PROJECT SPECIFICATIONS

PREAMBLE

In the event of any discrepancy between a part or parts of the Standard or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Employer's Agent before the execution of the work under the relevant item.

C3.2.1 GENERAL

PS.1 SERVICES

This Clause is to be read in conjunction with the provisions and obligations as contained in SANS 1921-1 and SANS 1921-2.

Further to Clauses PS.1 and PS.2 of this specification, tenderers are to note that allowance must be made under this item and / or the appropriate rates, for all costs incurred as a result of complying with these clauses. It shall also cover liaison with the services organisations and accommodation of their work gangs / contractors on site.

PS.1.1 Proving Underground Services

This clause must be read in conjunction with Clause DB.5.1.2, the requirements of which shall be extended to cover all earthworks operations whether for trenching or bulk earthworks, in the vicinity of underground services.

It is stressed that all services in a particular area must be proven before commencing work in that area.

Insofar as bulk earthworks and reticulation network are concerned, from site observations can reasonably be expected that such services are likely to exist where excavations are to take place, the Contractor shall without instructions from the Employer's Agent carefully excavate by hand to expose and prove their positions.
The cost of the proving trenches is to be included in the work covered by Clause DA.8.3.

When a service is not located in its expected position the Contractor shall immediately report such circumstances to the Employer's Agent who will decide what further searching or other necessary action is to be carried out and shall instruct the Contractor accordingly. The cost of this additional searching shall be to the Council's cost and shall be paid for under DB.8.19 - Proving Existing Services.

Should any service be damaged by the Contractor in carrying out the works and should it be found that the procedure as laid down in this clause has not been followed then all costs in connection with the repair of the service will be to the Contractor's account.

Proving of services shall be completed at least two weeks in advance of the actual programmed date for commencing work in the area. The position of these services located must be co-ordinated and levelled by the Contractor, and the information given in writing to the Employer's Agent's Representative.

The requirements of this clause do not relieve the Contractor of any obligations as detailed in the Conditions of Contract or under Clause 4.17 of SANS 1921-1.

PS.1.2 Relocation of Existing

This clause shall be read in conjunction with Clause PS.1.1

Relocation of services shall generally be carried out by the relevant services organisation. Generally, their work shall include the excavating and bedding the service which will include backfilling to a depth of approximately 300 mm above the service. The remainder of the backfilling shall be carried out by the Contractor.

PS.2 Appointment of a Geotechnical Engineering Laboratory

The contractor is to appoint a SANAS accredited geotechnical laboratory dedicated to the contract for the duration of the project. The contractor is to obtain a minimum of 3 quotations. The tendering procedure shall be done under the supervision of the Employer's Agent. The Employer's agent shall offer assistance as, and when, required by the contractor in the appointment of a suitable geotechnical laboratory. The final approval for the successful laboratory shall be the decision of the Employer. The laboratory shall be for the acceptance testing required by the Engineer and his team. The laboratory shall be required to submit CVs of key personnel identified to undertake the field work and reporting under this contract.

It is to be noted under this item that the geotechnical laboratory shall be required to hire the services of a Professionally Registered Geotechnical Engineer on an ad hoc basis. Such services shall be requested at the Employers' Agent's discretion to provide confirmation of anchoring method. A CV of the proposed individual is to be attached together with the quotation, along with a copy of their professional indemnity.

Further details shall be provided at time of acquiring the services for the geotechnical engineering laboratory.

This laboratory is intended for acceptance tests only. The contractor shall still be responsible for all control testing at his own cost. Should the contract also wish to use the appointed commercial laboratory for the purposes of site control testing, the costing shall then be shared between the contractor and employer on a 50/50 basis.

PS.3 SURVEY

PS 3.1 SURVEY FOR, AND PREPARATION OF, 'AS BUILT' DRAWING

The Contractor shall submit the following ""For Record"" data to the Design Consultant to complete the required "For Record'' Drawings before a Certificate of Completion will be issued:

Water, Sewer and other services:

- Co-ordinates, invert and cover levels of all water, sewer and other service controls that have been modified or constructed as new, during the contract,
- Including but not limited to: open lined concrete drains, stormwater catchpits, manholes, kerb and channels, precast pipe culverts and outlet structures.
- Co-ordinates of all other services e.g., cable duct markers, valve covers, service manholes etc. that have been either modified or constructed as new, during the contract.

General:

- Notwithstanding the above, the Contractor is to supply to the Design Consultant all other information necessary, to clearly indicate changes/modifications to the construction drawings during the contract period that will be required by the Design Consultant so that they can produce the "For Record" drawings.
- Each surveyed point shall be suitably coded and identifiable by the Design Consultant and shall supplied on a CD/DVD, in an Ascii file with the following format: -

  Code [SPACE]XCo-ordinate[SPACE] Cordinate[SPACE]Level[SPACE]Description
- The above information is to be given to an accuracy of three decimal places and is to be surveyed by a suitably qualified person.

In addition to the above, all 'For Record' information must be provided on a drawing in AutoCAD and DXF format together with a hard (paper) copy format showing the modifications undertaken during the contract period.

Suitable checks on the accuracy of the information provided may be carried out by the Design Consultant and should any of the information provided be found to be inaccurate or untrue, the Employer reserves the right to withhold payment or to employ the services of an engineering surveyor to re-survey all the works listed above, at the Contractor's expense. The Employer shall request a minimum of three quotations from three independent engineering surveyors of his choice, and the lowest quotation will be appointed, and the cost thereof will be deducted from monies owing to the Contractor.

The 'For Record' Data shall be the responsibility of the Contractor and shall be paid for under the item 'For Record' Data in the Contractors Preliminary and General Costs.

The unit of measurement shall be the "SUM"

The Contractor must also forward to the Engineer, a material "as built" spreadsheet in a format that is acceptable by the Client.

The completion certificate shall not be issued unless the above information in totality, has been forwarded to the Engineer.

PS 3.2 Additional Site Survey

The Engineer may instruct the contractor to conduct a survey during the course of the contract in order to facilitate re-design due to immovable obstructions or to facilitate the design of new settlements. The contractor will be required to submit all survey files in an Ascii format and drawings in a DXF/DWG format.

The unit of measurement shall be (sum) and the rate shall include for the survey as directed by the Engineer and the submission of all hardcopy and electronic files required by the Engineer.

PS.4 OCCUPATIONAL HEALTH AND SAFETY

PS.4.1 General Statement

When considering the safety on site the Contractor's attention is drawn to the following:

(1) Personal protective equipment (PPE) and inspection records and registers
(2) The area has rock that will require blasting
(3) The works will require machinery and plant of varying size.
(4) The manual moving of heavy precast products may be required.
(5) The raw asphalt used will be delivered to site at a high temperature, which, after processing, remains hot for some time.
(6) The site has a very steep gradient. Plant and machinery needs to be well controlled.
(7) Restricted access to site and steep gradient for heavy vehicles
(8) Trenches for the laying of sewer pipes and construction of manholes will be required.
(9) Shoring of deep trenches to prevent collapse (where necessary)
(10) Holes/trenches to be covered, guarded and clearly marked to prevent residents and labour from falling in.
(11) Access to the site will be through existing built up areas which have driveway vehicular access, pedestrian movement, small children and pets crossing the road

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2014 issued on 7 February 2014 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of Section 37(2) of the Occupational Health and Safety Act.

