

# SPECIFICATION FOR OCCUPATIONAL HEALTH AND SAFETY FOR TWEEFONTEIN WASTE WATERTREATMENT WORKS

**MAY 2024**

<b>PREPARED FOR:</b>  <b>King and Associates</b>  Department of Roads and Stormwater Private Bag X017 Kempton Park 1500	<b>PREPARED BY:</b>    26 Ahena Street Midstream Ridge Olifantsfontein Midrand  Email: <a href="mailto:taki@muneluvha.co.za">taki@muneluvha.co.za</a>	<b>ON BEHALF OF:</b>  Thulisile Hani Local Municipality
---	--	---

DOCUMENT CONTROL			
Report Title	Specification for Occupational Health and Safety: Tweefontein Wastewater Treatment Works		
Client Name	King and Associates	Consultant	Avhatakali Mahada
Date	07/05/2024	Revision Details/ Status	Specification
APPROVAL			
Responsibility	Name	Contact details	comments
Author	Carmen Mgese	Admin@muneluvha.co.za	
Approved	Avhatakali Mahada	taki@muneluvha.co.za Contact No.: +27 82 426 8958	

## TABLE OF CONTENTS

TABLE OF CONTENTS .....	ii
DEFINITIONS .....	viii
REFERENCES AND ABBREVIATIONS .....	xi
1. PURPOSE .....	1
2. SCOPE .....	1
3. REQUIREMENTS.....	1
3.1. Leadership and Commitment .....	1
3.1.1. Legal Requirements and Regulations for Health and Safety .....	1
3.1.2. Contractors' General Requirements for Health and Safety .....	2
3.1.3. Contractor's Health and Safety Management Plan .....	3
3.1.4. Site Supervision .....	10
3.1.5. Contractor's Construction Health & Safety Staff .....	10
3.1.6. Fall Protection Planner .....	12
3.1.7. Contractors' Safety Manual .....	12
3.2. Performance Measurement and Reporting .....	13
3.2.1. Health and Safety Statistics .....	13
3.2.2. Safety Management Records.....	13
3.2.3. Field Technical/Safety Audit by THLM .....	13
3.2.4. Unsafe Act/Condition Auditing .....	14
3.2.5. Involvement Communication and Motivation .....	15
3.2.6. Safety Meetings.....	15
3.2.7. Pre-Start Safety Briefings.....	15
3.2.8. Safety Review Meetings.....	15
3.2.9. Employee Health & Safety Representative .....	16
3.2.10. Health & Safety Discipline Procedure.....	16
3.3. Contractor Management.....	17
3.3.1. Subcontractor's Safety Management Plan.....	17
3.3.2. Subcontractor's Safety File .....	17
3.4. Training and Competency .....	17

3.4.1.	Contractor Personnel Competency and Responsibility for Health and Safety	17
3.4.2.	Training .....	21
3.5.	Hazard and Risk Management.....	24
3.5.1.	Project Specific Hazards .....	24
3.5.2.	Hazard and Facility Review Studies (RAMBO) .....	25
3.5.3.	Hazard Identification and Risk Assessment Workshops .....	25
3.5.4.	Risk Assessment of Plant and Equipment .....	26
3.5.5.	Construction Plant and Equipment.....	27
3.5.6.	Standard and Performa Registers.....	27
3.5.7.	Method Statement.....	28
3.5.8.	Critical Hazard Management Plan .....	28
3.5.9.	Risk Assessment.....	28
3.5.10.	Unsafe Operations.....	30
3.5.11.	Work in Operating Areas .....	30
3.5.12.	Hazardous Materials.....	30
3.5.13.	Hierarchy of Control.....	30
3.5.14.	Management of Change .....	31
3.5.15.	Construction Regulation .....	31
3.6.	Occupational Health and Hygiene.....	31
3.6.1.	Fitness for Duty .....	31
3.6.2.	Alcohol and Other Drugs.....	32
3.6.3.	Health Assessments and Health Monitoring .....	32
3.6.4.	Hygiene .....	32
3.6.5.	Cleaners, Solvents and Hazardous Materials .....	33
3.6.6.	First Aid Services.....	33
3.6.7.	First Aid Boxes .....	33
3.6.8.	Emergency Numbers.....	33
3.6.9.	Smoking .....	34
3.6.10.	Sun Protection .....	34
3.6.11.	Working Hours.....	34

3.7.	Safe Systems of Work .....	34
3.7.1.	Typical Activities Requiring Safe Work Procedures (SWP's) .....	34
3.7.2.	PPE .....	34
3.7.3.	General.....	35
3.7.4.	Scaffolding.....	35
3.7.5.	Activities per Discipline.....	35
3.7.6.	Personal Protection .....	35
3.7.7.	Working on Live Electrical Equipment / Sub-Station .....	38
3.7.8.	Requirements when Off-loading Vehicles .....	38
3.7.9.	Elevated Work .....	39
3.7.10.	Working in Existing Operations.....	40
3.7.11.	Permit to Work.....	40
3.7.13.	Working at Heights on platforms, scaffolding and in cradles. ....	43
3.7.14.	Work Platforms .....	44
3.7.15.	Alterations to Existing Facilities .....	44
3.7.16.	Protection of Equipment .....	45
3.7.17.	Work in Operating Areas.....	45
3.7.18.	THLM Operations .....	46
3.7.19.	Piling Operations .....	46
3.7.20.	Plant Isolation Procedures.....	46
3.7.21.	Working of Moving Equipment.....	46
3.7.22.	Compressed Air .....	46
3.7.23.	Oxygen, Acetylene and LPG Cylinders .....	47
3.7.24.	Recognized Walkways.....	48
3.7.25.	Commissioning of New Installation.....	48
3.7.26.	Explosive powered tools .....	49
3.7.27.	Welding, Cutting, Grinding and Heating .....	49
3.7.28.	Electrical Equipment.....	51
3.7.29.	Working at Heights on platforms, scaffolding and in cradles. ....	55
3.7.30.	Work Platforms .....	56
3.7.31.	Crane Cradle – (Man Cages) .....	56

3.7.32.	Scaffolding .....	58
3.7.33.	Formwork/False Work and Support Work.....	59
3.7.34.	Ladders (Portable) .....	59
3.7.35.	Suspended Loads.....	60
3.7.36.	Working Overhead .....	60
3.7.37.	Roofing and Cladding .....	60
3.7.38.	Pneumatic Tools and Compressed Air.....	61
3.7.39.	Radio-Active Sources .....	61
3.7.40.	Conveyors.....	62
3.7.41.	Riding on and Operating Equipment .....	62
3.7.42.	Fire and Emergency Equipment (Site) .....	62
3.7.43.	Confined Space Work.....	63
3.7.44.	Excavations, Trenches and Floor Openings.....	63
3.7.45.	Noise.....	64
3.7.46.	Abrasive Blasting and Spray Painting .....	65
3.7.47.	Lighting .....	65
3.7.48.	Stacking Material .....	66
3.7.49.	Manual Handling of Materials .....	66
3.7.50.	Heat Stress.....	66
3.7.51.	Blasting Requirements .....	67
3.7.52.	Crane Requirements.....	67
3.7.53.	Usage of Skyjacks & Material Hoist (Builder's Lift).....	69
3.7.54.	Material Hoists .....	69
3.7.55.	Water Environments .....	69
3.7.56.	Motor Fuel and Flammable Liquids .....	70
3.7.57.	Diesel Storage .....	70
3.7.58.	Hazardous Material.....	71
3.8.	Incident Management.....	71
3.8.1.	Incident Reporting System .....	72
3.8.2.	Serious Incidents.....	72
3.8.3.	Incident Report and Close Out.....	72

3.8.4.	Corrective Action .....	73
3.8.5.	Injury Management .....	73
3.9.	Site Management/ Monitoring .....	74
3.9.1.	Notices .....	74
3.9.2.	Incorporation of Documents into Contract.....	74
3.9.3.	Interpretation of Safe Working Instructions .....	74
3.9.4.	Emergency Response Manual .....	74
3.9.5.	Emergency Drills .....	75
3.9.6.	Fire Fighting .....	75
3.9.7.	Safety Equipment.....	76
3.9.8.	Weather Precautions.....	77
3.9.9.	Vehicles.....	77
3.9.10.	On-Site Vehicles .....	79
3.9.11.	Commencement of Work.....	82
3.9.12.	Electrical Work (Power Supply) .....	82
3.9.13.	Plumbing Work .....	82
3.9.14.	Completion Inspection .....	82
3.9.15.	Housekeeping.....	82
3.9.16.	Maintenance .....	83
3.9.17.	Defect Reporting and Correction .....	84
3.9.18.	Contractor Health & Safety Documentation.....	84
3.9.19.	Electricity .....	84
3.9.20.	Wearing of Short Trousers/Pants on Site (Prohibited).....	84
3.9.21.	Intoxicating Liquor or Drugs.....	84
3.9.22.	Access Control.....	85
3.9.23.	Trespass .....	85
3.9.24.	Visitors to Site .....	85
3.9.25.	Construction Welfare Facilities .....	85
3.9.26.	Emergency Evacuation.....	85
3.9.27.	Safety Officer Health & Safety Roles and Responsibilities.....	86
3.9.28.	Risk Assessments (RA's).....	87

3.9.29.	Daily Safe Task Instructions (DSTI's) .....	88
3.9.30.	Planned Task Observations (PTO) .....	88
3.9.31.	Management - Visible Felt Leadership (VFL) .....	88
3.9.32.	Health and Safety Experience board .....	88
3.9.33.	Safety Management Information Notice Boards .....	89
3.9.34.	Site Specific Health and Safety Rules and Requirements.....	89
3.9.35.	Fundamental health and safety requirements .....	91
3.9.36.	Health and Safety Bill of Quantities .....	92
4.	Termination and Suspension for Breach of Health and Safety Conditions .....	93
5.	Safety Conflict.....	94
6.	Contractor's Acceptance & Acknowledgement of the Health & Safety Specification:	
	95	



## DEFINITIONS

The following definitions will apply to the Safety Management Plan, acronyms given hereunder shall apply:

- ❖ Construction Work (as defined by the Occupational Health and Safety Act: Construction Regulations 2014):

Means any work in connection with –

- the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;
- ❖ Hazard Identification and Risk Assessment and Risk Control (HIRA)

Means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

- ❖ “construction site”

Means a workplace where construction work is being performed.

- ❖ The Act

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 85 of 1993 and Construction Regulations 2014 promulgated there under, (OHSA).

- ❖ Hazard

Means a source of or exposure to danger (source which may cause injury or damage to persons or property).

- ❖ Risk

Means the probability or likelihood that a hazard can result in injury or damage.

- ❖ Management and Supervision of Construction Works

**“Construction Manager”**

Means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site.

### **"Construction Supervisor"**

Means a competent person responsible for supervising construction activities on a construction site.

#### ❖ Hazardous Chemical Substance (HCS)

Means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

#### ❖ Construction Plant

Encompasses all types of plant including but not limiting to, cranes, piling frames, boring machines, excavators, dewatering equipment and road vehicles with or without lifting equipment.

#### ❖ Contractor

Means an employer who performs construction work.

#### ❖ Health and Safety Program

Means the documented program which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.

#### ❖ Health and Safety Plan (HSP)

Means a site, activity or project specific documented plan in accordance with the SANRAL's health and safety specification.

#### ❖ Health and Safety File

Means a file, or other record containing the information in writing required by Construction Regulations 2014.

#### ❖ Agent

Means in terms of Construction Regulations, 2014, 'a competent person who acts as a representative for a THLM' and in this instance will generally include an officer representing THLM who has been assigned a safety portfolio.

#### ❖ Client

Means any person for whom construction work is being performed.

❖ Competent Person

Means any person having the knowledge, training, experience and where applicable, qualifications specific to the work or task being performed:

- Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No. 67 of 2000), those qualifications and training must be regarded as the required qualifications and training; and
- Is familiar with the Act and with the applicable Regulations made under the Act.

❖ Demolition Work

Means a method to dismantle, wreck, break, pull down or knock down of structure or part thereof by way of manual labour, machinery, or the use of explosives.

❖ "Construction supervisor"

Means a competent person responsible for supervising construction activities on a construction site.

❖ "Construction Work Permit"

Means a document issued in terms of Regulation 3.

❖ "fall prevention equipment"

Means equipment used to prevent persons, tools or machinery from falling from a "fall risk" position, including personal protective equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment.

- ❖ "fall risk" means any potential exposure to falling either from, off or into.
- ❖ "fall protection plan" means a documented plan which includes:
  - all risks relating from a fall risk position, considering the nature of work undertaken;
  - the procedures and methods to be applied in order to eliminate the risk; and
  - a rescue plan and procedures.
- ❖ Working Days means, normal working days excluding Saturdays, Sundays, Public and or Religious Holidays.

## REFERENCES AND ABBREVIATIONS

### References

- ❖ SHE Guideline 5-43-1 Rules for Contractors on Site
- ❖ Compensation for Occupational Injury and Diseases Act, 130 of 1993
- ❖ Explosives Act, 15 of 2003.
- ❖ Occupational Health and Safety Act, 85 of 1993
- ❖ Asbestos Regulations, 2002 [GN R.155 2002]
- ❖ Construction Regulations, 2014 [GN R.84 07/02/2014]
- ❖ Driven Machinery Regulations, 1988 [GN R.295 1988]
- ❖ Electrical Installation Regulations, 2009 [GN R.242 2009]
- ❖ Electrical Machinery Regulations, 1988 [GN R.1593 1988]
- ❖ Environmental Regulations for Workplaces, 1987 [GN R.2281 1987]
- ❖ Explosives Regulations, 2003 [GN R.109 2003]
- ❖ Facilities Regulations, 2004 [GN R.924 2004]
- ❖ General Administration Regulations, 2003 [GN R.929 2003]
- ❖ General Machinery Regulations, 1988 [GN R.1521 1998]
- ❖ General Safety Regulations, 1986 [GN R.1031 1986]
- ❖ Hazardous Biological Agents Regulations, 2001 [GN R.1390 2001]
- ❖ Hazardous Chemical Substances Regulations, 1995 [GN R.1179 1995]
- ❖ Lead Regulations, 2002 [GN R.236 2002]
- ❖ Lift, Escalator and Passenger Conveyor Regulations, 1994 [GN R.797 1994]
- ❖ Major Hazard Installation Regulations, 2001 [GN R.692 2001]
- ❖ Noise Induced Hearing Loss Regulations, 2003 [GN R.307 2003]
- ❖ Pressure Equipment Regulations, 2009 [GN R.734 of 15 July 2009]
- ❖ Mines Health and Safety Act 1996
- ❖ Amended Mines Health and Safety Act 74 of 2008
- ❖ Disaster Management Act, Act 57 of 2002 and associated regulations.

