H&S Officer as soon as reasonably practicable, but still in the same shift and to the Provincial Director of the Department of Labour within seven calendar days from date of incident (Section 24 of the OHSA and General Administrative Regulation 8), **except** that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die

or suffer a permanent physical defect, the incident must be reported to both the Engineer and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail. All other reports should still be completed and provided as required.

The Contractor is required to provide the Engineer with copies of all statutory reports required in terms of the OHSA within seven calendar days of the incident occurring.

The Contractor is required to provide the Engineer with copies of all internal and external accident/incident investigation reports, including the reports contemplated below, within seven calendar days of the incident occurring.

OHS-5.12.2 Accident and incident investigation (General Administrative Regulation 9)

(1) The Contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that he, she and/or they had to be referred for medical treatment by a doctor, hospital or clinic.

(2) The results of the investigation to be entered into the accident and/or incident register.

(3) The Contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) and (c) of the OHSA and keeping a record of the results of such investigations including the steps taken to prevent similar accidents/incidents in future.

(4) The Contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

(5) The Engineer reserves the right to hold its own investigation into an incident or call for an independent external investigation.

The PC will develop and maintain an incident register that will be kept updated and filed in the H&S File on site. This register will include, but might not be limited to:

- Date
- Name of person involved
- Short description of incident
- Identification no of machine / equipment / vehicle involved (if applicable)
- Type of incident, which can include, but are not limited to:
  - Fatal
  - Lost Time incident
  - Medical Treatment
  - Light duty
  - First Aid Treatment

- Near miss
- Hazard
- Property Damage
- Breakdown
- Environmental

OHS-5.12.3 Fatality

The Client has a Zero Harm philosophy. All possible controls will be identified and implemented by the PC in order to ensure that no serious injury occurs. However, in the case where a fatality does occur, the immediate action will be as follows.

The area shall be barricaded and no unauthorised person shall be allowed in this area. The Police, the Engineer Project Manager and the Engineer site H&S Officer will be informed immediately. Except for the investigation conducted by the Police, the Engineer will be responsible to conduct an in-house investigation. The Client will be informed by the Engineer as soon as they are informed.

The PC will be responsible to ensure that they retrieve all the information with regards to the deceased and inform the Engineer' Project Manager and site H&S Officer, including, but not limited to:

- Place where body will be taken
- Names and contact detail of Police officers
- Contact detail of family

The PC will be responsible to inform the family of the incident and will ensure that the body is transported to the place of burial after all legal procedures have been completed.

The PC shall also be responsible for the report and all applicable documentation to be submitted to Authorities.

No operations / work will be allowed in the area of the incident, unless authorisation has been given, in writing, by the applicable authorities.

OHS-5.12.4 Medical

In the case of a medical treatment incident, the PC's H&S Officer and / or the Engineer site H&S Officer shall accompany the injured person. These Officers shall ensure that all necessary paperwork is completed and that the injured person is returned to his / her living quarters after receiving medical treatment. If the patient is admitted to hospital, the PC, Engineer site H&S Officer and Construction Project Manager shall be informed immediately.

OHS-5.12.5 First Aid

All first aid incidents will be recorded on the incident register and the Engineer site H&S Officer will be informed immediately.

OHS-5.13 Operational Control

OHS-5.13.1 Emergency Preparedness, Contingency Planning and Responses

The performance objectives are: (i) no incidents (no injuries, property damage, environmental, incidents); and (ii) all personnel trained in emergency response procedures.

The Contractor must appoint a competent person to act as emergency controller and/or coordinator.

The Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that TCTA may have in place.

The Contractor and Sub- Contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

OHS-5.13.2 First-Aid (General Safety Regulation 3)

The Contractor must provide first-aid equipment (including a stretcher) and have qualified first-aider(s) on site as required by General Safety Regulation 3 of the OHSA.

The contingency plan of the Contractor must include arrangements for the speedily and timeous transportation of injured and/or ill person(s) to a medical facility or getting emergency medical support to person(s) who may require it.

The Contractor must have firm arrangements with his Contractors in place regarding the responsibility of these Contractor's first-aid arrangements as well as treatment of injured and/or ill employees.

OHS-5.14 Occupational Disease

In the case where an occupational disease is identified by the Occupational Health Practitioner, the Occupational Health Practitioner will be responsible to inform the PC, the Engineer site H&S Officer and the applicable authorities. Any referral costs incurred in the confirmation of this diagnosis will be for the PC's account.

OHS-5.15 Near Miss / Hazards

All near misses and hazards identified on site shall be registered on the Incident Register.

OHS-5.16 Property Damage / Breakdown

All property damage and breakdown will be registered on the Incident Register, with specific reference to the plant / machine number and the operator. The Engineer site H&S Officer will be informed before the end of the shift.

OHS-5.17 Rescue Procedures

No later than 56 days after the commencement date and in any event no later than 7 days before the start of work in any area, the Contractor shall prepare and submit a method statement detailing evacuation procedures for the approval of the Engineer.

The procedures shall detail the nature of the emergencies contemplated, the training of employees forming rescue teams, their numbers, availability (at least one team shall be available for each shift), any delegation of responsibility, liaison with the emergency services and the Engineer, the equipment needed, actual methods of evacuation including transport methods, medical facilities to be used, communications systems to be used and any other matter that the Contractor considers relevant to the subject of emergency evacuation.

The emergencies contemplated shall include, among others, injury, fire, flood, falls of ground (not going to work underground), accidental leaks, spillages and explosion.

The equipment requirements shall include the need for items to be used exclusively by the rescue teams, and also the continuous operational readiness of plant and equipment, including standby facilities, during the construction of the works.

The procedures shall cover the level of medical competence of the rescue team, the use of support medical facilities and evacuation off-site to a relevant hospital or otherwise, including the use of helicopter services or the access to air evacuation facilities.

The Contractor shall immediately implement and prominently advertise the procedures in each work area. The Contractor shall test the effectiveness of the rescue procedures under the inspection of the Engineer at least every three months and shall make due allowance in his programs for the testing of the procedures.

OHS-5.18 Security

The Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied.

The Contractor must develop a set of project applicable security rules and procedures and maintain these throughout the construction period.

The PC will be responsible for the onsite security as well as the entrance and exit control from site. All vehicles will be inspected once entering or exiting the site. Visitors will sign in all equipment at the gate.

Employees on site will be issued with a gate permit for equipment that is taken in and out (e.g. laptops). Each employee on site will be issued with an access card once they have completed the risk based site medical and Client site induction. The following information will be displayed on the access card:

- Photo of employee (clear black and white / colour)
- Name and Surname of Employee
- Company
- Medical completion date
- Medical restrictions
- Client induction completion date
- Machinery competent to operate

These cards will be on the person and displayed at all times whilst on site.
The PC will be responsible to ensure that no unauthorised persons visit / enter the construction site. All visitors will be uniquely identified after receiving site specific visitors' induction training. Records of these as well as the hours on site will be retained and available in the Health and Safety file on site. No visitor must be allowed to be on site without a site employee present at all times. Any person spending a minimum of 16 hours per week on site, will be classified as a visitor.

OHS-5.19 Accommodation of Traffic

Where construction work is undertaken in, next to or close to a public road, the use of appropriate as well as a sufficient number of road signs is of paramount importance to protect employees against traffic and to warn motorists of the presence of construction work as well as construction employees/risks/vehicles.

The Contractor shall ensure that appropriate as well as a sufficient number of road signs are posted to protect employees against traffic and to warn motorists of the presence of construction work as well as construction employees/vehicles. These signs shall be repeated and utilised, where appropriate, as actual construction work is approached.

The following signage is required as a minimum where construction work is undertaken in, next to or close to a public road:

a. "Construction work ahead" sign at least 45 m before the start of the construction work;
b. "Lane narrows" sign 30 m before the start of the construction work;
c. "Keep right/left" sign 15 m before the start of the construction work and again where the tapering begins; and
d. Delineators and cones every 5 m for the entire stretch of construction work.

(Traffic accommodation will be in accordance with COLTO 1500 and SADC Road Traffic Signs Manual Volume 2.)

Where construction work includes excavations in or next to a public road, warning lights or visible boundary indicators should be provided after dark or when visibility is poor.

The maintenance of all signage and especially those that is suitable after dark should be duly managed.

Where appropriate, duly trained flag persons should be deployed a good distance ahead of areas where traffic is deviated or lanes closed off. These flag persons should be managed assertively to ensure that they add optimal value and should they not do so they should be retrained and if necessary replaced.

The community liaison officer (CLO) should also be sensitised on the optimal management of traffic and the risks involved and then be instructed to increase community awareness through talking to all stakeholders including the distribution of suitable information brochures.

OHS-5.20 Fall Protection (Working in elevated positions (Construction Regulation 10))

A pre-emptive risk assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as “work in elevated positions”.

As far as is practicable, any person working in an elevated position will work from a stable platform, ladder or other device that is at least as safe as if he or she is working at ground level and whilst working in this position be wearing a safety harness with a lanyard to prevent the person falling from the platform, ladder or other device utilised. This safety harness will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length and strength that the person will not be able to move over the edge.

Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with suitable guard rails at two different heights as prescribed in SANS 10085 code of practice for the design, erection, use and inspection of access scaffolding.

Where the requirement is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer’s head at all times and the lanyard must be fitted with a shock absorbing device or the person must be attached to a fall arrest system that is approved by TCTA.

Where the requirements are not practicable, a suitable catch net, which must be able to sustain the weight of at least the average person working in the elevated position, must be erected.

Employees working in elevated positions must be trained to do this safely and without risk to their or other person’s health and safety.

Updated records confirming the physical and psychological fitness of employees working at elevated positions should be kept on the health and safety file at all times.

The PC is required to develop a Fall Protection Plan which must include:

- A risk assessment of all work carried out from a fall risk position and the procedures and methods used to address all the identified risks;

- The evaluation procedure to be used for assessing employee's medical fitness for working at fall risk positions and the records thereof;
- A training programme for employees working at a fall risk position and the records thereof;
- The procedure on how fall protection equipment will be inspected, tested and maintained; and
- A Rescue Plan.

OHS-5.21 Access Scaffolding (Construction Regulation 16)

Access scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 16 and SANS 10085 entitled, "The Design, Erection, Use and Inspection of Access Scaffolding".

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly and safely.

Scaffolding must be erected, altered or dismantled by person(s) who has/have adequate training and experience in this type of work or under the continuous supervision of such a person.

OHS-5.22 Lifting Machinery (Construction Regulation 22 and Driven Machinery Regulation 18)

Lifting equipment must be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the Driven Machinery Regulation 18 of the OHSA:

The Driven Machinery Regulation requires that:

(a) Lifting equipment to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator;

(b) Each winch on a lifting machine must at all time have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;

(c) Lifting equipment shall be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted;

(d) Lifting equipment fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML;

(e) Every chain or rope on a lifting machine that forms an integral part of the machine must have a

factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:

- chains – 4 (four)
- steel wire ropes - 5 (five)
- fibre ropes- 10 (ten)

(f) Every hook or load attaching device must be designed as such or fitted with a device that will prevent the load from slipping off or disconnecting;

(g) Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturers prescription or to 110 % of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;

(h) All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book;

(i) No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour;

(j) Tower crane bases are firm, level and secured; and

(k) Where multiple tower cranes operate with overlapping slewing radii a tower crane operation plan must be developed and all relevant parties trained thereon. Such plan must aim to prevent the risk of slewing loads crossing.

(l) The PC shall prepare and maintain an updated lifting machine, tackle and equipment register whereon the dates for load testing and inspections are captured in order to monitor compliance.

OHS-5.23 Lifting Tackle

(a) Manufactured of sound material, well constructed and free from latent defects.

(b) Clearly and conspicuously marked with an identity numbers.

(c) Maximum mass load factor of safety:

- Natural fibre ropes - 10 (ten)
- Man-made fibre ropes and woven webbing - 06 (six)
- Steel wire ropes – single rope - 06 (six)
- Steel wire ropes – combination slings - 08 (eight)
- Mild Steel chains - 05 (five)
- High tensile/alloy steel chains - 04 (four)

(d) Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and

corrosion is evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.

(e) The PC shall prepare and maintain an updated lifting machine, tackle and equipment register whereon the dates for load testing and inspections are captured in order to monitor compliance.

(f) Lifting tackle to be stored safely when not in use to protect them from getting damaged.

OHS-5.24 Construction Vehicle and Mobile Plant Operators (Construction Regulation 23)

The following requirements will apply to construction vehicle and mobile plant operators:

(a) Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant.

(b) Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.

(c) Operators of jib cranes with a maximum mass load of 500 kg or more must be in possession of a certificate of training issued by an accredited (by the Department of Labour) training provider.

(d) Only employees duly authorised to do so may operate any construction vehicle and mobile plant.

(e) Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.

OHS-5.25 Construction Vehicles and Mobile Plant (Construction Regulation 23)

Construction vehicles and mobile plant must be:

(a) Of acceptable design and construction;

(b) Maintained in good working order;

(c) Used in accordance with their design and intention for which they were designed;

(d) Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;

(e) Provided with safe and suitable means of access;

(f) Fitted with adequate signalling devices to make movement safe including reversing;

(g) Excavations and other openings must be provided with sufficient barriers to prevent construction

vehicles and mobile plant from falling into same;

(h) Provided with roll-over protection and are fitted with structures designed to protect the operator from falling material;

(i) Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency;

(j) Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and

(k) Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

No loose tools, material, etc. is allowed in the driver and/or operators compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas where there is traffic, must be fitted with lights, reflectors or adequate barricades to prevent moving traffic from a sudden emergency, or to come into contact with the parked construction vehicles and mobile plant.