PS.4.2 Health and Safety Specifications and Plans to be submitted at tender stage

PS.4.2.1 Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in C3.5: Particular Specifications.

PS.4.2.2 Tenderer's Health and Safety Plan

At tender stage only a brief overview of the tenderer's perception on the safety requirements for this contract will be adequate.

Only the successful Tenderer shall submit a separate Health and Safety Plan as required in terms of Regulation 7 of the Occupational Health and Safety Act 1993 Construction Regulations 2014.

The detailed safety plan will take into consideration the site-specific risks as mentioned under PS.2.1 and must cover at least the following:

(i) A proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 9 to 29.
(ii) Pro-active identification of potential hazards and unsafe working conditions;
(iii) Provision of a safe working environment and equipment;
(iv) Statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 7)*;
(v) Monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
(vi) Details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 8 and other applicable regulations; and
(vii) Details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs.

A generic plan will not be acceptable.

PS.4.2.3 Cost of compliance with the OHSA Construction Regulations

The rates and prices tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract. Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

Items that may qualify for remuneration will be specified in the Employer's Health and Safety Specification.

PS.5 SITE SECURITY

PS 5.1 Contractor Site Security

The Contractor shall, for the duration of the contract, provide sufficient security and watchmen to adequately ensure the safety and protection of the works, the Contractor's staff, including local labour and subcontractors, and all site plant and construction equipment required for the works.

Site Security, in conjunction with the SAPS (where necessary), shall be responsible for removal of disruptive elements, that may interrupt the progress of the contract through acts such as, but not limited to, intimidation, threats of disruption, violent disruption, or criminal and illegal activity by the local community or independent organisations or entities that may result in slowing down or partial or total stoppage of the works.

Payment for this item shall be part of Preliminary and General items in the Bill of Quantities.

PS 5.2 Additional Site Security

This specification covers the provisional allowance for supplementary security measures that may be required during the construction phase. The Contractor shall utilize this allowance to provide additional security personnel or infrastructure on site, specifically to guard against any disruption of the works throughout the duration of the contract.

The deployment and utilization of this additional security shall not be at the Contractor's sole discretion, but shall be executed strictly as directed and approved by the Engineer. Payment for this item shall be made under Contractor fixed obligation of the Bill of Quantities.

PS.6 SOCIAL FACILITATOR

This specification covers the provision, management, and coordination of a Social Facilitator and Community Liaison Officers (CLOs) for the duration of the project. The Contractor is required to engage the services of CLOs for the duration of the project to manage community relations, local workforce integration, and dispute resolution.

The CLO shall act as the primary liaison between the Contractor, the Bultfontein and Phahameng local community, and the Ward Councillors. A key responsibility of the CLO includes facilitating the procurement of local labour and subcontractors to meet the Contract Participation Goal (CPG) component. This procurement process must be executed through the Ward's existing business forum and explicitly agreed upon by the Ward Councillors, which must be evidenced by a formal letter of approval.

Furthermore, the CLO is strictly responsible for addressing and arranging access to the various erven and properties within the informal settlement, and the Contractor is obligated to comply with these mediated access arrangements. To ensure clear communication and project alignment, both appointed CLOs are mandated to attend all scheduled progress meetings and must be present whenever site works, and community impacts are being discussed.

PS.7 REMOVAL OF ROADWAYS, SIDEWALKS AND/OR MEDIANS

This specification covers the provision of demolishing existing roadways, sidewalks, V-drains and transportation of the demolished material to a municipal approved dump site. The tendered rate for the demolishing of these structures must be fully comprehensive, incorporating all costs associated with discarding the material, haulage from the Bultfontein town, Phahameng and the rural site, and the payment of any applicable land fill fees.

PS.8 GEOTECHNICAL INVESTIGATION

This specification covers the provisional allowance for a geotechnical investigation of the replacement of asbestos pipelines. The utilization of this allowance shall not be at the Contractor's sole discretion but shall be executed strictly as directed and approved by the Project Engineer. Payment for this item shall be made under Preliminary and Generals of the Bill of Quantities, where it has been allowed for as a Provisional Sum.

PS.9 IMPORT AND HANDELLING OF G7

PS 9.1 Import of bedding Material

This specification covers the provision and importation of suitable G7 material required for the trench bedding. The Contractor is obligated to source and import G7 material from an approved contractor's offsite location or a commercial source. The tendered rate for the importation of this material must be fully comprehensive, incorporating all costs associated with sourcing the material, haulage to the Bultfontein, Phahameng and Rural areas of Bultfontein Town site, and the payment of any applicable royalties.

PS 9.2 Compaction of G7 Material

This specification governs the handling and preparation of the imported G7 material on site. The scope of works dictates that the imported G7 material must be properly spread, watered, and compacted. The Contractor shall ensure that the G7 fill material is compacted to a minimum density of 95% Modified AASHTO. This rigorous compaction standard is required to establish stable, level bedding for laying of the water pipes and to prevent any future differential settlement.

PS.10 SUBSOIL DRAINAGE

This specification encompasses the complete installation of subsoil drainage systems, which are critical for managing subsurface water behind retaining walls and beneath the earthwork platforms. The Contractor is required to supply and install 110 mm slotted uPVC sub-soil drainpipes.

To ensure proper water filtration and to maintain the longevity of the drainage system, the pipe must be laid centrally within a 300 mm wide by 450 mm deep surround constructed entirely of 19 mm drainage stone. Furthermore, to prevent the ingress of fine soil particles that could clog the system, this crushed stone surround must be completely wrapped in U14 Bidim or a similar Engineer-approved geofabric. The installation must ensure a minimum overlap of 500mm for the geofabric wrapping.

PS.11 FOUNDATIONS

This specification governs the structural concrete works, subgrade preparation, and the requisite sequential casting methodology for the facility's foundation system, which encompasses the ground slabs, structural foundation beams, and an integrated reinforced concrete sump.

A Grade 20/26 concrete blinding layer must be cast to provide a clean working surface. Following the curing of the blinding, an approved commercial weed killer must be applied to the prepared area.

The foundation system features 300 mm wide by 350 mm deep load-bearing foundation beams, a 100 mm thick ground slab, and an integrated effluent sump. To ensure structural

integrity and proper watertightness, this system must be cast sequentially. In the first sequential pour, the foundation beams and the base slab of the sump must be cast utilizing Grade 30/26 concrete. Once the initial pour has sufficiently cured and the reinforcement and formwork are in place, the second sequential pour shall commence, consisting of the 100mm thick ground slabs and the vertical walls of the sump, utilizing Grade 30/26 concrete.

All structural concrete must be adequately reinforced as per the engineer's bending schedules, comprising standard high tensile and mild steel reinforcement bars within the beams and sump structure, and Ref 193 high tensile steel fabric reinforcement mesh placed within the 100mm slabs. Formwork for all exposed vertical sides must be designed to achieve a Class 3 (Smooth) finish. Finally, all unformed, exposed horizontal concrete surfaces of the slabs and sump must be finished with a standard wood-floated finish.

PS 12 Acceptance criteria *

The acceptance of the pipe length or manhole shall depend upon whether it satisfies the criteria set out in SABS 1200 LD clauses 6, 7 and the PS clauses above.

PS.13 WATER RETICULATION FITTINGS

PS 13.1 75mm water reticulation

This specification governs the water reticulation network. The Contractor is required to supply and install 75mm HDPE PE100 PN16, complete with all necessary fittings.