### Abbreviations

AIA	Approved Inspection Authority
AMD	Acid Mine Drainage
CLO	Community Liaison Officer
COP	Code of Practice
CR	Construction Regulation
CV	Curriculum Vitae

DSTI	Daily Safety Task Instruction
H&S	Health and Safety
H&S Rep	Health and Safety Representative
HCS	Hazardous Chemical Substances
HIV	Human Immunodeficiency Virus
IOD	Incident on Duty
JSA	Job Safety Analyses
LDV	Light Duty Vehicle
MCF	Medical Certificate of Fitness
MML	Maximum Mass Load
MSDS	Material Safety Data Sheets
NCR	Non-Conformance Report
OHS	Occupational Health and Safety
PC	Principal Contractor
PPE	Personal Protective Equipment
PTO	Planned Task Observation
PTW	Permit to work
SACPCMP	South African Council for Project and Construction Management Professions
THLM	Thembisile Hani Local Municipality
SANS	South African National Standards
SASOM	South African Society of Occupational Medicine
SWP	Safe Work Procedure

## **1. PURPOSE**

This document describes the requirements of compliance to which the Principal Contractor/ Contractor is to adhere in relation to the scope of works.

This document defines the minimum management requirement that is to be implemented by the Principal Contractor/Contractor for the management of Health and Safety on any Thembisile Hani Municipality project.

The aim of this document is to present the health and safety aspects that need to be controlled and managed on the project.

This Health and Safety specification identifies and encompasses the working behaviours and safe work practices that are expected of all employees, Vendors and Contractors, Sub-Contractors and Visitors, engaged on Mtentu River Bridge site.

Providing a guideline to comply with best Health & Safety practices and the Occupational Health and Safety Act 85/1993 as amended, including reference to applicable legislative requirement.

## **2. SCOPE**

Contractors and Service Providers are required to read and take note of the requirements within this specification and ensure that they provide the required budget for stipulated safety requirements.

This specification applies to upgrade of Tweefontein Wastewater treatment works site. The Specification defines the strategies to manage Health & Safety. This specification must be read in conjunction with the standard STHLM Health and Safety Specification and contractual requirements.

## **3. REQUIREMENTS**

### **3.1. Leadership and Commitment**

The Contractor acknowledges the Thembisile Hani Local Municipality (THLM)'s strong commitment to Health and Safety and the Contractor affirms that it has a written Health and Safety Policy, supporting THLM's Health and Safety management policy that has been signed, and is actively supported and endorsed by the Contractor's management. The Contractor represents that its written policy is widely disseminated and understood among its employees, and that its policy includes a description of the Contractor's organization, procedures and methods of communication to and from personnel. The Contractor must provide copies of its policy and policy statement to THLM upon request.

#### **3.1.1. Legal Requirements and Regulations for Health and Safety**

The Contractor warrants that it is familiar with the contents and implications of the applicable Legislation (latest reprints), codes of practice, guidelines and standards applicable to the services to be provided.

The Act and the Regulation, where applicable, require development and implementation of Work Method Statements for a range of high-risk construction activities and prescribed demolition activities, which, where applicable, the Contractor must develop and implement.

The Contractor must ensure that its personnel and its subcontractor's personnel have been informed of all such laws, Acts, regulations, codes of practice, guidelines and standards.

Conspicuously display the Department of Labour Construction Permit Number (where applicable) at the entrance to the site (i.e. on the main gate to the site office area and to the main entrance onto the construction area). Where the site is spread over a long distance (e.g. on road works, etc) then display the Permit number at the main entrance to the site camp area.

### 3.1.2. Contractors' General Requirements for Health and Safety

The Contractor is solely responsible for carrying out the work under the Contract having the highest regard for the health and safety of its employees, the THLM's employees and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the Contractor carrying out its obligations under this Contract.

The Contractor must initiate and maintain safety precautions and programs to conform to all applicable Health and Safety laws or other requirements, including requirements of any applicable government instrumentality and THLM corporate, business unit and site requirements. The Contractor must, at its own cost, erect and maintain safeguards for the protection of workers and the public. The Contractor must manage all reasonably foreseeable hazards created by performance of the work. The Contractor must:

- ❖ Provide all items and take all measures necessary for maintaining proper personal hygiene, ensuring safety of persons and property and protecting the environment at or near the Site;
- ❖ Avoid unnecessary interference with the passage of people and property at or near the Site;
- ❖ irrespective of any acceptance, recommendation or consent by the THLM , its Contractors, employees, agents and invitees, or any Government Body;
- ❖ Costs for the above are borne by the Contractor;

- ❖ The Contractor must comply and is responsible for ensuring that all of its Sub-contractors comply with the relevant legislation(s) and statutory regulations for health and safety, the THLM's Health & Safety requirements included in the Contract and other document pertaining to health & safety contained in the Program Health & Safety Management System and include standards, policies, procedures, guidelines and safe work instructions.

### 3.1.3. Contractor's Health and Safety Management Plan

The Contractor must prepare, implement and administer the Contractor's Health and Safety Management Plan. The Plan is in writing and forwarded prior to mobilisation to the construction site for work under the Contract, to THLM or the THLM's nominated Agent for review. The Health and Safety Management Plan must comply with this Contract including

Project Site Rules & Requirements, and applicable law relating to workplace health, safety and environmental standards. Any proposed amendments or revisions to the Contractor's Safety Management Plan is submitted to STHLM for acceptance.

The Health and Safety Management Plan must provide a systematic method of managing hazards according to the risk priority and must include all mobilisation and site set-up activities.

The Plan will be audited for completeness by THLM or the THLM's nominated representative using an audit tool, and a score of 80% will be required before it will be "accepted with comments".

The Plan is presented and at least "accepted with comments" by THLM BEFORE permission will be granted to the Contractor to mobilise to site.

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

#### 3.1.3.1. Legal & Site-Specific Requirements

The Contractor shall develop, implement and administer Health & Safety Plan. The plan shall be in writing and shall be submitted to THLM Agent within 7 days of the contract being awarded no work may commence on site without the written permission of THLM included in the written permission shall be a copy of the construction Permit.

The Contractor shall sign the construction permit application within 7 days of the contract being awarded



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

- ❖ The Contractors' Safety Policy. (OH&S Act - Section 7.)
- ❖ How safety responsibilities are assigned to different roles within the organisation. Identification of role of Safety Coordinator, and on-site agent/managers. (OH&S Act - Section 8, Construction Reg.8
- ❖ Selection, placement and training procedures, including induction and ongoing training in 'Basic Safe Work' and Occupational Health & Safety training for newly hired or promoted supervisors. (OH&S Act - Section 8.)
- ❖ Occupational Health & Safety communications and meetings, including daily safe task instructions and project safety meetings. (OH&S Act - Section 19 & 20)
- ❖ Assessment of sub-contractors and Service Providers, including requirements for Health & Safety Plans.
- ❖ Safety awareness promotions.
- ❖ Nomination of personnel to carry out safety inspections. The task may be shared with other duties and provided within the resources of individual gangs and may be rotated.
- ❖ Contractor senior management involvement with Company's staff in consultative processes & daily management Safety walkabouts.
- ❖ Occupational Health & Safety Workplace Environment, including provision for monitoring employee exposures to noise, dust, etc. (OH&S Act – Environmental & Facilities Regulations)
- ❖ Rules and regulations including safety procedures the Contractor has in place for recurring work activities
- ❖ Personal protective equipment rules. (OH&S Act – General Safety Regulation 2)
- ❖ Control of dangerous and hazardous substances. (OH&S Act – Hazardous Substance Regulations)
- ❖ System of hazard identification and risk control, such as Risk assessments, Daily Safe Task Instructions and communication. (OH&S Act – Section 8, Risk Assessment, Construction Reg.9)
- ❖ Design control (if applicable) (OH&S Act – Section 10)
- ❖ Verification procedures including: (OH&S Act - Section 8)
- ❖ Monthly internal safety audits to ensure compliance with Health & Safety Plans
- ❖ Daily site safety inspections and audits. The auditing role may be shared with other duties or provided within the resources of individual groups. The role may be rotated.
- ❖ Inspection of plant, tools and equipment prior to introduction to site and at least monthly thereafter

- ❖ Accident/incident reporting, recording, investigation and analysis, which ensure that corrective action, are taken and this action is communicated to report initiators. (OH&S Act – General Administrative Regulations 6)
- ❖ Evacuation and emergency planning (OH&S Act – Environmental Regulation 9)
- ❖ Traffic management ensuring safe passage for pedestrians on separate pathways.
- ❖ Rehabilitation procedures that encourage an early return to work
- ❖ Record keeping, including details of what is kept and for how long

#### 3.1.3.2. Hazard Identification, Risk Assessment and Risk Control

- ❖ The development of a project/work scope and activity risk profile identifying and considering, safety, health and environmental hazards and exposures, for example, rigging, working at height, welding, confined spaces, delivery Contractors, unloading materials and equipment from trucks, hazardous substances, etc
- ❖ How controls to manage risks identified within the risk profile will be formalised and implemented
- ❖ Personal Protection Equipment
- ❖ Occupational Health & Safety communications and meetings, including daily safe task instructions and project safety meetings. (OH&S Act - Section 19 & 20)
- ❖ Assessment of sub-contractors and Service Providers, including requirements for Health & Safety Plans.
- ❖ Safety awareness promotions.
- ❖ Nomination of personnel to carry out safety inspections. The task may be shared with other duties and provided within the resources of individual gangs and may be rotated.
- ❖ Contractor senior management involvement with Company's staff in consultative processes & daily management Safety walkabouts.
- ❖ Occupational Health & Safety Workplace Environment, including provision for monitoring employee exposures to noise, dust, etc. (OH&S Act – Environmental & Facilities Regulations)
- ❖ Rules and regulations including safety procedures the Contractor has in place for recurring work activities
- ❖ Personal protective equipment rules. (OH&S Act – General Safety Regulation 2)
- ❖ Control of dangerous and hazardous substances. (OH&S Act – Hazardous Substance Regulations)
- ❖ System of hazard identification and risk control, such as Risk assessments, Daily Safe Task Instructions and communication. (OH&S Act – Section 8, Risk Assessment, Construction Reg.9)
- ❖ Design control (if applicable) (OH&S Act – Section 10)
- ❖ Verification procedures including: (OH&S Act - Section 8)

- ❖ Monthly internal safety audits to ensure compliance with Health & Safety Plans
- ❖ Daily site safety inspections and audits. The auditing role may be shared with other duties or provided within the resources of individual groups. The role may be rotated.
- ❖ Inspection of plant, tools and equipment prior to introduction to site and at least monthly thereafter
- ❖ Accident/incident reporting, recording, investigation and analysis, which ensure that corrective action, are taken and this action is communicated to report initiators. (OH&S Act – General Administrative Regulations 6)
- ❖ Evacuation and emergency planning (OH&S Act – Environmental Regulation 9)
- ❖ Traffic management ensuring safe passage for pedestrians on separate pathways.
- ❖ Rehabilitation procedures that encourage an early return to work
- ❖ Record keeping, including details of what is kept and for how long
- ❖ The hazard identification and risk assessment process for specific operations and activities and for new activities identified after the development of the project/work scope and activity risk profile. (Considers methodology, expert advice and selection of participants)
- ❖ The process to be used to review the effectiveness of risk controls
- ❖ Workplace hazard inspections
- ❖ The implementation of a safety observation (behaviour audit) and coaching process conducted as a minimum by persons in leadership roles
- ❖ Method by which daily activities will be assessed for hazards and controls defined before work commences
- ❖ Contractor will carry out inspections and maintain requests of the identification of and implementation of inspection and maintenance controls for plant, mobile plant, equipment and tools requiring formal management, including and not limited to:
  - Mobile cranes
  - Vehicles
  - Boswains chair or similar
  - Scaffolding
  - Hoists and winches
  - Lifting gear
  - PPE
  - Ladders
  - Pressure vessels
  - Elevated work platforms
  - Man hoists
  - Explosive powered tools
  - Portable electrical equipment
  - Confined spaces.

- MSDS Register and Information
- Authorised Isolators and Lock holders
- ❖ Process for identifying, developing and communicating site rules and standards.
- ❖ Control of dangerous and hazardous substances

#### 3.1.3.3. Policies Mandated by THLM

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

- ❖ Health & Safety Policies and Standards
- ❖ Health & Safety Policies and procedures
- ❖ Safety Management System and procedures
- ❖ The Project Health and Safety Management Plan
- ❖ THLM's or the THLM's nominated Representative's Safe Operating Procedures evolving from project risk assessments and included in the project Safety Management Plan and the Project Site Rules

#### 3.1.3.4. Injury Management

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

#### 3.1.3.5. Health and Safety Communication and Consultative Processes

- ❖ How project leadership will ensure all personnel are kept regularly up to date with Health and Safety information and how prompt feedback will be given to personnel for issues they raise. For example, hazard reports
- ❖ The establishment and maintenance of a consultative process for the duration of the project
- ❖ Daily pre-start discussions that encourage staff and leaders to try to anticipate and pre-empt potential hazards within the day's activities along with "Toolbox" meetings and project safety meetings

- ❖ Implementation of improvement programs that encourage and recognise personnel suggestions to enhance Health and Safety on site
- ❖ Health and Safety publicity and awareness programs. For example, competitions and lifestyle improvement
- ❖ Attendance at site safety meetings by Project Manager, Safety Manager and Safety Representatives. (To be elected and appointed per work area and discipline and comply with the Act Section 17 & 18.)

#### 3.1.3.6. Education, Training and Competency

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

#### 3.1.3.7. Measurement and Review

- ❖ Safety performance reviews with all site personnel by their supervisors at monthly intervals
- ❖ Schedule of site inspections and audits involving persons in leadership roles
- ❖ Leadership participation and review of significant incidents
- ❖ Schedule of reviews of the Health and Safety plan implementation progress
- ❖ Schedule of external safety audits of the project
- ❖ Scheduled reviews after the completion of potentially high-risk activities on site
- ❖ Provision for monitoring of employee's exposure to noise, dust etc
- ❖ Inspection and acceptance of plant, equipment, tools etc prior to introduction to site and regularly thereafter

#### 3.1.3.8. Health and Safety Alignment Meetings

THLM or the THLM's nominated Representative will hold a Health and Safety alignment session with contractor who has been awarded the tender. The Tenderer's senior project and proposed site management personnel must attend.

This session will be focused on the contents of the HSE specification in relation to the expectations of the THLM and the THLM's nominated Representative with regard to the Tenderer's Health and Safety leadership and project Health and Safety management proposals.

The aspects of the Contractor's tender that are unclear or sections of the Tender Document that have been missed or not fully understood and may need further explanation, will be discussed and resolved.

At the end of the session, the Contractor will have a complete and unambiguous understanding of the requirements with respect to the management of Health and Safety during the project works and THLM will fully understand what the Contractor has included in his tender.

After award of the Contract and prior to work commencing, the Contractor must participate in a Kick-Off Health and Safety review and alignment session with THLM or the THLM's nominated representative. The purpose of this review and alignment session is:

- ❖ To compare the contents of the Contractor's Health and Safety Management Plan and the Project Health and Safety Management Plan.
- ❖ To ensure specific Health and Safety risks are addressed prior to commencement.
- ❖ To align all parties on the program Health & Safety Goals, expectations, and requirements pertaining to Health & Safety.
- ❖ To arrange training to the Contractors Site Management team regarding Construction Safety Leadership.