In addition, construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. full lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

All construction vehicles and mobile plant daily inspection records must be kept available in the relevant vehicle or plant.

OHS-5.26 Electrical Installations (Construction Regulation 24)

The installation of temporary electricity for construction use shall be in accordance with Construction Regulation 24 and the Electrical Installation Regulations. The Contractor must ensure that:

(a) Existing services are to be located and clearly marked before construction commences and during the progress thereof;

(b) Where the abovementioned is not possible, employees with jackhammers etc. will be protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated

handles etc.;

(c) Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;

(c) Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file;

(e) Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and

(f) A competent person appointed in writing must control all temporary electrical installations.

OHS-5.27 Use and Storage of Flammables (Construction Regulation 25)

The Contractor must ensure that:

(a) No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions is taken.

(b) No flammables shall be used or applied e.g. in spray painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose, unless there is no danger of fire or explosion due to the application of adequate ventilation.

(c) The workplace is effectively ventilated. Where this cannot be achieved:

- Employees must wear suitable respiratory equipment.
- No smoking or other sources of ignition is allowed in the area.
- The area is conspicuously demarcated as “flammable.”

(d) Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient fire fighting equipment installed and fire prevention methods practiced for example proper housekeeping:

- Flammables stored in a permanent flammable store are stored so that no fire or explosion is caused.
- Stored in a locked and well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as “Flammable Store – No Smoking or Naked Lights”.
- The flammables store to be constructed of two-hour fire retardant walls, door and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall.
- Adequate and suitable fire fighting equipment installed in close vicinity of the flammables store and marked with the prescribed signs.

- All electrical switches and fittings to be of a flameproof design.
- Any work done with tools in a flammable store or work areas to be of a non-sparking nature.
- No Class A combustibles such as paper, cardboard, wood, plastic, straw, etc. to be stored together with flammables.
- The flammable store to be designed and constructed to, in the event of spillage of liquids in the store, to contain the full quantity + 10 % of the liquids stored.

(e) A sign indicating the capacity of the store to be displayed on the door.

(f) Only one day's quantity of flammable is to be kept in the workplace.

(g) Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas.

(h) Metal containers to be bonded to earth whilst decanting to prevent build-up of static forces.

(i) Welding and other flammable gases to be stored segregated as to the type of gas and empty and full cylinders.

OHS-5.28 Housekeeping (Construction Regulation 27)

The Contractor must ensure that:

(a) Housekeeping is continuously implemented and maintained;

(b) Materials and equipment is properly stored;

(c) Scrap, waste and debris is removed off site regularly;

(d) Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;

(e) Waste and debris not to be removed by throwing from heights but by chute or crane;

(f) Where practicable, construction sites are fenced off to prevent entry of unauthorised persons;

(g) Catch platforms or -nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects;

(h) An unimpeded work space is maintained for every employee;

(i) Every workplace is kept clean, orderly and free of tools and the likes that are not required for the work being done;

(j) As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;

(k) The walls and roof of every indoor workplace be sound and leak-free; and

(l) Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fenced, boarded over or provided with protection to prevent persons from falling.

OHS-5.29 Stacking and Storage (Construction Regulation 28)

The Contractor must ensure that:

(a) A competent person is appointed in writing to supervise all stacking and storage on a construction site;

(b) Adequate areas are provided and demarcated for storage and off-loading;

(c) The storage areas are kept neat and under control;

(d) The base of any stack is level and capable of sustaining the weight exerted on it by the stack;

(e) The items in the lower layers can support the weight exerted by the top layers;

(f) Cartons and other containers that may become unstable due to wet conditions are kept dry;

(g) Pallets and containers are in good condition and no material is allowed to spill out;

(h) The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang);

(i) The articles that make up a single tier are consistently of the same size, shape and mass;

(j) Structures for supporting stacks are structurally sound and able to support the mass of the stack;

(k) No articles are removed from the bottom of the stack first but from the top tier first;

(l) Anybody climbing onto a stack can and does do it safely and that the stack is sufficiently stable to support him or her;

(m) Stacks that are in danger of collapsing are broken down and restacked;

(n) Stability of stacks is not threatened by vehicles or other moving plant and machinery;

(o) Stacks are built in a header and stretcher fashion and that corners are securely bonded; and

(p) Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

OHS-5.30 Storage of Flammable and Hazardous Chemicals (Hazardous Chemical Substances Regulations)

See paragraphs **OHS-5.27** and **OHS-5.36**.

OHS-5.31 Fire Prevention and Protection (Construction Regulation 29)

The PC will be responsible to develop, implement and maintain an effective Fire Prevention and Protection Program. This program will form part of the "Contractors File" to be submitted and approved prior to any work commencing on site.

The Contractor must ensure that:

(a) The risk of fire is avoided;

(b) Sufficient and suitable storage of flammables is provided;

(c) Sources of ignition are obviated wherever flammable or highly combustible material is present in the workplace, for example:
- Notices prohibiting smoking is displayed and enforced.
- Welding and flame cutting is only allowed under controlled conditions that includes written hot work permits and by duly competent persons.
- Only spark-free hand and power tools are used.
- No grinding, cutting and shaping of ferrous metals are allowed using electrically driven power tools that produces sparks.
- Flameproof switches and fittings are to be used in the flammable atmosphere.
- Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles.
- Adequate ventilation is maintained.
- Adequate and suitably fixed and portable fire-fighting equipment is provided and maintained in good working order with unrestricted access.

(d) Maintenance must include:
- Regular inspections by a competent person appointed in writing and records of such inspections should be kept in the occupational health and safety file.

- Annual inspection and service by an accredited service provider.

(e) All employees are instructed in the use of the fire-fighting equipment and know how to attempt to extinguish a fire;

(f) A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;

(g) Employees are informed regarding emergency evacuation procedures and escape routes;

(h) Emergency escape routes are kept clear at all times and clearly marked;

(i) Evacuation assembly points are demarcated and made known to employees;

(j) Evacuation is regularly practiced to ensure that all persons are evacuated timeously;

(k) Roll call is held after evacuation to account for all employees and to ensure that no-one including visitors and disabled persons have been left behind; and

(l) A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

OHS-5.32 Eating, Changing, Washing and Toilet Facilities (Construction Regulation 30)

Toilets

The PC shall ensure that proper risk assessments are done in terms of the Hazardous Biological Agents Regulations of the OHS Act and that all employees working in these areas have been adequately vaccinated and are monitored on a regular basis. All necessary supplies will be supplied by the PC as contemplated in the Facilities Regulation of the OHS Act.

(a) The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 30.
(b) Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of at least 1 toilet per 30 employees within reasonable access.

Showers

At least hot and cold-water showers of some sort for each sex have to be provided at a ratio of at least 1 shower per 15 employees.

Change rooms

Some form of screened off changing facility must be provided separately for each sex.

Eating facility

The PC will supply and maintain a sheltered, from the sun, wind and rain, and hygienically clean eating

area for employees. There will be sufficient tables and chairs for the employees and means to dispose of uneaten food. The PC will be responsible for ensuring that this area is kept clean and maintained.

Living accommodation

Where the site is in a remote location and transport home is not readily available, reasonable and suitable living accommodation must be provided after obtaining the necessary permission from authorities and adhering to requirements such as Bylaws of the local municipality.

Drinking water

The PC will be responsible to ensure that sufficient drinking water is available on site at all areas of operation.

The PC will be responsible to ensure that occupational hygiene surveys are conducted in accordance with the baseline risk assessment. The frequency of these surveys will depend on the type of survey, exposure time and possible consequences.

These surveys may only be conducted by an Approved Inspection Authority.

This water must be tested and find compliant with the SANS 241:2009 standard.

The PC to inform their employees which water sources are potable clean drinking water and which are dirty/ unsafe water. The relevant signage needs to be displayed.

Fatigue

A fatigue survey shall be conducted at least once every 2 months on at least 50% of the workforce. The 50% will mainly consist of manual workers and operators. Of the 50%, a maximum of 4% will be supervisor and management level. These surveys shall be documented and submitted to the Engineer after completion.
The Engineer can supply a generic fatigue survey methodology.

OHS-5.33 Personal and Other Protective Equipment (Sections 8, 15 and 23 of the OHSA)

The Contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-Engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace, the Contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from

any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the Contractor maintains the equipment, instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s in a consistent and correct manner.

Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other valid reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The Contractor may **not charge any fee** for protective equipment prescribed by him **but may charge for equipment under the following conditions,** following a disciplinary hearing:

- Where the employee requests additional issue in excess of what is prescribed;
- Where the employee has blatantly abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment.

As a minimum, the following PPE will be worn by every employee on site:

- Acid resistant overalls
- Hard hat (no graffiti on these hats will be excepted)
- Reflective vests (with zip in front)
- Goggles / Safety glasses
- Safety boots with spats / Gumboots with steel toe cap

Additional PPE will be worn, which is task specific, as identified in the Baseline Risk Assessment. A JSA will be performed before each task commences, if any additional PPE is identified, these will be issued before the task is performed.

OHS-5.34 Portable Electrical Tools and Equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 A plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition electrical appliances such as fridges, hotplates, heaters etc. must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;

- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

This equipment:

- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

OHS-5.35 Public Health and Safety (Section 9 of the OHSA)

The Contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes among others:

(a) Non- employees entering the site for whatever reason;
(b) The surrounding community; and
(c) Passers-by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All non-employees entering the site must receive site applicable induction into the hazards and risks and the control measures for these.

OHS-5.36 Hazardous Chemical Substances

Hazardous Chemical Substances will be controlled, handled and stored as per the Hazardous Chemical Substances Regulations under the Occupational Health and Safety Act, No 85 of 1993. This will include, but are not limited to:

- MSDS'

- The MSDS of all HCS's will be posted in the area where the HCS are stored.
- No person will be allowed to work or perform a task with these HCS without proper training on:
    - The hazards and risks of the HCS
    - PPE requirements of the HCS
    - First Aid treatment of the HCS, and

- Proper storage of the HCS

- PPE

- The PC will ensure that every person managing or performing a task with the HCS will be issued with the correct PPE as specified in the MSDS and / or the baseline risk assessment and JSA.

- These PPE will be issued to the employees free of charge.

- Monthly inspections will be conducted, by the PC, on the suitability and general condition of the PPE. In the case where the PPE is no longer suite for use, the PC will replace it, free of charge.

- First Aid

- The PC will ensure that at least one person on the shift / work area is competent in the treatment methods as stated on the MSDS for the specific HCS.

- These First Aiders will be in possession of at least a Level 2 First Aid certificate, appointed in writing and uniquely identified.

- A First Aid kit will be available at all storage areas where HCS are stored and work areas where HCS are used.

- The First Aid kit will be managed and stocked as per the General Safety Regulations under the Occupational Health and Safety Act No 85 of 1993.

- The First Aid Kit will include measures to wash out the eyes injured employees and to treat burns.

- Fire Prevention

- The PC shall ensure that these HCS are stored in the suitable manner in order not to pose a fire risk.

- Sufficient and effective fire-fighting measure will be instituted.

- Trained and competent Fire Fighters will be appointed in order to operate / initiate these fire-fighting measures effectively.

- A comprehensive “Receive and Issue” list will be maintained by the PC. The list will also include diesel and petrol.

The Contractor must ensure that:

(a) Employees receive the necessary information and training to be able to use, handle and store hazardous chemical substances safely;

(b) Employees obey lawful instructions regarding:

- the wearing and use of personal protective equipment;

- the use, handling and storage of hazardous chemical substances;

- the prevention of the release of hazardous chemical substances;

- the wearing and using of exposure monitoring and measuring equipment;

- the cleaning up and disposal of materials containing hazardous chemical substances; and
- housekeeping, personal hygiene and the protection of the environment.

(c) The risk assessments required in terms of Construction Regulation 7 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;

(d) Suppliers provide the necessary information in the form of material safety data sheets regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances;

(e) An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances;

(f) Hazardous chemical substance containers be clearly marked as to the contents and main hazardous category e.g. “Flammable” or “Corrosive” and the reference number of the hazardous chemical substances on the list indicated above;

(g) Hazardous chemical substances for example asbestos dust is not cleared by using compressed air but should be vacuumed;

(h) No person eats or drinks in a hazardous chemical substances workplace; and

(i) Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.

OHS-5.37 Excavations (including Piling) (Construction Regulation 13)

Where excavations or any part thereof will exceed 1, 5 m in depth, the Contractor will be required to submit a method statement which includes a risk assessment to the Engineer for approval before commencing with the excavation and TCTA will issue a permit to proceed once the risk assessment and method statement is approved.

Regardless of the above, all excavation work has to comply with the following:

Excavation work must be carried out under the supervision of a competent person with at least two years practical experience in excavation work who has been appointed in writing.

Before excavation work begins, the stability of the ground must be evaluated.

Whilst excavation work is being performed, the Contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.

No person may be required or permitted to work in an excavation that has not been adequately shored

or braced.

Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out but only after written permission has been obtained from the appointed competent person.

Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.

Where uncertainty exists regarding the stability of the soil, the opinion of a competent professional Engineer or professional technologist must be obtained, before excavation proceeds, whose opinion will be decisive. The opinion must be in writing and signed by TCTA or technologist as well as the appointed excavator.

No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation, unless suitable shoring has been installed to be able to carry the additional load.

Neighbouring/adjoining buildings, structures or roads that may be affected or endangered by the excavation, must be suitably protected.

Every excavation must be provided with means of access that must be within 6 m of any employee within the excavation at any time.

