

PPS 1**HEALTH AND SAFETY SPECIFICATION****PPS1-1 General**

This specification shall be read together with all particular requirements stated in the other parts of the Specification. The Contractor shall comply with the Occupational Health and Safety Act (OHS Act No 85 of 1993) and the Construction Regulations, 2014. The "minimum safety requirements" referred to above shall be those contained in the Construction Regulations, 2014 of the above OHS Act and as specified herein. Furthermore, the Contractor shall comply with any additional current statutory requirements of any relevant Government Departments regarding health and safety and specifically environmental health issues.

The Contractor shall take full responsibility for the prevention of unhealthy or unsafe working conditions and practices and for the promotion of a healthy site and safe working practices on the Site as such conditions and practices may affect his employees and any other persons while present on the Site. The Contractor shall observe all industrial hygiene, occupational health and safety regulations on the Site. Nothing specified in this document shall relieve the Contractor of any obligations or responsibilities with regard to health and safety responsibilities.

Where safety precautions are not being observed, the Engineer may order the Contractor to comply with minimum safety requirements at the Contractor's expense, and compliance with such an order will not absolve the Contractor from any of his responsibilities and obligations under the Contract.

The Contractor shall prevent conditions on the Site which may be prejudicial to the safety and welfare of his employees or of other persons while present on the Site. The Contractor shall provide and maintain construction equipment, tools and systems of working that are safe.

The Contractor shall ensure that the necessary first aid facilities and emergency evacuation equipment is available on Site whenever persons are working on Site during or outside of working hours.

This Health and Safety Specification and the Contractor's own Safety Plan as well as the Construction Regulations 2014, shall be displayed on site and made available for inspection by all workers, employees, inspectors and any other persons entering the site of Works.

PPS1-2 DEFINITIONS

For the purpose of this Contract the following shall apply:

- (a) "Employer" where used in the Contract documents and in this Specification, means the Employer as defined in the General Conditions of Contract and it shall have the exact same meaning as "Client" as defined in the Construction Regulations 2014. "Employer" and "Client" is therefore interchangeable and shall be read in the context of the relevant document.
- (b) "Contractor", wherever used in the Contract documents and in this specification, shall have the same meaning as "Contractor" as defined in the General Conditions of Contract.

In this specification the terms "Principal Contractor" and "Contractor" are replaced with "Contractor" and "Subcontractor" respectively.

For the purpose of this Contract the "Contractor" will, in terms of OHS Act 1993, be the mandatory of the Employer, without derogating from his status as an employer in his own right.

- (c) "Engineer" where used in this specification, means the Engineer as defined in the General Conditions of Contract. In terms of the Construction Regulations the Engineer may act as agent on behalf of the Employer (the Client as defined in the Construction Regulations).

PPS1-3 APPLICATION FOR CONSTRUCTION WORK PERMIT

The Employer shall in terms of Regulation 3 of Construction Reg. 2014, apply to the Provincial Director of the Department of Labour in writing for a construction work permit if the intended construction work will;

- (a) Exceed 180 days
- (b) Involve more than 1800 person days or construction work; or
- (c) The work contract is of a value equal to or exceeding forty million rand or Construction Industry Development Board (CIBD) grading level 8.

PPS1-4 GUIDELINES FOR THE DEVELOPMENT OF A HEALTH AND SAFETY PLAN**PPS1-4.1 Project Background**

In terms of the Construction Regulations [Regulation 5 (1) (b)] of the Occupational Health and Safety Act, No 85 of 1993, 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 7 (1) (a), is required to prepare an Occupational Health and Safety Plan. This plan has to be prepared in terms of Regulation 5 (1) as well as the Client's Occupational Health & Safety Specification. In terms of Regulation 5 (1), the Client and the Contractor are required to agree on the Occupational Health and Safety Plan before any work may commence. The Contractor shall implement the Health and Safety Plan, in line with the various statutory regulations and Tender Schedule V. The Plan shall be submitted to the Engineer within 28 days after the Commencement Date. Upon the Engineer's approval, the Contractor shall immediately implement the Plan and any amendments, and keep it in operation for the full duration of the Contract

PPS1-4.2 Framework for an Occupational Health and Safety Plan**PPS1-4.2.1 Introduction**

The Contractor shall demonstrate to the Client that he has a suitable and sufficiently documented Occupational Health and Safety Plan as well as the necessary competencies, experience and resources to perform the construction work safely. The Contractor could be required to submit the following documentation for perusal and verification by the Client:

- Management Structure
- Quality Plan
- Human Resources Plan
- Registered Workplace Skills Plan
- "Letter of good standing" from the Compensation Commissioner or licensed compensation insurer.
- Proof of induction and other training of employees
- Example copy of minutes of previous Occupational Health and Safety Committee meetings and copies of Incident Investigation Reports

PPS1-4.2.2 Contents of an Occupational Health and Safety Plan

The Occupational Health and Safety Plan shall include the following:

- a) Occupational health and safety management programme
 - Management of Occupational Health and Safety risks
 - Occupational Health and Safety structures and appointments
 - Programme of Occupational Health and Safety inspections
 - Occupational Health and Safety Representatives
 - Occupational Health and Safety committee

b) Communication and Management of the Work

- Management structure and responsibilities
- Occupational Health and Safety objectives for the project and arrangements for monitoring and review of Occupational Health and Safety performance
- Arrangements for:
 - Regular liaison between parties on site
 - Consultation with the workforce
 - The exchange of design information between the Client, Engineer, supervisors and subcontractors on site
 - Handling design changes during the project
 - Selection and control of subcontractors
 - The exchange of Occupational Health and Safety information between all subcontractors
 - 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
 - Site Occupational Health and Safety rules
 - Fire and emergency procedures
 - Reporting to the Client i.e. results of Occupational Health and Safety inspections, incident and incident investigations and committee meetings
 - Reporting of incidents to the Department of Labour and Compensation insurer where appropriate

c) Arrangements for Controlling Significant Site Risks

The following are some examples requiring arrangements for controlling the most significant site risks:

- Safety risks

- Services, including temporary electrical installations
- Preventing employees from falling into excavations, from trucks etc.
- Work with, on or near fragile materials
- Control of lifting operations
- The maintenance of plant and equipment
- Poor ground conditions
- Traffic routes and segregation of vehicles and pedestrians
- Storage of hazardous materials
- Dealing with existing unstable structures/land
- Accommodating adjacent land use
- Other significant safety risks as and when identified

- Health risks

- Storage and use of hazardous chemical substances
- Dealing with contaminated land or material
- Manual handling
- Reducing noise and vibration
- Provision of adequate lighting
- Ventilation considerations
- Extreme heat and cold temperature considerations
- Dealing with HIV/Aids and other illnesses
- Provision of and maintaining ablution and eating facilities
- Other significant health risks as and when identified

PPS1-5 HEALTH AND SAFETY FILE

The Contractor shall in terms of Construction Regulation 5 (7) (a) maintain a Health and Safety File on site at all times. The Health and Safety File is a file or other permanent record containing information on aspects of the construction project - which will be necessary to ensure the health and safety of any person who may be affected by the construction work.

The Contractor shall appoint a suitably qualified person to prepare the Health and Safety File and to keep it up to date for the duration of the contract. The Health and Safety file shall include the following information:

- Construction work permit (Construction Regulation 3) (Annexure 1)
- Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- Proof of Registration and good standing with a COID Insurer (Construction Regulation 5 (j))
- Copy of health and safety plan (construction regulation 5 (m))
- OH&S Programme agreed with Client including the underpinning Risk Assessment and Method Statements (Construction regulation 5 (a))
- Designs/drawings (Construction Regulation 5 (1)(e))
- A list of Contractors (Subcontractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 9)
- Appointment / Designation forms required by the ACT and Regulations.
- Registers as follows:

Accident / Incident Register (Annexure 1 of the General Administrative Regulations)

- OH&S Representatives Inspection Register
- Form/Support work Inspection
- Excavations Inspection
- Lifting Equipment
- Demolition Inspections
- Designer's Inspection of Structures Record
- Batch Plant Inspections
- Arc & Gas Welding & Flame Cutting Equipment Inspections
- Construction Vehicles & Mobile Plant Inspections
- Electrical Installation and Machinery Inspections
- Fire Equipment Inspection & Maintenance
- First Aid
- Hazardous Chemical Substances
- Lifting Tackle and Equipment Inspections
- Inspection of Cranes
- Inspection of Ladders
- Inspection of Vessels under Pressure
- Machinery Inspections
- Drivers/Operators of Mobile Plant/Construction Vehicles Daily Inspections
- Accommodation of traffic daily inspection book

The Health & Safety File shall be handed over to the Client on completion of the contract. It must contain all the documentation handed to the Contractor by any subcontractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project.

PPS1-6 RISK ASSESSMENT

The Contractor shall appoint, in writing with a copy to the Engineer, a competent person to carry out a risk assessment of the Contract work in terms of the Occupational Health and Safety Act, Construction Regulations 2014 (Regulations 9), which assessment (the Health and Safety Plan in terms of the Act) is to form part of the Contractor's Health and Safety Plan and which is to include;

- i) Identification of the risks and hazards;

- ii) Analysis and evaluation of the risks and hazards identified;
- iii) A documented plan of safe work procedures;
- iv) A monitoring plan; and
- v) A review plan.