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

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

Contractors are responsible for qualifying all Sub-contractors using this system. Sub-Contractors approved for work will be forwarded to THLM review and comment. The

contractor will keep this list up-to-date and will provide monthly updates to the status of Sub-Contractors engaged by the principal contractor.

#### 3.1.4. Site Supervision

The contractor shall comply with OH&S Act – Section 8, 9, 13 and 16 and the Construction Regulations 2014.

The Contractor must nominate and appoint a responsible person on site to whom THLM may refer in connection with the Works. Persons are nominated for all shifts worked or whilst any activity relating to the Contract is being performed on site and must have the authority to bind the Contractor with respect to the Contract. (OH&S Act - 16 Section (2)).

The Contractor must ensure that the performance of all specified Works is supervised throughout by a sufficient number of qualified and competent appointed representatives of the Contractor, who have experience in the type of work specified. (OH&S Act – Construction Reg. 8 (1) and 8. (2).)

The Construction Manager 8. (1) must be registered with SACPCMP and be in good standing.

Note: No work may commence and or continue without supervisory appointees present on site. The Construction Manager must be equipped with a mobile telephone with message bank and/or pager or an equivalent communication device so that communication throughout the Contract can be maintained at all times. As the terrain does not allow for communication easily site radios will need to be provided.

The Construction Manager must provide a list of names and contact telephone numbers of all Contractors and Sub-Contractor's contact persons on site. This list is updated as a new Contractor or Sub-Contractor employee commences on site.

The Construction Manager must keep a record of all employees, including date of induction, relevant skills and licenses, and be able to produce this list at the request of THLMR representative.

The Construction Manager must complete and issue to THLM Representative manning sheets describing the day's activities, labor numbers and classifications prior to 9.00 am on a daily basis.

THLM Representative is notified of any new starter with evidence of induction and site-specific induction prior to commencement of work.

#### 3.1.5. Contractor's Construction Health & Safety Staff

Staff Requirements

One (1) x Construction Health and Safety Officer

All Health and Safety staff shall only perform health and safety functions and shall not have any other function allocated to them.

The Construction Health and Safety Officers must be appointed in terms of the Occupational Health and Safety Act and must be on site when work commences and be present until all activities for the day (Including sub-Contractors) are finished.

Construction Health and Safety Officers is to be registered with the SACPCMP.

Should there be a requirement (illness or leave) for any of the Health and Safety personal and it is anticipated to be for more than 7 calendar days then a replacement person of equivalent qualification and experience must be submitted for approval and be placed on site.

Should it be identified by the client, that additional CHSO's are required, the principal contractor shall provide within 14 days.

The CHSM and CHSO shall be required on site full time during construction, should the contractor choose to perform shift work then additional CHSO's shall be required.

Construction Health & Safety Officer is required for night shift(s) or weekend public holiday. This may require additional Health and Safety personal due to shift work for the numbers during night shift must be equal to the dayshift requirements.

The Safety Officer must have the following minimum qualifications:

- ❖ Registration with SACPCMP (or proof of submission then an evaluation shall take place to ensure the candidate meets the requirements)
- ❖ At least 5 years' experience as a Safety Advisor on construction projects of a similar nature.
- ❖ Successful completion of a Supervisors training course.
- ❖ Sound knowledge of the Occupational Health and Safety Act 85 of 1993 and Regulations including the 2014 Construction Regulations
- ❖ Qualification in hazard identification, risk assessment and risk management processes (HIRA).
- ❖ Sound knowledge of incident causation phenomena
- ❖ Qualification in accident/incident investigation procedures (Such as IRCA's Route Cause Analysis (RCAT), etc).
- ❖ Sound knowledge of SANS 10085
- ❖ Valid First Aid Certificate level 2.
- ❖ Valid SAQA Accredited Fall Arrest Certificate US 229998 & IWH accredited training



Prior to work commencing, Contractors must submit a CV of their proposed Site Construction Health & Safety Team to THLM Health & Safety Program Manager for an interview and approval.

The Contractor must notify THLM in writing of the name, qualifications, duties and responsibilities of the Construction Health & Safety Officer proposed. Approval is obtained from the THLM, and the person is appointed and mobilised, prior to the Contractor mobilising to Site.

In the event that a Construction Health & Safety Manager or Officer disobeys direct Health & Safety Instructions, condones unsafe acts or conditions on site (either willingly or otherwise), from the THLM's Health and Safety Agent, he/she can be removed from the project.

#### 3.1.6. Fall Protection Planner

The contractor shall appoint a Fall Protection Planner CR 10. (1).

The Fall Protection Planner shall have the following qualifications as a minimum:

- ❖ Fall Arrest Course (Accredited SAQA Unit Standard 229998)
- ❖ Fall Protection Planner (Accredited SAQA Unit Standard 229994)
- ❖ A designated member "Fall Protection Planner" in good standing with a professional body (such as the Institute for Working at Heights, IWH).

Valid Medical Certificate of Fitness with Annexure 3

The Fall Protection Planner shall determine what site-specific appointments are required e.g. Fall Protection Officer, Fall Arrest Worker, Fall Protection Equipment Controller, etc.

The Fall Protection Plan must be drafted in accordance with the requirement of the Fall Protection Planner course (SAQA Unit Standard: 229994), taking into account any changes in the industry best practices, and will be assessed by the THLM's Health & Safety Agent.

#### 3.1.7. Contractors' Safety Manual

The Contractor must provide both electronic and hard copies of its safety manuals, policies and procedures to thlmand must ensure that its personnel, at all times, strictly observe and comply with the procedures set out therein. THLM or the THLM's nominated Representative may from time to time request safety procedures applicable to the area of operations. The Contractor must forward to THLM any updates or revisions to its safety manuals, policies or procedures as soon as practicable following revision or update.

THLM may require the Contractor from time to time to supplement its safety manual, policies and procedures with guidelines and/or operating standards provided to the Contractor by THLM. The Contractor must comply with such requests where the request is consistent with the requirements of the Contract. The Contractor must give prompt written notice to THLM of any objection to the requested supplement, including the reasons for objection. The THLM's rights under this Clause are not intended, and must not be construed, to relieve the Contractor from any obligations to ensure compliance with all provisions of this Contract.

### **3.2. Performance Measurement and Reporting**

#### **3.2.1. Health and Safety Statistics**

The Principal Contractor/Contractor must ensure injury and incident records (Near misses/Hits, First Aid, Medical Cases, Disabling Lost Time Incidents, Accident Frequency Rates, Accident Incidents Rates, Disabling Injury Severity Rate/Accident Severity Rates), training etc. referred to above are kept on site and submitted monthly to the Engineer. All documents shall be made available to the Engineer for inspection including the Department of Labour's Inspectors as required by OHSA or as Specified by THLM.

The statistics formula as listed below shall be adhered to during construction:

$$\text{DIFR (Disabling Injury Frequency Rate)/ (Accident Frequency Rate)} = \frac{\text{Total number of DI's in a period}}{\text{Total Number of Man-Hours worked in a period}} \times 100,000 \text{ AFR}$$

$$\text{DISR (Disabling Injury Severity Rate)/ (Accident Severity Rate)} = \frac{\text{Total number of Days Lost in a period}}{\text{Total Number of Man-Hours worked in a period}} \times 1000 \text{ ASR}$$

$$\text{AIR (Accident Incidence Rate)} = \frac{\text{Number of Defined Accidents}}{\text{Average Number Employed}} \times 1\,000$$

#### **3.2.2. Safety Management Records**

The Contractor must submit to THLM for acceptance a schedule of the specific Health and Safety records it intends to maintain for the Contract. As a minimum, such records are as specified by applicable legislation. Copies are provided to THLM or THLM's nominated Representative if requested.

#### **3.2.3. Field Technical/Safety Audit by THLM**

THLM or the THLM's nominated Representative have the right to conduct audits/inspections of the Contractor's Safety Management Plan implementation, operations, equipment, emergency procedures, etc at any time, and the Contractor must

fully cooperate with THLM or the THLM's nominated Representative during such audits/inspections. The THLM's rights under this clause do not/must not and will not relieve the Contractor of its own obligations to conduct audits and reviews of its own Health and Safety performance.

Where such audits/inspections reveal deficiencies in the Contractor's procedures, drills, training or equipment, or non-conformities with the Contractor's accepted project Safety Management Plan, of a minor nature (Risk Rating of 6 or less), the Contractor must investigate the cause of the nonconformity and initiate corrective and preventive action to rectify such deficiencies and non-conformities and prevent recurrence as soon as practicable.

Where such audits/inspections reveal deficiencies of a major nature (Risk rating of 7 or greater), the Contractor must stop work on the operation/activity concerned, immediately investigate the cause of the nonconformity, and initiate corrective actions to rectify such deficiencies and non-conformities and to prevent recurrence. These corrective action plans are to be submitted to THLM for review and comment within 24 hours of the audit finding.

Where such deficiencies include an unsafe practice or a breach of the statutory or the Contract's requirements, THLM or the THLM's nominated Representative may in accordance with the General Conditions of Contract suspend the work associated with the unsafe practice or breach until the deficiency is rectified.

THLM or the THLM's nominated Representative will establish a schedule of regular field safety audits which will be based on an audit tool aligned to the Contractor's Safety Management Plan and site operations and activities. The Contractor's audit conformance will be assessed as a percentage and where conformance is better than 90% it will be considered satisfactory and the Contractor must develop and implement an action plan within 4 weeks, to be reviewed at the next regular audit. Where the Contractor's level of conformance is between 85 – 90%, a corrective action plan will be required to be developed and implemented within 2 weeks, and a follow up audit will be carried out.

Where the Contractor's conformance is less than 85% the Contractor must stop work until an investigation of the cause/s has been completed and corrective actions have been developed and implemented by the Contractor.

The Contractor must provide to THLM or the THLM's nominated Representative, at a time to be agreed, not to exceed monthly intervals, a regular status report on all outstanding corrective actions until they are successfully closed out.

#### 3.2.4. Unsafe Act/Condition Auditing

The Contractor must implement a system to recognise, correct, and report unsafe acts/conditions (Unsafe Act/Condition Auditing) associated with all Site activities.

#### 3.2.5. Involvement Communication and Motivation

The Contractors' and subcontractor's workforce must, through their supervision, safety notice boards, toolbox meetings and daily pre-start meetings be kept aware of safety related matters.

#### 3.2.6. Safety Meetings

The contractor must implement and comply with OH&S Act, Section 19

The Contractor must conduct weekly safety meetings with his employees to foster safety awareness. Copies of minutes and action items arising from such Toolbox meetings is submitted or otherwise made available for review by THLM or the THLM's nominated Representative.

Such meetings should at least address:

- ❖ Accident / safety incidents
- ❖ Hazardous conditions
- ❖ Hazardous materials / substances
- ❖ Work procedures
- ❖ Protective clothing / equipment
- ❖ Housekeeping
- ❖ General safety topics
- ❖ Job or work look-ahead issues
- ❖ Safety statistics
- ❖ Significant Safety Occurrences (SSO)

The Contractor must conduct at least one formal safety meeting per month and must maintain appropriate records of attendance and meeting content. Such records are made available to THLM Representative.

The Contractor must conduct at least weekly a "toolbox" meetings to discuss safety issues and procedures relevant to the current operations.

#### 3.2.7. Pre-Start Safety Briefings

The Contractor must hold documented Daily Safe task Instructions with each work team before the start of each shift. Attendance records and brief topic notes is kept for auditing and record purposes.

#### 3.2.8. Safety Review Meetings

The Contractors' Site Manager and a Site Safety Representative must take part in weekly safety review meetings between the Contractor's and THLM or the THLM's nominated Representative.

The Contractor must attend all project safety meetings as outlined in the Project Safety Management Plan.

#### 3.2.9. Employee Health & Safety Representative

In all cases where 20 or more people work on a project, a Health and Safety Representative shall be elected and appointed, as described in the OHS Act Section 17 and General Safety Regulations 6 and 7, at a rate of one Health and Safety for every 50 employees or part thereof.

The Contractor must ensure that sufficient elected and/or appointed Health and Safety representative/s represent all workers employed by the Contractor. Each elected and/or appointed Health and Safety Representative is required to attend an accredited Health and Safety Representatives training course, at the expense of the Contractor, in accordance with the provisions of the applicable legislative requirements.

The Contractor must ensure that elected and/or appointed Health and Safety Representatives execute their functions as under the provisions of applicable legislation.

An appropriate sticker is to be issued by the Contractor and affixed to a DARK GREEN helmet to identify each Health and Safety Representative.

#### 3.2.10. Health & Safety Discipline Procedure

Where a breach of a Site Health & Safety rule or The Contractors safety Procedure is identified the Contractor must ensure that any disciplinary action taken is in accordance with an approved procedure. In the absence of a disciplinary procedure and dependent on the nature of the breach, the process as outlined below should be used:

- ❖ First breach – verbal warning/counselling
- ❖ Second breach – written warning/counselling
- ❖ Third breach - appropriate disciplinary action taken

Where a breach of a Health & Safety rule has occurred and is considered blatant, the person's site access may be withdrawn at the discretion of THLM's Construction Manager or Health and Safety Agent after consultation with the relevant persons.

Should an NCR be raised, concerning Health and Safety Matters, by the THLM's Health and Safety Agent, against the any Contractor (Principle or Sub-Contractor) for serious deviations/ unsafe acts/ unsafe condition being condoned, etc, the recommendations within the NCR will be final and can include, but not be limited to, a Fine of R10,000.00 per NCR and/or the removal of persons from site, or the termination of a contractor's services on the project.

The THLM's Health & Safety Agent will also be compelled to report such offences to the relevant statutory professional body to which the offender is registered (as required).

### **3.3. Contractor Management**

#### **3.3.1. Subcontractor's Safety Management Plan**

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

#### **3.3.2. Subcontractor's Safety File**

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

The contractor shall not appoint "service providers" all contractors appointed by the contractor shall be deemed a sub-contractor and as such all the required documentation shall be required.

#### **3.3.3. Working Together for a Safe Site**

The Contractor and its subcontractors must actively participate in any programs and/or activities designed to improve the Health and Safety performance on the project.

### **3.4. Training and Competency**

#### **3.4.1. Contractor Personnel Competency and Responsibility for Health and Safety**

Prior to the commencement of the work, including mobilisation and site set-up activities, the Contractor must provide current documentation to the satisfaction of THLM verifying that the Contractor's and subcontractor's personnel are competent and have the

appropriate qualifications, job skills and training as required by this Contract and applicable laws.

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

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

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

Note: No certificates that are aligned to unit standards will be accepted. The course providers must be accredited course providers, and the certificates issues must be accredited wherever unit standards exist.