PS 13.2 Trench Shoring, Dewatering and Protection (Provisional)

This specification covers the provisional allowance for trench shoring, dewatering, safe access and the protection of adjacent structures in restricted or unstable excavations, where the Engineer instructs measures beyond the Contractor's ordinary obligations under SANS 1200 DB and the Construction Regulations. The utilization of this allowance shall not be at the Contractor's sole discretion but shall be executed strictly as directed and approved by the Engineer in writing, and the work shall be measured and valued as instructed. Payment for this item shall be made in the Bill of Quantities, where it has been allowed for as a Provisional Sum, and any balance not expended shall be deducted from the contract sum.

PS 13.3 Existing Service Crossings (Provisional)

This specification covers the provisional allowance for sleeves, concrete protection, special bedding and special reinstatement at crossings of existing services that are not covered by the trench rates, once the services have been proven under PS.1.1. The utilization of this allowance shall not be at the Contractor's sole discretion, but shall be executed strictly as directed and approved by the Engineer, and the work shall be measured and valued as instructed. Payment for this item shall be made from the Bill of Quantities, where it has been allowed for as a Provisional Sum, and any balance not expended shall be deducted from the contract sum.

PS 13.4 Connect into existing Raw Dam

Pipe epoxy spec: Supply, prepare, coat and test all DN400 mild steel pipework. Internal surfaces shall be abrasive blast cleaned to SA 2½ and lined with a solvent-free potable water approved epoxy coating to a minimum dry film thickness of 400 microns. External surfaces shall receive an epoxy coating system comprising zinc-rich primer, high-build epoxy intermediate coat and polyurethane finish coat to a total dry film thickness of not less than 300 microns. Coating system shall comply with SANS, ISO 12944 and AWWA C210 requirements. All coated surfaces shall be holiday tested and repaired where necessary.

PS 13.5 (Scour Point)

We have 11 scour valve is provided on the bulk main. The Contractor shall supply and install a D400 scour valves on the bulk main, which is the low point of the main. Complete with its isolating valve, riser, all flanged jointing materials, and corrosion protection to standard drawing. The scour serves as the scour point for flushing, disinfecting, and emptying the main.

The unit of measurement shall be the number (No.) of scour valves installed, and the tendered rate shall be inclusive of the tee, isolating valve, riser, scour valve, jointing materials, and corrosion protection. The chamber is measured separately.

PS 13.6 Valve Boxes for Branch Isolating Valves

To secure the branch isolating valves against tampering and damage, each of the six of isolating valves shall be housed in a cast iron surface box with a lockable cover appropriate to the loading at its location. The box must be set on a precast or in-situ concrete surround, with an extension spindle where the valve is deeper than 1000mm to 2200mm, and a valve marker to standard drawings.

The unit of measurement shall be the number (No.) of valve boxes installed, and the tendered rate shall be inclusive of the box, surround, extension spindle, marker and reinstatement.

PS 13.7 Air Valve Boxes for Branch Air Valves

To secure the branch air valves against tampering and damage, each of the 42 of air valves shall be housed in a cast iron surface box with a lockable cover appropriate to the loading at its location. The box must be set on a precast or in-situ concrete surround, with an extension spindle where the valve is deeper than 2200mm, and a valve marker to standard drawings.

The unit of measurement shall be the number (No.) of valve boxes installed, and the tendered rate shall be inclusive of the box, surround, extension spindle, marker and reinstatement.

PS 13.8 Supply and install HDPE PE100 PN16

PS 13.8.1 Scope

1. Asbestos Decommissioning, Site Preparation and Earthworks.
2. Prepare asbestos work plan, risk assessment, notifications, permits and statutory documentation.
3. Supply and install new 400 mm HDPE PE100 PN16 pipeline parallel to old route, including welding, alignment, jointing, handling, lowering, bedding, testing (Pumpstation 1 to Existing Reservoir - 10 860m)
4. Supply and install new 400 mm HDPE PE100 PN16 pipeline parallel to old route, including welding, alignment, jointing, handling, lowering, bedding, testing (Pumpstation 2 to Raw Water Dam - 12 180m)
5. Supply, fabricate, test, deliver and install various diameter mild steel pipe complete with PN16 flanges welded both ends, fabricated from 12.7 mm wall thickness steel pipe, including full-face EPDM gaskets, M27 galvanized bolts, nuts and washers, coated internally and externally with approved epoxy coating, suitable for operation at 16 bar working pressure.
6. Pipe epoxy spec: Supply, prepare, coat and test all DN400 mild steel pipework. Internal surfaces shall be abrasive blast cleaned to SA 2½ and lined with a solvent-free potable water approved epoxy coating to a minimum dry film thickness of 400 microns. External surfaces shall receive an epoxy coating system comprising zinc-rich primer, high-build epoxy intermediate coat and polyurethane finish coat to a total dry film thickness of not less than 300 microns. Coating system shall comply with SANS, ISO 12944 and AWWA C210 requirements. All coated surfaces shall be holiday tested and repaired where necessary.
7. Construction of 42 DN400 Air Valve Chambers and Concrete Structural Anchorages,
8. Construction of 2 DN400 Inlet Control Manholes
9. Construction of 11 DN400 Scour Manholes
10. Construction of 2 DN400 Steel Pipe Outlets
11. New 400mm HDPE PE100 PN16 pipe, supply, string, handle, lay and butt-fusion weld (3000meters).
12. Approved pn 16 -400mm control valve, complete with flanges, bolts, gaskets and operating accessories.
13. New 200mm HDPE PE100 PN16 pipe, supply, lay and butt-fusion weld (1300meters).
14. 200mm pn 16- control valve complete with flanges, bolts, gaskets and accessories.
15. New 150mm HDPE PE100 PN16 pipe, supply, lay and butt-fusion weld (750meters).
16. 150mm pn 16-control valve complete with flanges, bolts, gaskets and accessories.
17. New 125mm HDPE PE100 PN16 pipe, supply, lay and butt-fusion weld (2610meters).
18. 125mm pn16-control valve complete with flanges, bolts, gaskets and accessories.
19. New 75mm HDPE PE100 PN16 pipe, supply, lay and butt-fusion weld (17000meters).
.20. 75mm pn 16-control valve complete with fittings and operating accessories.
21. New 100mm HDPE PE100 PN16 pipe, supply, lay and butt-fusion weld (400m).
22. 100mm pn16-control valve complete with fittings and operating accessories.
23. Sectional hydrostatic pressure testing of pipeline network; test pressure and duration to approved specification (25100m).
24. Flushing, disinfection/chlorination and clean-water sampling/laboratory analysis.
25. Road crossing reinstatement, Utilities, Watercourse Crossings and Special Protection.
26. Pressure test end caps, temporary thrust restraint, gauges, calibrated equipment and test manifolds.
27. Railway/major road authority crossing permits, supervision and inspections.
28. OHS compliance audits, asbestos compliance records and close-out file.
29. Check all special bend angles, reducer orientation, tee dimensions to be confirmed on site.
30. Approved route plan to be confirmed with Engineer on site.

PS 13.8.2 Standards

Work shall comply with SANS 1200 A, D, DB, G and L, and the general and particular notes on the drawing. Flanges to SANS 1123 (Tables 2500/3 and 1600/3 as scheduled), gate valves to SANS 664, steel pipe to SANS 719, galvanizing to SANS 121.