Contractors must ensure that all subcontractors conduct risk assessments for their scope of work as well.

The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the Works under the Contract, and it shall include a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The risk assessment shall be available on site for inspection by inspectors, Employer, Engineer, subcontractors, employees, trade unions and health and safety committee members, and must be monitored and reviewed periodically by the Contractor.

A baseline hazard identification and risk assessment is included as Appendix B to this Specification by way of example of what is required.

PPS1-7 Audits

The following SHE audits, in accordance with the agreed protocol, shall be executed on the project:

- Contractor's monthly audit on sub-contractors.
- Contractor's self-audit / assessment
- Client Safety Agent initial Assessment 3 to 4 weeks after start up.
- Client Site Monthly audit on Contractors

The checklist included in Annexure A of this specification shall be used as a basis for these audits.

PPS1-8 APPOINTMENT OF EMPLOYEES AND SUBCONTRACTORS

PPS1-8.1 Health and Safety Plan

The Contractor shall appoint his employees and any subcontractors to be employed on the contract, in writing, and he shall provide them with a copy of his documented Health and Safety Plan, or relevant sections thereof. The Contractor shall ensure that all subcontractors and employees are committed to the implementation of his Safety Plan.

The Contractor shall establish clear and easily accessible procedures for the reporting of Health and Safety infringements, improvements and the like to the Health and Safety Officer who shall act on these reports immediately. The procedures established by the Contractor shall be accessible by all persons working on the Site. The Contractor shall ensure that the Health and Safety Plan and reporting procedures are explained and complied with by all Subcontractor's on the Site.

The Contractor shall compile and distribute printed copies (in English, isiZulu and any other relevant languages) of the Health and Safety Plan to all employees so that they are aware of their rights and responsibilities.

PPS1-8.2 Health and Safety Induction Training

The Contractor shall ensure that all employees under his control, including subcontractors and their employees, undergo a health and safety induction training course by a competent person before commencement of construction work. No visitor or other person shall be allowed or permitted to enter the site of the works unless such person has undergone health and safety training pertaining to hazards prevalent on site.

The Contractor shall promote the need for safety awareness in all aspects of the work by conducting safety awareness programmes and campaigns, and training throughout the duration of construction work, displaying posters and using audio visual methods.

The Contractor shall ensure that every employee or visitor on site shall at all times be in possession of proof of the health and safety induction training issued by a competent person prior to commencement of construction work.

PPS1-8.3 OH&S Training Requirements

(As required by the Construction Regulations and as indicated by the OH&S Specification and the Risk Assessment/s):

- General Induction (Section 9 of the Act)
- Site/Job Specific Induction (also visitors)
- Site/Project Manager
- Construction Supervisor
- OH&S Representatives (Section 19 of the Act)
- Operation of Cranes (Driven Machinery Regulations 18 (11))
- Operators and Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 23).
- Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction regulation 29)
- Basic First Aid (General Safety Regulations 3)
- Storekeeping Methods & Safe Stacking
- Emergency, Security and Fire Co-ordinator

PPS1-9 APPOINTMENT OF SAFETY PERSONNEL

PPS1-9.1 Construction Supervisor

The Contractor shall appoint a full-time Construction Supervisor with the duty of supervising the performance of the construction work.

He may also have to appoint one or more competent employees to assist the construction supervisor where justified by the scope and complexity of the works.

PPS1-9.2 Health and Safety Officer

Subject to the decision by the Inspector of the Department of Labour and taking into consideration the size of the project and the hazards or dangers that can be expected, the Contractor shall appoint in writing a full-time or part-time Health and Safety Officer. The Safety Officer shall have the necessary competence and resources to perform his duties diligently.

Provision will be made in the Bill of Quantities to cover the cost of a dedicated Health and Safety Officer appointed after award of the Contract if so ordered by the Engineer.

The Contractor shall appoint a full-time CONSTRUCTION HEALTH AND SAFETY OFFICER (in terms of Construction Regulation 8) will be required on this project. The construction Health and safety officer will be required to carry out basic functions of CHSO, as per SACPCMP Requirements. CHSO, should be registered with the SACPCMP. Provide proof of Registration or proof that Application for registration has been done and submitted to SACPCMP.

PPS1-9.3 Health and Safety Representatives

In terms of Sections 17 and 18 of the Act (OHSA 1993) the Contractor shall appoint a health and safety representative whenever he has more than 20 employees in his employ on the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 50 employees.

The function of the health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery etc. on a regular basis, to participate in consultations with inspectors and to attend meetings of the health and safety committee.

PPS1-9.4 Works Health and Safety Committee

In terms of Sections 17 and 18 of the Act (OHSA 1993) the Contractor (as employer), shall establish one or more health and safety committee(s). Where there are two or more health and safety representatives at a workplace, the persons selected by the Contractor to serve on the committee shall be designated in writing.

The Committee shall comprise:

- The Health and Safety Officer;
- Representatives of the Contractor's supervisory staff;
- Representatives of the various categories of the Contractor's workforce.; and
- A member of the Engineer's staff nominated by the Engineer.

The Contractor shall ensure that no loss of pay or benefits shall apply to any employee elected to the Health and Safety Committee.

The Contractor's obligations and liabilities in respect of Health and Safety matters shall not be limited or affected in anyway by the inclusion of a member of the Engineer's staff.

The main functions of the Committee will be inter alia:

- a) Reviews of Health and Safety Procedures for the purposes of monitoring effectiveness or shortcomings and to recommend changes where necessary;
- b) To carry out regular inspections, review results and make recommendations as necessary;
- c) To investigate any unsafe practices;
- d) To review, consider and report on any aspect of Health and Safety contained in this specification or any other part of the Contract; and
- e) To maintain a written record of all meetings of the Committee.
- f) Consider incident reports and make recommendations to the Employer.

The Committee shall meet at least at monthly intervals. Minutes of the meeting shall be kept by the Contractor and copied to the Engineer within 7 days of the meeting.

PPS1-9.5 Competent Persons

In accordance with the Construction Regulations the Contractor shall appoint, in writing, competent persons responsible for supervising construction work for the following work situations that may be expected on the site of the Works.

- (a) Risk assessment (Regulation 9);
- (b) Fall protection (Regulation 10);
- (c) Structures (Regulation 11);
- (d) Formwork and support work (Regulation 12);
- (e) Excavation work (Regulation 13);
- (f) Demolition work (Regulation 14);
- (g) Tunnelling (Regulation 15);
- (h) Scaffolding work (Regulation 16);
- (i) Suspended platform operations (Regulation 17);
- (j) Boatswain chairs (Regulation 18)
- (k) Material Hoists (Regulation 19);
- (l) Batch plant operations (Regulation 20);
- (m) Explosive powered tools (Regulation 21)

- (n) Cranes (Regulation 22);
- (o) Construction vehicle and mobile plant (Regulation 23(1));
- (p) Electrical installation and machinery on construction site (Regulation 24);
- (q) Use and temporary storage of flammable liquids on construction site (Regulation 25);
- (r) Water environments (Regulation 26);
- (s) Housekeeping on construction sites (Regulation 27)
- (t) Stacking and storage on construction sites (Regulation 28);
- (u) Fire precautions on construction sites (Regulation 29); and
- (v) Construction welfare facilities (Regulation 30).

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

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

PPS1-10 CONTRACTOR'S RESPONSIBILITIES

Before commencement of work under the Contract, the Contractor shall enter into an agreement with the Employer (Client) to confirm his status as mandatory (employer) for the contract under consideration.

The Contractor's duties and responsibilities are clearly set out in the Construction Regulations 2014, and are not repeated in detail but some important aspects are highlighted hereafter, without relieving the Contractor of any of his duties and responsibilities in terms of the Construction Regulations.

In addition, the Contractor shall also comply with the requirements of the Compensation of Occupational Injuries and Diseases Act 130 of 1993 (COIDA) and to this effect shall submit a letter of good standing with the compensation Insurer to the Client before work on site commences.

(a) Contractor's Position in Relation to the Employer (Client) (Regulation 5)

In accordance with Section 4 of the Regulations, the Contractor shall liaise closely with the Employer or the Engineer on behalf of the Employer, to ensure that all requirements of the Act and the Regulations are met and complied with.

(b) The Contractor and Subcontractor (Regulation 7)

Any subcontractors employed by the Contractor shall be appointed in writing, setting out the terms of the appointment in respect of health and safety. An independent subcontractor shall, however, provide and demonstrate to the Contractor a suitable, acceptable and sufficiently documented health and safety plan before commencement of the subcontract. In the absence of such a health and safety plan the subcontractor shall undertake in writing that he will comply with the Contractor's safety plan, the health and safety specifications of the Employer and the Construction Regulations 2014.

(c) Supervision of Construction Work (Regulation 8)

The Contractor shall appoint the safety and other personnel and employees as required in terms of Regulation 8 and as set out in paragraph 7 above. Appointment of those personnel and employees does not relieve the Contractor from any of the obligations under Regulation 7.

(d) Risk Assessment (Regulation 9)

The Contractor shall have the risk assessment performed before commencement of the work, and it must be available on site for inspection at all times. The Contractor shall consult with the health and safety committee or health and safety representative(s) etc. on a regular basis to ensure that all employees, including subcontractors under his control, are informed and trained by a competent person regarding health hazards and related work procedures.

No subcontractor, employee or visitor shall be allowed to enter the site of works without prior health and safety induction training, all as specified in Regulation 7.