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

- ❖ Construction Safety Officer (CR8.5) – SAMTRAC (Or equivalent – approved by THLM) and at least 5 years construction safety experience and 2 years working at heights experience.
- ❖ Risk Assessor (CR9.1) - to have completed a SAMTRAC & SAQA Accredited Risk Assessors (HIRA) course or equivalent.
- ❖ Management and Supervisory personnel and foreman (All 16.2 and 8.1 appointees) – Supervisor's Safety course – (IRCON 24-hour course or equivalent approved by SANRAL) and a certificate of competency as required by regulations regarding competency
- ❖ Workforce – (Basic Health & Safety Training)
- ❖ Trained, elected and appointed Safety Representatives per area in the following ratio: (OH&S Act - Section 17 &18 and General Administrative Regulations 6 and 7)

- ❖ Up to 50 people on site = 1 Representative
- ❖ And 1 for every 50 or part thereof thereafter
- ❖ Trained and appointed First Aiders per area in the following ratio; (OH&S Act – General Safety Regulation 3) at least one First Aider to hold a Level 3 certificate and be on site fulltime.
- ❖ Up to 50 people on site = 1 First Aider
- ❖ And 1 for every 50 or part thereof, thereafter

When teams are working in separated areas THLM Representative may instruct the Contractor to appoint First Aiders and Safety Representatives per work area regardless if less than fifty people are working in an area.

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

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

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

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

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

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



- ❖ Fitters
- ❖ Welders
- ❖ Boiler makers
- ❖ Crane and Hoist Drivers
- ❖ Crane Chasers, Banks man, Doggers
- ❖ Riggers (Qualification & Experience Specific to level of rigging required).
- ❖ Scaffolders
- ❖ Plant Operators
- ❖ Shot Firers
- ❖ Winch Drivers
- ❖ Explosive Tools Operation
- ❖ Demolisher
- ❖ Electricians
- ❖ Plumbers
- ❖ Gasfitters
- ❖ Trade Assistants
- ❖ Steel fixers
- ❖ Carpenters
- ❖ Concrete Finishers etc

The actual list will depend on applicable regulations regarding competency.

Contractor's and subcontractor's employees carrying out the following designated tasks require specific authorisation by THLM, i.e.:

- ❖ Operation of mobile equipment including cranes and work platforms
- ❖ Slings of loads from, and the direction of movement of loads by, cranes and other lifting devices
- ❖ Erection and dismantling of scaffolding in excess of 4.5 meters in high.
- ❖ Driving light vehicles, buses, trucks, etc
- ❖ Supervising Excavations deeper than 1.5m

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

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

### 3.4.2. Training

#### 3.4.2.1. Induction in Health and Safety

Comply with: OH&S Act - Section 8

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

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

- ❖ Copy of medical certificate of fitness with annexure 3.
- ❖ Copy of Identity document.
- ❖ Legal appointment letter (where applicable)
- ❖ CV (Where applicable)
- ❖ Drivers licence (where applicable)
- ❖ Certificates of training (where applicable)

The THLMand Engineers team shall; be required to present the following.

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

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

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

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

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

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

Where there is a SAQA unit standard available that shall be deemed to be the minimum required standard. Should there be no SAQA unit standard then industry best practice shall be the standard

The Contractor must ensure that all its personnel and its subcontractor's personnel receive a copy of the Contractor's Health and Safety training manuals or handbooks relevant to their jobs which must detail Health and Safety code and conduct, personal safety protection, emergency Health and Safety response and personal health conduct. The Contractor must provide THLM with details of ongoing training programs and must provide THLM with all related revisions during the term of this Contract. The Contractor must provide programs for the above to overcome any language, literacy or comprehension impairments.

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

Prior to induction all employees must undergo a pre-employment medical examination (If required) and found fit for duty. A copy of the certificate of fitness shall be presented for permanent record at the induction centre and kept at site offices for permanent record to be transferred to THLM on project completion. Employees found with health conditions

and need to receive chronic medication, shall be monitored as to the effect that medication are taken.

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

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

- ❖ Contractors' job specific Induction

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

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

The Contractor must ensure that badges and exit medical certificates are submitted to THLMsite representative when people are demobilised; failure must result in withholding of final payment until exit medical certificates are received and or a penalty of R200-00 shall be paid for every badge not submitted.

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

#### 3.4.2.2. Emergency Procedures

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

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

Ambulance, fully equipped and manned by paramedics with rope access certification to be available on North and South Banks at all times

Contractor to provide proof of contract with emergency Medivac helicopter, which shall be made available and be on site within one hour of request.

Rescue teams to be trained to a level that include rescue using rope access methods.

The contractor must submit a comprehensive emergency plan taking into account all possible scenarios.

#### 3.4.2.3. Isolation Procedure Training

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

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

#### 3.4.2.4. Contractors Health and Safety Management Handbook

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

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

Where reading skills and/or language is an issue with the workforce the Contractor must propose an alternative to the above, maintaining the intent of the above, for acceptance by the THLM.

### **3.5. Hazard and Risk Management**

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

#### 3.5.1. Project Specific Hazards

THLM shall present a Baseline Risk assessment identifying specific project related hazards and risks with applicable control measures. The contractor shall take cognisance of the identified hazards and risks when preparing their tender bid. the contractor shall be responsible for the further identification of all hazards and risks associated with the project including task and issued based hazards and risks.

### 3.5.2. Hazard and Facility Review Studies (RAMBO)

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

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

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

THLM has made all reasonable efforts to ensure that the safe and clean design input information provided shall be complete and correct. However, the Contractor must make its own assessment of the hazards and risks associated with the Work under the Contract, consistent with the requirements of the Contract and the obligations imposed by all applicable legislation.

### 3.5.3. Hazard Identification and Risk Assessment Workshops

The Contractor must conduct, with appropriate personnel, Construction Safety Studies to identify the detailed methodology and related hazardous activities, in particular those with potentially catastrophic consequences such as multiple and single fatalities, of the Contractor's Site installation work scope, for example crane operations and positions, lift sizes, work at height locations, confined spaces locations, work near operational plant, hot work, hazardous substances and dangerous goods being used, etc.

The Contractor must also conduct, with appropriate personnel, Preliminary Hazard Assessment (PHA) workshops to identify the work methodology and related hazardous activities, in particular

Those with potential for fatality or serious injury, of tasks and activities related to particular work packages or locations. In all circumstances the objective of these risk management processes will be to eliminate hazards or otherwise reduce risks through the hierarchy of controls.

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

reviewed by the Contractor prior to starting work each day or shift, and Work Instructions prior to starting work each week.

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

The Contractor's Site Management Representatives, supervisory personnel, technical experts as required, and work force personnel directly involved will participate in these

hazard and risk assessment processes, and the findings documented. The THLM, and/or the THLM's nominated Representative must attend the workshops / studies. At these workshops/studies the Contractor's methodology may be reviewed task by task, potential hazards identified, and actions agreed on to mitigate risk.

#### 3.5.4. Risk Assessment of Plant and Equipment

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

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

The contractor must implement and comply with OH&S Act - Electrical Machinery Regulation 9.

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

- ❖ Appropriate for the type of work to be performed

- ❖ Approved, inspected, tested, numbered and tagged (if appropriate) in accordance with Occupational Health & Safety Statutory regulations and THLM rules, before importation onto the site
- ❖ Properly maintained in accordance with manufacturer's recommendations
- ❖ Placed on register and checked at least monthly and or more frequent as required by required by Legislation and or THLM rules

#### 3.5.5. Construction Plant and Equipment

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

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

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

No item of plant or equipment delivered to site for this Contract shall be removed from the site prior to the completion of the Contract without the written approval of THLM Representative.

THLM Representative reserves the right to inspect items of plant or equipment brought to site by the Contractor for use on this Contract. Should THLM Representative from the opinion that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, THLM Representative must advise the Contractor in writing and the Contractor must forthwith remove the item from the site and replace it with a safe and adequate substitute. In such

cases, the Contractor must not be entitled to extra payments or extensions of time in respect of delay caused by THLM Representative's instructions.

#### 3.5.6. Standard and Performa Registers

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

- ❖ Set up an initial set of registers
- ❖ Complete the registers for each piece of plant, tool & equipment brought onto site
- ❖ Maintain a complete, continuous and comprehensive inspection & service history in these registers



Ensure at least monthly inspections are done and recorded for all plant, tools & equipment by a competent person.

#### 3.5.7. Method Statement

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

Acceptance of a Safety Method Statement by THLM must not relieve the Contractor of responsibility for ensuring full compliance with Contract specifications and conditions.

Specific Work Method Statements may also be required by legislation. Note: an approved Safety Method Statement shall be useless without the corresponding Approved Risk Assessment.

The Contractor must record the Safety Method Statement on the THLM or THLM's nominated Representative format. The Task Items listed in the Safety Method Statement must tie up exactly with the task items being assessed in the Risk Assessment document.

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

#### 3.5.8. Critical Hazard Management Plan

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

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

#### 3.5.9. Risk Assessment

As described above, prior to the commencement of each work activity, or as requested by THLM or the THLM's nominated Representative, a Risk Assessment (RA) is completed, documented and submitted to the THLM or the THLM's nominated Representative for approval prior to the task commencing (the Contractor must factor in at least ten (10) working days for an RA review, this does not necessarily mean that

approval will be within seven days as amendments may be required and the RA resubmitted for review).

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

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

The Risk Assessment must:

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

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

The sub-contractors must also comply with competency, content and format requirements of the Risk Assessments as listed above. It is the Contractors responsibility to review and approve their sub-contractors Risk Assessments to the same standard as THLM or

THLM's nominated Representative would review it to. THLM or THLM's nominated Representative reserves the right to inspect the sub-contractors risk assessments and if found to be sub-standard then those tasks affected by the sub- standard risk assessments will be stopped until the risk assessments are amended to a satisfactory level.

#### 3.5.10. Unsafe Operations

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

#### 3.5.11. Work in Operating Areas

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

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

#### 3.5.12. Hazardous Materials

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

The Contractor must ensure that all hazardous materials and waste products are disposed of in accordance with applicable laws and regulations and any procedures published by THLM or in the absence of any relevant law, regulation or procedures, in accordance with sound safe practice.

#### 3.5.13. Hierarchy of Control

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

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

- ❖ Elimination of the hazard shall be the main objective.

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

- ❖ Substitution - substituting a less hazardous material, process or equipment.
- ❖ Isolation - isolating the hazard from the person or the person from the hazard.
- ❖ Engineering - redesigning equipment or work processes.
- ❖ Administration - introduce administrative controls.
- ❖ As a last resort, when exposure to the risk is not (or cannot be) minimised by other means.
- ❖ PPE - identify and use appropriate personal protective equipment.

#### 3.5.14. Management of Change

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

The change management process must aim to ensure the following:

- ❖ Changes are identified and recognized
- ❖ Careful consideration shall be given to managing the Risks associated with any change
- ❖ Due diligence can be shown to have taken place
- ❖ A reduction in the number of unsatisfactory or unnecessary changes
- ❖ Involvement of the right people in the change process
- ❖ All statutory requirements are met

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

#### 3.5.15. Construction Regulation

In addition to THLM Risk assessment requirements above, the contract must implement and ensure compliance with: Construction Regulation 9.

### **3.6. Occupational Health and Hygiene**

#### 3.6.1. Fitness for Duty

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

- ❖ General level of personal fitness and/or medical conditions
- ❖ The consumption of alcohol
- ❖ The use of other drugs (prescription, pharmaceutical or illicit)
- ❖ Fatigue
- ❖ Stress

#### 3.6.2. Alcohol and Other Drugs

The Contractor must ensure that personnel under its control and authority do not at any time, during the performance of the work, take or work under the influence of any alcoholic and/or other drug other than for bona fide medical reasons or other proper reasons that have been approved in advance and in writing by THLM Project Manager. The measures to be taken by the Contractor must include a drug test prior to such personnel starting work on the site. The Contractor must ensure that personnel under its control and authority comply with the Project site program of random testing for alcohol and other drugs.

#### 3.6.3. Health Assessments and Health Monitoring

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

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

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

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

#### 3.6.4. Hygiene

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

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

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

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

#### 3.6.5. Cleaners, Solvents and Hazardous Materials

No chemical, which shall be potentially hazardous, shall be brought onto the Site without the prior acceptance of THLM or the THLM's nominated Representative.

The Contractor must submit to THLM a Materials Safety Data Sheet (MSDS) with its request for acceptance of each hazardous substance the Contractor proposes to use at the Site.

The Contractor must ensure that all necessary transport, storage and usage precautions are taken and that safety equipment, including antidotes, if necessary, are available on the Site.

#### 3.6.6. First Aid Services

The contractor must implement and comply with OH&S Act General Safety Regulation 3

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

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

#### 3.6.7. First Aid Boxes

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

#### 3.6.8. Emergency Numbers

Lists with emergency numbers to be posted at phones and in every office. Provide workers with stickers to place inside their hardhats with emergency numbers printed on stickers.

#### 3.6.9. Smoking

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

#### 3.6.10. Sun Protection

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

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

#### 3.6.11. Working Hours

The Contractor shall be responsible for the administration of the working hours of its employees and subcontractors. Maximum working hours per day and minimum rest times between shifts shall be specified in the Contractor's Health and Safety Management Plan and must comply with the requirements for the project site unless specifically approved by THLML.

### **3.7. Safe Systems of Work**

#### 3.7.1. Typical Activities Requiring Safe Work Procedures (SWP's)

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

- ❖ Site establishment, Firefighting and evacuation, Rubble and refuse removing, Stacking and storing, Housekeeping, Loading & off-loading of vehicles etc.

#### 3.7.2. PPE

Safe Systems of work to address specific PPE requirements over and above the minimum requirements as per the Site Rules taking into account items of PPE that might not be compatible with the user or with other PPE (e.g. if the user has spectacles and shall be required to wear a full face respirator, the spectacle arms will break the seal and will not

provide the required protection). PPE shall be also to be seen as the last resort and engineering controls should be put in place whenever possible.

#### 3.7.3. General

Work areas – benches, Containing of sparks, Barricading and handrails, Safe Access and egress, Evacuation and emergency procedures, Backfilling and compacting, Shuttering & Form work, Lifting and rigging, Steel fixing, Pouring of concrete and floating, Elevated work, Use of ladders, Roadwork and Fuelling of machines.

#### 3.7.4. Scaffolding

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

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

- ❖ Managing of the scaffolding requests
- ❖ Certification of the scaffold to be handed over
- ❖ Inspection of the scaffolding
- ❖ Documentation in triplicate
  - Scaffold request
  - Scaffold Handover certificate
  - Scaffold inspection register
  - Scaffold site instruction (for altering scaffolding)
  - Scaffold record of all scaffolding on site and dismantlement's
- ❖ Overall management of the ordering of material, storage on site and laydown areas
- ❖ Staffing plan including CV's certificates and appointments.

#### 3.7.5. Activities per Discipline

Civil, Structural, Pipefitting, Mechanical, Electrical, Instrumentation, Bricklaying, Roofing and cladding, Installation of cable racks, Cable pulling, Work in confined spaces, Stock keeping and control, Grit blasting, Demarcation

People activities like:

Grinding, Welding, Using Jack Hammer, operating of machines, Cutting, Compacting, Crane operating etc.

#### 3.7.6. Personal Protection

The contractor must implement and comply with OH&S Act – General Safety Regulation 2.