PS 13.8.3 Materials

Pipework, valves and fittings shall be as listed in the scope of work.

PS 13.8.4 Construction

Chamber, thrust walls, sleeves and pipe supports shall be constructed as shown on the drawing and the typical pipe support detail. Dimensions and reinforcement shall be verified on site and approved by the Engineer before construction.

PS 13.8.5 Testing and commissioning

Pressure test and disinfect to SANS 1200 L. Submit as-builts and O&M manuals at handover.

PS 13.8.6 Measurement and payment.

Rates shall cover supply, delivery, installation, jointing, testing and all incidentals needed to complete the work. This is a re-measurable contract.

PS 13.9 Internal Isolating Valves

To allow any fixture group to be isolated for maintenance without interrupting the others, the Contractor shall supply and install Class 16 full-bore ball valves with lockable or loose-key handles. The valves must be of a vandal-resistant pattern.

The unit of measurement shall be the number (No.) of valves installed, and the tendered rate shall be inclusive of the connections to the piping.

PS 13.10 Operation and Maintenance Manuals, Spares, Labelling and Training

To ensure that the Municipality's operating staff can operate and maintain the new infrastructure, the Contractor shall provide two hard copies and an electronic copy of the operation and maintenance manuals for the pressure reducing valve station and the potable water system, together with a valve schedule, a list of recommended spares, permanent engraved labels on every valve and item of equipment, and a half-day training session on site for the Municipality's operating staff before the works are handed over.

The unit of measurement shall be the sum, and the tendered rate shall be inclusive of the manuals, schedules, labels and training.

PS 13.11 Raw water Connection (dam)

Pipe epoxy spec: Supply, prepare, coat and test all DN400 mild steel pipework. Internal surfaces shall be abrasive blast cleaned to SA 2½ and lined with a solvent-free potable water approved epoxy coating to a minimum dry film thickness of 400 microns. External surfaces shall receive an epoxy coating system comprising zinc-rich primer, high-build epoxy intermediate coat and polyurethane finish coat to a total dry film thickness of not less than 300 microns. Coating system shall comply with SANS, ISO 12944 and AWWA C210 requirements. All coated surfaces shall be holiday tested and repaired where necessary.

STANDARD SPECIFICATIONS

The Specifications on which this contract is based are the Tswelopele Local Municipality's Standard Engineering Specifications (hereafter referred to as the Standard Engineering Specifications). This document is obtainable separately, and Tenderers shall obtain their own copies.

PARTICULAR SPECIFICATIONS

In addition to the Standardized and Project Specifications the following Particular Specifications / Policies shall apply to this contract:

OHSA 1993 Safety Specification

Standard Environmental Management Plan for Civil Engineering Construction Works

Part C3.4

CONSTRUCTION

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

.

C3.4.1.1 National and International Standards

All the Standard Specifications are listed in the Scope of Works and in the Standardized SANS 1200 Specifications.

C3.4.1.2 Variations and Additions to the Standardized Specifications

Variations and additions to Standardized Specifications, listed on page C113 are given in section.

C3.4.2 SITE ESTABLISHMENT

C3.4.2.1 Site usage

The Site shall only be used for the construction of the works.

C3.4.2.2 Permits and wayleaves.

The Employer's Representative shall be responsible to obtain all the wayleaves required for this Contract.

C3.4.2.3 Features requiring special attention.

(a) Site maintenance

During progress of the work and upon completion thereof, the Works of the Site shall be kept and left in a clean and orderly condition. The Contractor shall store materials and equipment for which he is responsible in an orderly manner and shall keep the Site free from debris and obstructions.

(b) Testing and quality control

i. Contractor to engage services of an independent laboratory.

Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Employer's Representative in deciding whether the quality of materials utilised, and workmanship achieved by the Contractor comply with the requirements of the Specifications. The foregoing shall apply irrespective of whether the specifications indicate that the said testing is to be carried out by the Employer's Representative or by the Contractor.

The Contractor shall be responsible for arranging with the independent testing laboratory for the timeous carrying out of all such testing specified in the Contract, at not less than the frequencies and in the manner specified. The Contractor shall promptly provide the Employer's Representative with copies of the results of all such testing carried out by the independent laboratory.

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" (as defined in sub clause PSA 7.2) which is not under the

management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

ii. Additional testing required by the Employer's Representative

In addition to the provisions of sub clause C3.4.2.5 (b) (i): Contractor to engage services of an independent laboratory, the Employer's Representative shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in sub clause C3.4.2.5 (b) (i), at such times and at such locations in the Works as the Employer's Representative shall prescribe. The Contractor shall promptly and without delay arrange with the independent laboratory for carrying out all such additional testing as required by the Employer's Representative, and copies of the test results shall be promptly submitted to the Employer's Representative.

iii. Costs of testing

a. Tests in terms of sub clause C3.4.2.5(b)(i)

The costs of all testing carried out by the independent laboratory in accordance with the requirements of sub clause C3.4.2.5 (b) (i), above shall be borne by the Contractor and shall be deemed to be included in the tendered rates and prices for the respective items of work as listed in the Bill of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out in terms of sub clause C3.4.2.5 (b) (i).

Where, as a result of the consistency of the materials varying or as a result of failure to meet the required specifications for the work, it becomes necessary to carry out additional tests (e.g. re-tests on rectified work and/or replacement materials), the costs of such additional testing shall be for the Contractor's account.

b. Additional tests required by the Employer's Representative

The costs of any additional tests required by the Employer's Representative in terms of sub clause C3.4.2.5(b)(ii): Additional testing required by the Employer's Representative, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Bill of Quantities; provided always that the costs of any such additional tests ordered by the Employer's Representative, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

(c) Subcontractors

All matters pertaining to subcontractors (including Nominated Subcontractors) and the work executed by them shall be dealt with directly between the Employer's Representative and the Contractor in the context of all subcontract work being an integral part of the Works for which the Contractor is responsible.

The Employer's Representative will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the Contractor and the subcontractors and the Employer's Representative will not become involved.

(d) Access to properties

The Contractor shall organise the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working.

(e) Existing residential areas

Electricity and water supply interruptions in existing residential areas shall be kept to a minimum. The Employer's Representative's approval shall be obtained prior to such interruptions and residents shall be notified in writing at least 24 hours but not more than 48 hours in advance. Supplies shall be normalised by 16:00 on the same day.

(f) Monthly statements and payment certificates

The statement to be submitted by the Contractor in terms of Clause 6.10.1 of the Conditions of Contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Employer's Representative, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

For the purposes of the Employer's Representative's payment certificate, the Contractor shall subsequently be responsible, at his own cost, for making such adjustments to his statement as may be required by the Employer's Representative for the purposes of accurately reflecting the actual quantities and amounts which the Employer's Representative deems to be due and payable to the Contractor in the payment certificate.

The Contractor shall, at his own cost, make the said adjustments to the statement and return it to the Employer's Representative within three (3) normal workings days from the date on which the Employer's Representative communicated to the Contractor the adjustments required. The Contractor shall submit to the Employer's Representative five (5) sets of A4 size paper copies of such adjusted statement, together with a copy of the electronic digital computer file thereof.

Any delay by the Contractor in making the said adjustments and submitting to the Employer's Representative the requisite copies of the adjusted statement for the purposes of the Employer's Representative's payment certificate will be added to the times allowed to the Employer's Representative in terms of Sub clause 6.10.4 of the Conditions of Contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor.