(e) Fall Protection (Regulation 10)

Fall protection, if applicable to this contract shall comply in all respects with Regulation 10 of the Construction Regulations.

(f) Structures (Regulation 11)

The Contractor will be liable for all claims arising from the collapse or failure of structures if he failed to comply with all the specifications, project specifications and drawings related to the structures, unless it can be proved that such collapse or failure can be attributed to faulty design or insufficient design standards on which the specifications and the drawings are based.

In addition the Contractor shall comply with all aspects of Regulation 11 of the Construction Regulations.

(g) Formwork and Support Work (Regulation 12)

The Contractor will be responsible for the adequate design of all formwork and support structures by a competent person.

All drawings pertaining to formwork shall be kept on site and all equipment and materials used in formwork, shall be carefully examined and checked for suitability by a competent person. A design certificate of the formwork and support structures shall be submitted by a professional Engineer.

The provisions of Regulation 12 of the Construction Regulations shall be followed in every detail.

(h) Excavation Work (Regulation 13)

It is essential that the Contractor shall follow the instructions and precautions in the Standard Specifications and Project Specifications as well as the provisions of the Construction Regulations to the letter as unsafe excavations can be a major hazard on any construction site. The Contractor shall therefore ensure that all excavation work is in terms of the Standard Specifications and Project Specifications and the Construction Regulations, carried out under the supervision of a competent person, that inspections are carried out by a Professional Engineer or Technologist, and that all work is done in such a manner that no hazards are created by unsafe excavations and working conditions.

Supervision by a competent person will not relieve the Contractor from any of his duties and responsibilities under Regulation 13 of the Construction Regulations.

(i) Demolition Work (Regulation 14)

Whenever demolition work is included in a contract, the Contractor shall comply with all the requirements of Regulation 14 of the Construction Regulations. The fact that a competent person has to be appointed by the Contractor, does not relieve the Contractor from any of his responsibilities in respect of safety of demolition work.

(j) Tunnelling (Regulation 15)

The Contractor shall comply with Regulation 15 wherever tunnelling of any kind is involved.

(k) Scaffolding (Regulation 16)

The Contractor shall ensure that all the provisions of Regulation 16 of the Construction Regulations are complied with. [Note: Reference in the Regulations to "Section 44 of the Act" should read "Section 43 of the Act"]

(l) Suspended Platforms (Regulation 17)

Wherever suspended platforms will be necessary on any contract, the Contractor shall ensure that copies of the system design issued by a Professional Engineer are submitted to the Engineer for inspection and approval. The Contractor shall appoint competent persons as supervisors and competent scaffold erectors, operators and inspectors and ensure that all work related to suspended platforms are done in accordance with Regulation 17 of the Construction Regulations.

(m) Boatswain's Chairs (Regulation 18)

Where boatswain's chairs are required on the construction site, the Contractor shall comply with Regulation 18.

(n) Material Hoists (Regulation 19)

Wherever applicable, the Contractor shall comply with the provisions of Regulation 19 to the letter.

(o) Batch Plants (Regulation 20)

Wherever applicable, the Contractor shall ensure that all lifting machines, lifting tackle, conveyors, etc. used in the operation of a batch plant shall comply with, and that all operators, supervisors and employees are strictly held to the provisions of Regulation 20. The Contractor shall ensure that the General Safety Regulations (Government Notice R1031 of 30 May 1986), the Driven Machinery Regulations (Government Notice R295 of 26/2/1988) and the Electrical Installation Regulations (Government Notice R2271 of 11/10/1995) are adhered to by all involved.

In terms of the Regulations, records of repairs and maintenance shall be kept on site.

(p) Explosive Powered Tools (Regulation 21)

The Contractor shall ensure that, wherever explosive-powered tools are required to be used, all safety provisions of Regulation 21 are complied with.

It is especially important that warning notices are displayed and that the issue and return of cartridges and spent cartridges be recorded in a register to be kept on site.

(q) Cranes (Regulation 22)

Wherever the use of tower cranes becomes necessary, the provisions of Regulation 22 shall be complied with.

(r) Construction Vehicles and Mobile Plant (Regulation 23)

The Contractor shall ensure that all construction vehicles and plant are in good working condition and safe for use, and that they are used in accordance with their design and intended use. The vehicles and plant shall only be operated by workers or operators who have received appropriate training, all in accordance with all the requirements of Regulation 23.

All vehicles and plant must be inspected on a daily basis, prior to use, by a competent person and the findings must be recorded in a register to be kept on site.

(s) Electrical Installation and Machinery on Construction Sites (Regulation 24)

The Contractor shall comply with the Electrical Installation Regulations (Government Notice R2920 of 23 October 1992) and the Electrical Machinery Regulations (Government Notice R1953 of 12 August 1993). Before commencement of construction, the Contractor shall take adequate steps to ascertain the presence of, and guard against dangers and hazards due to electrical cables and apparatus under, over or on the site.

All temporary electrical installations on the site shall be under the control of a competent person, without relieving the Contractor of his responsibility for the health and safety of all workers and persons on site in terms of Regulation 24.

(t) Use of Temporary Storage of Flammable Liquids on Construction Sites (Regulation 25)

The Contractor shall comply with the provisions of the General Safety Regulations (Government Notice R1031 of 30 May 1986) and all the provisions of Regulation 25 of the Construction Regulations to ensure a safe and hazard-free environment to all workers and other persons on site.

(u) Water Environments (Regulation 26)

Where construction work is done over or in close proximity to water, the provisions of Regulation 26 shall apply.

(v) Housekeeping on Construction Sites (Regulation 27)

Housekeeping on all construction sites shall be in accordance with the provisions of the environmental Regulations for workplaces (Government Notice R2281 of 16 October 1987) and all the provisions of Regulation 27 of the Construction Regulations.

(w) Stacking and Storage on Construction Sites (Regulation 28)

The provisions for the stacking of articles contained in the General Safety Regulations (Government Notice R1031 of 30 May 1986) as well as all the provisions of Regulation 28 of the Construction Regulations shall apply.

(x) Fire Precautions on Construction Sites (Regulation 29)

The provisions of the Environmental Regulations for Workplaces (Government Notice R2281 of 16 October 1987) shall apply.

In addition the necessary precautions shall be taken to prevent the incidence of fires, to provide adequate and sufficient fire protection equipment, sirens, escape routes etc. all in accordance with Regulation 29 of the Construction Regulations.

(y) Construction Welfare Facilities (Regulation 30)

The Contractor shall comply with the construction site provisions as in the Facilities Regulations (Government Notice R1593 of 12 August 1988) and the provisions of Regulation 30 of the Construction Regulations.

(z) Non-compliance with the Construction Regulations 2014 and the Requirements, Other Regulations and Standards

The foregoing is a summary of parts of the Construction Regulations applicable to all construction projects.

The Contractor, as employer for the execution of the contract, shall ensure that all provisions of the Construction Regulations applicable to the contract under consideration are complied with to the letter.

The Contractor is advised in his own interest to make a careful study of the Act and the Construction Regulations as ignorance of the Act and the Regulations will not be accepted in any proceedings related to non-conformance to the Act and the Regulations.

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

PPS1-11 PROJECT / SITE SPECIFIC REQUIREMENTS

The following is a list of specific activities and considerations that have been identified for the project and the construction site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Contractor.

PPS1-11.1 Hard Rock Excavations

Extensive blasting of hard rock materials may be required with heavy excavating, haulage and crushing machinery operating in the area. These areas must be made safe so that people and livestock cannot inadvertently be exposed to the dangers therein.

PPS1-11.2 Excavation

Excavations will be required for the raising of the dam. The Contractor should take into account that these operations will be undertaken where the water table may be encountered and that proper methods for the removal of water, ground shoring and bracing will need to be carried out to ensure the safety of site staff and other persons on site. The need for fall protection barriers or fences should also be taken into account. Blasting will be required in the vicinity of a public road and all the recovery precautions must be observed to ensure the safety of site staff and the general public in these areas.

PPS1-11.3 Electrical Installations

Certain temporary installations will be powered by electricity. Once power is switched on to these installations the necessary procedures and regulations must be adhered to ensure the safety of the relevant site staff and other persons on site.

PPS1-11.4 Epidemics and Hazardous Substancesa) Outbreak of 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.

a) Dealing with hazardous substances

The Contractor shall identify and keep records of all hazardous equipment, materials, or other substances and any other health hazards in his undertaking of the Contract. Newly created hazards or new hazardous equipment, materials or other substances brought on to Site shall be added to the record. The Contractor shall draft new, or adapt and modify existing codes of practice appropriate to the said hazards.