The location and nature of any existing services such as water, electricity, gas, telecommunication etc. must be established before any excavation is commenced with and any service that may be affected by the excavation, must be protected and made safe for employees working in or near in the excavation.

Every excavation, including the shoring and bracing or any other method to prevent a possible collapse, must be inspected by the appointed competent person as follows:

(a) Daily before work commences.
(b) After every blasting operation.
(c) After an unexpected collapse of the excavation or part thereof.
(d) After substantial damage to any support.
(e) After rain.

The results of any inspections must be recorded in a register kept on site in the health and safety file.

Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off, on all sides, to at least 1 m high and as close to the excavation perimeter as practicable.

Provided with warning lights or visible boundary indicators after dark or when visibility is poor.

Warning signs to be displayed next to excavations within which or where persons are working.

Upon entering an excavation the requirements of General Safety Regulation 5 must be observed:

- Any confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable or noxious air mixture.

- The confined space must be purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes.
- The safe atmosphere must be maintained.
- Employees are to be provided with breathing apparatus and wearing a safety harness with a rope with the free end of the rope being continuously attended to by a competent person outside the confined space.
- Furthermore, an additional person, trained in resuscitation, to be in full-time attendance immediately outside the confined space.
- Additional serviceable breathing and rescue apparatus is kept immediately outside the confined space for rescue purposes.
- All pipes, ducts, etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage.
- The Contractor must ensure that all employees have left the confined space after the completion of work.
- Where flammable gas is present on or in a confined space, no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

OHS-5.38 Blasting (Explosives Regulations 2003 and Explosives Act, Act 15 of 2003)

The Contractor must 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 is developed in accordance with all applicable explosives legislation, by an appointed person, who is certified as a competent person in the use of explosives and provided to the Engineer within three workings days prior to blasting taking place.

(c) the necessary permits are in place for the transportation of explosives to be used.

(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 is strictly restricted.

(g) no smoking or hot work is 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) Cognizance must also be taken of the possibility of 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.

OHS-5.39 Use of Explosives (Explosives Regulations 2003 and Explosives Act, Act 15 of 2003)

The Contractor shall comply with the requirements of the relevant Explosives Act for all requirements involving the use of explosives for the construction of the Works.

In addition to his compliance with the Explosives Act, the Contractor shall submit to the Engineer for approval, a full and detailed Method Statement as to his proposals for the use of explosives in the construction of the Works. This shall be submitted at least 7 days before any blasting work is required, and shall include proposals for:

(a) The locations of blasting works;

(b) The location and size of storage magazines, explosives register, security fencing, earthing of building;

(c) Danger signs in English, Afrikaans and Zulu that shall be prominently displayed at all areas where explosives are stored or used;

(d) Transportation of explosives to and from the magazine;

(e) Licenses required for the magazine(s);

(f) The storage at the place of use;

(g) The use of explosives and dealing with misfires;

(h) The types of explosive and detonators contemplated;

(i) Ensuring that all excavation spoil is free of undetonated caps;

(j) Fencing off excavation spoil dumps and preventing unauthorised entry; and

(k) The names, qualifications and experience of those people responsible for the handling and use of explosives.

In addition to the blasting license referred to in the Explosives Act, the employees who shall be responsible for supervising the charging of drill holes with explosives and the blasting shall have

documentary proof that they have at least five years' experience in supervising the loading and firing of charges in surface works such as quarries or underground works such as tunnel excavation, depending on where it is proposed that they shall be employed.

Notwithstanding the provisions of the Explosives Act, any person who is licensed in the storage, handling and in the use of explosives must be literate, of good sight and hearing and well experienced in the work he is to carry out. TCTA shall have the right of access to storage areas and all registers.

Notwithstanding the provisions of the Explosives Act, the Contractor shall:

(a) Accept a decision of the Engineer to suspend the holder of a blasting certificate for an act of negligence or a contravention of the Explosives Act, as if he, as the 'employer' of the holder of the certificate had made that decision;

(b) Not permit the underground storage of explosives;

(c) Keep on site the originals of licenses for his own staff and acknowledged copies of licenses for any subcontracted works. All license holders will carry acknowledged copies on their person when at work. All blasting licenses or certificates should be valid for the period required on site; and

(d) Install and operate at each point where a blast is to take place, a siren of sufficient volume to be easily heard above the general site noise from all points within a 1 km radius of any blast. Hand operated sirens may only be used in areas of restricted access such as a tunnel heading where access is fully controlled. Sirens will be sounded for at least 5 minutes before any blast takes place and will continue for one minute after the blast has taken place. In addition to the above, the Contractor shall station men on roads and elsewhere with red flags to prevent persons, animals and traffic entering or remaining within the danger zone.

Care shall be taken to ensure that all possible approach routes to the danger zone are covered by these warning arrangements. Blasting shall not be carried out until occupants of any nearby buildings or working areas have been notified by the Contractor at least 24 hours in advance. After blasting, no person shall approach the area until it has been examined by the blasting supervisor or other responsible person and declared safe.

The Contractor shall provide for the approval of the Engineer details of each and every blasting operation at least 24 hours before that operation is to be carried out. The details shall show the location of and the intended time of each blast, the number, size and length of each blast hole, the quantity and types of explosives and detonators to be used and the name of the licensed blaster and shift foreman responsible.

OHS-5.40 Working Over or Close to Water

Where construction or other support work is undertaken over or in close proximity to water or similar liquids such as wastewater and sludge, the Contractor shall:

(a) appoint a competent person in writing to supervise, control and inspect any work on or over or in

close proximity of the water as well as the construction, installation, and dismantling of caissons and/or cofferdams and/or other support or safety structures;

(b) ensure that written proof of the competence of above appointee is available on site;

(c) ensure that risk assessments are carried out by the competent person before any work is undertaken, mitigation measures documented as well as implemented and thereafter evaluated on a daily basis;

(d) undertake the necessary induction and refresher training;

(e) ensure that measures for the timeous warning of flooding are in place;

(f) ensure that provision is made to prevent employees from falling into the water and the rescuing of employees in danger of drowning;

(g) ensure that where an employee is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the employee; and

(h) provide applicable personal protective equipment such as safety harnesses etcetera and enforce the utilisation thereof.

OHS-5.41 Suspended Platforms (Construction Regulation 17)

The 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.

The Contractor shall not use or permit the use of a suspended platform, unless:

(a) the design, stability and construction thereof comply with the applicable safety standards;

(b) he or she is in possession of a certificate of system design issued by a professional Engineer, certificated Engineer or a professional technologist for the use of the suspended platform system; and

(c) he or she is, prior to the commencement of the work, in possession of an operational compliance plan developed by a competent person based on the certificate of system design and applicable to the environment in which the system is being used, this must include proof of the:

- competent person who has been appointed for supervision;
- competency of erectors, operators and inspectors;
- operational design calculations which should comply with the requirements of the system design certificate;
- performance test results;

- sketches indicating the completed system with the operational loading capacity of the platform;
- procedures for and records of inspections having been carried out; and
- procedures for and records of maintenance work having been carried out.

The Contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional Engineer, certificated Engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director of the Department of Labour before commencement of the use of the system and must further indicate the intended type of work the system would be used for.

The Contractor shall need not re-submit a copy of the certificate of system design for every new project, provided that the environment in which the system is being used, does not change to such an extent that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional Engineer, certificated Engineer or professional technologist will be decisive.

The Contractor shall ensure that the outriggers of each suspended platform:

(a) are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and

(b) have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.

The Contractor shall ensure that:

(a) the parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;

(b) the suspension wire rope and the safety wire rope are separately connected to the outrigger;

(c) each person on a suspended platform is provided with and wears a safety harness as a fall prevention device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;

(d) the hand or power driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;

(e) the machinery referred to in paragraph (d) is so situated that it is easily accessible for inspection;

(f) the rope connections to the outriggers are vertically above the connections to the working platform; and

(g) where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.

The Contractor shall ensure that the suspended platform:

(a) is suspended as near as possible to the structure to which work is being done and, except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;

(b) is fitted with anchorage points to which employees will attach the lanyards of the safety harnesses worn and used by the employees and such anchorage connections will have sufficient strength to withstand any potential load applied to it; and

(c) is fitted with a conspicuous notice easily understandable by all employees working with the suspended platform, showing the maximum mass load which the suspended platform can carry.

The Contractor shall cause:

(a) the whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification;

(b) the whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;

(c) the performance test be undertaken by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who will determine the serviceability of the structures, ropes, machinery and safety devices before they are used, every time suspended platforms are erected; and

(d) the performance test of the whole installation of the suspended platform to be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 % of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly.

The Contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

The Contractor shall ensure that the suspended platform supervisor appointed, or the suspended platform inspector, carries out a daily inspection of all the equipment prior to use, including establishing whether:

(a) all connection bolts are secure;

(b) all safety devices are functioning;

(c) all safety devices are not tampered with or vandalised;

(d) the maximum mass load of the platform is not exceeded;

(e) the occupants in the suspended platform are using safety harnesses which have been properly attached;

(f) there are no visible signs of damage to the equipment; and

(g) all reported operating problems have been attended to.

The Contractor shall ensure that all inspection and performance test records are kept on the construction site at all times and made available to an inspector, TCTA, TCTA's agent or employee upon request.

The Contractor shall ensure that all employees required to work or to be supported on a suspended platform are:

(a) medically fit to work safely in a fall risk position or such similar environment by being in possession of a medical certificate of fitness;

(b) competent in conducting work related to suspended platforms safely;

(c) trained or had received training which include at least:
- how to access and egress the suspended platform safely;
- how to correctly operate the controls and safety devices of the equipment;
- information on the dangers related to the misuse of safety devices;
- information on the procedures to be followed in the case of:
  (i) an emergency;
  (ii) the malfunctioning of equipment;
  (iii) the discovery of a suspected defect in the equipment; and
- instructions on the proper use of safety harnesses.

Where the outrigger is to be moved, the Contractor will ensure that only persons trained and competent to effect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.

The Contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

OHS-5.42 Transportation of Employees

Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.

The Contractor shall not allow employees to be transported in a goods vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of:

(a) at least 350 mm above the surface on which employees are seated; or

(b) at least 900 mm above the surface on which employees are standing,

in a manner and with a material of sufficient strength to prevent employees from falling from such vehicle when it is in motion.

OHS-5.43 Epidemics

In the event of any outbreak of illness of a highly contagious or epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the relevant authorities.

OHS-5.44 Lightning

The Contractor shall take precautions against lightning by the use of lightning protection equipment and earthing mats, all of which shall be properly designed and installed to the satisfaction of the Engineering. Metalwork and conductors on the site shall be properly earthed. All tower cranes should be earthed and no work should be performed when there is the risk of lightning in the vicinity of the site.

No charging or blasting shall take place if the imminent approach of lightning to the site is forecast. All charged areas shall be immediately evacuated.

OHS-5.45 Health Measures to Address Industrial Hygiene

The Contractor shall institute and operate a medical screening and examination system for prospective employees. The screening system shall be established and monitored in consultation with the Engineer, the Department of Health and the Department of Labour. Medical screening shall take place before employment, annually, and on termination of employment, for whatever reason.

The Contractor shall establish a procedure for detecting and treating work related disorders, such as hearing defects or breathing disability. The procedures shall be a best working practice, and shall include for the medical examination of all people whom he proposes to employ on the works.

Records of the prospective employee's history of employment and the results of similar examinations shall be required to be produced at this pre-employment examination and shall be duly recorded. The procedure shall also include for annual re-examination and a final one on completion of employment. In addition, further examinations at shorter intervals may be necessary due to the work environment of the employee. Medical examination records of all employees shall be kept by the Occupational Health Practitioner on the site and made available when requested by TCTA or the Engineer.

Work related disorders shall include, but not be limited to:

(a) The effect on hearing due to noise exposure. The Contractor shall not expose people to a noise level in excess of 85 dB(A) unless adequate hearing protection in the form of ear muffs or plugs,

for the noise levels emitted, is supplied and worn. The medical examinations referred to above shall include audiometric measurement for air and bone conduction.

(b) The effects on the respiratory system due to dust exposure. The Contractor shall not expose people to dust levels in excess of those specified, unless adequate protection is provided by the use of dust masks or respiratory systems for the working conditions prevailing. The examinations referred to above shall include radiographic testing for pneumoconiosis and other similar disorders.

(c) Chest diseases due to exposure to such contaminable diseases as tuberculosis. The examinations referred to above shall include tests by the use of radiographs and spirometry.

(d) Allergic symptoms due to exposure to conditions to which the person is allergic. Examinations shall include such tests as are appropriate, and will be carried out on demand only.

(e) Local or temporary disorders which may be due to poor sanitary conditions, lack of nutritional food value and the like. Examinations and testing shall be as appropriate and on demand only.

Where referral or rehabilitation is required, the Contractor shall obtain and keep recorded information as to the treatments given and the results achieved.

The Contractor shall identify and negotiate with locally based and operational HIV/Aids and tuberculoses NGOs to provide applicable HIV/Aids awareness training and counselling to the workforce. Suitable HIV/Aids referral facilities should also be identified.

OHS-5.46 Permit to Work

PC's and Contractors shall adhere to the approved Permit to Work (PTW) system of the Client. If the type of work requires it, Contractors shall be trained, competence assessed and authorised in writing, by the Client in order to perform certain duties of an authorised or responsible person. These may include, but are not limited to:

- Operating Regulations or High Voltage systems
- Plant Safety Regulations
- Pulverised Fuel Firing Regulations
- Hot work
- Radiation
- Confined Space Work
- Other

OHS-5.47 Barricading on Site

All barricading on site shall be of the rigged type (orange netting, etc.). Danger tape will not be accepted to serve as barricading.