(g) Construction in restricted areas

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices tendered will be deemed to include full compensation for any difficulties encountered by the Contractor while working in restricted areas. Neither extra payment nor any claim for payment due to these difficulties will be considered.

(h) Notices, signs, barricades and advertisements

All notices, signs and barricades, as well as advertisements, may be used only if approved by the Employer's Representative. The Contractor shall be responsible for

their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

The Employer's Representative shall have the right to instruct the Contractor to move any sign, notice or advertisement to another position, or to remove it from the Site of the Works if in his opinion it is unsatisfactory, inconvenient or dangerous.

(i) Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced Employer's Representatives, foremen, surveyors, materials technicians, other technicians and technical staff, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the Works at all times.

The cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates tendered for the related items of work.

The Contractor's attention is drawn to the provisions of the various Standardized Specifications regarding the minimum frequency of testing required. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion and submission of every part of the work to the Employer's Representative for examination and measurement, the Contractor shall furnish the Employer's Representative with the results of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.4.2.4 Extension of time due to abnormal rainfall

(a) Extension of time in respect of delays resulting from wet climatic conditions on the Site will only be considered in respect of abnormally wet climatic conditions and shall be determined for each calendar month or part thereof, in accordance with the formula given below:

$$V = (Nw - Nn) + (Rw - Rn)/X$$

in which formula the symbols shall have the following meanings:

V = Potential extension of time in calendar days for the calendar month under consideration:

If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn.

When the value of V for any month exceeds the number of days in the particular month, V will be the number of days in the month.

Nw = Actual number of days in the calendar month under consideration on which a rainfall of Y mm or more was recorded on the Site

Nn = Average number of days, derived from existing records of rainfall in the region of the Site, on which a rainfall of Y mm or more was recorded for the calendar month

Rw = Actual rainfall in mm recorded on the Site in an approved rain gauge for the calendar month under consideration

Rn = Average rainfall in mm for the calendar month, derived from existing records of rainfall in the region of the Site

The factor (Nw - Nn) shall be deemed to be a fair allowance for variations from the average number of days during which the rainfall exceeds Y mm.

The factor (Rw - Rn)/X shall be deemed to be a fair allowance for variations from the average number of days during which the rainfall did not exceed Y mm but wet conditions prevented or disrupted work.

(b) The rainfall records will be based at rainfall station situated at the Bultfontein town. The table at the end of this section, and the monthly averages (Rn and Nn) for this period shall, for the purposes of this Contract be taken as normal and as the values to be substituted for Rn and Nn in the formula above. The values of X and Y shall be 20 and 10 respectively.

The potential extension of time V has been calculated for each month and year of the period concerned to indicate the possible effect of the rainfall formula. The values of V were obtained by applying the rainfall formula and using the actual rainfall figures and the calculated values of Rn and Nn indicated in the table.

(c) The Contractor shall, at his own cost, provide and erect on the Site at a location approved by the Employer's Representative, an approved rain gauge, which shall be fenced off in a manner which will prevent any undue interference by workmen and others. The Contractor shall, at his own cost, arrange for the reading of the rain gauge on a daily basis for the duration of the Contract. The gauge readings, as well as the date and time at which the reading was taken shall be recorded in a separate record book provided by the Contractor for this purpose. All entries in the rainfall record books shall be signed by the person taking the reading and the gauge shall be properly emptied immediately after each reading has been taken. If required by the Employer's Representative, the Employer's Representative shall be entitled to witness the reading of the gauge.

(d) The Contractor's claims in terms of Sub clause 5.12.2 of the Conditions of Contract for extension of time in respect of delays resulting from wet climatic conditions on the Site during each month, shall be submitted in writing to the Employer's Representative monthly;

provided always that

i. the period allowed to the Contractor in terms of Clause 10.1 of the Conditions of Contract in which to submit his claim for each month shall be reduced to seven (7) days, calculated from the last day of the month to which the claim applies; and

ii. (ii)the 28-day period allowed to the Employer's Representative in terms of Sub clause 10.1.5 of the Conditions of Contract in which to give his ruling on the claim, shall be reduced to fourteen (14) days.

The Contractor's monthly claim shall be accompanied by a copy of the signed daily rainfall readings for the applicable month.

(e) The extent of any extension of time which may be granted to the Contractor in respect of wet climatic conditions (whether normal or abnormal) shall be determined as the algebraic sum of the "V" values for each month between the Commencement Date and the Due Completion Date of the Contract, calculated in accordance with sub clause C3.4.2.6(a) above;

provided always that

i. rainfall occurring within the period of the Contractor's Christmas shut-down period (referred to in Sub clause 1.6 of the Conditions of Contract) shall not be taken into account in the calculation of the monthly "V" values;

ii. (ii) rainfall occurring during any period during which the Contractor was delayed due to reasons other than wet climatic conditions on the Site, and for which delay an extension of time is granted by the Employer's Representative, shall not be taken into account in the calculation of the monthly "V" values;

iii. (iii) if the algebraic sum of the "V" values for each month is negative, the time for completion will not be reduced on account of subnormal rainfall, and

iv. where rainfall is recorded only for part of a month, the "V" value shall be calculated for that part of the month using pro rata values for Nn and Rn.

(f) The Employer's Representative shall, simultaneous with granting any extension of time in terms of this clause, revise the Due Completion Date of the Contract to reflect an extension of time having been granted in respect of wet climatic conditions, to the extent of the algebraic sum of all the "V" values for all the preceding months of the Contract, less the aggregate of the "Nn" values for the remaining (unexpired) months of the Contract (viz less aggregate of the potential maximum negative "V" values for the remaining Contract Period). Thus, provided that where such period is negative, the Due Completion Date shall not be revised.

(g) Any extension of time in respect of wet climatic conditions granted in terms of this clause shall not be deemed to take into account delays experienced by the Contractor in repairing or reinstating damage to or physical loss of the Works arising from the occurrence of abnormal climatic conditions. Extension of time in respect of any such repairs or reinstatement regarding damage shall be the subject of a separate application for extension of time in accordance with the provisions of Clause 5.12 and Clause 10.1 of the Conditions of Contract.

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

- *Add the following:*

  "Extension of time resulting from abnormal rainfall or other forms of weather shall be calculated according to the requirements of Method (ii) (Critical-path method).

The numbers of days per month on which work is expected not to be possible as a result of normal rainfall, for which the Contractor shall make provision, is given in Table B1215/1. In his tendered rates, prices and programme the Contractor shall allow at least for the number of lost working days listed for each month. Only the number of days lost as a result of adverse weather conditions (i.e. rain, wind, dust, cold, heat, etc.) exceeding the number of days listed in Table B1215/1 will qualify for consideration of extension of time.

Table B1215/1: Expected Number of Working Days Lost per Month due to Normal Rainfall

MONTH	Expected number of working days lost as result of normal rainfall
January	3
February	3
March	3
April	3
May	3
June	3
July	3
August	3
September	3
October	3
November	3
December	3
TOTAL	**36 days**

The number of working days lost for December and January allows for builders holiday from 16 December to 5 January.

During the execution of the Works, the Engineer's Representative will certify a day lost due to abnormal rainfall and adverse weather conditions if:

- If no work was possible on the relevant working day on any item which is on the critical path according to the latest approved construction programme; or

- if less than 30% of the work force and plant on Site could work during that specific working day.