The Engineer shall be granted access to such records at all times.

i Hazardous substances

The Contractor shall:

- Submit a Method Statement detailing the substances / materials to be used together with the storage, handling and disposal procedures of the materials to the Engineer within 56 days after the Commencement Date;
- Ensure that a Material Safety Data Sheets (MSDS) is available on site. Procedures detailed in the MSDS shall be followed in the event of an emergency situation;
- Ensure that the procurement, transportation, handling, usage and disposal of Hazardous Substances complies with the Hazardous Substances Act (1973), The Environmental Conservation Act (1989), National Environmental Management Act and Occupational Health and Safety Act (1993); and
- Ensure an up-to-date Alphabetical list/record shall be kept on site of all HCS used/stored/handled containing information on:
 1. Flammability / corrosiveness / oxidising qualities.
 2. Threat through:
 - Inhalation
 - Radiation
 - Indigestion
 - Skin Absorption
 - Burn
 - Physical force (explosion)
 3. Chemical Ingredients
 4. Storage / handling / use / disposal
 5. Emergency Procedures
 6. Location of each item
 7. Quantities in stock

ii Fuel (petrol and diesel) and oil

The Contractor shall:

- Demarcate bulk fuel storage areas and provide adequate security, control and hazard signage;
- Ensure that plant be refuelled at designated re-fuelling areas only;
- Ensure that a spillage kit is available at all fuel storage and re-filling areas. The kit

should be able to handle a full-storage spill;

- Ensure that tanks are placed on an impermeable surface and within a bunded area; and
- Ensure that filling points are on an impermeable surface sloping to a collection pit.

All storage areas, spillage containment areas, containers of hazardous substances and dangerous equipment shall be clearly and prominently marked as such, in English and isiZulu, and other relevant languages used by the workforce.

The Contractor shall conduct and document at least weekly, inspections of the storage areas for equipment, transport vehicles and hazardous materials and substances, especially for spillages and leaks. The Contractor shall submit to the Engineer within 56 days after the Commencement Date, for his approval, a Method Statement demonstrating how spills of toxic or unacceptable contaminants will be prevented from entering stormwater systems and water courses, and also how areas outside the Site will be cleared to protect the environment and maintain the safety of people.

The Contractor shall prepare plans and Drawings of proposed dedicated buildings or proposed protected containment areas to contain or store hazardous substances for the approval of the Engineer. They shall show clearly methods of ventilation and containing spillage, and shall indicate the method of clearing any spillage which may occur.

PPS1-11.5 First Aid Provisions

The Contractor shall provide a first aid post/sick bay and first aid stations.

The Contractor shall, through the auspices of the Health and Safety Committee, institute and operate a basic first aid training programme to ensure that at least each foreman or work crew leader is trained in first aid and possesses a valid certificate to that effect issued by the Red Cross Society of South Africa, or equivalent qualification within 3 months of his appointment. There shall be a person certified in first aid in each work crew.

PPS1-11.6 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 staff 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, amongst others, injury, fire, flood, falls of ground, accidental leaks, spillages and explosion.

The equipment requirements shall include for 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.

Wherever practical, the Contractor shall provide at any confined work area, alternative means of exit for use in the case of an emergency. Such emergency exits shall be clearly marked and shall be kept free from obstruction. All people employed in the work area shall be kept trained in their use by regular drills. In any confined area where it is not practical to provide an alternative means of exit, the Contractor shall provide adequate life support systems for the health of people in the work area in the event of an emergency as contemplated above. The systems shall be capable of supporting life until rescue can be effected. They shall be maintained to a standard and kept at a level of readiness that satisfies the Engineer.

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. He shall make due allowance in his construction programmes for the testing of the procedures.

PPS1-11.7 Lighting and Power

All power and lighting circuits are to be fitted with earth leakage systems. Such systems shall be tested monthly and any circuit where the earth leakage system is malfunctioning shall be repaired immediately or removed and replaced with a satisfactory unit.

The Contractor shall ensure that lighting installed on the Site does not interfere with road (temporary or permanent) traffic or become a nuisance to the surrounding community.

PPS1-11.8 Transport of Personnel and Road Safety

The Contractor shall make provision for the safe vehicular transport of all personnel. The Contractor shall prohibit his personnel from riding as passengers on excavation plant or dumpers. Flat bed trucks or similar vehicles may only be used for transport of labour if fitted with acceptable side restraints and adequate seating. Weatherproof covering to personnel transport shall be fitted to the vehicle at all times. The prevention of overloading of vehicles shall be rigidly enforced by the Contractor. Crush barriers of a standard approved by the Engineer shall be provided at all personnel loading points.

The principles of road safety both on and off the Site must be adhered to. Special care shall be taken by plant, delivery vehicles and haulage trucks entering and leaving the Site from Point Road. All trucks carrying spoil from the Site shall be properly sealed so as to ensure no spillage of material enroute. Where material is of a dry and sandy nature tip trucks shall be supplied with tarpaulins in order to prevent material being blown away during transportation.

PPS1-11.9 Transport, Earthmoving, Materials Handling and Excavating Equipment

The Contractor shall ensure compliance with the OHS Act and the relevant regulations for the operation and maintenance of the equipment and vehicles.

Furthermore, the Contractor shall satisfy the Engineer of the following with respect to the equipment and vehicles:

- All vehicles and equipment shall be inspected prior to being allowed on site and suppliers of hired vehicles, plant and equipment, will be required to comply with this specification as well as the OHS Act and Regulations;
- All vehicles and equipment shall be maintained in good working order in order to maximise efficiency and minimise pollution;
- All vehicles shall be equipped with an audible reversing warning system;

- All vehicles and equipment shall be operated / driven by trained, competent and authorised operators / drivers only. No authorised person shall be allowed to drive;
- All drivers shall be tested for competence before employment on the Works. Their competence shall also be tested at yearly intervals during the Contract. The pre-employment and yearly competence tests of drivers shall in addition to testing their driving ability, also test their eyesight, including night vision and colour blindness;
- Operators and drivers must be in possession of
 - (a) A valid drivers / operators licence or written authority to drive at all times.
 - (b) A current medical certificate declaring the driver / operating physically and psychologically fit to drive or operate the vehicle or equipment.
- All equipment with moving parts shall have a manual override in the case of a malfunction;
- All equipment and other vehicles shall be equipped with a dry powder fire extinguisher;
- All equipment and other vehicles shall be inspected by the driver / operator on a daily basis before start up and a written record submitted;
- All equipment and other vehicles shall be maintained and serviced in the Contractor's workshops; and
- If a vehicle breaks down on site the Contractor may repair in situ with Engineers permission; and
- All equipment and vehicles shall only be washed in designated washing areas to minimise water pollution and soil contamination.

The Contractor shall inform all suppliers to ensure that all materials are appropriately secured to ensure safe passage to and from Site.

PPS1-11.10 Safety of Public

Where the Public could be exposed to danger by any of the site activities the Contractor shall as appropriate provide suitable flagmen, barriers and/or warning signs in English and Tswana all to the approval of the Engineer.

PPS1-11.11 The Use of Explosives

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 his 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:

- The locations of blasting works;
- The location and size of storage magazines, explosives register, security fencing, earthing of building;
- Danger signs in English and Tswana that shall be prominently displayed at all areas where explosives are stored or used;
- Transportation of explosives to and from the magazine;
- Licences required for the magazine(s);

- The storage at the place of use;
- The use of explosives and dealing with misfires;
- The types of explosive and detonators contemplated;
- Ensuring that all excavation spoil is free of undetonated caps;
- Cordoning off areas for underwater blasting on the surface of the water and preventing unauthorised entry;
- Fencing off excavations and spoil dumps and preventing unauthorised entry; and
- The names, qualifications and experience of those people responsible for the handling and use of explosives. In addition to the blasting licence referred to in the Explosives Act, the personnel 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 pipe trenches, depending on where it is proposed that they shall be employed. For underwater blasting, the divers must also have documentary proof that they conform to the latest Diving Regulations.

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. The Engineer 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 licences for his own staff and acknowledged copies of licences for any subcontracted works. All licence holders will carry acknowledged copies on their person when at work. All blasting licences / 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.

Where underwater blasting is required, those people on board vessels or craft underway, anchored or moored within 500 metres of the blast area shall be notified before the blast is fired.

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.

PPS1-11.12 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 Engineer. Metalwork and conductors on the Site shall be properly earthed. 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.

PPS1-11.13 Protective Clothing and Equipment

The Contractor shall provide free issue of protective clothing and equipment to his staff engaged on the Works as well as his visitors to the Works.

The Contractor shall ensure that sufficient quantities of clothing and equipment are available from the Commencement Date and that stocks are maintained throughout the duration of the Contract. The Contractor shall ensure that all employees are made aware of the need to use such clothing and equipment in terms of the Contractor's Health and Safety Plan and these aspects shall be monitored and enforced by the Works Health and Safety Committee described in PPS1-9.4.

PPS1-11.14 Measurement of Dust and Noise Levels

Refer to the Section 1 - **General PS-11.8 and PS-11.9** respectively.

PPS1-11.15 Provision of Sanitary Conveniences

The Contractor shall provide at or within 100 m of each work place adequate toilet facilities with toilet paper, potable water, soap and towels together with industrial soaps and barrier creams as appropriate. He shall maintain them in a clean and sanitary condition.

PPS1-11.16 Provision of Food and Beverages

Where the Contractor provides food or beverages to employees, he shall ensure that any preparation and serving of food or beverage is carried out under controlled and hygienic conditions of high standard. He shall ensure that food is of a high nutritional value and of a well balanced dietary nature.

Adequate measures must be taken to prevent pollution of the countryside

Sufficient rubbish bins are to be provided at all eating areas.

PPS1-11.17 Competence of First Aid Personnel

Appointed First Aid Personnel must have a training certificate issued by an organisation approved by the Department of Labour.

PPS1-11.18 Incident / Accident Reporting

The Contractor, through the Health and Safety Officer or his deputy, 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 to die or to suffer a permanent or physical defect or likely 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
- Machinery ran out of control

to the Engineer within two days and to the Provisional Director of the Department of Labour within seven days.