OHS-5.48 Dust Suppression

Dust suppression will take place at intervals determined by the Job Safety Analyses, unless otherwise requested or required by the Engineer site H&S Officer and/or the Engineer Project Manager.

OHS-5.49 Minimum Training Requirements for Key H&S Personnel

These training requirements will be the minimum that the PC will have to comply with in order to proof competence of H&S appointees.

Project Manager / Construction Supervisor

- Three years applicable experience in construction management
- Risk Assessment training
- Incident investigation and root cause analyses training
- OHS Act orientation training
- Training in the Construction Regulations
- In-house PTO training
- In-house JSA training

Assistant Project Manager / Construction Supervisor

- Two years applicable experience in construction management
- Risk Assessment training
- Incident investigation and root cause analyses training
- OHS Act orientation training
- Training in the Construction Regulations
- In-house PTO training
- In-house JSA training

Safety Officer

- Five years applicable experience in managing construction H&S
- Risk Assessment training
- Incident investigation and root cause analyses training

- OHS Act orientation training
- Construction Regulation training
- Emergency preparedness and response training
- SAMTRAC / COMSOC
- In-house PTO training
- In-house JSA training

Health and Safety Representatives

- Accredited H&S Representative training
- Hazard identification and risk assessment training
- In-house PTO training
- In-house JSA training

First aiders

All first aiders will be at least an accredited Level 2 first aider, appointed in writing.

The PC will be responsible to develop a method in order to uniquely identify H&S appointed personnel. This method must ensure that these employees are highly visible and all employees on site will be trained on the identification method.

OHS-5.50 Identified Hazards on Site

Possible hazards were identified on site, which includes, but are not limited to:

- Veld fires
- Working in areas with shallow water table, rivers, and wetlands
- Dust
- “Live” structures i.e. water storage or supply systems
- Theft
- Wildlife, especially endangered species and snakes
- Uneven or unstable structures and/or land
- Rain
- Mud
- Sunburn
- Deep excavations on confined spaces
- Public gathering at entrance gate looking for employment and business opportunities, and riots
- Drowning
- Vehicle & Traffic

These hazards must be identified in the PC baseline risk assessment, with effective control measures

identified. All identified control measures needs to be implemented prior to work commencing.

OHS-5.51 Biological Monitoring

The Client will be responsible for perform the following tests:

- Chemical analysis of the dust.
- Analysis of the ceilings in buildings to be demolished.

The PC will be informed accordingly and will be responsible to ensure that effective control measures are identified, implemented and maintained as per the Hazardous Chemical Substances Regulation.

OHS-5.52 Traffic Management Plan

The PC will be responsible to compile a Traffic Management Plan (TMP). This plan will as a minimum include the following information:

- Appropriate speed limits
- Travel routes for LDV's
- Travel routes for machinery
- Re-fuelling points
- Parking procedures (safe parking distances/locations and required barriers from heavy mobile equipment and pedestrians)
- Overtaking protocol
- Light vehicles entering hazardous or restricted areas, including Tunnel inspection vehicle
- Tunnel inspection vehicle Vehicle, diesel engine, roll bars, max speed 20km/h, extra head and back lights

This traffic management plan will be approved by the Engineer, prior to any work commencing and then on a monthly basis or as soon as a one of the above mentioned, changes. The traffic management plan will be displayed at key areas in view of all accessing the site. The PC will be responsible for the implementation and compliance with the plan.

The speed limit on site will not be more than 40km/h for machinery and 60km/h for LDV's.

All employees on site will be trained in the effective application of the TMP. Records of such training will be filled in the H&S File on site.

The PC's appointed Traffic Management Supervisor will be responsible for the overall management and approval of the TMP.

OHS-5.53 Planned Task Observations

As per the site organogram, a PTO will be conducted by all Supervisory and Managerial personnel. The frequency for Supervisory personnel will be at least one per day. Managerial personnel will perform at least three per week, depending on the complexity and risks on the project. The PC's H&S Officer will perform at least two PTO's per day. The objective of the PTO is to ensure that all staff on site are complying with prescribed requirements and performing their work safely.

All Supervisory and Managerial staff as well as the PC's H&S Officer will be trained in the completion of the PTO's prior to going on site or commencing work.

The format of the PTO's will be approved by the Engineer. If required, the Engineer will issue the PC with an appropriate and acceptable format for PTO's.

OHS-5.54 Job Safety Analyses

Training on the effective completion of the Job Safety Analyses (JSA) will be presented to all H&S Representative, Foremen and Supervisors. JSA's shall be conducted prior to any work/task being performed. The JSA will be conducted at least daily. A new JSA shall be conducted in the case where the task/operation changes. All employees involved in the specific task/operation shall form part of the JSA group and will sign the JSA for attendance, understanding and intent to comply with the control measures as identified on the JSA. The completed JSA's will be submitted to the PC on a weekly basis.

The format of the JSA's will be approved by the Engineer. If required, the Engineer will issue the PC with an appropriate and acceptable format for JSA's.

OHS-5.55 Toolbox Talks

Toolbox Talks will be conducted on a daily basis with every employee on site. This will include Records of the attendance of the Toolbox Talks will be filled in the H&S File on site.

OHS-5.56 Emergency Preparedness and Response

The PC will formulate an emergency response procedure which will deal with both safety and health issues. They will be responsible for ensuring that they establish that the hospitals accept IOD cases and are able to access a private ambulance for the transportation of injured employees.

A designated first aid room will be supplied on each basin, and be, at least, fitted with the following:

- An examination couch
- Desk and chair

- Trauma Board
- Oxygen Cylinder with at least 20 minutes of oxygen
- Hand wash basin
- Air conditioner
- One lockable steel cupboard
- Floors must be tile or vinyl
- Doubles doors accessible by ambulance

Each employee shall be trained in the process to be followed in the case of an emergency. The PC Site manager and H&S Officer will be in possession of all employees on site's cell phone numbers.

Minor injuries may be treated at the Engineer appointed Occupational Health Service Provider's rooms in Boksburg and are for the PC's account.

The PC will be responsible to ensure that all employees and visitors on site know and understand the Emergency preparedness and response procedure. Emergency contact card might be a good idea.

Regular emergency drills will be performed on site and the outcome of the drill will be documented and the observations and identified improvements will be filed in the Health and Safety File on site.

OHS-5.57 Medical Services

The PC will ensure that there is a qualified Occupational Health Practitioner on site once a week for four hours at the first aid rooms to perform follow up examinations on employees who have restrictions. This service to be negotiated with the Engineer appointed Occupational Health Service Provider.

OHS-5.58 First Aiders

First Aiders responsible for the HCS area or use there off, will be trained to at least Level 2.

One First Aider will be appointed for every 50 employees or part thereof, at the work area, or per working group. A First Aider will always form part of a workgroup or work area.

All First Aiders will be appointed in writing and their responsible areas clearly identified. They will also be uniquely identifiable on site.

OHS-5.59 First Aid Equipment

A First Aid box will be available at all areas of construction. The content of these First Aid boxes will, as a minimum, contain the contents as required by the General Safety Regulations under the Occupational

Health and Safety Act No 85 of 1993. More first aid boxes shall be provided if the risks, distance between work teams or workplace requirements require it.

The storage and identification will also comply with the requirements of the General Safety Regulations under the Occupational Health and Safety Act No 85 of 1993.

No medication of any kind will be stored in or issued for the first aid kit.

OHS-5.60 Emergency Equipment

The PC will ensure that sufficient emergency equipment is available on site. This equipment will be in good working order and inspected at least once a month. The required emergency equipment will be determined by the baseline risk assessment, but will include, as a minimum:

- Life jackets (where required)
- Life buoys (where required)
- Stretchers (full spinal boards with head blocks and spider harness) All first aiders to be trained in its use
- First Aid Kits
- Applicable and effective Fire Extinguishers
- Emergency showers (where required)
- Emergency eye wash facilities (where required)
- Breathing apparatus (where required)

All employees will be trained in the effective use or life jackets, life buoys and fire-fighting equipment. Records of such training will be kept in the H&S File on site.

OHS-5.61 Code of Practice / Safe Work Procedure / Method Statement

The PC will be responsible to develop, implement and maintained a Code of Practice (COP) / Safe Work Procedure (SWP) / Method Statement, when, inclusive, but not limited to:

- Legislation requires it;
- A task is identified as high risk and/or include exposure to health risks;
- Employees are being trained on a specific task;
- The Auditor, Engineer site H&S Officer or Construction Project Manager request it;
- Competencies need to be verified by the PC.

OHS-5.62 Health and Safety Meetings

OHS-5.62.1 PC and the Engineer

The Engineer and the PC shall have a H&S meeting at least once per month. The following appointees from the PC will be required to attend the meeting:

- The PC's Project Manager (Construction Manager)
- The PC's Assistant Construction Manager
- The PC's Construction Supervisor
- The PC's Resident Engineer (if applicable)
- The PC's H&S Officer
- The Engineer's Project Manager
- The Engineer's Resident Engineer
- The Engineer's site H&S Officer
- The Engineer's H&S Auditor
- The Engineer's Occupational Health consultant
- The Agent

Minutes of these meetings will be kept in the H&S File on site. When possible, this meeting can be incorporated into the Site Meeting.

OHS-5.62.2 PC and all Sub-contractors

The PC shall conducted weekly H&S meeting with all his employees as well as all sub-contracting employees. Minutes of these meeting will be filed in the H&S File. The Engineer site H&S Officer has the authority to include any item as a standing item on the minutes.

OHS-5.63 Contractor Requirement with Submission of Tender

The PC is responsible to ensure that all contractors and sub-contractors appointed are complying with legal and client requirements. As a minimum, the following documentation must be submitted:

- Letter of Good Standing for the Workmen's Compensation Commissioner or FEM
- Site organogram
- CV's of all key employees or required as identified in site organogram
- H&S statistics for the past 5 years, including:
- Project name
- Total project cost
- Budget for H&S on each project
- Actual cost for H&S on each project
- Total hours worked on each project

- No of incident occurred on each project
- Reportable incidents (as defined under definitions of this document)
- Fatalities
- Lost time (as defined under definitions of this document)
- Medical treatment (as defined under definitions of this document)
- First aid (as defined under definitions of this document)
- Near miss incidents
- Hazards

All reportable, fatal and lost time incidents will be discussed in detail.

OHS-5.64 Confined Space Work (General Safety Regulation 5)

Upon entering any confined space the requirements of General Safety Regulation 5 must be complied with:

- Any confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable or noxious air mixture.
- The confined space must be purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes.
- The safe atmosphere must be maintained.
- Employees are to be provided with breathing apparatus and wearing a safety harness with a rope with the free end of the rope being continuously attended to by a competent person outside the confined space.
- Furthermore, an additional person, trained in resuscitation, to be in full-time attendance immediately outside the confined space.
- Additional serviceable breathing and rescue apparatus is kept immediately outside the confined space for rescue purposes.
- All pipes, ducts, etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage.
- The Contractor must ensure that all employees have left the confined space after the completion of work.
- Where flammable gas is present on or in a confined space, no work may be performed in close proximity to the flammable atmosphere that may ignite the flammable gas or vapour.

OHS-5.65 Temporary Work (Construction Regulation 12)

All temporary work shall be carried out under the supervision of a competent person who has been appointed in writing for this purpose.

All temporary work must be strong enough to support any loads that may be imposed on them.

The designs of the temporary work must be done with close reference to the design drawings and the designer shall be consulted for any uncertainties.

Detailed activity specific design drawings pertaining to the design of temporary works structures are kept on the site and are available on request to the inspector, other contractors, the Client, the Client's Agent or any employee.

The temporary works drawings or any other relevant document shall include construction sequences and method statements.

A competent person must inspect all temporary work structures immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least on a daily basis until the temporary works structure has been removed and the results have been recorded in a register and made available on site.

Upon casting concrete, the temporary work structure must be left in place until the concrete has acquired sufficient strength to support safely not only its own weight but also any imposed loads, and not removed until authorization has been given by the competent person mentioned above.

The foundation conditions must be suitable to withstand the weight caused by the formwork and support work structure and any imposed loads.

The employees erecting the formwork and support work must be given adequate training and instruction.

All equipment used in temporary works structure are carefully examined and checked for suitability by a competent person, before being used.

OHS-5.66 Demolition Work (Construction Regulation 14)

A competent person must be appointed in writing to supervise demolition work

A competent person must carry out a detailed structural engineering survey in order to ascertain the method of demolition to be done and to draw up a method statement prior to commencement of demolition.

During the demolition a competent person shall check the structural integrity of the structure at intervals determined in the method statement mentioned above.

Ascertain as far as possible the location and nature of electricity, water, gas or other similar services, which may be affected by the demolition and the necessary steps to render the circumstances safe for

all persons involved.

The contractor shall ensure that no person works under overhanging material or a structure which has not been adequately supported, shored or braced.

The contractor shall ensure where the stability of an adjoining building, structure or road is likely to be affected by the demolition work on a structure that the necessary steps are taken to ensure the stability of such structure or road and the safety of persons.

The contractor shall ensure that no material falls outside the exterior walls of the structure unless that area is adequately protected.

All asbestos related work must be carried out in accordance with the provisions made in the Asbestos Regulations, 2001, promulgated by Government Notice No. R. 155 of 10 February 2002.

All lead related work must be carried out in accordance with the provisions made in the Lead Regulations, 2001, promulgated by Government Notice No. R. 236 of 28 February 2002.