#### 3.7.6.1. Standard PPE

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

- ❖ Safety head protection with chin strap (SANS 11451 approved)
- ❖ Safety footwear with steel toe protection.
- ❖ Safety glasses with side shields (UVEX type or equivalent)
- ❖ Hand Protection as required
- ❖ Long trousers
- ❖ Long-sleeved shirts with cuffs and collars and reflective taping as required
- ❖ High visibility Reflective Vests.
- ❖ Hearing and respiratory protection as required
- ❖ Suitable protective clothing (Overalls for all employees conducting physical working)

Personnel exposed to noise levels exceeding 85dB (A) for any period of time or where signs indicate hearing protection shall be required to wear (SANS 11451 approved) hearing protection. Note: NIHL (noise induced hearing loss) assessment should be conducted, where appropriate, by a competent person (Registered Occupational Hygienist) and recommendations and control measures followed.

Other personal protection items such as gloves, face shields, leather spats, safety harnesses, aprons or other such items may be specified for use by legislation, the Scope of Work or THLM Representative. Personal protective equipment must also be worn, if recommended by manufacturers or suppliers of proprietary products or equipment.

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

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

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

#### 3.7.6.2. Specific PPE

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

**SABS/EN/EC** approved hard hats and hard hats with fixed side knobs for welding and grinding operations.

Approved and appropriate overalls.

Wearing of impact Safety Spectacles with side shields are compulsory on site and in workshops at all times. Prescription glasses must comply with the same standard or cover impact safety spectacles is worn over them.

Front flip goggles to be used for gas cutting.

### **Double Eye-Protection**

- ❖ Welding – Impact Spectacles & Welding Hood
- ❖ Grinding – Impact Spectacles & Full-Face Visor
- ❖ Cutting – Impact Spectacles & Full-Face Visor
- ❖ Reaming – Impact Spectacles & Full-Face Visor

### **Specific PPE**

- ❖ Welding – Spats/Apron/Yoke/Respirator (Metal frame) - Knee pads for welders in kneeling positions.
- ❖ Grinding – Spats and Apron
- ❖ Gas Cutting - Spats and Apron
- ❖ Boots / Shoes – “Fram” safety boots or equivalent.
- ❖ Gumboots – Steel cap toe.
- ❖ Earplugs (SANS 11451 Approved)– Noise zones exceeding 85Db (Including grinding/compacting etc)
- ❖ Nuisance Dust – Dust Masks – 3M Standard
- ❖ Asbestos – FFP2 minimum
- ❖ Grit Blasting – Airline Hood
- ❖ Spray Painting – Airline Hood (Confined Spaces) /Canister type mask

#### **3.7.6.3. Applicable Gloves to be worn for all Hand Operations**

- ❖ Termination of cables – glass cutting gloves
- ❖ Using a Stanley knife - Glass cutting gloves
- ❖ Welding – Welding gloves etc.
- ❖ Gas/Argon – Cutting/Welding
- ❖ Gloves for artisans and helpers.
- ❖ Manual Handling – standard gloves.

- ❖ Symbolic signs (To comply with SANS 11186) indicating the use of PPE shall be placed at entrance to the construction site

#### Respiratory Protective Equipment (RPE) & Breathing Apparatus (BA):

- ❖ Only SABS/EN/EC rated equipment to be supplied.
- ❖ Must be provided as per Risk Assessment requirements based on Time Weighted Averages (TWA) and Workplace Exposure Limits (WEL).
- ❖ Must be provided as advised by an Occupational Hygienist, after they have considered the exposure risks on site.
- ❖ Where possible, after considering exposure risk and cost factors, the most effective RPE for the situation should be used.
- ❖ Specific training must be provided to all employees who use the RPE/BA for the use and maintenance of RPE/BA. Training must include but not be limited to: : Cleaning of RPE/BA, Disposal of RPE/BA items or filters/cartridges, Hygiene, Correctly Putting PPE on, Inspection of PPE, Health Risks associated with the task, Identifying when PPE is spent (i.e. reach saturation point/no longer functioning as it should) or broken, etc.

#### 3.7.6.4. Issue, Replacement and Control of PPE

A dedicated person must:

- ❖ Control the issue and replacement of equipment
- ❖ Keep an up-to-date register, with signatures of the recipients, as proof of having been issued with such equipment will be free charge

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

#### 3.7.7. Working on Live Electrical Equipment / Sub-Station

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

#### 3.7.8. Requirements when Off-loading Vehicles

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

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

### 3.7.9. Elevated Work

The contractor must implement and comply with Construction Regulation 10 The Contractor must:

- ❖ Submit a fall protection and rescue plan to THLM Project Manager for approval, before any elevated work commence
- ❖ Parachute type harness with shock absorber and double lanyard to be provided for all elevated work
- ❖ Ensure that:
  - All tools in elevated positions shall be attached to lanyards and be attached to either the person or structure
  - Equipment in elevated positions are tied back to the structure
  - No loose items in elevated positions. E.g. Bolts and nuts shall be in pouches, not paper boxes
  - Overhead work allowed only if Area below shall be barricaded in accordance with THLM barricading requirements
  - Competent riggers place lifelines on register and check it daily before use and records findings in the said register

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

#### 3.7.9.1. Structures

The Contractor must implement and comply with Construction Regulation 11.

#### 3.7.9.2. Barricading and Edge Protection Requirements

The contractor must implement and comply with OH&S Act – General Safety Regulation 13 (I)

The Contractor must ensure that:

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

- ❖ Barricading shall be tagged, placed on register, maintained and inspected daily –  
The owner of the barricade's name and mobile number must appear on the tag

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

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

Note: Danger tape will not be accepted as barricading!

The use of danger tape shall not be permitted on site.

#### 3.7.10. Working in Existing Operations

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

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

#### 3.7.11. Permit to Work

The Contractor must obtain a permit from the permit control room/THLM and necessary test done like testing for gases and vapour presents, etc.

The permit must list specific condition and hazards involving the specific task.

#### 3.7.12. Lock-out Procedures.

In operating areas lock out procedures must follow STHLM procedures. The Contractor shall co-ordinate with THLM Representative.

An entirely separate set of procedures cover the requirements for lockout, commissioning, start-up and hand over of the completed works.

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

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

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

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

- ❖ Executing tie-ins to existing Operating plant
- ❖ Working near live equipment
- ❖ Start-up and commissioning of electrical equipment and electrically driven machinery
- ❖ Working on live pipelines, confined spaces and hydraulic equipment

### **Electrical/Mechanical Lock-out Procedure**

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

Purpose: -To ensure that all plant and equipment being put into operation shall be done so in an orderly manner to safeguard all personnel involved in the commissioning process.

### **Procedure**

- ❖ The Contractors 16(2) assignee must nominate and appoint a competent person as the responsible person for energising and isolating equipment in response to requests from holders of work permits
- ❖ THLM Project Manager must nominate and appoint a competent person for the duty of managing the "Permit to work" system which must entail the stages of issue, revocation and completion
- ❖ All electrical control panels are to be locked by the Contractors' appointed person with padlocks having two keys for the series
- ❖ The Contractor must provide these padlocks
- ❖ The Construction Manager and the Contractors' appointed person would be the sole custodian of these keys

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

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

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

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

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

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

- ❖ Verify that it is the correct equipment as specified on the permit
- ❖ Isolate the piece of equipment and ensure that it shall be de-energised
- ❖ Attach his lock and tag to a multiple locking device
- ❖ The permit holder, having witnessed the isolation, must
- ❖ Physically test that the equipment shall be correctly isolated
- ❖ Sign the permit to this effect
- ❖ Inform his workers of the nature of the work and hazards involved
- ❖ Complete and sign the Workers Register and attach to the permit
- ❖ Attach his lock and tag to the multiple locking device, and

- ❖ Hand the second copy of the permit and worker's register to the Contractors responsible person
- ❖ After completion of the work, the permit holder must remove all tools and equipment and leave the area in a neat and tidy condition
- ❖ The permit holder must sign all copies of the permit and workers register to the effect that his work is complete, and remove his tag and lock from the isolator
- ❖ If work continues over more than one shift, a worker must remove his tag and lock at the end of the shift.
- ❖ If another person is to work on the machine, he must follow the same lockout procedure

An up-to-date record book shall be maintained at all times and be available for inspection by THLM Representative.

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

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

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

### 3.7.13. Working at Heights on platforms, scaffolding and in cradles.

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

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

- ❖ Safety harnesses and double lanyards (with the correct hook attached to the lanyard, e.g. Pylon type hook for scaffolding, or lifeline hook for lifelines, etc).
- ❖ Approved lifelines, be it Static Lifelines, Retractable Lifelines, etc (installed and certified by a competent and suitably qualified person as per applicable SAQA unit standards). Lifelines must be sufficient for the work carried out and must consider the hazards of the task and numbers of employees to be attached at any given time.
- ❖ Other approved means.
- ❖ All harnesses must comply with SABS/EN/EC Standards and must be in a good state as inspected using a comprehensive inspection checklist, must be "in-date" as per manufacturing guideline.



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

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

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

#### 3.7.14. Work Platforms

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

- ❖ If a permit holder does not remove his lock after the shift, and does not report to work the following day, the construction manager shall be the only person authorised to remove his lock and energise the equipment after ensuring that it shall be safe to do so
- ❖ At the first stage of cold commissioning THLM commissioning team takes over control of the plant and must follow a similar lock-out procedure but must utilise their own plant documentation, padlocks and tagging system

Note:

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

#### 3.7.15. Alterations to Existing Facilities

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

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

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

#### 3.7.16. Protection of Equipment

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

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

#### 3.7.17. Work in Operating Areas

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

- ❖ Provide safety watchers as necessary or as directed by THLM Representative
- ❖ Provide, erect and maintain all the required barriers, flags, and wheel stops, buffer stops flashing lights or other safety equipment to enable his operations to proceed in a manner which satisfies THLM Safety Regulations
- ❖ Remove all such protective devices once the hazard has been removed or on completion of the work

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

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

The relevant permits are obtained prior to undertaking any work. In addition to this, the Contractor must advise THLM Representative immediately prior to commencing work in the area.

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

Remember for all work done in live plant Contractor's supervisors must obtain a permit to work from the THLMs operational control with a THLM Representative present.

#### 3.7.18. THLM Operations

There are no THLM operations present on the site.

#### 3.7.19. Piling Operations

All piling machinery, core/dynamic drilling machinery and an attachment must comply with legal requirements and a pre inspection shall be done by the Contractors operational manager and it must be reviewed by THLM representative prior commence doing any piling, soil test, dynamic compaction or ground improvement. Each piece of equipment must have a valid operator's competency certificate, latest inspection log registers a copy steel cables certificate. A copy of risk assessments and safe operating procedures for each specific operation. Prove that every employee has been trained to risk assessment and safe operating procedure. Special care shall be taken when working in the vicinity of pile driving equipment.

The Area must be properly barricaded according to THLM standards.

#### 3.7.20. Plant Isolation Procedures

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

#### 3.7.21. Working of Moving Equipment

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

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

#### 3.7.22. Compressed Air

Compressed air must NOT be used for any purpose other than that for which it shall be provided.

Do not use compressed air to remove dust from clothing.

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

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

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

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

### 3.7.23. Oxygen, Acetylene and LPG Cylinders

The contractor must implement and comply with OH&S Act - General Safety Regulation 9 and SANS 11548

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

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

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

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

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

Oxygen cylinders should be stored at least 5m away from other flammable gas cylinders. Flashback arrestors to be fitted on torch and cylinders.

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

#### Storage of Gas Cylinders

- ❖ Storage areas should whenever possible be well clear of buildings
- ❖ A protective covering shall be provided
- ❖ Adequate ventilation shall be provided
- ❖ Storage areas shall be kept free from all combustible materials, no other materials are to be stored in cylinder enclosure
- ❖ open valves to check whether cylinders are empty or full. Mark empty cylinders clearly and store in space provided
- ❖ Cylinders must always stand upright; special stands are to be used for cylinders and the cylinders shall be chained separately in an upright position
- ❖ Cylinders shall be stored in rows with aisles in-between for easy removal in event of fire
- ❖ For security and ventilation purposes a wire mesh fence should surround the storage area. Keep the enclosure locked
  - All danger signs are prominently displayed at storage area; e.g.:
  - No Smoking
  - No naked flames
- ❖ Adequate firefighting equipment shall be available
- ❖ Oxygen and acetylene should be stored separately
- ❖ The storage should be clearly marked
- ❖ Oxygen - Full Oxygen – Empty
- ❖ Acetylene - Full Acetylene – Empty
  - Flammable and oxidising gasses must not be stored together, greases and oils must never be allowed to come in contact with Oxygen
  - If electrical lighting shall be required, it should be of an approved type and comply with SANS 10108

#### 3.7.24. Recognized Walkways

When walking through the Site or to personal work area use recognised thoroughfare. Don't take short cuts.

#### 3.7.25. Commissioning of New Installation

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

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

#### 3.7.26. Explosive powered tools

The Contractor must implement and comply with Construction Regulation 19.

Explosive powered tools may only be used when prior written permission is granted by THLM Project Manager.

#### 3.7.27. Welding, Cutting, Grinding and Heating

- ❖ cylinders are kept apart from empty cylinders so that it must not be necessary to

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

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

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

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

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

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

### **Hot Work**

- ❖ Hot work permit to be obtained before job starts
- ❖ Falling sparks and/or Hot cuttings to be contained
- ❖ Fire Blankets and Fire Extinguishers shall be at hand

- ❖ Ensure not to carry out any Hot work, Cutting and/or Grinding in the vicinity of Flammable Liquids
- ❖ Protect Rubber lined Vessels / Tanks etc
- ❖ Combustible Floors shall be wetted down, covered with Damp sand or Fireproof sheets
- ❖ All wall and floor openings covered
- ❖ Containers / Pipes purged of Flammable vapours
- ❖ Fire watch shall be provided
- ❖ Area to be inspected after Hot work has been completed
- ❖ Fire watch to stay in place for at least 30 minutes after operation
- ❖ Warn all Employees working under hot work process

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

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

- ❖ Zinc, lead, cadmium, mercury, or beryllium bearing based or coated materials in enclosed spaces
- ❖ Stainless steel with inert-gas equipment
- ❖ In confined spaces
- ❖ Galvanised steel
- ❖ Full Where an unusual condition can cause an unsafe accumulation of contaminants Proper protective equipment to prevent exposure of personnel shall be provided.

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

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

Hoses shall be deflated before cutting torches are cleaned and nozzles not robbed against gloves

During welding operations, the earth lead shall be attached to the work area and never such that the earth shall be established through equipment bearings or through clearance gaps of any sort.

Welders and other people executing hot work must not wear any jewellery and or carry cigarette lighters on their person.

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

### 3.7.28. Electrical Equipment

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

Electrical installations and machinery on construction

The Contractor must ensure that:

- ❖ All electrical installations carried out on the site are in accordance with the Electrical Installation Regulations. For permanent or temporary installation, as appropriate. In addition, electrical installations must comply with THLM Electrical Standard Specification.
- ❖ Connections are not made to any power supply without the prior written approval of THLM Representative and where an isolation shall be required that an isolation permit has been obtained and the isolation procedure associated to the permit has been followed correctly.
- ❖ All electrical installations are inspected by THLM Electrical Representative (or his nominee) to ensure that the installation complies with the statutory regulations applicable to the site and THLM Safety Regulations

All electrical machines and appliances provided by the Contractor for his own use on the site are in a serviceable condition.