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 Provisional Director of the Department of Labour forthwith by telephone, telefax or Email.

The Contractor is required to provide the Engineer with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Contractor is required to provide the Engineer with copies of all internal and external accident / incident investigation reports within 7 days of the incident occurring.

The Contractor shall submit to the Engineer at the end of each month reports and statistics in spreadsheet format approved by the Engineer on all accidents involving any person employed on or visiting the Works. The report shall contain the name of the person involved, the nature of the accident, the location, the action taken and the current condition of the patient. Statistical information for each month shall include the Compensation Incidence Frequency Rate (CIFR) which shall be calculated as:

where:

- *No. of Compensation Claims: The number of claims lodged with the COID insurer for the period under review.
- **200 000: The fixed factor to align the rate with other rates used internationally
- ***220 Manhours: The average number of hours worked by one employee in one month in the Construction industry
- ****No. of Employees: The actual or average number of employees employed for the period under review.

The Contractor shall submit the above data to the Engineer in electronic format, accompanied by a hard copy. The Engineer will advise the Contractor of the format in which this data shall be presented.

When the Works are completed, or earlier if requested, he shall furnish the Engineer with a full report summarising the statistical returns for health and safety issues.

PPS1-11.19 Impounded Water Level and Flood Monitoring

The Contractor shall design and implement an early warning system capable of monitoring the occurrence of storm events in the catchment area of the Tzaneen Dam and the resultant impact on the impounded levels in the dam. This system shall be capable of providing adequate warning to safely evacuate all personnel and equipment which could be affected by the overtopping/inundation of the works, specifically the operations on the lowered crests and saddle spillway.

Specific provision for an evacuation plan for all personnel, and public if necessary, shall be drawn up and submitted as part of the general OHS plan, indicating escape routes and action plans in the event of a flood event, even a minor one.

PPS1-12 MEASUREMENT AND PAYMENT

Payment for the Contractor's obligations in respect of the Occupational Health and Safety Act and Construction Regulations shall be made through three payment items described below. The three payment items together shall include full compensation for all personnel (including a dedicated full time Health and Safety Officer), costs and incidentals in respect of compliance with and enforcement of the Health and Safety specifications, which shall include for the compilation, presentation, implementation and maintenance of the site Health and Safety Plan as contemplated in Regulation 5 of the Construction Regulations.

In tendering rates for the three items the Contractor shall ensure that the sum of the amounts for the three items shall not be less than one percent (1%) of the Tender Amount.

PPS1-12.1	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Lump Sum
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The full amount will be paid in one instalment only once:-

- (a) Application of Work Permit is done and approved (Client).
- (b) The Contractor has made the required initial Appointments of Employees and Sub-Contractors.
- (c) The Client has approved the Contractor's Health and Safety Plan.
- (d) The Contractor has set up his Health and Safety File

PPS1-12.2	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Lump Sum
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Payment shall be effected as follows only after payment for the Contractors initial obligations in PPS1-12.1 above has been made. Payments of incremental amounts (calculated by dividing the sum by the contract duration in months as slated in the Appendix to the Form of Tender) will be authorised in each of the subsequent progress certificates for the authorised duration of the contract. The tendered sum shall not be exceeded without prior approval from the Engineer.

PPS1-12.3	Submission of the Health and Safety File	Lump Sum
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This amount will be paid only once the Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

Annexure A : RECORDS TO BE KEPT ON SITE

ITEM	CR	RECORD TO BE KEPT	RESPONSIBLE PERSON
1.	3(3)	Notification to Provincial Director – Available on site	Client (Consultant)
2.	4(3)	Copy of Principal Contractor's Health & Safety Plan Available on request	Client (Consultant)
3.	5(6)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor
4.	5(7)	Health & Safety File opened and kept on site (including all documentation-required i.t.o. OHSA & Regulations Available on request	Contractor
5.	5(8)	Consolidated Health & Safety File handed to Client on completion of Construction work. To include all documentation required i.t.o. OHSA & Regulations and records of all drawings, designs, materials used and similar information on the structure.	Principal Contractor
6.	5(9)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done Included in Health & Safety file and available on request	Principal Contractor
7.	6(7)	Keep record on the Health & safety File of the input by Construction Safety Officer [CR 6 (6)] at design stage or on the Health & Safety Plan	Contractor
8.	7(2)	Risk Assessment Available on site for inspection	Contractor
9.	7(9)	Proof of Health & Safety Induction Training	Every Employee on site
10.	8(3)	Construction Supervisor [CR 6 (1)] has latest updated version of Fall Protection Plan [CR 8 (1)]	Contractor
11.	9(2)(b)	Inform Contractor in writing of dangers and hazards relating to construction work	Designer of Structure
12.	9(3)	All drawings pertaining to the design of structure On site available for inspection	Contractor
13.	9(4)	Record of inspection of the structure [First 2 years – once every 6 months, thereafter yearly]	Owner of Structure
14.	9(5)	Maintenance records – safety of structure Available on request	Owner of Structure
15.	10(1)(d)	Drawings pertaining to the design of formwork/support work structure Kept on site, available on request	Contractor
16.	11(3)(h)	Record of excavation inspection On site available on request	Contractor
17.	15(11)	Suspended Platform inspection and performance test records Kept on site available on request	Contractor
18.	17(8)(c)	Material Hoist daily inspection entered and signed in record book kept on the premises	Contractor
19.	17(8)(d)	Maintenance records for Material Hoist Available on site	Contractor
20.	18(9)	Records of Batch Plant maintenance and repairs On site available for inspection	Contractor
21.	19(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register – recipient signed for receipt as well as return	Contractor
22.	21(1)(d)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Contractor
23.	22(d)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Contractor

Annexure B: OCCUPATIONAL HEALTH AND SAFETY: CHECK LIST SYSTEM**1. ADMINISTRATIVE & LEGAL REQUIREMENTS**

Section/ Regulation	Subject	Requirements	1.1.1.2 Yes/No
Construction Regulation 3	Application of construction work permit	Department of Labour notified	
Construction. Regulation 4	Notice of carrying out Construction work	Department of Labour notified Copy of Notice available on Site	
General Admin. Regulation 3	Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations on site Readily available for perusal by employees	
COLD Act Section 80	Registration with Compens. Insurer	Written proof of registration / Letter of good standing available on Site	
Construction. Regulation 5(1)(b)	OH&S Specification & Plan	H&S Specification received from Client OH&S plan developed Updated regularly	
Section 9(2)	Hazard Identification & Risk Assessment	Hazard Identification carried out/Recorded Risk Assessment and Plan drawn up/Updated Risk Assessment Plan available on Site Employees/Subcontractors informed/trained	
Section 16(2)	Assigned duties (Managers)	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.	
Construction. Regulation 8	Designation of Person Responsible on Site	Competent person appointed in writing as Construction Supervisor	
Construction. Regulation 7(1)(iv)	Designation of Subordinate Person	Competent person appointed in writing as Sub-ordinate Construction Supervisor	
Section 17 & 18	Designation of Occupational Health & Safety Representatives	More than 20 employees - one OH&S Representative, one additional OH&S Rep. for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful OH&S Rep. reports. Reports actioned by Management.	
Section 19 & 20	Occupational Health & Safety Committee/s	OH&S Committee/s established. Members appointed in writing. Meetings held monthly. Minutes kept. Actioned by Management.	
Section 37	Agreement with Mandataries (Subcontractors)	Written agreement with Subcontractors. List of Subcontractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Work Supervisor designated Written arrangements concerning OH&S Reps & OH&S Committee Written arrangements regarding First Aid	
Construction. Regulation 10	Fall Prevention & 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/updated Available on Site	
Construction. Regulation 10	Roofwork	Competent person appointed to plan & supervise Roofwork. Proof of appointees competence available on Site Risk Assessment carried out Roofwork Plan drawn up/updated Roofwork inspect before each shift. Inspection register kept Employees medically examined for physical & psychological fitness. Written proof available	

Section/ Regulation	Subject	Requirements	1.1.1.2 Yes/No
Construction. Regulation 11	Structures	Information re. the structure being erected received from the Designer including: - geo-science technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers / hazards / 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 17	Formwork & Support work	Competent person appointed in writing to supervise erection, maintenance, use and dismantling of Support & Formwork Design drawings available on site Risk Assessment carried out Support & Formwork inspected: - before use/inspection - before pouring of concrete - weekly whilst in place - before stripping/dismantling. Inspection register kept	
Construction. Regulation 16	Scaffolding	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept	
Construction. Regulation 17	Suspended Scaffolding	Competent persons appointed in writing to: - erect Susp.scaffolding (Scaffold Erector/s) - act as Susp.Scaffold Team Leaders - inspect Susp.Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Risk Assessment conducted Certificate of Authorization issued by a registered professional Engineer available on Site/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. 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/load attaching devices quarterly. Tests log book kept Employees working on Susp.Scaffold medically examined for physical & psychological fitness. Written proof available	