Extension of time as a result of abnormal rainfall and adverse weather conditions shall be calculated monthly being equal to the number of working days certified by the Engineer's Representative as lost due to rainfall and adverse weather conditions, less the number of days allowed for as in Table B1215/1, which could result in a negative figure for certain months. The total extension of time as a result of abnormal climatic conditions, for which the Contractor may apply, shall be the cumulative algebraic sum of the monthly extensions. Should the sum thus obtained be negative, the extension of time shall be taken as nil. It will be calculated monthly and agreed in the site meeting. Consequential delays to be claimed as per GCC10.1.

C3.4.3 PLANT AND MATERIALS

C3.4.3.1 Plant and materials supplied by the employer.

No plant and/or material will be supplied by the Employer.

C3.4.3.2 Materials, samples and shop drawings

(a) Samples

Materials or work which does not conform to the approved samples submitted in terms of Sub clause 7.4 of the Conditions of Contract will be rejected. The Employer's Representative reserves the right to submit samples to tests to ensure that the material represented by the sample meets the specification requirements.

The costs of any such tests conducted by or on behalf of the Employer's Representative, the results of which indicate that the samples provided by the Contractor do not conform to the requirements of the Contract, shall, in accordance with the provisions of Sub clause 7.4.4 of the Conditions of Contract, be for the Contractor's account.

C3.4.4 CONSTRUCTION EQUIPMENT

C3.4.4.1 Requirements for equipment

The Contractor's equipment shall be adequate to construct the works.

C3.4.4.2 Equipment provided by the employer.

No equipment will be made available by the Employer.

C3.4.5 EXISTING SERVICES

C3.4.5.1 Known services.

Known services are indicated on the drawings. The contractor will expose them and protect them and should avoid damaging them.

Part C3.5

PARTICULAR SPECIFICATIONS

C3.5 PARTICULAR SPECIFICATIONS

INDEX

Item	**Description**
C3.5.1	Occupational Health and Safety Specifications by Employer

Part C3.5.1

OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS BY EMPLOYER

C3.5 OCCUPATIONAL, HEALTH AND SAFETY

C3.5.1 GENERAL

C3.5.1.1 Tender Document

This document is the pre-contract Health and Safety Specification which must be used by the Principal Contractor and Sub Contractors appointed by the Principal Contractor to compile Health and Safety Plans for this project and forms part of the tender documentation.

***Upon award of the contract, the contractor is to assume and adopt the function and duties of the Principal Contractor as set out in the Construction Regulations 2014, Government Gazette No. 37305 promulgated on 10 February 2014*.**

The health and safety specifications outlined herein must be taken into account and due allowance made within the pricing of appropriate items contained within the specification. Where the tenderer is of the opinion that a requirement is missing or is not adequately specified then this shall be drawn to the Client / Client's Representative's attention during the tender period. In the absence of any direction to the contrary, the tenderer shall as part of the tender submission, set out the details of such discrepancy together with the costs associated therewith, separately identified and included within the tender figure.

C3.5.2 INTRODUCTION AND BACKGROUND

C3.5.2.1 Background to the Pre-construction Health and Safety Specification

The Construction Regulations (Feb 2014) place the onus on the Client to prepare a pre-construction health & safety specification, highlighting all risks not successfully eliminated during design.

C3.5.2.2 Purpose of the Pre-construction Health and Safety Specification

To assist in achieving compliance with the Occupational Health & Safety Act 85/1993 and the now promulgated Construction Regulations (Feb 2014) in order to reduce incidents and injuries. This pre-construction specification shall act as the basis for the drafting of the construction phase health & safety plan. These specifications in no way release Contractors from compliance with the relevant Legal requirements.

The pre-construction specification sets out the requirements to be followed by the Principal Contractor and other Contractors so that the health & safety of all persons potentially at risk may receive the same priority as other facets of the project e.g. cost, programme environment, etc.

C3.5.2.3 Implementation of the Pre-construction Health and Safety Specification

This specification forms an integral part of the contract, and the Contractor is required to use it at pre-tender phase when drawing up its project-specific construction phase health & safety plan. The Principal Contractor shall forward a copy of this specification to all Contractors at their bidding stage so that they can in turn prepare health & safety plans relating to their operations.

C3.5.2.4 Client's Occupational Health and Safety Agent: The Municipality will appoint OHS Agent.

C3.5.3 PRE-CONSTRUCTION HEALTH AND SAFETY SPECIFICATION

C3.5.3.1 Scope

This Specification covers the requirements for eliminating and mitigating incidents and injuries on the particular project

The scope also addresses legal compliance, hazard identification and risk assessment, risk control, and promoting a health and safety culture amongst those working on the project. The specification also makes provision for the protection of those persons other than employees.

C3.5.3.2 Interpretations

a) Application

This specification is a compliance document drawn up in terms of South African legislation and is therefore binding. It must be read in conjunction with relevant legislation as noted previously.

b) Definitions

This specification is a compliance document drawn up in terms of South African legislation and is therefore binding. It must be read in conjunction with relevant legislation as noted previously.

C3.5.3.3 Minimum Administrative Requirements

a) Notification of Intention to Commence Construction Work

The Contractor shall notify the Provincial Director of the Department of Labour in writing before construction work commences. A copy of this notification must be forwarded to the Client on appointment.

b) Assignment of Contractor's Responsible Persons to Supervise Health and Safety on Site

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

c) Competency for Contractor's Appointed Competent Persons

Contractors" competent persons for the various risk management portfolios shall fulfil the criteria as stipulated under the definition of Competent in accordance with the Construction Regulations (Feb 2014). Proof of competence for the various appointments must be included.

d) Compensation of Occupational Injuries and Diseases Act 130 of 1993(COIDA)

The Principal Contractor shall submit a letter of good standing with its Compensation Insurer to the Client as proof of registration. Sub-Contractors shall submit proof of registration to the Principal Contractor before they commence work on site.

e) Occupational Health and Safety Policy

The Principal Contractor and all Sub Contractors shall submit a Health and Safety Policy signed by their Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented by the Company / Contractor.

f) Health and Safety Organogram

The Principal Contractor and all Sub Contractors shall submit an organogram, outlining the Health and Safety Site Management Structure including the relevant appointments/competent persons. In cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram shall be updated when there are any changes in the Site Management Structure.

g) Preliminary Hazard Identification and Risk Assessment and Progress Hazard Identification and Risk Assessment

The Contractor shall cause a hazard identification to be performed by a competent person before commencement of construction work, and the assessed risks shall form part of the construction phase health and safety plan submitted for approval by the Client. The risk assessment must include;

i). A list of hazards identified as well as potentially hazardous tasks;
ii). A documented risk assessment based on the list of hazards and tasks;
iii). A set of safe working procedures (method statements) to eliminate, reduce and/or control the risks assessed;

iv). A monitoring and review procedure of the risks assessment as the risks change.

The Principal Contractor shall ensure that all Sub Contractors are informed, instructed and trained by a competent person regarding any hazards, risks and related safe work procedures before any work commences and thereafter at regular intervals as the risks change and as new risks develop. Proof of this must be kept for inspection by the Client or Client Representative.