Where explosives are used as part of the demolition work carried out the contractor shall ensure a method statement is developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for demolition work and all persons involved in the demolition works must adhere to these demolition procedures issued by the competent person.

OHS-5.67 Pressure Equipment (Pressure Equipment Regulations)

Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections and testing of Pressure Equipment. Written proof of competence of above appointee available on Site.
Risk Assessment carried out.
Certificates of manufacture available on site and manufacturer's plate intact.
Register available of all pressure vessels on Site.
Inspections and testing by approved inspection authority (AIA):

- After installation, re-erection or repairs;
- Every 36 months; and
- Register or log kept of inspections, tests, modifications and repair on Site.

Inspection or maintenance schedules should be available for all pressure vessels and such inspections or maintenance to be carried out in accordance with the schedules.
Results recorded and test certificates available.

OHS-6 HEALTH AND SAFETY POLICY

The Contractor has to provide the Engineer, as an annexure to the health and safety plan, with a detailed health and safety policy outlining the Contractor's stance on and principles adopted for health and safety, signed and dated by the Contractor's CEO.

OHS-7 COST FOR HEALTH AND SAFETY MEASURES DURING THE CONSTRUCTION PROCESS

The Contractor will have to demonstrate to the Engineer that sufficient provision has been made for the cost to implement and maintain the health and safety plan proposed to meet the requirements of this health and safety specification as well as that of the OHSA and its Regulations.

A detailed schedule of costs has to be included in the health and safety plan submitted as part of the potential Contractor's tender document. Failure by the Contractor to adhere to this requirement will force the Client to reject the tender/bid in terms of Construction Regulation 5 (1) (g).

OHS-8 OVERVIEW OF ATTACHMENTS

Attachment 1:	Specified framework for the Contractor's occupational health and safety plan
Attachment 2:	Legal compliance assessment
Attachment 3:	Measuring injury experience
Attachment 4:	A Sample SHE Risk Management Report

ATTACHMENT 1:

HEALTH AND SAFETY PLAN

SPECIFIED FRAMEWORK FOR THE CONTRACTOR'S
OCCUPATIONAL HEALTH AND SAFETY PLAN

1. DEFINITIONS

In this document the following expressions shall bear the meanings assigned to them below:

1.1 **Client** means any person for whom construction work is being performed and/or undertaken [i.e. Trans Caledon Tunnel Authority (TCTA) for purposes of this specification];

1.2 **Construction Regulations** means the Occupational Health and Safety Act's, No 85 of 1993, Construction Regulations that came into effect on 07 February 2014;

1.3 **Occupational health and safety plan** means a documented plan which addresses hazards identified and includes safe working procedures to mitigate, reduce or control the hazards identified;

1.4 **Occupational health and safety specification** means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons working and/or visiting the site;

1.5 **OHSACT** means the Occupational Health and Safety Act, No 85 of 1993, as amended; and

1.6 **Contractor** means an employer, as defined by section 1 of the OHSACT who performs construction work and is appointed by the Client to be in overall control and management of the construction works.

2. INTRODUCTION

In terms of the Construction Regulations [Regulation 5 (1) (b)] of the OHSACT, the Client is required to compile an occupational health and safety specification for each of its projects and the Contractor, appointed by the Client in terms of Regulation 5 (1) (k), is required to prepare an occupational health and safety plan.

This plan has to be prepared in terms of Regulation 7 (1) (a) as well as the Client's occupational health and safety specification. In terms of Regulation 5 (1) (l), the Client and the Contractor are required to agree on the occupational health and safety plan before any work may commence.

The Contractor's health and safety plan has to follow the framework specified in this attachment a minimum guideline.

3. SPECIFIED FRAMEWORK FOR THE OCCUPATIONAL HEALTH AND SAFETY PLAN

3.1 Introduction

The Contractor has to demonstrate to the Client that it has developed a suitable and sufficiently documented occupational health and safety plan for the specific project appointed as well as the necessary competencies, experience and resources to perform the construction work safely. The Contractor should submit the following documentation for perusal and verification by the Client:

a. Management structure.

b. Quality plan.

c. Human resources plan.

d. Registered workplace skills plan.

e. “Letter of good standing” from the Compensation Commissioner or licensed compensation insurer.

f. Proof of induction and other training of employees.

g. Copy of minutes as an example of other project’s occupational health and safety committee meetings and copies of incident investigation reports.

3.2 Contents of the Occupational Health and Safety Plan

3.2.1 Occupational health and safety management programme

The occupational health and safety management programme should at least provide a detailed overview of the following matters:

(a) Management of occupational health and safety risks.

(b) Occupational health and safety structures and appointments.

(c) Programme of occupational health and safety inspections.

(d) Occupational health and safety representatives.

(e) Occupational health and safety committee.

3.2.2 Communication principles and management of work

The communication and management principles to be applied, should be in the format as illustrated in **Attachment 4** and the content shall cover the minimum of the following:

a. Management structure and responsibilities.

b. Occupational health and safety goals for the project and arrangements for monitoring and reviewing occupational health and safety performance.

c. Arrangements for:

- Regular liaison between parties on site; and
- Consultation with the workforce.

d. The exchange of design information between the Client, designers, supervisors and Contractors on site.

e. Handling of design changes during the project.

f. Selection and control of Contractors.

g. The exchange of occupational health and safety information between all Contractors on matter such as:

- Security;
- Site induction and on-site training;
- Facilities and first-aid;
- The reporting and investigation of accidents and incidents;
- The production and approval of risk assessments and method statements;
- OHSACT site rules; and
- Fire and emergency procedures.

h. Reporting to the Client i.e. results of occupational health and safety inspections, incidents, incident investigations and committee meetings.

i. Reporting of incidents to the Department of Labour and compensation insurer where appropriate.

3.2.3 Arrangements for controlling significant site risks and exposures

The following are some examples of the arrangements for controlling the most significant site risks/exposures:

3.2.3.1 Safety risks

(a) Services, including temporary electrical installations.

(b) Preventing employees from falling into excavations, from trucks etc.

(c) Work with, on or near fragile materials.

(d) Control of lifting operations.

(e) The operation and maintenance of plant and equipment.

(f) Poor ground conditions.

(g) Traffic routes and segregation of vehicles and pedestrians.

(h) Storage of hazardous materials.

(i) Dealing with existing unstable and uneven structures and/or land.

(j) Accommodating adjacent land use.

(k) Other significant safety risks as and when identified.

3.2.3.2 Health risks

(a) Storage and use of hazardous chemical substances.

(b) Dealing with contaminated land or material.

(c) Manual handling.

(d) Reducing noise and vibration.

(e) Provision of adequate lighting.

(f) Ventilation considerations.

(g) Extreme heat and cold temperature considerations.

(h) Dealing with HIV/Aids and other illnesses.

(i) Provision of and maintaining ablution and eating facilities.

(j) Other significant health risks as and when identified.

3.3 Preparation of an Occupational Health and Safety Operational Reference File and/or Manual

The following are some of the minimum requirements to be addressed:

(a) Layout, format and content requirements.

(b) Arrangement for the collection and gathering of information.

(c) Storage and archiving of all the information.

(d) Copy to the Client at completion of project.

3.3.1 Minimum contents of an occupational health and safety file and/or manual

(a) Occupational health and safety policy.

(b) Notice of new projects.

(c) Relevant site start-up documentation.

(d) Security measures.

(e) Copies of written designations and appointments.

(f) Arrangements with Contractors and/or mandataries.

(g) Occupational health and safety rules and procedures.

(h) Induction training details.

(i) Occupational health and safety training.

(j) Occupational health and safety promotion.

(k) Occupational health and safety representatives.

(l) Occupational health and safety committees.

(m) Workplace facilities, for example ablution, sheltered eating areas etc.

(n) Personal protective equipment.

(o) Workplace inspections and assessments.

(p) Investigation and reporting of incidents and/or accidents.

(q) Mechanical safeguarding.

(r) Electrical safeguarding.

(s) Safeguarding against hazardous substances.

(t) Lifting machinery and equipment.

(u) Construction vehicles and mobile plant.

(v) Welding, heating and flame cutting.

(w) Excavations.

(x) Protection of the environment affected by construction activities.

(y) Keeping of records in terms of the OHSA.

3.4 Risk Assessments

Every Contractor performing construction work shall, before the commencement of any construction or associated work and during such work, ensure that a risk assessment is undertaken by a competent person, appointed in writing. The risk assessment shall form part of the occupational health and safety plan and be implemented and maintained as contemplated in Construction Regulation 7 (1) (a).
The risk assessment shall include, at least:

(a) The identification of the risks and hazards to which persons may be exposed to;

(b) The analysis and evaluation of the risks and hazards identified;

(c) A documented plan of safe working procedures (SWP) and any method statements to mitigate, reduce or control the risks and hazards that have been identified;

(d) A plan to monitor the application of the SWPs; and

(e) A plan to review the risk assessments as the work progresses and changes are introduced.

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

3.4.1 <u>Baseline or datum risk assessments</u>

The Contractor will be required 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 people, plant, vehicles and facilities may be exposed to 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.

3.4.2 Continuous risk assessments

The OHSA 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 ongoing 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:

(a) Regular audits;

(b) Maintaining general hazard awareness, and

(c) Pre-work risk assessment.

The Contractor's health and safety plan should include a comprehensive list of risk assessments (based on **Annexure 7** of the Client's occupational health and safety specification) to be carried out as well as the methodology to be followed. The plan should also include detailed site-specific occupational health and safety rules to be applied during the project.

3.5 Cost for health and safety measures during the construction process

To enable the Client to comply with Construction Regulation 5 (1) (g), all potential Contractors submitting tenders have to demonstrate to the Client that sufficient provision has been made for the cost to implement the plan proposed by the Contractor to meet the requirements of this health and safety specification as well as that of the OHSA and its Regulations.

3.6 Payment

3.6.1 Principles

It is a condition of this contract that Contractors submitting tenders for this project shall make adequate provision in their tendered rates and prices for the cost of compliance with all health and safety requirements of the Construction Regulations.

Provision will however be made in the Bill of Quantities for the following specific items that may not be fully covered under other general items.

3.7 Scheduled items

3.7.1 Appointment of dedicated safety personnel

(a) Construction Supervisor.....Unit: Sum
(b) Construction Health and Safety Officer .....Unit: Sum

3.7.2 Records and registers .....Unit: Sum

3.7.3 Risk Assessment by Contractor.....Unit: Sum

3.7.4 Contractor's Health and Safety plan. .....Unit: Sum

The lump sums tendered for sub-items 3.7.1 (a) and (b) shall cover the cost to the Contractor for the provision of dedicated full-time officers for the duration of the contract, as required by the Client.

The lump sum tendered for sub-item 3.7.2 shall cover the cost for providing and maintaining on site all the documents, files, records and registers as specified in the Construction Regulations.

The lump sum tendered for sub-item 3.7.3 shall cover the cost of having a risk assessment performed and recorded as required in the Construction Regulations.

The lump sum tendered for sub-item 3.7.4 shall cover the cost for the provision of the Contractor's Health and Safety Plan, subject to the approval of the Client or its representative.

Payment for sub-items 3.7.1 (a) and (b) will be made on a monthly basis at incremental rates in proportion to the specified time for completion. Payment will only be made for actual appointments, and payment for months in which the positions were not filled, will be withheld permanently.

Payment of the tendered lump sum in item 3.7.2 will be made as follows:

(i) 25 % of the lump sum will be paid when the required documents, files and registers under 3.7.2 are in place on site and approved by the Engineer.

(ii) The balance of the lump sums will be paid in equal monthly instalments up to the end of the contract period. Monthly payments will be withheld permanently for each month during which the Contractor failed to comply with the specifications.

Payment for items 3.7.3 and 3.7.4 will be made when the Risk Assessment Report and the Contractor's Health and Safety plan have been approved in writing by the Client or its representative.
Payment for these items does not absolve the Contractor of his responsibilities and liabilities in terms of this specification and Regulation 33 of the Construction Regulations 2014.