- ❖ Power tools used on the site are protected by residual current devices approved by THLM and are double insulated.
- ❖ All extension cords, portable tools and electrical plant supplied at a voltage above 32 volts are inspected tested and tagged by a licensed electrician at regular monthly intervals. Details of inspections and tests shall be kept in logbooks available for inspection by THLM Representative or any other authorised officer of THLM
- ❖ Where natural lighting shall be inadequate, artificial lighting is to be provided in all work areas, access ways and for rescue equipment. Compliance with OH&S Act - Environmental Regulation 3 and Annexure E to the regulations.
- ❖ Portable lights have adequate stability and are fitted with a mechanical guard to protect the lamp.



- ❖ Temporary festoon lighting shall be of the 'double insulated' type and shall be supported at least 2.5m above the floor, if possible.
- ❖ Hand lamps shall be of the 'all insulated' type.
- ❖ All temporary light fittings are supplied from more than one final sub-circuit, with the supply from a residual current device, extra low voltage source or an isolating transformer.

Any installations deemed unsatisfactory by THLM Representative should be removed by the Contractor at his expense.

The Contractor must obtain approval from THLM Representative before any of his employees or sub-Contractors commence work within three (3) meters of high tension wires, or where there is a possibility of equipment coming close to and/or touching a power source, and must provide suitable protective insulating barriers. For the erection of scaffolding, the distance shall be five (5) meters.

Only authorised persons may enter electrical contractor houses, motor rooms, switch rooms, control rooms or cable ducts. Should the Contractor require entering such places to carry out work, he must first obtain permission from THLM Representative and obtain a valid permit to work.

persons", with the names entered in THLM Authorised Persons Register, after receiving approval from THLM Electrical Supervisor, or they is accompanied by an authorised person who must supervise the placement of Danger Tags and Out-of-Service Tags, as well as electrical isolation permit.

Before commencing work on the site, the Contractor must provide the following information to THLM Representative:

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

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

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

Such inspection(s) are to be performed by an appropriately qualified electrician and a report submitted to THLM Representative, in accordance with the following:

#### Frequency of Testing:

The Contractor must test and tag all the Contractors' and subcontractors' electrical equipment and leads on a monthly basis, as follows:

#### Colour Code:

Contractors must ensure the tagging and colour coding of all tools and equipment. Colour code a different colour for each month as follows:

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

#### Details of the Tag:

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

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

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

Before commencing work on the site, the Contractor must provide the following information to THLM Representative:

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

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

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

Such inspection(s) are to be performed by an appropriately qualified electrician and a report submitted to THLM Representative, in accordance with the following:

Frequency of Testing:

The Contractor must test and tag all the Contractors' and subcontractors' electrical equipment and leads on a monthly basis, as follows:

Colour Code:

Contractors must ensure the tagging and colour coding of all tools and equipment. Colour code a different colour for each month as follows:

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

Details of the Tag:

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

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

An up-to-date record book shall be maintained at all times and be available for inspection by THLM Representative. The record book must contain full details, as identified in the tag, and must list, in addition, the following:

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

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

### 3.7.29. Working at Heights on platforms, scaffolding and in cradles.

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

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

- ❖ Safety harnesses and double lanyards (with the correct hook attached to the lanyard, e.g. Pylon type hook for scaffolding, or lifeline hook for lifelines, etc)
- ❖ Approved lifelines, be it Static Lifelines, Retractable Lifelines, etc (installed and certified by a competent and suitably qualified person as per applicable SAQA unit standards). Lifelines must be sufficient for the work carried out and must consider the hazards of the task and numbers of employees to be attached at any given time.
- ❖ Other approved means.
- ❖ All harnesses must comply with SABS/EN/EC Standards and must be in a good state as inspected using a comprehensive inspection checklist, must be “in-date” as per manufacturing guideline.

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

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

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

#### 3.7.30. Work Platforms

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

The Contractor must implement and comply with OH&S Act - General Safety Regulation 13F Suspended platforms may only be used on site with prior written approval from THLM Construction Manager.

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

#### 3.7.31. Crane Cradle – (Man Cages)

The contractor must implement and comply with OH&S Act - Driven Machinery Regulation 2015, section 18(8), General Safety Regulation 13C, and Lift Escalator and Passenger Conveyer Regulations.

- ❖ The Contractor must ensure that every Man Cage or similar device shall be securely suspended and shall be constructed in such a manner so as to prevent any occupant from falling there from
- ❖ The Contractor must ensure that an inspection shall be carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out on a daily basis prior to use.”

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

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

Cradle must comply with the specifications of Health & Safety Act and the design engineer and approved By the Department of labour and review by THLM Construction Manager on site.

THLM Representative shall be advised well beforehand of the intention to use such equipment on site so that the Representative can make arrangements for inspection.

THLM Construction Manager must approve any cradle before use. The contractor must:

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

- ❖ Provide copies of welding X-Rays.

### 3.7.32. Scaffolding

The contractor must implement and comply with OH&S Act - SANS 10085, General Safety Regulation 1986: section 13D to 13G and Construction Regulation 2014: section 16.

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

The scaffold supervisor and scaffold inspector may not be the same person. The rule on scaffolding shall be it must be 100% compliant

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

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

A Tagging scaffolding management system is used by the Contractor to ensure that scaffolding erected on Site complies with the provisions of Legal, SANS and THLM rules. Contractors must use SGB and or similar type THLM approved tags.

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

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

Where complex/technical and/or unusual scaffolding shall be required in hazardous locations, liaison with the THLM's Health and Safety Agent shall be required, before undertaking such work, because a competent Designer CR12 may be required to be appointed in writing, who shall be a structural engineer with relative experience, and who must design, inspect and sign off on the scaffolding before it may be used.

All persons working on scaffolding must be trained for working at heights with a minimum of an Accredited Fall Arrest Course (SAQA Unit Standard 229998). The supervisor of the scaffolding work must be trained at a minimum Accredited Fall Arrest and Basic Rescue

(SAQA Unit Standard 229998 & 229995). A Rescue Kit (Contents of the Rescue Kit as per the Fall Protection Plan, and as determined by the type of working from a fall risk position that is being conducted on site) must be available at all times on site. The site must have at least one Accredited Fall Arrest Rescue Co-Coordinator on site (SAQA Unit Standard 229995, 230000, 229999) that shall be able to take charge and conduct a rescue if required.

#### 3.7.33. Formwork/False Work and Support Work

The contractor must implement and comply with Construction Reg. 12. The competent designer shall be to be appointed in terms of CR 12. Furthermore, all formwork/false work and Support Work must be designed and signed off by the appointed designer CR12 who shall be a structural engineer, along with an inspection of the installation by the designer CR12 detailing that it has been erected correctly before work continues.

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

#### 3.7.34. Ladders (Portable)

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

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

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

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

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

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



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

#### 3.7.35. Suspended Loads

The contractor must implement and comply with OH&S Act - Driven Machinery Regulation 18

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

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

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

Guide ropes to be used to prevent loads from swinging.

#### 3.7.36. Working Overhead

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

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

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

No overhead work shall be allowed.

#### 3.7.37. Roofing and Cladding

The contractor must implement and comply with OH&S Act - General Safety Regulation 10 The contractor must provide safe access for gaining access on to the roofs.

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

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

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

No work shall be permitted during rain or when wind speeds exceed 30 Kph. – This shall be only a guide it must also depend on Risk Assessment and working conditions.

The Responsible Person must enforce this with the delegated authority on site. Bundles of roof sheeting stacked on the roof must conform to the following:

- ❖ Only sufficient bundles to be stacked on the roof to meet immediate needs – other bundles to remain stacked on the ground until required
- ❖ Bundles of sheeting to be secured by means of 20mm steel strapping applied with a strapping tool.
- ❖ Securely tied to the rafters so as to prevent sheets being blown from the roof during high winds
- ❖ No material may be stored on the roof over weekends and holiday periods.
- ❖ Side and gable cladding to be erected by means of a swing scaffold attached to the roof truss extensions as specified by the manufacturer – no makeshift arrangements shall be permitted.

#### 3.7.38. Pneumatic Tools and Compressed Air

The contractor must implement and comply with OH&S Act - Driven Machine Regulation 14 May only be used on site with prior written approval from THLM Construction Manager.

It shall be illegal for a pneumatic tool to be operated by using a compressed gas cylinder. Pneumatic equipment must only draw supply from mobile air compressors or from compressed air lines installed within the premises after gaining permission from THLM Representative.

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

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

#### 3.7.39. Radio-Active Sources

The contractor must implement and comply with Nuclear Energy Act 131 of 1993

May not be utilised on site without written permission from the Engineer and all statutory requirements shall be adhered to.

- ❖ Radiation operators must submit proof of certification.
- ❖ All X-ray personnel must wear meters and film badges.
- ❖ Warning signs and lights to be posted at all X-ray activities.
- ❖ Sources shall be stored according to legal requirements.
- ❖ All Contractors shall be informed of X-ray activities.
- ❖ X-ray work may only commence with a valid permit to work. The permit will be valid for one and one section only.
- ❖ X-ray areas to be barricaded and flagged with radio-active identification markers as per legal requirements.
- ❖ Before commencing with X-rays, THLM Safety Manager shall be notified.

#### 3.7.40. Conveyors

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

Riding on conveyor belts shall be forbidden.

#### 3.7.41. Riding on and Operating Equipment

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

#### 3.7.42. Fire and Emergency Equipment (Site)

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

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

Electric welding, Oxy-welding or cutting, or any other fire hazardous equipment is not to be used inside or adjacent to electrical switch room, control room, cable duct, any electrical equipment or cables without the permission of THLM Representative.

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

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

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

#### 3.7.43. Confined Space Work

The contractor must implement and comply with OH& S Act - General Safety Regulation 5 Enclosed space work necessitates a Confined Space Permit. This may only be obtained from the authorised person nominated in writing and after approval by THLM Representative.

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

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

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

Compulsory - Continuous monitoring, trained rescue teams, radio communication & adequate ventilation and resuscitation equipment.

#### 3.7.44. Excavations, Trenches and Floor Openings

The contractor must implement and comply with Construction Regulation 13 OH&S Act - General Safety Regulation 13

The Contractor must ensure that all excavation work shall be carried out under the supervision of a competent person who has been appointed in writing.

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

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

When excavations are necessary across roadways, approval shall be sought from THLM Representative. Where necessary, "Detour" notices and detour routes shall be provided.

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

Personnel must report any unusual conditions that may be found, such as underground power lines, pipelines, sewers or inconsistent materials, immediately to THLM Representative and, if a risk to personnel safety shall be involved, stop all work until approval to continue shall be granted by THLM Representative.

Safe access and egress to be provided and sides battered or shored to the satisfaction of THLM Representative.

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

Note: No loose material shall be within 3m of the excavation edges.

#### 3.7.45. Noise

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

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

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

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

#### 3.7.46. Abrasive Blasting and Spray Painting

The contractor must implement and comply with OH&S Act Hazardous Chemical Substances Regulation 11.

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

- ❖ Obtain written permission from THLM Representative.
- ❖ Comply with any direction from THLM Representative as to the suitability of proposed blasting site, prescribed times of blasting operations, wind conditions or other considerations that THLM Representative may deem appropriate.

The Contractor must not commence any spray-painting operation on the site without the written approval of THLM Representative.

THLM Representative may conduct an Environmental Impact Audit of the Contractors' proposed operation and the Contractor must comply with any direction by THLM Representative in relation to the Contractors' spray-painting operation.

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

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

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

The contractor must implement and comply with OH&S Act - Environmental Regulation 5

For any job, which generates excessive dust or fumes (for example welding), an effective exhaust system shall be used.

#### 3.7.47. Lighting

The contractor must implement and comply with OH&S Act – Environmental Regulations and Schedule E of the Regulation.

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

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

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

Hand lamps are of the 'all insulated' type.

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

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

#### 3.7.48. Stacking Material

The contractor must implement and comply with OH&S Act - General Safety Regulation 8 Stacking to be neat and safe.

Before stacking any material, the Contractor, sub-Contractor or their employees must consult THLM Representative for allocation of a stacking area.

#### 3.7.49. Manual Handling of Materials

Contractors must ensure that no employee shall be required or permitted to lift or move by hand any heavy object that is likely to cause a risk of injury.

Adequate PPE shall be issued and used if required.

#### 3.7.50. Heat Stress

The contractor must implement and comply with OH&S Act - Environmental Regulation 2 (4)

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

Comply with: Explosives Act 26 of 1956

Explosives must not be brought onto the site or be used without the express permission of THLM Representative.

Explosives or detonators must not be stored on the site.

Detonators and other explosives must never be carried in the same box. The provisions of all relevant Acts & Regulations are strictly observed.

### 3.7.51. Blasting Requirements

The Contractor must ensure that:

- ❖ blasting activities are carried out under the supervision of a competent person with at least five years practical experience in blasting who has been appointed in writing.
- ❖ a method statement shall be developed in accordance with all applicable explosives legislation, by an appointed person, who shall be certified as a competent person in the use of explosives and provided to the Engineer within three working days prior to blasting taking place.
- ❖ the necessary permits are in place for the transportation of explosives to be used.
- ❖ provision has been made for lightning protectors.
- ❖ every lightning protection system is examined and tested by a person with sufficient knowledge, training, and experience in lightning protection.
- ❖ access to the blasting area shall be strictly restricted.
- ❖ no smoking or hot work shall be allowed close to explosives or the blasting areas.
- ❖ Reasonable steps are taken to prevent damage to structures in the vicinity of the blasting area.
- ❖ Any other industry required safety measures are considered and implemented specifically taking the construction site's specific requirements into account including the removal of any surplus explosives off the site.
- ❖ The contractor shall undertake pre-blast inspections at all structures in the vicinity of the blast. Adjacent landowners shall also be notified at least 24 hours in advance prior to each blast.
- ❖ Cognizance must also be taken of the possibility of blasted rocks or other loose objects rolling from heights to other areas adjacent to the blast. Relevant mitigation measures to be provided in the Blasting Plan to be submitted for approval.

### 3.7.52. Crane Requirements

The contractor must implement and comply with Construction Reg. 22 regarding Tower Cranes and OHS Act Driver Machinery Regulation 18

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

No Crane shall be used at arrival on Site before copies of all documentation have been handed over to THLM Safety Co-ordinator and the Crane have been checked by the competent THLM Construction Manager

Crane Test Certificate



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

- ❖ Ropes
- ❖ Hooks
- ❖ Slew Brakes
- ❖ Outriggers & Pads
- ❖ Boom & Guides
- ❖ Anti Two-block Device
- ❖ Load Indicating System
- ❖ Boom OH & Save Wheels Condition
- ❖ Crane Brakes and Air System

Copies of all documentation are kept in the Crane at all times.