The Principal Contractor shall be responsible for ensuring that all persons who could be negatively affected by its operations are informed and trained according to the hazards and risks and are conversant with the safe work procedures, control measures and other related rules (tool box talk strategy to be implemented).

h) Health and Safety Representative(s)

The Principal Contractor and all Contractors shall ensure that Health and Safety Representative(s) are appointed under consultation and trained to carry out their functions. The appointment must be in writing. The Health and Safety Representative shall carry out regular inspections, keep records and report all findings to the Responsible Person forthwith and at health & safety meetings.

i) Health and Safety Committees

The Principal Contractor shall ensure that project health and safety meetings are held monthly and minutes are kept on record. Meetings must be organised and chaired by the Principal Contractor's Responsible Person. All Contractors" Responsible Persons and Health & Safety Representatives shall attend the monthly health & safety meetings. Sub-Contractors shall also have their own internal health & safety committees in accordance with the OHS Act 85/1993 and minutes of their meetings shall be forwarded to the Principal Contractor on a monthly basis.

j) Health and Safety Training

- Induction

  The Principal Contractor shall ensure that all site personnel undergo a risk-specific health & safety induction training session before starting work. A record of attendance shall be kept in the health & safety file. A suitable venue must be supplied to house this training.

- Awareness

  The Principal Contractor shall ensure that, on site, periodic toolbox talks take place at least once per week. These talks should deal with risks relevant to

the construction work at hand. A record of attendance shall be kept in the health & safety file. All Contractors have to comply with this minimum requirement. At least one of the Toolbox talks shall be on any environmental related issue.

- Competency

  All competent persons shall have the knowledge, experience, training, and qualifications specific to the work they have been appointed to supervise, control, and carry out. This will have to be assessed on regular basis e.g. periodic audits by the Client, progress meetings, etc. The Principal Contractor is responsible to ensure that competent Sub Contractors are appointed to carry out construction work.

- Rules of conduct.

  Principal contractors, their sub-contractors and all employees under their control, including any visitor brought onto site must adhere to the following Rules of conduct on site.

YOU MAY NOT:

* Partake, possess or sell drugs or alcoholic beverages on site. Any employee or visitor whose action and demeanour show symptoms of possible narcosis or drunkenness shall be removed from site.
* Indulge in practical jokes, horseplay, fighting or gambling.
* Destroy or tamper with safety devices, symbolic signs or wilfully and unnecessarily discharge fire extinguishers.
* Bring onto site or have in your possession a firearm, lethal weapon.
* Assault, intimidate or abuse any other person.
* Operate construction equipment (vehicles or plant) without the necessary training and authorisation.
* Display insubordination toward any supervisor, foreman or Manager in respect to carrying out of properly issued instructions or orders for health and Safety reasons.
* Enter any area where you have no business unless authorised to do so by the person in charge.
* Negligently, carelessly or wilfully cause damage to property of others.
* Refuse to give evidence or deliberately make false statements during investigations.

k) General Record Keeping

The Principal Contractor and all Sub Contractors shall keep and maintain Health and Safety records to demonstrate compliance with this Specification, with the OHS Act 85/1993; and with the Construction Regulations (Feb 2014). The Principal Contractor shall ensure that all records of incidents/accidents, training, inspections;

audits, etc. are kept in a health & safety file held in the site office. The Principal Contractor must ensure that every Sub Contractor opens its own health & safety file, maintains the file and makes it available on request.

Inspection of equipment and tools.

The following items of equipment must be regularly inspected and maintained and appropriate records kept.

* First Aid dressing registers.
* Fire equipment
* Lifting equipment
* Lifting Gear
* Portable electrical equipment
* Stacking and storage inspections
* Explosive power tools
* Materials hoist (where applicable)
* Pressure Vessels
* Ladders
* Excavations
* Safety harnesses
* Scaffold - static and mobile.
* Pneumatic tools
* Construction vehicles and mobile plant.
* Health and Safety Representatives checklists.

l) Health & Safety Audits, Monitoring and reporting

The Client shall conduct monthly health & safety audits of the work operations including a full audit of physical site activities as well as an audit of the administration of health & safety. The Principal Contractor is obligated to conduct similar audits on all Sub Contractors appointed by them. Detailed reports of the audit findings and results shall be reported on at all levels of project management meetings/forums. Copies of the Client audit reports shall be kept in the Primary Project Health & Safety File while the Principal Contractor audit reports shall be kept in their file, a copy being forwarded to the Client. Sub-Contractors have to audit their sub-contractors and keep records of these audits in their health & safety files, available on request.

m) Emergency Procedures

The Principal Contractor shall submit a detailed Emergency Procedure for approval by the Client prior to commencement on site. The procedure shall detail the response plan including the following key elements:

v). List of key competent personnel;

vi). Details of emergency services;
vii). Actions or steps to be taken in the event of the specific types of emergencies;
viii). Information on hazardous material/situations.

Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, bomb threats, major incidents/accidents, etc. The Principal Contractor shall advise the Client in writing forthwith, of any emergencies, together with a record of action taken. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and available to site personnel.

n) First Aid Boxes and First Aid Equipment

The Principal Contractor and all Sub Contractors shall appoint in writing First Aider(s). The appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. The Principal Contractor shall provide an on-site First Aid Station with first aid facilities, including first aid boxes adequately stocked at all times. All Sub Contractors with more than 5 employees shall supply their own first aid box. Sub-Contractors with more than 10 employees shall have a trained, certified first aider on site at all times.

o) Accident / Incident Reporting and Investigation

Injuries are to be categorised into first aid; medical; disabling; and fatal. The Principal Contractor must stipulate in its construction phase health & safety plans how it will handle each of these categories. When reporting injuries to the Client, these categories shall be used. The Principal Contractor shall investigate all injuries, with a report being forwarded to the Client forthwith. All Contractors have to report on the 4 categories of injuries to the Principal Contractor at least monthly. The Principal Contractor must report all injuries to the Client in the form of a detailed injury report at least monthly.

p) Hazards and Potential Situations

The Principal Contractor shall immediately notify other Sub Contractors as well as the Client of any hazardous or potentially hazardous situations that may arise during performance of construction activities.

q) Personal Protective Equipment (PPE) and Clothing

The Principal Contractor shall ensure that all workers are issued and wear hard hats, safe footwear and overalls. The Principal Contractor and all Sub Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. The Principal Contractor shall clearly outline procedures to be taken when PPE or Clothing is:

- Lost or stolen;
- Worn out or damaged.

The above procedure applies to Sub Contractors and their contractors, as they are all Employers in their own right.

r) Occupational Health and Safety Signage

The Contractor shall provide adequate on-site OHS signage. Including but not limited to „no unauthorised entry, report to site office „‟ site office, beware of overhead work, „hard hat area". Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, scaffolding, and other potential risk areas/operations.

s) Permits

Permits may include the following:

- Use of Explosives and Blasting
- Work for which a fall prevention plan is required
- Use of cradles
- Excavation

t) Contractors and their Sub-contractors

The Principal Contractor shall ensure that all Sub Contractors under its control comply with this Specification, the OHS Act 85/1993, Construction Regulations (Feb 2014), and all other relevant legislation that may relate to the activities directly or indirectly. The Contractor, when appointing other Contractors as „Sub-contractors", shall mutatis mutandis ensure compliance.

u) Incentives and Penalties

Certain incentives will be provided for ongoing compliance to the provisions of the construction phase health & safety plan submitted by the Principal Contractor.

Penalties will be implemented for ongoing non-compliance to the provisions of the construction-phase health & safety plan as submitted by the Principal Contractor.