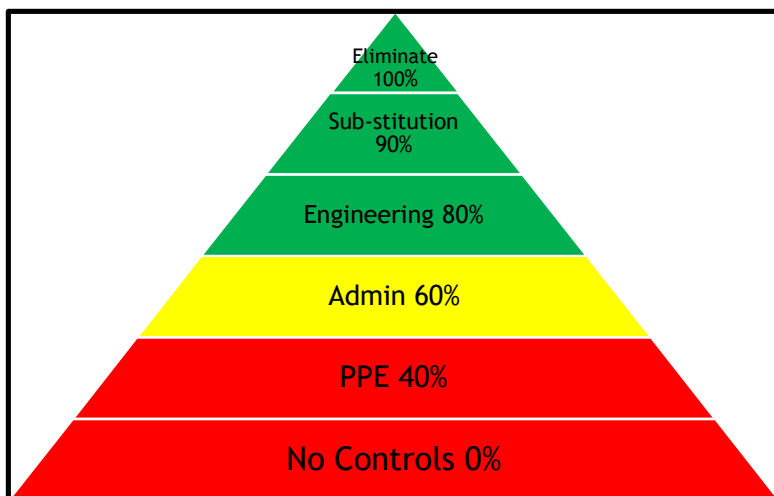
Section/ Regulation	Subject	Requirements	1.1.1.2 Yes/No
Construction. Regulation 13	Excavations	Competent person/s appointed in writing to supervise and inspect excavation work Written Proof of Competence of above appointee/s available on Site Risk Assessment carried out Inspected: - before every shift - after any blasting - after an unexpected fall of ground - after any substantial damage to the shoring - after rain. Inspections register kept Method statement developed where explosives will be/ are used	
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 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. Inspections register kept.	
Construction. Regulation 12	Caissons & Cofferdams	Competent person appointed in writing to supervise, control & inspect the construction, installation/dismantling of caissons/coffer dams Written Proof of Competence of above appointee available on Site Risk Assessment carried out To be inspected daily by a competent person. Inspections register kept	
Construction. Regulation 21	Explosive Powered Tools	Competent person appointed to control the issue of the Explosive Powered Tools & cartridges and the service, maintenance and cleaning. Register kept of above Empty cartridge cases/nails/fixing bolts returns recorded Cleaned daily after use	
Construction. Regulation 20	Batch Plants	Competent person appointed to control the operation of the Batch Plant and the service, maintenance and cleaning. Register kept of above Risk Assessment carried out Batch Plant to be inspected weekly by a competent person. Inspections register kept	
Construction. Regulation 15/ Mine Health & Safety Act (29 of 1996)	Tunnelling	Complying with Mines Health & Safety Act (29 of 1996) Risk Assessment carried out	

Section/ Regulation	Subject	Requirements	1.1.1.2 Yes/No
Construction. Regulation 22/ Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - daily by operator - Tower Crane/s - after erection/6monthly - Other cranes - annually by comp. person - Lifting tackle(slings/ropes/chain slings etc.) - 3 monthly Risk Assessment carried out	
Construction. Regulation 24/Electrical Machinery Regulations	Inspection & Maintenance of Electrical Installation & 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 & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools and -lights and extension leads identified/numbered. Monthly visual inspection by User/Issuer/ Storeman. Register kept.	
Construction. Regulation 26 Diving Regulations	Water Environments	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. Available on Site Record of Voice Communications kept Diving Operations record kept Each Diver keeps a personal logbook. Entries countersigned by the Diving Supervisor Decompression tables available on Site Records of any Decompression illness kept Certificate of Manufacture of any Compression Chamber or Diving Bell in use available on Site	
Construction. Regulation 28/ General Safety Regulation 8(1)(a)	Designation of Stacking & Storage Supervisor.	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site	
Construction. Regulation 29/ Environmental Regulation 9	Designation of a Person to Co-ordinate Emergency Planning And Fire Protection	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practised - Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out All Fire Extinguishing Equipment identified and on <i>register</i> . Inspected weekly. Inspection Register kept Serviced annually	

Section/ Regulation	Subject	Requirements	1.1.1.2 Yes/No
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 freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aiders and Certificates Name of person/s in charge of First Aid box/es displayed. Location of F/Aid box/es clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries	
General Safety Regulation 2	Personal Safety Equipment (PSE)	PSE Risk Assessment carried out Items of PSE prescribed/use enforced Records of Issue kept Undertaking by Employee to use/wear PSE	
General Safety Regulation 9	*Inspection & Use of Welding/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	
Construction. Regulation 25/ Hazardous Chemical Substances (HCS)	*Control of Storage & Usage of HCS	Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS Written Proof of Competence of above appointee available on Site Risk Assessment carried out Register of HCS kept/used on Site	
Vessels under Pressure Regulations	Vessels under Pressure (VUP)	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of VUP's Written Proof of Competence of above appointee available on Site Risk Assessment carried out Certificates of Manufacture available on Site Register of VUP's on Site Inspections & Testing by Approved Inspection Authority (AIA): - after installation/re-erection or repairs - every 36 months. - Register/Log kept of inspections, tests. Modifications & repair	
Construction. Regulation 23	Construction Vehicles & Earth Moving Equipment	Operators/Drivers appointed to: - Carry out a daily inspection prior to use - Drive the vehicle/plant that he/she is competent to operate/drive Written Proof of Competence of above appointee available on Site Record of Daily inspections kept	
General Safety Regulation 13D	Inspection of Ladders	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on site and monthly thereafter. Inspections register kept	
General Safety Regulation 13B	Ramps	Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept	

Annexure C : RISK ASSESSMENT CONTROL SAMPLES

EFFECTIVENESS OF CONTROLS:



CONTROLS (EXAMPLES ONLY)		
ENGINEERING	ADMINISTRATIVE	PPE
- Local exhaust ventilation - General ventilation - Silencer on machine - Installed lighting - Barricading - Bunding - Access control cages - Automated lockout - Filter bags - Drip tray - Machine fixed guard - Earth leakage - Automated braking system - Wet scrubber - Sound proofing - Closed water reticulation - Drainage/water channels - Automated access control - Filtration system - Speed limiter - Reconditioning - Product reuse in process - Light curtain - Methane/ energy capture	- Inspections - Culture survey - Posters - Demarcation - Symbolic signage - Colour coding - Waste permits - Monitoring programme - Labelling - Lock out - Performance tests - MSDS - Vehicle licence - Certificate of compliance - Toolbox talks/awareness - Training - Appointments - Emergency plan - Mock drill - Internal or external audits - Incident recall - HSE committee meeting - Supervision - Medical surveillance - Man-job specification - Work instructions - Planned job observation - Waste management - All documentation	- Hard hat - Goggles - Safety harness - Boots - Face shield - Gauntlets - Boot flap - Gloves - Lead apron - Ear protection - Hazchem suit

C3.3: PARTICULAR SPECIFICATIONS

BASELINE RISK MATRIX		HAZARD EFFECT / CONSEQUENCE				
Loss Type	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic	
Timeline	No impact on overall project timeline	May result in overall project timeline overrun of less than 5%	May result in overall project timeline overrun of between 5% and less than 20%	May result in overall project timeline overrun of between 20% and less than 50%	May result in overall project timeline overrun of 50% or more	
Budget	No impact on the budget of the project	May result in overall project budget overrun of less than 5%	May result in overall project budget overrun of between 5% and less than 20%	May result in overall project budget overrun of between 20% and less than 50%	May result in overall project budget overrun of 50% or more	
Investment Return – NPV loss	Less than R5m	R5m to less than R50m	R50M to less than R500m	R500m to R5b	R5b or more	
Quality	No impact on quality	Minimal quality issues that can be addressed in a short timeframe with minimal interactions	Some quality issues that requires immediate management action	Significant quality issues that requires senior project management interaction	Significant quality issues that requires sponsorship intervention with significant resource and cost implications for rework	
Safety / Health	First aid case / Exposure to minor health risk	Medical treatment case / Exposure to major health risk	Lost time injury / Reversible impact on health	Single fatality or loss of quality of life / Irreversible impact on health	Multiple fatalities / Impact on health ultimately fatal	
Environment	Minimal environmental harm - L1 incident	Material environmental harm - L2 incident remediable short term	Serious environmental harm - L2 incident remediable within LOM	Major environmental harm - L2 incident remediable post LOM	Extreme environmental harm - L3 incident irreversible	
Legal & Regulatory	No legal impact	Minor legal concerns with minor impact	Some legal concerns with manageable level of impact	Serious legal concerns and significant impact on operations	Legal non-compliance with risk of shutdown of operations with significant cost impacts	
Reputation / Social / Community	Slight impact - public awareness may exist but no public concern	Limited impact - local public concern	Considerable impact - regional public concern	National impact - national public concern	International impact - international public attention	

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

UNFORESEEABLE HAZARDS:

The principal contractor must immediately notify contractors as well as the CLIENT in writing of any hazardous or potentially hazardous situations that may arise during the performance of construction activities so that the necessary precautions may be taken before such work begins.