All Cranes shall be fitted with the following Safety Devices - As per the Machinery and Occupational Safety Act. No. 6 of 1983. (Driver Machinery Regulation 18)

Regulation 18.2 (Revised to include additional THLM requirements)

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

A Limiting device which must automatically arrest the driving effort when:

- ❖ The Hook or Load attachment point of the Power-Driven lifting machine reaches its highest safe position
  - ❖ In the case of a Winch Operated lifting machine with a lifting capacity of 5000kg or more; the load shall be greater than the rated mass load of such machine
- Regulation 18.2.9

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

- ❖ A load indicator that must indicate to the operator of the Jib-Crane the mass of the load being lifted, provided that such a device must not require manual adjustment from the application of the load, to the Jib-Crane, until the release of the load
  - ❖ A Limiting Device which must automatically arrest the driving effort whenever the load being lifted shall be greater than the rated mass load of the Jib-Crane
- Regulation 18.2.11

The user must ensure that every lifting machine shall be operated by an Operator specifically trained for a particular type of lifting machine; provided that in case of fork lift trucks with a lifting capacity of 750kg or more, and Jib-Cranes with a lifting capacity of

5000kg or more at minimum Jib-radius; the user must not require or permit a person to operate such lifting machine unless the operator shall be in possession of a certificate of training, issued by a person or organisation approved for the purpose by the chief inspector.

#### Mobile Crane near Power Lines

No mobile cranes are to be used near overhead power lines until THLM Representative has been notified and provided safe access conditions and a valid permit to work shall be obtained.

Mobile cranes are effectively earthed when working in the vicinity of electrical wires. Assume that all electrical equipment and wires are live and avoid them.

#### 3.7.53. Usage of Skyjacks & Material Hoist (Builder's Lift)

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

#### 3.7.54. Material Hoists

The contractor must implement and comply with Construction Regulation 19.

#### 3.7.55. Water Environments

The contractor must implement and comply with Construction Reg. 26. Notably the Contractor must provide:

- ❖ Provisions to prevent persons falling into water (Solid Barricading).
- ❖ Provisions must be made for rescuing a person in danger of drowning (Qualified Lifesaver, Lifesaving procedure specific to the location and access/egress of the body of water).

- ❖ Lifejackets must be provided to all employees who are exposed to the risk of drowning by falling into the water. Supervision is required to ensure Life Jackets are worn and that procedures and control measure are implemented.

#### 3.7.56. Motor Fuel and Flammable Liquids

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

Contractor's proposals to store fuel on site must have written approval from thlm Representative. The amount of fuel allowed to be stored must depend on site conditions and Statutory Regulations.

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

Storage tanks are to be clearly marked with a "Flammable Liquid, No Smoking & No naked Flame" signs and be clearly marked to indicate contents of the tank. 4.5kg, shall be provided, installed and maintained.

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

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

#### 3.7.57. Diesel Storage

May only be on site with prior written approval from THLM Construction Manager. The Contractor must ensure that:

- ❖ Storage should be well clear of buildings
- ❖ Storage areas shall be kept free from all combustible materials
- ❖ All danger signs are prominently displayed e.g.
- ❖ No Smoking
- ❖ No Naked Flames
- ❖ Adequate Fire Fighting equipment shall be available
- ❖ Diesel tanks shall be installed in a bunded area; bunded area shall be able to contain 110% of tank capacity
- ❖ Bund walls shall be plastered on the inside
- ❖ Bunded area must have a solid concrete/cement floor
- ❖ Bunded area must have a functional drain valve
- ❖ Loading/Fuelling bay shall be a solid concrete base with a spillage trench leading to a spillage sump to contain any spillages

- ❖ All equipment shall be bonded
- ❖ All electrical lighting and equipment are of an approved flameproof type
- ❖ No other material/equipment shall be stored in the bunded area

#### 3.7.58. Hazardous Material

##### Flammable liquids

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

##### **Hazardous substances**

The contractor must implement and comply with the OH&S Act - Hazard Chemical Substances Regulations 9

Hazardous substances are any substance or materials specified in statutory regulations as being hazardous.

Prior to any hazardous substances being brought onto the site or produced on the site, the Contractor must supply THLM Representative with the following:

- ❖ Material Safety Data sheets (MSDS) in accordance with the requirements of the OH&S Act – Regulations for Hazardous Chemical substances
- ❖ Proposed arrangements for safe storage
- ❖ Proposed methods for handling/usage
- ❖ Proposed method of disposal
- ❖ Proposed method of transportation
- ❖ Risk assessment with specific reference to compatibility with other chemicals

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

THLM Representative must only approve the use of any hazardous substance after receiving a copy of the Materials Safety Data Sheet for the substance from the Contractor. Such substances are not to be brought onto the site until THLM Representative's approval shall be received.

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

Note: Cleaners, Solvents and Hazardous Materials Not to be stored with flammable liquids!

### **3.8. Incident Management**

### 3.8.1. Incident Reporting System

The contractor must implement and comply with OH&S Act - General Administrative Regulations 6 and 8.

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

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

Contractors must complete and keep record of Annexure 2 as required by legislation.

### 3.8.2. Serious Incidents

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

Paramedics shall be available on site within a ten (10)-minute time frame Medivac to be available within one (1) hour.

### 3.8.3. Incident Report and Close Out

Contractor must provide THLM or the STHLM's nominated Representative with the results of the investigation and recommendations on how to prevent a recurrence. A formal root cause investigation process for all high potential incidents shall be followed.

The written report must include:

- ❖ Date, time and place of non-conformance
- ❖ Detailed description of non-conformance
- ❖ Type of injury (if any)
- ❖ Medical treatment provided (if any)
- ❖ Persons involved

- ❖ Corrective action to prevent recurrence

THML or the THLM's nominated Representative must have the right to designate a representative to participate in the investigation at THLM or the THLM's nominated Representative's sole discretion.

Where the results of any investigation are not completed and issued to THLM or the THLM's nominated Representative within 24 hours from the time of occurrence, the Contractor must supply to THLM or the THLM's nominated Representative a written update every 24 hours, of the progress and results of the investigation until such time as the incident report has been fully completed and issued to the THLM

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

#### 3.8.4. Corrective Action

The Contractor must:

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

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

#### 3.8.5. Injury Management

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

Paramedic services to be made available for serious incidents within 10 minutes. Medical doctor shall be to be nominated by the contractor has been nominated for the

Project to which the Project medical staff will refer all injured employees requiring medical assistance in the first instance. If the Contractor does not wish to utilise the services of the Project doctor the Contractor must make alternative arrangements and THLMis to be notified in writing of the doctor to be used. The treatment of injured personnel will not be

compromised, and the immediate needs will be referred as required by the Project paramedics.

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

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

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

### **3.9. Site Management/ Monitoring**

#### **3.9.1. Notices**

The Contractor must provide to THLM or the THLM's nominated Representative copies of any notices, correspondence or directions of whatsoever nature issued by any relevant Government Authority concerning Health and Safety within 8 hours of the dispatch and/or receipt of such notice, correspondence or direction, and must immediately comply with same.

#### **3.9.2. Incorporation of Documents into Contract**

The Contractor must comply with all Site Rules/Site Instructions issued to it by the THLM, which are by this reference incorporated into and made part of this Contract.

#### **3.9.3. Interpretation of Safe Working Instructions**

The contractor must implement and comply with OH&S Act - Section 8 (2) (j)

If any site personnel are in doubt as to the meaning of any safe working instructions, they must consult their supervisor who issued them or the site office of THLM Representative.

#### **3.9.4. Emergency Response Manual**

The Contractor must provide THLM with both electronic and hard copies of the Contractor's Emergency Response Manual that sets out its procedures for fire spill response, rescue from heights and other relevant emergency response procedures. Those procedures are made compatible with the THLM's emergency response

procedures for the Site prior to commencing Site activities. Unforeseen conflicts between the THLM's policies and those of the Contractor shall be addressed and resolved by a direction from THLM or the THLM's nominated Representative prior to the Contractor commencing the work.

#### 3.9.5. Emergency Drills

(rescue and spill drills) to test the effectiveness of its emergency procedures and equipment, and the knowledge and proficiency of all response personnel. The timing of such drills shall be agreed and shall be the responsibility of the Contractor after consultation with THLM or the THLMs nominated Representative. The Contractor must report the test results to the THLM, or the THLM's nominated Representative if requested and as required by any regulatory agency.

#### 3.9.6. Fire Fighting

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

The Contractor must train all employees in the procedures to be followed in the event of a fire and/or a fire alarm.

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

Electric welding, oxy-welding or cutting, or any other fire hazardous equipment shall be not to be used inside electrical switch rooms, control rooms, cable ducts or adjacent to any electrical switch room, control room, cable duct or adjacent to any electrical equipment, cables or conveyor belts without the permission of THLM or the THLMs nominated Representative.

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

Fire precautions on construction sites

In addition to the guidelines above the contractor must implement and comply with  
Comply with: Construction Regulation 29

Good Housekeeping plays a major role in Fire Prevention.



The Contractor must ensure that:

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

### Fire Fighting and Training

It shall be the responsibility of the Contractor to ensure that supervisory staff and all persons involved in grinding, cutting or welding shall be familiar with firefighting procedures and the use of firefighting equipment.

The contractor to ensure that there shall be adequate firefighting capacity taking into account the types of fires and the location of the nearest adequately equipped emergency services

### Maintenance

All Fire Extinguishers must be:

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

### Damaged Equipment

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

### High Fire Risk Areas

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

#### 3.9.7. Safety Equipment

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

#### 3.9.8. Weather Precautions

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

#### 3.9.9. Vehicles

##### Access to Site

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

The contractor shall develop and implement a colour coded display system for all vehicles this shall be to be issued for all vehicles. Day visitors must be issued with a colour coded tag at the gate on arrival this will distinguish to what areas the person may enter with their vehicle. e.g. site offices, deliveries etc. The areas shall have a matching colour coding sign. Any vehicle found in an area without the correct colour tag shall be removed or the person issued with the correct tag.

All the contractor's vehicles, contractors supplied vehicles, suppliers and delivery vehicles must be fitted with a in vehicle monitoring system to monitor the manner in which the vehicle shall be used. This includes the contractor's management team.

A weekly report shall be to be made available to the engineer and all transgressors are to be disciplined, on their third offence they are to be removed from the project.

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

written approval of the Construction Manager.

Upon Written application to THLM Representative, the Contractors' senior supervisory personnel may be issued with gate passes permitting access to the premises for nominated private vehicles.

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

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

THLM must deny access to the premises of any driver and/or vehicle not issued with a gate pass and/or failing to comply with STHLM safety requirements.

The Contractor must attach identification markers provided by THLM to all of his vehicles permitted to enter the site.

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

Drivers of all construction self-propelled mobile equipment must carry a valid appointment with them at all times.

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

#### Vehicle Drivers

The Contractors vehicle drivers must:

- ❖ Comply with all safety, direction and speed signs and drive in accordance with the provisions of THLM and the contractors site traffic rules
- ❖ Ensure that vehicle loads are properly secured and loaded onto vehicles
- ❖ Not divert from designated routes or travel on unsealed roads/areas without the prior written approval of the engineer's representative
- ❖ Obey all instructions given by Security/Emergency Services Officers
- ❖ Ensure that vehicles are not overloaded
- ❖ Traffic fines will be for the driver. THLM will not be liable for paying fines

#### Licensing of Vehicle Drivers

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

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

#### Registration of Vehicles

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

All vehicles used by the Contractor on the premises are maintained to standards of the Road Traffic Act 29/1989.

The Contractor must provide evidence to THLM Representative that all mobile cranes, forklifts, front-end loaders, back hoes, elevated platforms, road vehicles or mechanical equipment of any kind, which shall be used in complying with the Contractors' obligations under this Contract, comply with the requirements of the Occupational Health & Safety Act 85/1993 and regulations and of the Road Traffic Act 29/1989 prior to that equipment being brought onto the premises.

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

#### 3.9.10. On-Site Vehicles

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

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

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

#### Accidents

In the event of an accident on site in which the contractors' employee or sub-contractor shall be involved, the driver must remain at the scene until the accident shall be attended by the Engineers Representative, or the Contractor has received approval from Engineers Representative, to leave the scene, unless medical attention shall be required.

## Vehicle Safety

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

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

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

## Rules

Traffic rules and signs such as speed signs; stop signs shall be obeyed at all times. Maximum speed limit to and from site 80km p/h

## Dirt Road

LMV speed limit 60km p/h HMY speed limit 40km p/h

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

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

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

- ❖ No vehicles are left with the engine running or the keys in the ignition, if the drivers leave the vehicle unattended
- ❖ Should the load be moved and transported by means of a mobi-lift, guide ropes must always be in use. Persons guiding the load are not allowed between the lift and load, and the load must, under no circumstances obscure the view of the driver. The mobi- lift must travel at a slow walking speed

In the event of an accident in which The Contractor's employee is involved, the employee must remain at the scene until THLM or the THLM's nominated Representative or the Police arrive on the scene or until THLM or the THLM's nominated Representative, or the Police authorises the employee to leave the scene, unless the employee needs medical attention.

#### Transportation and Securing of Loads Long and Wide Loads

When transporting long and wide loads, the Contractor must ensure compliance with the Road Traffic Regulations. THLM Representative shall be notified so those necessary requirements can be made where an escort may be necessary and so that the appropriate entrance can be arranged.

#### Securing of Loads on Vehicles

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

#### Principles:

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

#### What Truck Drivers Must Do:

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

#### What Dispatch Points Must Do:

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

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

#### 3.9.11. Commencement of Work

Prior to the commencement of any Site work, the Contractor must consult with THLM the THLM's nominated Representative regarding the availability of and access to the item or area of the plant to be worked on and regarding instructions relating to any special or unusual safety procedures that are to be followed.

The Contractor must not commence work on a particular item or area of the Site until THLM or the THLM's nominated Representative has provided the appropriate "authority to commence work".

#### 3.9.12. Electrical Work (Power Supply)

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

#### 3.9.13. Plumbing Work

The Contractor must submit to THLM or the THLMs nominated Representative, in writing, notification of completion of any plumbing work prior to water being supplied. No further work shall be undertaken without the written acceptance of THLM or the THLM's nominated Representative. All plumbing work shall be carried out in accordance with the relevant statutory requirements.

#### 3.9.14. Completion Inspection

On completion of any work on Site the Contractor must notify THLM or the THLM's nominated Representative and conduct a final inspection to ensure that all items and areas of plant are left in a safe, clean and operational condition.

#### 3.9.15. Housekeeping

The contractor must implement and comply with Construction Reg. 27

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

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

The Contractor must carry out regular safety/housekeeping inspections at least weekly to ensure maintenance of satisfactory standards. The Contractor must document the results of each inspection and must maintain records for viewing by THLM Representative.

At the time that the Contractor establishes site facilities and permanently mans the site, or at an alternative time agreed between THLM and the Contractor, the Contractor must assign dedicated housekeeping crews.

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

(4) hours of generation.

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

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

#### 3.9.16. Maintenance

All equipment and structures both fixed and temporary are to receive regular maintenance, at intervals no longer than that recommended by the manufacturer, under



a planned maintenance system to ensure the safety of personnel who are responsible for operating the equipment.

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

#### 3.9.17. Defect Reporting and Correction

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

#### 3.9.18. Contractor Health & Safety Documentation

The Contractor shall be required to supply to THLM Health & Safety documentation as indicated in this Specification and as directed by THLM throughout the Contract.