ATTACHMENT 2:

LEGAL COMPLIANCE ASSESSMENT

OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT: RISK ASSESSMENT CHECKLIST

(Based on the Construction Regulations of the Occupational Health and Safety Act)

* Denotes items applicable to both construction sites, Contractor plant and storage yards

ELEMENT	REMARKS
1. Administrative and legal requirements	
2. Education, training and promotion	
3. Public safety, security measures and emergency preparedness	
4. Personal protective equipment	
5. Housekeeping	
6. Working at heights (including roof work)	
7. Scaffolding and temporary works	
8. Ladders	
9. Electrical safeguarding	
10. Emergency, fire prevention and protection	
11. Excavations and demolition	
12. Tools	
13. Cranes	
14. Builder's hoists	
15. Transport and materials handling equipment	
16. Site plant and machinery	
17. Plant and storage yard or site workshop specifics	
18. Workplace environment, health and hygiene	
19. Medical fitness	
20. Demolition work	
21. Confined Space Work	

1. ADMINISTRATIVE AND LEGAL REQUIREMENTS

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
Construction Regulation 3	**Construction Work Permit - Exempted Notice of carrying out Construction work**	Department of Labour notified. Copy of notice available on site.	
General Admin. Regulation 4	***Copy of OHSA**	Updated copy of the OHSA and Regulations on site. Readily available for perusal by all	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		employees.	
COID Act Section 80; Construction Regulation 5(1)(j) and Construction Regulation 7(1)(c)(iv)	***Registration with Compensation Commissioner or other approved compensation insurer**	Written proof of registration/Letter of good standing available on site.	
Construction Regulation 5 & 6(1)(a)	**OHSA specification, plans and programme**	OHSA spec received from TCTA. OHSA plan developed. OHSA programme implemented. Plans and programme updated regularly.	
Section 8(2)(d) Construction Regulation 9	***Hazard identification and risk assessment**	Hazard identification carried out and recorded. Risk assessment and –plan drawn up and updated. Employees and sub-Contractors informed and trained.	
Section 16(2)	***Assigned duties (Managers)**	Responsibility of complying with the OHSA assigned to other person/s by CEO.	
Construction Regulation 8(1)	**Designation of person responsible on site (Construction Manager)**	Competent person appointed in writing as construction manager.	
Construction Regulation 8(2)	**Designation of assistant Construction Manager**	Competent person appointed in writing as assistant construction manager.	
Section 17 & 18 and General Administrative Regulations 6 & 7	***Election and designation of occupational health and safety representatives**	More than 20 employees - one representative and one additional representative for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful reports. Reports actioned by management.	
Section 19 & 20 and General Administrative Regulations 5	***Occupational health and safety committee/s**	Committee/s established. Members appointed in writing. Meetings held monthly. Minutes kept. Actioned by management.	
Section 37(1) & (2)	***Agreement with mandataries, Contractors and sub-Contractors**	Written agreement with Contractors and sub-Contractors. List of Contractors and sub-Contractors displayed.	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		Proof of Registration with Compensation Commissioner or Compensation Insurer as well as Letter of Good Standing. Construction Supervisor designated. Written arrangements regarding representatives and committee. Written arrangements regarding first-aid. Ensure cooperation between all appointed sub-Contractors.	
Section 24 and General Administrative Regulation 8 COID Act Section 38, 39 and 41	***Reporting of incidents (Department of Labour)**	Incident reporting procedure displayed. All incidents in terms of section 24 reported to the Provincial Director, Department of Labour, within 3 days (Annexure 1 and/or WCL 1 or 2). Cases of occupational disease reported. Copies of reports available on site. Record of first-aid injuries kept.	
General Administrative Regulation 9	***Investigation and recording of incidents**	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of reports (Annexure 1) available on site. Tabled at committee meeting. Action taken by site management.	
Construction Regulation 5(1)(c), (d) and Construction Regulation 6	**Duties of Designer**	Health and safety specification to be taken into consideration during the design. Where changes are brought about to the designs make sufficient health and safety information and resources available to the Principal Contractor. Information regarding the structure being erected received from the designer including: • All health and safety information about the design that may affect the pricing of the construction work;	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		• geo-science technical report where relevant; • the design loading of the structure; • anticipated dangers, hazards and/or special measures to construct safely. When mandated, carry out the necessary inspections at the appropriate stages. When mandated, stop any contractor from performing construction work which is not in accordance with the relevant design's health and safety aspects. Risk assessment carried out. Method statement drawn up. All above available on site. Temporary Works: • Adequately designed and capable of supporting all anticipated loads; • Design of temporary works done with close reference to structural design drawings; • All drawings and calculations pertaining to the design of temporary works kept in the office of the temporary works designer; • Loads caused by temporary works and any imposed loads are clearly indicated on the designs.	
Construction Regulation 10	**Fall prevention and protection**	Competent person appointed to draw up and supervise the fall protection plan. Proof of appointees' competence available on site. Risk assessment carried out for work at heights. Fall protection plan drawn up and updated. Plan available on site.	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		Employees medically examined for physical and psychological fitness and written proof on site.	
Construction Regulation 10(5)	**Roof Work**	Competent person appointed to plan & supervise roof work. Proof of appointees' competence available on site. Risk assessment carried out. Roof work plan drawn up and updated. Roof work inspect before each shift and inspection register kept. Employees medically examined for physical and psychological fitness and written proof on site.	
Construction Regulation 11	**Structures**	Information regarding the structure being erected received from the designer including: • geo-science technical report where relevant; • the design loading of the structure; • the methods and sequence of construction; and • anticipated dangers, hazards and/or special measures to construct safely. Risk assessment carried out. Method statement drawn up. All above available on site. Structures inspected before each shift. Inspections register kept.	
Construction Regulation 12	**Temporary Works**	Competent person appointed in writing as temporary works designer. Competent person appointed in writing to supervise erection, maintenance, use and dismantling of temporary works. Detailed activity specific drawings available on site. Risk assessment carried out. Necessary training provided. Temporary works inspected:	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		• before use and inspection; • before pouring of concrete; • during pouring of concrete; • after pouring of concrete; • daily whilst in place; and • before stripping or dismantling and inspection register kept. Pouring of concrete only after authorisation has been given in writing from Temporary Works Supervisor. Temporary Works drawings or other relevant documents to include construction sequences and method statements. Temporary Works drawings approved by Temporary Works Designer/s.	
Construction Regulation 13	**Excavations**	Competent person/s appointed in writing to supervise and inspect excavation work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Excavations inspected: • before every shift; • after any blasting; • after an unexpected fall of ground; • after any substantial damage to the shoring; and • after rain. *Inspections register kept.* Method statement developed where explosives will be and/or are used. Excavations to be adequately shored or braced, unless sides of excavations are adequately sloped to the natural angle of repose. Where any uncertainty exists the decision from a	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		professional engineer or professional technologist competent in excavations is required in writing. Confined Space procedure complied with. Warning signs to be positioned next to excavations where persons are working/ inspecting.	
Construction Regulation 14	**Demolition work**	Competent person/s appointed in writing to supervise and control demolition work. Written proof of competence of above appointee/s available on site. Risk assessment carried out. Engineering survey and method statement available on site. Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept.	
Construction Regulation 16	**Scaffolding**	Competent persons appointed in writing to: • erect scaffolding (scaffold erector/s); • act as scaffold team leaders/ supervisors; and • inspect scaffolding weekly and after inclement weather (scaffold inspector/s). Written proof of competence of above appointees. Appointees available on site. Copy of SANS 085 available on site. Risk assessment carried out. Inspected weekly and/or after bad weather. Inspection register/s kept.	
Construction Regulation 17	**Suspended platforms**	Competent persons appointed in writing to: • control the erection of suspended platforms; • act as suspended platform team leaders; and	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		• inspect suspended scaffolding weekly and after inclement weather. Risk assessment conducted. Certificate of authorisation issued by a registered professional Engineer available on site and copy forwarded to the Department of Labour. The following inspections of the whole installation carried out by a competent person • after erection and before use; • daily prior to use; and • inspection register kept. *The following tests to be conducted by a competent person:* • load test of whole installation and working parts every 12 months; • hoisting ropes, hooks and load attaching devices quarterly; and • tests log book kept. Employees working on suspended platforms should be medically examined for physical and psychological fitness. Written proof available.	
Construction Regulation 19	**Materials hoist**	Competent person appointed in writing to inspect the material hoist. Written proof of competence of above appointee available on site. Materials hoist to be inspected weekly by a competent person. Inspection register kept.	
Construction Regulation 20	**Bulk mixing plants**	Competent person appointed to control the operation of the bulk mixing plant as well as the service, maintenance and cleaning of this plant. Register kept of above. Risk assessment carried out. Start and stop devices easily	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		accessible and not able to start accidentally. Bulk mixing plant to be inspected weekly by a competent person and inspections register kept.	
Construction Regulation 21	**Explosive actuated fastening devices**	Competent person appointed to control the issue of the explosive powered tools and cartridges as well as the service, maintenance and cleaning. Register kept of above. Empty cartridge cases, nails and fixing bolts returns recorded. **Cleaned daily after use.**	
Construction Regulation 15	**Tunnelling**	Complying with Construction Regulation 15). Risk Assessment carried out.	
Construction Regulation 22 Driven Machinery Regulations 18 and 19	**Cranes and lifting machines equipment**	Competent person appointed in writing to inspect cranes, lifting machines and equipment. Written proof of competence of above appointee available on site. Cranes and lifting tackle identified and numbered. Register kept for lifting tackle. Logbook kept for each individual crane. Inspection: • **All cranes:** Daily by operator. • **Tower cranes:** After erection and thereafter 6 monthly. • **Other cranes:** Annually by competent person. All integral parts (i.e. ropes, hooks, etc.) of the cranes to be inspected 6 monthly. • **Lifting tackle (slings, ropes, chain slings etcetera):** Three monthly.	
Construction Regulation 24	**Water environments (including caissons and cofferdams)**	Competent person appointed in writing to supervise, control and inspect work on or over water and the construction, installation, and dismantling of caissons and/or cofferdams. Written proof of competence of	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		above appointee available on site. Risk assessment carried by a competent person on a daily basis. Inspection register kept.	
Construction Regulation 24 *Electrical Machinery Regulations 9 and 10* *Electrical Installation Regulations*	***Inspection and maintenance of electrical installation and equipment (including portable electrical tools)**	Competent person appointed in writing to inspect/test the installation and equipment. Written proof of competence of above appointee available on site. Inspections: • Electrical installation and equipment inspected after installation, alterations and quarterly thereafter. Inspection registers kept. • Portable electric tools and -lights and extension leads identified/numbered. • Monthly visual inspection by user, issuer or storeman. Register kept.	
Diving Regulations	**Diving operations**	Competent person appointed in writing to supervise diving operations and ensure maintenance, statutory inspection and testing by an approved inspection authority of equipment used. Written proof of competence of above appointee available on site. Proof of registration of all divers present on site available. Risk assessment carried out. Diving manual produced and available on site. Record of voice communications kept. Diving operations record kept. Each diver keeps a personal logbook and entries countersigned by the diving supervisor. Decompression tables available on site. Records of any decompression illness kept. Certificate of manufacture of any	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		compression chamber or diving bell in use available on site.	
Construction Regulation 28 General Safety Regulation 8(1)(a)	***Designation of stacking and storage supervisor**	Competent persons with specific knowledge and experience designated to supervise all stacking and storage. Written proof of competence of above appointee available on site.	
Construction Regulation 29 Environmental Regulation 9	***Designation of a person to coordinate emergency planning and fire protection**	Person/s with specific knowledge and experience designated to coordinate emergency contingency planning and execution and fire prevention measures. Emergency evacuation plan: • Developed and available on site; • Drilled and practiced; and • Records of drills and practices available on site. Fire risk assessment carried out. All fire extinguishing equipment: • Identified and on register; • Inspected weekly and inspection registers kept; • Replaced after use; and • Serviced annually.	
General Safety Regulation 3	***First-aid**	Every workplace provided with sufficient number of first-aid boxes (required where 5 persons or more are employed). First-aid boxes freely available. Content of boxes as per the minimum requirements of the OHSA. One qualified First-aider appointed for every 50 employees (required where more than 10 persons are employed). List of First-aiders and competency certificates available on site. Name and contact details of person in charge of first-aid box clearly displayed. Location of first-aid boxes clearly	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		demarcated. Signs instructing employees to report all injuries and/or illness including first-aid injuries.	
General Safety Regulation 2	**Personal protective equipment (PPE)**	PPE risk assessment carried out. Items of PPE prescribed and use enforced. Records of issue kept. Undertaking by employee to use and/or wear PPE.	
General Safety Regulation 9	***Inspection and use of welding and/or flame cutting equipment**	Competent person/s with specific knowledge and experience designated to inspect electric arc, gas welding and flame cutting equipment. Written proof of competence of above appointee available on site. Equipment identified/numbered and entered into a register. Equipment inspected monthly. Inspection register kept.	
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 25	***Control of storage and usage of HCS and other flammables**	Competent person/s with specific knowledge and experience designated to control the storage and usage of HCS (including flammables). Written proof of competence of above appointee available on site. Risk assessment carried out. Register of HCS kept and/or used on site. MSDSs available and communicated for all HCSs kept and used on site.	
Pressure Equipment Regulations	**Pressure Vessels**	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections and testing of pressure vessels. Written proof of competence of above appointee available on site. Risk assessment carried out. Certificates of manufacture available on site. Register of pressure vessels on site. Inspections and testing by approved	

OHSA SECTION OR REGULATION	SUBJECT	REQUIREMENTS	YES/NO
		inspection authority (AIA): • after installation, re-erection or repairs; • every 36 months; and • register or log kept of inspections, tests, modifications and repair on site.	
Construction Regulation 23	**Construction vehicles and mobile plant**	Operators or drivers appointed to: • Carry out a daily inspection prior to use; and • Drive the vehicle or plant that he/she is competent to drive or operate. Written proof of competence of above appointee available on site. Record of daily inspections kept on site.	
General Safety Regulation 13A	***Inspection of Ladders**	Competent person appointed in writing to inspect ladders. Ladders inspected at arrival on site and monthly thereafter. Inspections register kept on site.	
General Safety Regulation 13B	**Ramps**	Competent person appointed in writing to supervise the erection and inspection of ramps. Inspection register kept on site.	

2. EDUCATION, TRAINING AND PROMOTION

SUBJECT	REQUIREMENT	YES/NO
***Occupational Health and Safety Policy as per OHSA Section 7(1)	Policy signed by CEO and published and communicated to employees. Policy displayed on employee notice boards. Management and employees committed.	
***Company and site health and safety rules as per OHSA Section 13(a)	Rules published. Rules displayed on employee notice boards. Rules issued and explained to employees with written proof hereof. Follow-up to ensure employees understand and adhere to the rules.	
***Induction and task safety training as per OHSA Section 13(a)	All new employees receive health and safety induction training. Training includes task safety instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand and adhere to instructions.	
***General health and safety training as per OHSA Section 13(a)	All employees receive basic health and safety training. Written proof kept. Operators of plant and equipment receive specialised training. Follow-up to ensure employees understand and adhere to instructions.	
***Occupational health and safety promotion	Incident experience board indicating among others - • Number of hours worked without an injury; and • Number of days worked without an injury. Safety grading - Board kept up to date. Relevant safety posters displayed and changed regularly. Employee notice board for health and safety notices. Site health and safety competitions. Company health and safety competition. Participation in regional health and safety competitions. Suggestion scheme.	