BASELINE RISK ASSESSMENT

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
SECTION A: SITE ESTABLISHMENT:							
1	Incompetent persons Uncontrolled site establishment activities Incorrect stacking procedures	- Injuries during off loading - Cuts and burns - Rushed activities - Incorrect supervision - Management team not identifying existing services - Trip and fall - Cuts - Collapsing of stacks - Incorrect manual handling – back injuries	- Hand and back injuries - Dropping of equipment - Physical injuries - Incorrect manual handling - Potentially fatal accidents - Loss of limbs - Lost time injuries - Medical treatment cases	12	- The contractor must declare all employees competent in writing. - Contractor OHS file must be approved prior to site establishment begins – aligned to New Construction Regulation 2014 - Site specific safe work procedures must be followed - Site – induction must be given to all employees to make them aware of the specific hazards - Employees must be issued with correct PPE before works begin - All workers on site must be declared medically fit by a medical practitioner	- Construction Supervisor - Contractor Safety Officer - Construction Supervisor	Before construction commences
	Offloading heavy equipment and containers Establishment of camps	- Defective mobile crane can cause accidents - Unsecure offloading area could cause accidents	- Serious injury and fatalities - Standing time - Lost time injuries 1st Aid medical treatment cases	13	- Material to be stacked on firm and level ground. - Stacking to be supervised by a competent supervisor. - Adequate storage area to be provided - All unstable stacks to be dismantled and stacked over, in pre-determined area	- Construction Supervisor - Offloading Supervisor	
	Site security and fencing: – Fence with lockable gates – 24 security deployed – Fire prevention – All required OHS signage – Accommodation of offices	- Theft of property - Fires - Unsafe conduct by visitors	- Financial losses - Loss of equipment / documentation - Lost time due to theft - Production time lost	5	- Load test certificate will be submitted to the client. - Rope certificates must be submitted to the client. - Safe load indicator must be in good working order. - Over wind device must be in place and in working order (Crane and in working order (Crane operated truck) - Daily checks as per checklist by operator. - Checklist signed by supervisor and filed by safety officer	- Lifting & Hoisting Supervisor - Site Security - Safety Supervisor	During Site Establishment

C3.3: PARTICULAR SPECIFICATIONS

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
SECTION A: SITE ESTABLISHMENT (continue):							
	Housekeeping: – Ablution facilities – Clean drinking water – Sheltered eating area – Designated parking areas – Bunt area for diesel – Storage / office facilities – Designated stacking areas	- Poor health and diseases - Unsafe movement of people and equipment on site - Personal injuries - Poor hygiene could lead to outbreak of diseases	- Diseases - Serious injuries - Environmental impact - Personal injuries - Lost time in production	9	- Use site establishment checklist to ensure compliance with all items - Toilet facilities & staff welfare as per Construction Reg 2014 - Toilets 1:30 - Correct signage for all storage of hazardous materials	- Construction Supervisor - Staff Welfare Inspector	During Site Establishment
	Diesel tanks to be a distance of 10m away from any building and parking areas. A slab with a bund wall capable of carrying 110% of the tank capacities must be constructed for the tanks to stand in	- Fire risk - Medical risks - Environmental risk - Standing time	- Burns on all parts of body - Damage to plant and property - Fatalities - Medical treatment cases	21	- Proper layout of site. - Persons in charge of tanks should be inducted regarding all hazards involved and how to control them - Proper signage for hazardous material area - Works induction on no-go areas	- Construction Supervisor - Contractor Safety Officer - Hazardous Material Control Officer	During Construction
	All cables from distribution board to offices, store and for security to be underground. The distribution board is to stand on a fire level base and should be locked at all times	- Incorrect installation - Unqualified electrician could cause harm or damage to equipment & material	- Electrocution - Fatality - Serious injuries causing project delay/standing time	22	Ensure all cables are marked properly and isolated	- Construction Supervisor - Contractor Safety Officer - Electrical Engineer - Qualified Electrician	During Site Establishment
2.	THEFT/SECURITY SITE CAMP	- Unauthorised removal of tools, equipment or substances - Standing time due to loss of equipment & tools	- Financial losses to the company. - Tools, equipment or substances which may be used by inexperienced or incompetent persons could result in injury or ill health to such persons	14	- All tools, equipment or substances will be stored in a safe and secure manner. - Security staff will conduct searches of premises and persons in a random basis. - Relevant records will be kept. - Access controls to premises will be maintained.	- Construction supervisor - Contractor safety Officer - Security company	All the time
3.	LABOUR CONTROL	- Sub-standard time keeping and attendance records - Labour disputes can disrupt progress	- Persons remaining on site after the official end of shift time could be injured - Legal disputes and strikes could lead to loss in production	14	- Attendance registers are kept at the main offices. - Signed copies of labour contracts are kept on file in the site office	- CLO - Contractor	Before works commences Site Establishment

C3.3: PARTICULAR SPECIFICATIONS

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
SECTION A: SITE ESTABLISHMENT (continue):							
4.	ENVIRONMENT Water Pollution	- Hazardous substances from the construction process entering rivers, streams or dams - Waste substances from workshops, repair bays or salvage/scrap site - Dust from construction work	- Contamination of rivers, streams or dams which could result in illness to persons who may consume the water - Contamination of ground water resulting in possible illness to persons - Contaminated water entering rivers or streams - Persons exposed to harmful dust which could result in respiratory illness	12	- Contamination of water within the construction area by means of pumps, drains and bunting. - Biological monitoring programmes - EIA to be conducted prior to construction works	- Construction Supervisor - Contractor Safety Officer	Before works commences
5	Air Pollution	Gasses and fumes released into the atmosphere	- Persons exposed to gasses and fumes - Damage to structures through corrosion	12	- Regular environmental surveys are conducted - Fumes and gas emission controls at discharge points, i.e. filler system - Regular environmental survey	Environmental Officer	
6.	FIRE Veld fires	- Lightning - Burning of refuse dumps in the adjacent open veld	- Damage to property or equipment - Destruction of vegetation and possible damage to property or equipment - Injury to persons who enter the area - Environmental pollution	12	- Fire breaks around structures and buildings - Fill excavations with top soil when full - Maintain perimeter fence and fire breaks - Access gates to be locked	- Fire Controller - Construction supervisor - Contractor safety Officer	All the time

C3.3: PARTICULAR SPECIFICATIONS

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
SECTION A: SITE ESTABLISHMENT (continue):							
7	TEMPORARY STOCKPILING OF MATERIAL	- Unprotected stockpiling area could lead to trip & fall - Trip & fall hazards - Man/Machine interface could cause injuries - Standing time	- Injury to hand, feet, legs and arms - Standing time and loss in production - Crushed fingers. Splinters in fingers or hands - Cut to fingers or hands, feet or legs injured - Injury to fingers and hands - Lost time injuries - Injury to legs and feet - Injury to hands, arms, legs and feet - Injury to all parts of body	12	- Stackers to be inducted into the use maintenance and reason for wearing PPE - Required PPE as required by R/A and SWP - Units are to be stacked according to a set standard the stack is to be stable and secure before strapping operation may begin - Strapping is also to be done to pre-planned set standard - Be aware of forklift movement when it comes to collect the load - Stacker's working area always to be kept clean and tidy. Floor area to be free from obstacles - Stacker to stay away from all moving parts of machinery - Stackers are to be trained how to stack properly and in a safe way - Stackers are to be trained how to strap properly - Forklift driver to alert stacker that is entering his working area - Stacker to be inducted at his work place. Re: housekeeping and safety - Stacker to be inducted to stay away from the composite plant and moving machinery	- Construction supervisor - Contractor safety Officer	All the time

C3.3: PARTICULAR SPECIFICATIONS

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
SECTION A: SITE ESTABLISHMENT (continue):							
	Fires in stores / Storage area	- Spontaneous combustion caused when chemicals such as HTH and oil products come into contact with each other - Accumulation of vapours/fumes in confined spaces	- Fires or explosions which could result in damage to property and injury to person - Potential for ignition due to naked flames or smoking	21	- Conform to the manufacturer's safe handling and storage instructions - Ensure storage area is well ventilated - Good housekeeping principles - Display relevant symbolic signs	– Storage Supervisor	
	Uncontrolled refuelling of vehicles & refuelling area	- Accidental ignition during vehicle refuelling - Ignition of flammable substances due to smoking or naked flames. (i.e. grease/oil, paint, etc.) - Ignition of compressed gas - Ignition of items such as timber, cotton waste, etc - Ignition due to faulty electrical cables/fittings	- Fire or explosion resulting in injury and damage to property - Fatalities - Lost time - Loss in production - Injury to persons or damage to property - Loss time injuries - Damage to property	21	- Adequate fire extinguishers placed in strategic positions - Warning signs informing persons of danger - Stored in approval storage areas, i.e. flammable stores - Fire hydrants are required at strategic points, as pointed out in site lay-out - Electrical cables and fitting must not be secured to timber roof beams/ structures i.e. use steel brackets - Conduct survey - Use approved fittings and appliance - Regular inspection programmes	– Fire Control Officer – Electrical Supervisor	All the time
	Fires in offices (Site Offices)	Faulty electrical equipment could lead to fires & damage to property	- Destruction of documents or plans - Loss in production - Time delay	18	- Key plans and documents are locked away in fire proof vaults or safes at the end of each working day - Keep copies of plans in safe place - Electrical fittings and connections must be inspected on a regular basis, i.e. planned maintenance programme - Fire extinguishers positioned at strategic points	– Construction Manager	At all times