#### 3.9.19. Electricity

The contractor must implement and comply with OH&S Act Electrical Installation Regulations OH&S Act Construction Reg.24

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

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

#### 3.9.20. Wearing of Short Trousers/Pants on Site (Prohibited)

Long trousers / pants are worn in the construction areas or in any workshop in the lay down area.

#### 3.9.21. Intoxicating Liquor or Drugs

The contractor must implement and comply with OH&S Act – General Administrative Regulation 10

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

#### 3.9.22. Access Control

The Contractor must comply with THLM access control systems applicable to the plant as well as specific to the construction site.

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

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

#### 3.9.23. Trespass

The Contractor and his employees must not trespass on any land outside the limits of the site, as determined by THLM Representative, and must ensure that all fences are maintained during the Contract. If instructed by THLM Representative, the Contractor must remove from the site any employee who offends against the provision of this clause.

The Contractor and his employees are required to work only in the specified construction areas and access to these areas shall be only by routes specified by THLM Representative.

#### 3.9.24. Visitors to Site

Visitors to the site are required to comply with site-specific safety induction prior to being allowed access to site. Visitors are required to conform to the Site PPE requirements and should arrive at site with the appropriate PPE.

Contractor must not arrange inspections by visitors to the site without the prior approval of THLM Representative.

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

#### 3.9.25. Construction Welfare Facilities

The contractor must implement and comply with Construction Reg. 30.

#### 3.9.26. Emergency Evacuation

The contractor must implement and comply with OH&S Act – Environmental Regulation  
9

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

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

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

The procedure must be submitted to THLM Project Manager.

### 3.9.27. Safety Officer Health & Safety Roles and Responsibilities

Contractors Site Safety Manager:

- ❖ Implement and maintain the Safety Management Plan on site. Communicate Plan to Sub-Contractors and ensure compliance to the Safety Management Plan
- ❖ Advise the Site Management team on safety issues and suggested solutions
- ❖ Report directly to the Contractors Construction Manager and act on his authority regarding safety issues
- ❖ Promote a culture in which safety shall be the prime concern and must never be compromised
- ❖ Promote the involvement of all employees and Contractors in improving safety
- ❖ Focus on and establish a culture of the elimination of unsafe acts, and rectification of unsafe conditions quickly, by Management and supervision
- ❖ Ensure self and others safety awareness at all times
- ❖ Facilitate and participate in all Contractors and Sub-Contractors accident /incident investigations
- ❖ Ensure that all incidents are thoroughly investigated to avoid re-occurrence
- ❖ Participate in and contribute to THLM Management team Safety Plan
- ❖ Ensure that all involved THLM and Contractors personnel prior to commencement of any work complete Risk Assessments (RA) and Daily Safety Task Instruction (DSTI). Then, by a review process, verifying that the development process shall be with by means of at least two daily site inspections

- ❖ Ensure SMI boards are erected in each working area, and the following minimum information shall be displayed – Method Statement, Risk Assessment, DSTI, Construction Manager, Supervisor, First Aider and Safety Representative
- ❖ Coordinate all safety induction training requirements and conduct site specific induction for THLM and Contractor supervision
- ❖ Coordinate site accesses and security
- ❖ Coordinate and implement comprehensive daily incident reporting by management, supervision, foremen and Safety Officers
- ❖ Compile and present a weekly safety report to include: Incident trend analyses & preventative measures. Injury trend analysis and preventative measures. Contractors & Sub-Contractors Planned Tasked Observations for week ahead, DSTI quality and effectiveness. Management walkabouts including participation and findings. High risk activities for the week ahead. Risk Assessment plan for week ahead, based on the construction plan. Statistics for previous week regarding man-hours, complement, RA's completed, induction & medicals (entry and exit). Estimates for week ahead regarding, complement, RA's, induction & medicals (entry and exit)
- ❖ Conduct a Bi –weekly internal Contractor & Sub Contractor audit to ensure implementation and continuous compliance with the Safety Management Plan and legislative compliance. Record findings and issue action sheets for deviations to include an action close out plan and report
- ❖ Accompany injured people to doctor/hospital and ensure prompt treatment and return to work. Report all Incitements in a timely manner in the case of a medical treatment/Lost Time Injury cases immediately (telephonic) to the Project Health & Safety Manager and follow it up with an initial Incident Notification and Significant Safety Occurrence (SSO) report before the end of shift and a complete investigation within 24 hours
- ❖ Coordinate and ensure the pre check and recording thereof for all tools, plant and equipment
- ❖ Final check and sign of RA's before submitting to THLM Project Manager for approval
- ❖ Implement and maintain the Construction Regulations

### 3.9.28. Risk Assessments (RA's)

- ❖ To be completed one week before the execution of a job, and submitted to THLM Project Manager for approval, to avoid delays. (See Annexure 1 for the required document)
- ❖ Each Contractor must submit a RA plan that will also include a monitoring and review plan
- ❖ Attach Safe Work Procedures and Safety Method

- ❖ Each Supervisor to communicate Job specific Risk Assessments to every person involved on the job, and workmen must sign acknowledgment the communication of and understanding the risks related to the job and preventative measures and controls
- ❖ General Risk Assessments will not be accepted

RA Team to consist of the Contractors' Construction Manager, Specific Task Supervisor, and Specialists executing the job, Safety Officer and STHLM Supervisor and or Project Manager.

#### 3.9.29. Daily Safe Task Instructions (DSTI's)

- ❖ Each Contractors' Supervisor and Foreman must, on a daily basis before work commences, inspect his work area and complete the checklist part of the DSTI. (See Annexure 3 for the required document)
- ❖ Complete the DSTI regarding tasks for the shift, specific hazards and specific precautions and also refer to and discuss the precautions and controls of the relevant Risk Assessments.
- ❖ Discuss the DSTI with his team.
- ❖ The supervisor and his team must then sign the DSTI acknowledging communication thereof.

If the scope of work or job changes, the DSTI shall be revised and communicated before commencing with changed job.

#### 3.9.30. Planned Task Observations (PTO)

- ❖ Each Contractors Supervisor and Foreman will complete and submit at least one PTO daily. (See Annexure 7 for the required document)
- ❖ When sub standards are identified RA's shall be revised and communicated again discuss and rectify non-standard actions with employee.

#### 3.9.31. Management - Visible Felt Leadership (VFL)

The Contractors' Construction Manager, Safety Officer, supervisor and Foreman per area, must conduct and record a Daily Visible Felt Leadership checklist.

#### 3.9.32. Health and Safety Experience board

The Contractor must provide a Health and Safety Experience board, to be approved by THLM Manager, displaying:

- ❖ Department of Labour Construction Permit Number (where applicable).
- ❖ Contractors Logo.
- ❖ THLM Logo.

- ❖ Manpower.
- ❖ Lost Time Injury Frequency Rate -LTIFR.
- ❖ Disabling injury frequency rate – DIFR.
- ❖ Man-hours.
- ❖ Incidents and injuries.

### 3.9.33. Safety Management Information Notice Boards

The Contractor must provide Safety Management Information notice boards (SMI boards) in work areas per foreman, with the following posted:

- ❖ Relevant Risk Assessments.
- ❖ DSTI.
- ❖ Method Statements.
- ❖ Weekly Safety Report.
- ❖ Emergency Procedure.
- ❖ Supervisors Photo and Contact detail.
- ❖ First Aid Photo and Contact detail.

### 3.9.34. Site Specific Health and Safety Rules and Requirements

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

- ❖ Safe Access and Egress to and from work areas.
- ❖ Good Housekeeping and Stacking Practices – continuous cleaning and clearing of work platforms after every shift. No work to commence before complying.
- ❖ Safe and orderly routing of welding cables, electrical extensions and air hoses. Elevated out of walkways on temporary hooks/racks.
- ❖ Rigging Studies for all heavy and/or difficult lifts.
- ❖ No lifting in windy conditions exceeding 30 km/h. (This is only a guide - it will also depend on Risk Assessment/Rigging study/Shape mass & Size of load and the capability of the Crane to be used!)
- ❖ Prohibiting certain work in wet conditions – elevated work, roof sheeting installation, etc.
- ❖ People may not be transported on the back of a bakkie and or truck. Never on top of material!
- ❖ Elevated work - Compulsory use of Lifelines, Safety Harnesses & Fall Arrestors including a height rescue system and training of rescuers. To comply with SABS-EN –353-355,358,360-365,795,813&SABS033, 1833, 341,564-567,892,1891,12277 and 4878 -Fall Right SA standards or equivalent - Attached at all times in elevated positions and use of double lanyards.

- Scaffolding to comply with Legal, SANS 10085 and THLM standards – Tagged to SGB Standards.
- Ladders on inside of frames, staggered every two meters with a safe landing platform.
- Trap door fitted on working platform.
- Work benches to be provided for onsite work.
- Riggers to be identified by means of illuminating vests.
- Solid Barricading – Solid frame covered with orange netting – Excavations, Overhead Work, walkways and all Openings.
- ❖ Attaching of Tools and Equipment at heights – use lanyards
  - activities.
  - Use of Spacers/Wedges when fitting equipment.
  - Shields and fire blankets to be used for grinding, welding & gas cutting operations to contain sparks.
  - Fire Extinguishers – With people when doing hot work, on self-propelled mobile machines and at all fuel driven machines.
  - Guide ropes to be used for all lifts.
  - Firewatchers to be posted when commencing hot work in hazard prone areas.
  - Permits to be obtained and adhered to.
  - Excavations: Provide for shoring, battering back, soil and loose rocks to be 2 meters from edge and approved barricading.
  - Dedicated flagmen with illuminating vests to be in control of movement of heavy mobile and earth moving equipment.
  - Submit a Safety incentive scheme for approval and provide for the cost for it.
  - Equipment Safety Officer – Computer with CD Rom and cell phone.
  - The cradle to grave principle shall be implemented and adhered to regarding spillage of hazardous and flammable substances.
  - Voltage reducers fitted to all welding machines.
  - Concrete buckets to be fitted with Safety Chains and opening wheels.
  - Earth leakage units to be fitted to all portable generator sets and welding machines with electrical outlets.
  - Earth moving vehicles to be fitted with prescribed rotating lights and operated with headlights on. Site vehicles to be fitted with whip aerials and rotating lights. Reverse hooters/back up alarms to be functional at all times.
  - Weatherproof caravan type connections fitted to all electrical equipment and extensions when used externally in wet conditions.
  - Nine Inch Grinders not to be used, unless fitted with backing plate.

- All cranes are fitted with: Anti two block cut out devices/Automatic load arrest systems/ Automatic load limit devices and indicators/Gear lock on neutral and a waste safety belt.
- All Self-propelled mobile machines are fitted with Fire extinguishers and reverse hooters/ back up alarms.
- Flashback Arrestors at cylinders and torches and proper clamps (gas cutting equipment).
- Correct and safe manual lifting operations.
- Supervision ratio of foreman to workers - Not > 1:15.
- Two new long sleeve overalls with company logo on back to be provided every six months. (or more frequently, if required due to specific task)

#### Hardhat Identification:

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

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

#### Shaded eating areas with:

- ❖ Tables & chairs
- ❖ Hand washing facilities
- ❖ Adequate potable water provided

#### Portable toilets:

- ❖ At a ratio of 1:10
- ❖ To be cleaned daily and maintained weekly as minimum requirement (Daily Inspection Record Required).
- ❖ Running water to be available at toilets with soap to wash hands.

#### 3.9.35. Fundamental health and safety requirements

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



- ❖ Legal liability training of all Supervisors and Construction Managers.
- ❖ IRCON or equivalent approved course for all supervisors, foremen and Construction Managers.
- ❖ Incident investigation training by Construction Manager and or Safety Officer.
- ❖ Letter of good standing with the Workman's Compensation Commissioner.
- ❖ Original of the notification of construction work stamped by the Department of Labour.
- ❖ Public Liability Insurance.
- ❖ Competency training certificates of people to execute the job.
- ❖ Method statements for work to be conducted.
- ❖ A Baseline Risk Assessment.
- ❖ Risk Assessments for every Job/Task.
- ❖ A Construction plan detailing each activity per job.
- ❖ Signed legal appointments as required by legislation.
- ❖ Contractors' Safety Officer - to be interviewed and approved by THLMs appointed Health & Safety agent.

#### 3.9.36. Health and Safety Bill of Quantities

The contractor to provide Health and Safety Bill of Quantities (BOQ).

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

#### **4. Termination and Suspension for Breach of Health and Safety Conditions**

THLM and the Contractor agree that the provisions of this Clause are of the utmost importance, and any relevant violation of them shall be considered to be a material and substantial breach of this Contract.

The Contractor must not cause, permit, or tolerate a hazardous, unsafe, unhealthy or environmentally unsound condition or activity over which it has control at the Site. If the Contractor becomes aware of any hazardous, unsafe, unhealthy or environmentally unsound condition, including a violation of any of the Health and Safety requirements, it must immediately notify THLM or the S as shall be agreed between THLM and the Contractor to remove from site, eliminate, terminate, mitigate, and rectify the condition. If

remedial action is not implemented within the agreed term, THLM or the THLM's nominated Representative has the right to stop work forthwith.

If the Contractor fails to take the necessary steps to cure that breach or violation promptly or to otherwise comply with this Clause, THLM may exercise its rights of termination according to the default provisions of this Contract or issue a fine to the Contractor to the value of R10,000.00 for the offence.

Should offences of a similar nature occur by the same person then the fine shall be doubled for each successive offence i.e.

1st offence R10 000.00

2nd offence R 20 000.00

3rd offence R 40 000.00, etc

Should THLM or the THLM's nominated Representative observe an unsafe act or become aware of a planned unsafe act, THLM or the THLM's nominated Representative may direct the Contractor to cease, or not to proceed with, the unsafe work. The Contractor must, at the Contractor's own cost and risk, modify its Method of Work in order to work safely.

## **5. Safety Conflict**

Where any conflict exists between the requirements of this Annexure, the Site Rules or Statutory Requirements/Regulations the higher standard must apply unless such conflict shall be brought to the attention of THLM or the THLM's nominated Representative and a direction provided. The Contractor shall be deemed to have allowed for the higher standard.

The Contractor shall be legally responsible for ensuring that he conforms to all applicable aspects of the Occupational Health & Safety Act 85/1993 and Regulations (OH&S Act) and other relevant Acts and Regulations. If in dispute with STHLM's specification and or foreign legislation, the most stringent requirement must apply for all THLM controlled project/ sites.

**6. Contractor's Acceptance & Acknowledgement of the Health & Safety Specification:**

I, \_\_\_\_\_ (print name in full),

the undersigned responsible person (Contractors 16.1/16.2 Appointee) for:

\_\_\_\_\_  
\_\_\_\_\_(Company Name)

declare that I have read, understood and accept the responsibilities and requirements of this Health & Safety

Specification for the project: Mtentu River Bridge. I will ensure that this Health & Safety

Specification shall be communicated to the relevant parties so that the

requirements hereto can be complied with.

\_\_\_\_\_  
**Contractor's Responsible Person (16.1/ 16.2 Appointee**

**Date**