3. PUBLIC SAFETY, SECURITY MEASURES AND EMERGENCY PREPAREDNESS

SUBJECT	REQUIREMENT	YES/NO
***Notices and signs	Notices and signs at entrances along perimeters indicating **"No unauthorised entry"** and **"Entry at own risk"**. Notices and signs at entrance instructing visitors and non-employees what to do, where to go and where to report on entering the site or yard with directional signs for example **"Visitors to report to office"**. Notices and signs posted to warn of overhead work and other hazardous activities for example **General Warning Signs**.	

SUBJECT	REQUIREMENT	YES/NO
Site safeguarding	Nets, canopies, stills, fans etc to protect members of the public passing and/or entering the site.	
*Security measures	Access control measures and register in operation. Security patrols after hours and weekends. Sufficient lighting after dark. Guard has access to telephone or other means of emergency communication.	
*Emergency preparedness	Emergency contact numbers displayed near telephone. Emergency evacuation instructions posted up on all notice boards (including employees' notice boards). Emergency contingency plan available on site or in yard. Doors open outwards and unobstructed. Emergency alarm audible all over (including in toilets).	
Emergency drill and evacuation	Adequate number of employees trained to use fire equipment. Emergency evacuation plan available, displayed and practiced. **(See Section 1 for designation and register)**.	

4. PERSONAL PROTECTIVE EQUIPMENT (PPE)

SUBJECT	REQUIREMENT	YES/NO
*PPE needs analysis	Need for PPE identified and prescribed in writing.	
*Head protection	It is compulsory for all persons on site to wear safety helmets including sub-Contractors and visitors (where prescribed).	
*Foot protection	All persons on site have to wear safety footwear including gumboots for concrete or wet work and non-slip shoes for roof work.	
*Eye and face protection	Eye and face protection (such as goggles, face shields, welding helmets) to be used when operating the following: • Jack or kango hammers; • Angle or bench grinders; • Electric drills (overhead work into concrete, cement and bricks); • Explosive powered tools; • Concrete vibrators or pokers; • Hammers and chisels; • Cutting or welding torches; • Arc welding equipment; • Skill or bench saws; and	

SUBJECT	REQUIREMENT	YES/NO
	• Spray-painting equipment etc.	
*Hearing protection	Hearing Protectors (such as muffs, plugs) used when operating the following: • Jack or kango hammers; • Explosive powered tools; and • Wood or aluminium working machines such as saws, planers, routers.	
*Hand protection	Protective gloves to be worn by employees handling or using: • Cement, bricks, steel or chemicals; • Welding equipment; • Hammers and chisels; and • Jack or kango hammers etc.	
*Respiratory protection	Suitable and efficient respirators to be worn correctly by employees handling or using: • Dry cement; • Dusty areas; • Hazardous chemicals; • Angle grinders; and • Spray-painting etc.	
*Fall Prevention Equipment	Suitable safety belts or fall arrest equipment correctly used by persons working on or in unguarded, elevated positions such as: • Shaft work; • Scaffolding; • Riggers; • Lift shafts; • Edge work; and • Ring beam edges etc. Other applicable methods of fall prevention should all be applied such as catch nets.	
*Protective clothing	All jobs requiring protective clothing (such as overalls, rain wear, welding aprons etcetera) to be identified and clothing worn.	
*PPE issue and control	Identified equipment to be issued free of charge.	

SUBJECT	REQUIREMENT	YES/NO
	All PPE should be maintained in good condition (i.e. regular checks). Workers instructed in the proper use and maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on file.	

5. HOUSEKEEPING

SUBJECT	REQUIREMENT	YES/NO
*****Scrap removal system	All items of scrap, unusable off-cuts, rubble and redundant material removed from working areas on a regular basis. Scrap and/or waste removal from heights by chute, hoist or crane (i.e. nothing thrown or swept over sides). Scrap disposed of in designated containers or areas. Removal from site or yard on a regular basis.	
Stacking and storage **(See Section 1 for designation and register)**	Stacking: • Stable; • On firm level surface or base; • Not leaning and/or collapsing; • Irregular shapes bonded; • Not exceeding 3 times the base; • Stacks accessible; and • Removal from top only. Storage: • Adequate storage areas provided; • Functional for example demarcated storage areas, racks, bins etc; • Special areas identified and demarcated for example flammable gas, cement etc; • Neat, safe, stable and square; • Store and storage areas clear of superfluous material; • Storage behind sheds etcetera should be neat and under control; and • Storage areas free from weeds, litter etc.	
*****Waste control or reclamation	Re-usable off-cuts and other re-useable material removed daily and kept to a minimum in the work areas.	

SUBJECT	REQUIREMENT	YES/NO
	All re-useable materials neatly stacked or stored in designated areas (i.e. nails removed or bent over in re-useable timber). Issue of hardware, nails, screws and cartridges etc should be controlled and return of unused items monitored.	
Sub-Contractors	Sub-Contractors required to comply with the site or yard's housekeeping requirements.	

6. WORKING AT HEIGHTS (INCLUDING ROOF WORK)

SUBJECT	REQUIREMENT	YES/NO
Openings	*Unprotected openings adequately guarded, fenced and barricaded with catch nets installed where necessary.* Covers over openings in roof of robust construction and secured against displacement.	
General requirements	Roof work discontinued when bad or hazardous weather prevails. Fall protection measures (including warning notices) when working close to edges or on fragile roofing material.	

7. SCAFFOLDING AND TEMPORARY WORKS

SUBJECT	REQUIREMENT	YES/NO
Access and system scaffolding **(See Section 1 for designation and register)**	Foundation firm and stable. Sufficient bracing. Tied to structure and secured from side or cross movement. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Complying with OHSA and SANS 085.	
Free Standing Scaffolding	Foundation firm and stable. Sufficient bracing. Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe or unsafe for use signs to be used. Height and base ratio correct. Outriggers used and tied to structure where necessary. Complying with OHSA and SANS 085.	
*****Mobile scaffolding	Foundation firm and stable. Sufficient bracing.	

SUBJECT	REQUIREMENT	YES/NO
	Platform boards in good condition and secured. Sufficient platform boards to be used. Handrails and toe boards provided. Access ladders or stairs provided. Area/s under scaffolding tidy. Safe and unsafe for use signs to be used. Wheels and swivels in good condition. Brakes working and applied. Height to base ratio correct. Outriggers used where necessary. Complying with OHSA and SANS 085.	
Suspended scaffolding	Outriggers securely supported and anchored. Correct number of steel wire ropes used. Platform as close as possible to the structure. Handrails on all sides. All winches, ropes, cables and brakes inspected regularly. Inspection registers kept on site. Scaffolding complies with OHSA. Winches maintained by competent person.	
Temporary work	All components in good condition. Foundation firm and stable. Use of solvents, oils or other similar substances not affecting the health of any person. Adequate bracing and stability ensured. Good workmanship, uprights straight and plum. Good cantilever construction. Safe access provided. Areas under support work tidy. Same standards as for system scaffolding.	
Special scaffolding	Special scaffolding for example cantilever, jib and truss-out scaffolds erected to an acceptable standard and inspected by specialists. Inspection registers to be kept on site.	
Edges and openings	Edges barricaded to acceptable standards. Manhole openings covered and/or barricaded. Openings in floor and other openings covered, barricaded or fenced. Stairs provided with handrails. Lift shafts barricaded or fenced off.	

8. LADDERS

SUBJECT	REQUIREMENT	YES/NO
***Physical condition, use and storage **(See Section 1 for designation and register)**	Stepladders – hinges, stays, braces and stiles in order. Extension ladders – ropes, rungs, stiles, safety latch and hook in order. Extension or straight ladders secured or tied at the bottom	

SUBJECT	REQUIREMENT	YES/NO
	or top. No joined ladders used. All ladders stored on hooks or racks and not on ground. Ladders protrude 900 mm above landings, platforms or roof. Fixed ladders higher than 5 m have cages or fall arrest system.	

9. ELECTRICAL SAFEGUARDING

SUBJECT	REQUIREMENT	YES/NO
***Electrical distribution boards and earth leakage	Colour coded, numbered and symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate, openings blanked off and no exposed "live" conductors or terminals. Door kept close. Switches and/or circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument - test results within 15 – 30 milli-amps. Aperture openings provided for the plugging in and removal of extension leads without the need to open the door.	
***Electrical installations and wiring	Temporary wiring or extension leads in good condition with no bare or exposed wires. Earthing continuity and polarity correct: **"Brown is live, Blue is neutral, Green and Yellow earth the lot"** Cables protected from mechanical damage and moisture. Correct loading observed for example no heating appliance used from lighting circuit etc. Light fittings and lamps protected from mechanical damage/moisture.	
***Physical condition of electrical appliances and tools	Electrical Equipment and Tools (includes all items plugging in to a 15 Amp supply socket): • Insulation and casing in good condition. • Earth wire connected or intact where not of double insulated design. • Double insulation mark where no earth wire. • Cord in good condition/no bare wires/secured to machine & plug. • Plug in good condition, connected correctly and correct polarity.	

10. EMERGENCY, FIRE PREVENTION AND PROTECTION

SUBJECT	REQUIREMENT	YES/NO
***Fire extinguishing equipment **(See Section 1 for designation and register)**	Fire Risks Identified and on record. Fire Extinguishing Equipment available for: • Offices; • General stores; • Flammable store; • Fuel storage tanks; • Gas welding or cutting operations; and • Where flammable substances are being used or applied.	
***Maintenance	Fire equipment serviced minimum annually, but preferably 6 monthly.	
***Location & Signs	Fire Extinguishing Equipment: • Clearly visible; • Unobstructed; and • Sign posted including "No Smoking" and "No Naked Lights" where required i.e. (flammable store, gas store, fuel tanks etc.)	
*** Storage issue and control of flammables (incl. gas cylinders)	Storage area provided for flammables with suitable doors, ventilation, bund etc. Flammable store neat and tidy with no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied. Only sufficient quantities issued for one day's use. Special gas cylinder store or storage area. Gas cylinders stored, used and transported upright and secured in trolley, cradle or structure that is well ventilated. Types of gas cylinders identified and stored separately. Full cylinders stored separately from empty cylinders.	
***Storage, issue and control of Hazardous Chemical Substances (HCS) **(See Section 1 for designation and register)**	HCS storage principles applied i.e. products segregated. Provision made for leakage and spillage containment. Emergency (serviceable) showers and eye wash facilities provided. HCS under lock and key as well as controlled by designated person. Decanted or issued in containers with information and warning labels. Disposal of unwanted HCS by recognised disposal agent.	

11. EXCAVATIONS AND DEMOLITION

SUBJECT	REQUIREMENT	YES/NO
Excavations deeper than 1.5 m. **(See Section 1 for designation and register)**	Shored or braced to prevent caving or falling in. Provided with an access ladder. Excavations guarded, barricaded or lighted after dark in public areas. Soil dumped at least 1 m away from edge of excavation. On sloping ground soil dumped on lower side of excavation.	

12. TOOLS

SUBJECT	REQUIREMENT	YES/NO
***Hand tools	Shovels, Spades and Picks: • Handles free from cracks and splinters; • Handles fit securely; and • Working end sharp and true. Hammers: • Good quality handles, no pipe or reinforcing steel handles; • Handles free from cracks and splinters; and • Handles fit securely. Chisels: • No mushroomed heads or heads chamfered; • Not hardened; and • Cutting edge sharp and square. Saws: • Teeth sharp and set correctly; and • Correct saw used for the job.	
***Explosive powered tools **(See Section 1 for designation and register)**	Only used by trained and authorised personnel. Prescribed warning signs placed or displayed where tool is in use. Inspected at least monthly by competent person and results recorded in on site register. Issue and return recorded including cartridges or nails and unused cartridges, nails, empty shells recorded. Cleaned daily after use in on site register.	

13. CRANES

SUBJECT	REQUIREMENT	YES/NO
Tower crane **(See Section 1 for designation and register)**	Only operated by trained authorised operator with valid certificate of training. Certificate available on site.	

SUBJECT	REQUIREMENT	YES/NO
	Structure - no visible defects. Electrical installation good and safe. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. Limit switches fitted and operational. Access ladder fitted with back rests or fall arrest system installed. Lifting tackle in good condition and inspection colour coding current. Wind speed devices to be fitted onto tower cranes and forces of wind on the crane to be taken into consideration.	
*****Mobile crane **(See Section 1 for designation and register)**	Only operated by trained authorised operator with valid certificate of training. Certificate available on site. Rear view mirrors and windscreen visibility good. Windscreen wipers operating effectively. Indicators operational. Hooter working. Tyres safe with sufficient tread and pressure visibly sufficient. No missing wheel nuts. Headlights, taillights operational. Grease nipples and grease on all joints. No visible oil leaks. Hydraulic pipes visibly sound with no leaks. No undue corrosion on battery terminals. Boom visibly in good condition with no apparent damage. Cable and sheaves greased with no visible damage, split wires or corrosion. Brakes working properly. Crane hook - throat pop marked, safety latch fitted and functional. SWL/MML displayed. By-pass valves operational. Deflection chart displayed and visible to operator or driver. Outriggers functional used. Base plates positioned underneath outriggers when in use.	
*Gantry crane	Only operated by trained authorised persons. Correct slinging techniques used. Recognised displayed on chart signals used. Log book kept up to date. Prescribed inspections conducted on crane and lifting tackle. “Crane overhead” signage, where applicable. Crane hook - throat pop marked, safety latch fitted and	

SUBJECT	REQUIREMENT	YES/NO
	functional. SWL/MML displayed and load limiting switches fitted and operational.	