C3.3: PARTICULAR SPECIFICATIONS

SECTION B: TRAFFIC ACCOMMODATION:							
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
1.	TRAFFIC ACCOMMODATION	• High volume of traffic • Accidents while placing road signage • Pedestrian injuries & fatalities • Injury/fatality while setting out signs/measurements • Workers fatality	• High speed vehicles could lead to fatalities • Injury/fatality to flagmen • Injury/fatality to workers measuring lay-out & placement of signs • Road traffic accidents to poor visibility or wrong traffic signage • Lost Time Injuries due to event of accident • 1st Aid medical treatment cases • Damage to road signage • Incompetent flagmen could lead to major incidents or fatalities	21	• Correct setting out of traffic signage • Approval of road traffic management plan • Induction of all workers/personnel on road traffic management plan • Induct all workers on R/A • SWP • Permit to work • Appoint designated traffic control officer • Toolbox Talk on traffic control • Correct signage • Monitoring programme • Check vehicle licences • Training of flagmen • Training • Emergency plan for incident to be communicated man-job specification • Correct PPE for task • High visibility of all workers	– Construction Supervisor – Traffic Control Officer – Flagmen x4 – Qualified Operators	
2.	PLACING SIGNAGE FOR PARTIAL LANE CLOSURE/ STOP-GO ACTIVITIES						

C3.3: PARTICULAR SPECIFICATIONS

SECTION B: TRAFFIC ACCOMMODATION:							
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
3.	REGULATING TRAFFIC – FLAGMEN OPERATIONS: PARTIAL LANE CLOSURE	- Serious injuries/ fatalities - Heat exposure to workers - Hit & run accidents - Flying objects form loose stones - Damage to construction vehicles - Damage to traffic signage	- Poor visibility could lead to vehicles ignoring traffic signs - Poor lay-out of signs could lead to traffic accidents (major) or fatalities - Standing time - Flagmen ran over by speeding traffic could lead to fatality	21	- Installation of road traffic signs & regulating according to installation inventory - Trained flagmen - Flagmen working in shifts - Insure good visibility at all times - Radio communication between flagmen - Implement: Advance warning are, transition area; buffer zone; work zone termination area - Correct high visibility vests & PPE - Correct symbolic signage - Certificate of compliance for flagmen - Correct appointments - Traffic Control Officer - Direct supervision - Planned Job Observations - Daily start-up procedures & closure - Replacement of broken traffic signs & traffic cones	- Construction Supervisor - Flagmen: Qualified x4 - Traffic control officer 1st Aider - Emergency Coordinator	

C3.3: PARTICULAR SPECIFICATIONS

SECTION C: CONSTRUCTION WORKS						
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM
1.	EXCAVATION USING HEAVY EQUIPMENT	- Man/Machine interface - Machinery uncontrolled could injure bystanders - Equipment toppling due to uneven surfaces / into trenches - Blind spots - No supervision could cause uncontrolled activity	- Possible LTI - Standing time due to serious injuries - Project timeline could be influenced - Damage to existing services if not identified - Unqualified operators could cause damage - Medical treatment cases	18	- Implement Red Zone Pass permit system - All vehicles to be pre inspected and issued with Red Zone entry permit - Licences operator - Medicals for operators - Correct PPE to be issued for task - Full time supervision - Toolbox talk on potential machine/man interface 3 Point contact induction to plant operators - Vehicles to have audible reverse horns & appoint signal man	- Heavy Plant Inspector - SHE Rep - Construction Supervisor - Qualified TLB/Grader Operator
2.	EXCAVATION USING HEAVY EQUIPMENT	- Man/Machine interface - Machinery uncontrolled could injure bystanders - Equipment toppling due to uneven surfaces / into trenches - Blind spots - No supervision could cause uncontrolled activity	- Possible LTI - Standing time due to serious injuries - Project timeline could be influenced - Damage to existing services if not identified - Unqualified operators could cause damage - Medical treatment cases	18	- Implement Red Zone Pass permit system - All vehicles to be pre inspected and issued with Red Zone entry permit - Licences operator - Medicals for operators - Correct PPE to be issued for task - Full time supervision - Toolbox talk on potential machine/man interface 3 Point contact induction to plant operators - Vehicles to have audible reverse horns & appoint signal man	- Heavy Plant Inspector - SHE Rep - Construction Supervisor - Qualified TLB/Grader Operator
3.	EVALUATION OF STABILITY OF SURFACE	Inspections not conducted by Safety Officer could lead to damage of services not located	- Damage to machinery - Loss of production - Unauthorised access	17	SD to inspect surface/access stability: Communicate acknowledge & sign for documentation	Appointed Site Manager
4	IMPORT OF MATERIAL FROM BORROW-PIT AREA FOR LAYER WORKS / OR STOCK PILED AREA	- No authorization for haulage from borrow area - No pre-start checks - No S.O.P - In proper use of PPE - Un-roadworthy machinery	- Truck/SME/MAN interface - Fatality - Physical injuries - Loss of production - LDV/SME Interface - Unauthorised work in borrow-area/ work area	13	- Required operators appointments as per Mine Health & Safety Act - Permits obtained - SME pre-start checks DSTI for task - S.O.P / RA / One pagers - Method statement - Emergency drills & procedures - Red Zone Pass	- Appointed Site Manager - Operators - Foreman - Construction Supervisor

C3.3: PARTICULAR SPECIFICATIONS

SECTION C: CONSTRUCTION WORKS (continue)						
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM
5.	LOAD MATERIAL WITH EXCAVATOR ON TIPPER TRUCKS	- No proper supervision could cause injury - No pre-start checks or S.O.P Communicated - No isolation & lock-out - No 3 way contact communicated	- Interface Tipper/SME Excavator - Damage to plant - Injury/Fatality - Loss of production	13	- S.O.P for tipper trucks & excavator with RA – communicated to workers - Operator competency/medical - Adhere to Shell PTW - Competent Supervisor - JHA /WCF - Supervision - Correct PPE for task - Toolbox Talk - Dust control	- Appointed Site Manager - Flagmen - Foreman - Plant Operator
6	OFFLOADING OF CONCRETE KERBS & PLACEMENT	- Unstable load could cause trip & fall - Poor grip ability could cause trip hazard & injury to foot - Handling of kerbs could cause crushing of feet & hands - Damage to kerbs/ injury to people - If load is too heavy could lead to manual handling injuries	- Fatigue could lead to kerbs being dropped - Damage to material if no proper Supervision - Trip & Fall – hand and foot injuries	17	- Pre-task assessment of manual handling risks related to: - Size (material) - Weight - Grip ability - Frequently – duration - Distance to be moved - Twisting - Turning – reach - Stability - Position changing - Fatigue issues - Ensure that no tripping hazards exists while loading & offloading - Ensure that workers wear correct clothing not to restrict reach, bending, walking, access - Correct PPE (Footwear) - Team lifting (±4 workers) has the benefit of sharing the load between 2 or more people - Supervision to ensure co-ordinated approach with proper signals given to the group.	- Supervisor at offloading area - Construction Supervisor - Foreman
7	MIXING OF LAYER MATERIAL WITH MOTOR GRADER	- Improper traffic control - SWP DSTI not completed - No proper Supervision	- Uncontrolled SME operation. Interface/SME/IMAN - Fatality - Damage to plant	18	- Proper lock-out/ isolation of machinery - Only authorised operators for SME's - Inspection pre-start in lay down area - Qualified Grader operator	- Appointed Site Manager - Grader Operator - Foreman

C3.3: PARTICULAR SPECIFICATIONS

SECTION C: CONSTRUCTION WORKS (continue)						
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM
8	LEVELLING MATERIAL	- No toolbox talks could lead to in proper communication - Poor supervision	- Man/ machinery interface - Fatality/injury - Loss production	9	- SOP Machinery - DSTI - Road Traffic management plan implementation - Red Zone Pass	Appointed Site Manager
9	STABILIZATION WITH CONCRETE CEMENT	No pre-determined area for cement to be stockpiled	- Loss time - Injury ; fatality - Uncontrolled dust control could cause health hazard	9	- SOP - SWP - DSTI - Road Traffic Management Plan - Red Zone Pass	Appointed Site Manager
10	Cranes, Tower-, Mobile- and Gantry Erection, Dismantling and Use	- Collapse of structure - Overturning of structure - Falling materials	- Possible LTI - Standing time due to serious injuries - Loss in production - Damage to property	22	- Ensure emergency procedures are in place and all operative are aware of the details - Only use trained and competent operators for the erection and dismantling and use of cranes - Ensure crane driver is trained and holds certification as proof. Must have valid medical certificate of fitness. - Ensure there is safe means of access available at all times - Ensure the mobile crane driver has 360° vision if not ensure a fully trained banksmen is used - Banksmen to wear reflector vest to identify himself to the crane driver - Ensure all personnel wear suitable and sufficient personal protective equipment - Consider creating exclusion areas	- Construction Supervisor - Safety Supervisor - Lifting & Hoisting Supervisor
						Before work commence

C3.3: PARTICULAR SPECIFICATIONS

SECTION C: CONSTRUCTION WORKS (continue)						
NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	RR	HOW IS HAZARD TO BE DEALT	BY WHOM
11	Work over or next to Water	Drowning Damage to property	- Possible LTI - Standing time due to serious injuries - Loss in production	21	- Evaluate depth of water, height above water that work takes place, whether workers can swim or not and then determine safety precautions required: these may include such measures such as barriers, signage, life belts, safety harnesses, etc - When working on harbour edge - erect life saving devices and barriers on harbour wall and any other exposed areas to protect workers and vehicles (stop blocks may also be required). - Monitor times of high tide and remove operatives from exposed or dangerous areas before times of high tide - Only trained and competent persons to be used	- Construction Supervisor - Safety Officer
						During Construction