14. BUILDER'S HOIST

SUBJECT	REQUIREMENT	YES/NO
Builder's hoist **(See Section 1 for designation and register)**	**"Hoist in operation"** - sign displayed. General construction strong and free from latent defects. Tower: • Adequately secured and braced. • At least 900 mm available for over travel. • Barricaded at least 2 100 mm high at ground level and floors. • Landing place provided with gate at least 1 800 high. Platform: • No persons conveyed on platform. • Steel wire ropes with breaking strain of six times maximum weight. • Signal systems used. • Goods prevented from moving/falling off. • Effective brake capable of holding maximum weight.	

15. TRANSPORT AND MATERIALS HANDLING EQUIPMENT

SUBJECT	REQUIREMENT	YES/NO
*Site vehicles	All site vehicles, dumpers, bobcats, loaders etc checked daily before used by driver or operator. Inventory of vehicles used/operated on site. Inspection by means of a checklist and results recorded. No persons riding on equipment not designed for passengers. Site speed limit posted and not exceeded. Drivers and operators trained and licensed. Licenses available on site. No unauthorised persons allowed to drive or operate equipment.	
Conveyors	Conveyor belt nip points and drive guarded. Emergency stop and lever brake fitted, clearly marked and accessible.	

16. SITE PLANT AND MACHINERY

SUBJECT	REQUIREMENT	YES/NO
Brick cutting machine	Operator trained and only authorised persons use the machine. Emergency stop switch clearly marked and accessible. **Area around the machine dry and slip or trip free as well as clear of off cuts.** All moving drive parts guarded. Electrical supply cable protected. Operator using correct PPE i.e. eye, face, hearing, foot, hands and body.	
***Electric arc welder	Welder trained. Only authorised and trained persons use welder. Adequately earthed. Electrode holder in good condition and safe. Cables, clamps, lugs and connectors in good condition. Area in which welding machine is used is dry and protected from wet. Welder using correct PPE i.e. eye, face, foot, body and respiratory. Screens and warning signs placed.	
***Woodworking machines	Operator's trained and only authorised persons use machines. Provided with guards and guards used. Operators using correct PPE i.e. eye, face, foot and hearing.	
***Compressors	Relief valves set, locked and sealed. Maximum safe working pressure (MSWP) indicated on face of pressure gauge face and not on glass cover. All drives adequately guarded. Receiver and lines drained daily. Hoses good condition and clamped, not wired.	
Concrete mixer and batch plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE i.e. eye, hands and respiratory. All moving drive parts guarded. Emergency stops identified, indicated and accessible. Area kept clean, dry and free from tripping and slipping hazards. Banksman identified and crane signals displayed and used.	
***Gas welding and flame cutting equipment	Only authorised and trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition, correct type and all connections with clamps. Cylinders stored, used and transported in upright position, secured in trolley or cradle. Fire prevention control methods applied.	

SUBJECT	REQUIREMENT	YES/NO
	Hot work permits.	

17. PLANT AND STORAGE YARD OR SITE WORKSHOP SPECIFICS

SUBJECT	REQUIREMENT	YES/NO
OHSA, Section 8(2)(1) General Machinery Regulation 2(1) **Supervision of the use and maintenance of machinery**	Persons with specific knowledge and experience designated to supervise the use and maintenance of machinery. Critical items of machinery identified, numbered and placed on register or inventory. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded.	
General Machinery Regulation 9(2) **Notices regarding operation of machinery**	Schedule D notice posted in work areas.	
Vessels under Pressure Regulation 13(1)(b) **Supervision of the use and maintenance of pressure vessels**	Persons with specific knowledge and experience designated to supervise the use and maintenance of pressure vessels. Pressure vessels identified, numbered and placed on register. Manufacturers plate intact. Inspection or maintenance schedules for abovementioned. Inspections or maintenance carried out to above schedules. Results recorded and test certificates available.	
Lock-out procedure	Lock-out procedure in operation.	
Ergonomics	Ergonomics survey conducted. Results on record. Survey results applied.	
Demarcation and colour coding	Demarcation principles applied. All services, pipes, electrical installation, stop-start controls, emergency controls etcetera colour coded to own published or SABS standard. Employees trained to identify colour coding.	
Portable and bench grinders	Area around grinder clear and trip/slip free. Bench grinders mounted securely and grinder generally in good condition. No excessive vibration. On and off switch or button clearly demarcated and accessible. Adequate guards in place. Tool rest – secure, square and maximum 2 mm gap. Stone or disk - correct type and size, mounted correctly and dressed. Use of eye protection enforced.	

SUBJECT	REQUIREMENT	YES/NO
Ancillary lifting equipment	Chain blocks, tirfors, jacks and mobile gantries etc. identified and numbered on register. Chains in good condition and links no excessive wear. Lifting hooks – throat pop marked and safety latch fitted. SWL/MML marked or displayed. Stored safely.	
Presses, guillotines and shears	Only operated by trained and authorised persons. PPE used by operators Interlocks or lockouts fitted.	

18. WORKPLACE ENVIRONMENT, HEALTH AND HYGIENE

SUBJECT	REQUIREMENT	YES/NO
***Lighting	Adequate lighting in places where work is being executed for example stairwells and basements or after sunset. Light fittings placed and installed causing no irritating or blinding glare.	
***Ventilation	Adequate ventilation, extraction and exhausting in hazardous areas for example where chemicals and adhesives are stored, welding takes place and where petrol or diesel motors are running in confined spaces or basements.	
***Noise	Tasks identified where noise exceeds 85 dBa. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dBa.	
***Heat stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30 (see Environmental Regulation 4). Cold drinking water readily available when extreme temperatures are experienced.	
***Ablution facilities	Sufficient toilets provided for men and women separately i.e. 1 per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites). Toilet paper available. Sufficient showers provided for men and women separately. Facilities for washing hands provided. Soap available for washing hands. Means of drying hands available. Changing facilities or area provided for men and women separately. Ablution facilities hygienic and clean.	
***Eating and cooking facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area.	

SUBJECT	REQUIREMENT	YES/NO
	Refuse bins with lids provided. Facilities clean and hygienic.	
*Pollution of environment	Measures in place to minimize dust generation. Accumulation of empty cement pockets, plastic wrapping or bags, packing materials etc. prevented. Spillage or discarding of oil, chemicals and dieseline into storm water and other drains prevented.	
*Hazardous chemical substances **(See Section 1 for designation and register)**	All substances identified and list available e.g. acids, flammables, poisons etc. Material Safety Data Sheets (MSDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely.	

Name of person who has undertaken the assessment _____

Signature _____

Date _____

Received by _____

Designation _____

Date _____

Tabled at health and safety committee _____

ATTACHMENT 3:

MEASURING INJURY EXPERIENCE

MEASURING INJURY EXPERIENCE

1. Background

Injury experience has moved from measuring injury by the use of a Disabling Injury Frequency Rate, the so-called "DIFR". The DIFR was calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of person-hours worked.

The DIFR has been replaced internationally with a Recordable Case Rate (RCR). The only difference between the two rates is that the 1 million in the calculation is replaced with 200 000 (200 000 purported to be the number of hours and average person works in a lifetime).

In using of the two rates with manipulation of disabling injuries to hide the facts by returning the injured employee to the workplace so as not to lose a shift and therefore having not to register a disabling injury, will not be tolerated.

This Attachment provides guidance in the use of RCR rate based on the number of compensation injury claims, which are found not to be easy to manipulate because the reporting of injuries, subject to compensation, is a legal requirement.

Measure of the RCR rate shall include professional staff on the project.

2. Recordable Case Rate (RCR)

2.1 Formula

No of Recordable Cases X 200 000
*220 person hours X No of employees

2.2 Definitions

No of compensation claims: The number of recordable cases for the period under review which, while being inclusive shall cover disabling and compensation claims. The Contractor shall keep his own register of cases regardless of their submission for compensation and use for reporting.

200 000: The fixed factor to align the rate with other rates used internationally.

Person hours worked Include: The denominator of the equation covers the total hours worked on the project to date of the report. The monthly data for the person hours shall be obtained from labour returns kept by the Contractor. Should an alternative calculation method be applicable to obtain hours for the daily paid employees the employee number is multiplied by a common factor of 220 (No of employees X *220 each) for construction workers and (No of employees X *168 hours each) for professional staff

220 and 168 person-hours: The *average number of hours worked by one construction employee in one month in the construction industry and by one professional in construction industry.

Note: * Overtime, absence on leave or sick leave, unrecorded after hours time worked by senior and middle management factored into this average. The total worked hours is always available from the Contractor's labour data.

No of employees: The actual or average number of employees employed for the period under review.

MONTHLY HEALTH AND SAFETY REPORT

CONTRACT NO.

Recordable Case Category | **Number of Cases**

(Excl. First Aid Cases)

LWDC – Lost Workday Case
LOCC – Loss of Consciousness Case
RWC – Restricted Work Case
TC – Transfer to another job Case
MTC/MTBFAC – Medical Treatment beyond First Aid Case
Recordable Illnesses

Number of First Aid Cases

Brief Description of Each First Aid Case for Reporting Month :

CONTRACT NO.

Recordable Case Category | **Number of Cases**

(Excl. First Aid Cases)

LWDC – Lost Workday Case
LOCC – Loss of Consciousness Case
RWC – Restricted Work Case
TC – Transfer to another job Case
MTC/MTBFAC – Medical Treatment beyond First Aid Case
Recordable Illnesses

Number of First Aid Cases

Brief Description of Each First Aid Case for Reporting Month :

Contract No	Previous Total		This Period Total			Current Total		
	cases	hours	cases	hours	RCR	cases	hours	RCR
TOTAL								

$$RCR = \frac{[\ recordable\ cases\ ] \ \times \ 200\ 000}{[\ total\ hours\ ]}$$

ATTACHMENT 4:

SAMPLE SHE MANAGEMENT REPORT

SAMPLE SAFETY, HEALTH AND ENVIRONMENT (SHE): RISK MANAGEMENT REPORT

(Please note that this is an example only and all information is fictitious)

XYZ Construction

SHE risk management report for the period January 2004 to March 2004

1. Introduction

We trust that this quarterly SHE Risk Management report will provide a clear picture of the company's performance as far as occupational health, safety and environment is concerned.

The first quarter of 2004 generally reflected an improvement in injury experience and indicates a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2003 figures. A sub-Contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation during May 2004 of the new electronic SHE Management system that will provide the tools to implement the SHE programme and make it available to all management and supervisory staff.

2. Incident Statistics

2.1 Recordable Case Rate (RCR)

See a sample report provided as Attachment 3: Measuring Injury Experience.

2.2. Other major incidents

Three other major incidents were experienced in the period under review:

2.2.1 A major trench collapsed at Job. 00123: XYZ Head Office, Braamfontein: No personnel injured, extensive damage to foundations: 3 days delay.

2.2.2 A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Randburg. The driver jumped off and was not injured. Cost of damage to façade: R45 000.

2.2.3 A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and levelling machines. Cost of replacing the hut and machines: R30 000.

3. Risk areas

The following items of concern need priority consideration by management:

3.1. New employees must undergo pre-employment medical examinations to:

- protect XYZ from possible claims at a later stage;
- ensure that only capable persons are employed;
- prevent injuries and illness in the workplace; and
- enhance XYZ image.

3.2. Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

4. Risk assessments

Three SHE risk assessments were conducted in February and March:

Job 00432:	Gillooly's Mall	Compliance: 56 %
Job 00786:	Cullinan Head Office	Compliance: 83 %
Job 00589:	Cleveland Station	Compliance: 76 %

5. Training

One hundred and forty two employees, representing 7 % of employees, attended nine training courses. *Our objective is to train 5,5 % of employees on a quarterly basis.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal
	15	OH&S Reps	Contractor
	3	Crane Drivers	External
February	23	Induction	Internal
	17	OH&S Reps	Contractor
March	43	Induction	Internal
	9	OH&S Reps	Contractor
	3	Bomag Rollers	Supplier
	3	First Aiders	St. John's

6. Legal matters

6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gillooly's Mall. The notice requires that all scaffolding comply with the SANS standards for the Erection and Maintenance of Access Scaffolding (SANS 085). This is currently being attended to and the inspector will return on 15 April 2004 to ascertain if the notice has been complied with.

7. Occupational health matters

7.1 HIV Aids

The proposed clinic will soon be operational and we will then be able to send our employees who have tested positive for HIV/Aids to the clinic for counselling and eventual treatment when necessary.

The mobile clinic attended to and tested fifty employees on a voluntary basis at 3 sites this month. Eighteen of them tested positive.

7.2 Tuberculosis (TB)

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 April 2004 respectively to screen employees for TB.

7.3 Noise

All suspected noise pollution areas have been identified and tested and the results are awaited.

Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

8. Environmental measures

Inspectors from the Botswana Department of Environment visited Djwaneng and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day with water instead of the present twice per day.

9. Achievements and awards

9.1 The client at Djwaneng (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client's SHE managers. The project manager and his team are to be congratulated for this sterling effort.

9.2 Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1 million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

Source: SAFCEC Occupational Health and Safety Committee