C3.5.3.4 Physical Requirements

a) Demolition Work

Prior to any demolition work being carried out, the Principal Contractor shall submit a safe working procedure and a detailed engineering survey for approval by the Client. Acceptance will then be issued to the Principal Contractor to proceed with

the demolition work. The Principal Contractor shall ensure that demolition work complies with the Construction Regulations (Feb 2014).

b) Excavations, Shoring, De watering or Drainage

The Principal Contractor and any relevant Sub Contractors shall make provision in their tender for shoring, dewatering or drainage of any excavation as per this specification.

The Contractor shall make sure that:

i). The excavations are inspected before every shift each occurrence of rain or change to the excavation / shoring. and a record is kept;
ii). Any excavation shall be adequately shored if people are required to work in the excavation and the depth id more than 1.5 metres or where conditions render this necessary at lesser depths. Undercutting is not allowed.
iii). Safe work procedures have been communicated to the workers;
iv). Excavated material shall be placed as far from the trench as practically possible. a close watch shall be maintained at all times for signs of slipping, e.g. cracks developing at the edges of the excavation)
v). The safe work procedures are enforced and maintained by the Contractor's Responsible Persons at all times)
vi). The requirements as per section 11 of the Construction Regulations are adhered to.

c) Edge Protection and Penetrations

The Principal Contractor must ensure that all exposed edges and openings are guarded and demarcated at all times until permanent protection has been erected. The Principal Contractor's risk assessment must include these items. E.g. protection of decking edges, finished floor slab edges, stairways, floor penetrations, lift shafts, and all other openings and areas where a person may fall.

d) Explosives and Blasting

The Principal Contractor shall ensure that a competent Contractor undertakes the use of explosives and blasting (where required). A Safe Work Procedure (SWP) must be submitted to the Client for approval before commencement of blasting work.

e) Piling

The Contractor shall ensure that piling is undertaken by a competent Contractor. A SWP shall be submitted to the Client for approval before commencement of this work.

f) Stacking of Materials

The Principal Contractor and other relevant Sub Contractors shall ensure that there is an appointed staking supervisor and all materials, formwork and all equipment is stacked and stored safely.

g) Speed Restrictions and Protection

The Principal Contractor shall ensure that all persons in its employ, all Sub-Contractors, and all those that are visiting the site are aware and comply with the site speed restriction(s). Separate vehicle and pedestrian access routes shall be provided, maintained, controlled, and enforced.

h) Hazardous Chemical Substances (HCS)

The Principal Contractor and other relevant Sub Contractors shall provide the necessary training and information regarding the use, transport, and storage of HCS. The Principal Contractor shall ensure that the use, transport, and storage of HCS are carried out as prescribed by the HCS Regulations. The Contractor shall ensure that all hazardous chemicals on site have a Material Safety Data Sheet (MSDS) on site and the users are made aware of the hazards and precautions that need to be taken when using the chemicals. The First Aiders must be made aware of the MSDS and how to treat HCS incidents appropriately.

i) Asbestos

The principal Contractor is responsible for ensuring that all work involving asbestos complies with the Asbestos Relations. Any Contractor involved in asbestos work must obtain temporary registration as an asbestos contractor from the Dept of Labour. Written safe work procedures and the relevant risk assessments must govern all asbestos work. An asbestos contractor must provide exposed employees with the necessary training and information regarding asbestos, as well as the necessary personal protective equipment. Wetting down and low speed cutting techniques must be employed wherever possible to prevent airborne asbestos.

Should any asbestos work involving fryable asbestos (e.g. lagging or insulation) which falls under the definition of Demolition work, defined under the Asbestos Regulation. An Approved Inspection Authority must be utilised to carry out air monitoring plus a decontamination unit must also be provided.

C3.5.3.5 Plant and Machinery

a) Construction Plant

“Construction Plant” includes all types of plant including but not limited to, cranes, piling rigs, excavators, road vehicles, and all lifting equipment.

The Principal Contractor shall ensure that all such plant complies with the requirements of the OHS Act 85/1993 and Construction Regulations (Feb 2014). The Principal Contractor and all relevant Sub Contractors shall inspect and keep records of inspections of the construction plant used on site. Only authorised/competent persons are to use machinery under proper supervision. Appropriate PPE and clothing must be provided and maintained in good condition at all times. Proofs of medical test as required by the Construction regulations are available for inspection by the Client.

Vehicles shall not enter site with:

* Defective exhaust systems
* Serious oil or fuel leaks
* Unsafe bodywork or loads
* Non-standard equipment fitted.
* Improperly seated passengers
* Any obvious mechanical defects.

All earth moving equipment shall be operated in accordance with good safety practice so as to protect the safety of the operator and other workers or persons in the area. All earth moving equipment shall be equipped with a reverse siren

b) Vessels under Pressure (VuP) and Gas Bottles

The Principal Contractor and all relevant Sub Contractors shall comply with the Vessels under Pressure Regulations, including:

i). Providing competency and awareness training to the operators;
ii). Providing PPE or clothing;
iii). Inspect equipment regularly and keep records of inspections;
iv). Providing appropriate firefighting equipment (Fire Extinguishers) on hand.

c) Fire Extinguishers and Fire Fighting Equipment

The Principal Contractor and relevant Sub Contractors shall provide adequate, regularly serviced firefighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted up as required. A Fire risk survey must be conducted by a competent person; proof of survey must be kept in the Site Safety File.

d) Hired Plant and Machinery

The Principal Contractor shall ensure that any hired plant and machinery used on site is safe for use. The necessary requirements as stipulated by the OHS Act 85/1993 and Construction Regulations (Feb 2014) shall apply. The Principal Contractor shall ensure that operators hired with machinery are competent and that

certificates are kept on site in the health & safety file. All relevant Sub Contractors must ensure the same.

e) Scaffolding / Working at Heights

Working at heights includes any work that takes place in an elevated position. The Principal Contractor must submit a risk-specific fall prevention plan in accordance with the Construction Regulations (Feb 2014) before this work is undertaken. The Client must approve the fall prevention plan before work may commence.

f) Formwork and Support work for Structures

The Principal Contractor shall ensure that the provisions of section 10 of the Construction Regulations (Feb 2014) are adhered to. These provisions must include but not be limited to ensuring that all equipment used is examined for suitability before use; that all formwork and support work is inspected by a competent person immediately before, during and after placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work has been removed. Records of all inspections must be kept in a register on site.

g) Lifting Machines and Tackle

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

- All lifting machinery and tackle has a safe working load clearly indicated
- Regular inspection and servicing is carried out;
- Records are kept of inspections and of service certificates;
- There is proper supervision in terms of guiding the loads that includes a trained banks man to direct lifting operations and check lifting tackle;
- The tower crane bases have been approved by an engineer;
- The operators are competent as well as physically and psychologically fit to work and in possession of a medical certificate of fitness to be available on site.

h) Ladders and Ladder Work

The Principal Contractor shall ensure that all ladders are inspected monthly, are in good safe working order, are the correct height for the task, extend at least 1m above the landing, fastened and secured, and at a safe angle. Records of inspections must be kept in a register on site. Sub-Contractors using their own ladders must ensure the same. Ladders shall not be used as horizontal walkways or

as scaffolding. Tools or equipment must be carried in suitable slung containers or hoisted up to the working position.

i) General Machinery

The Principal Contractor and relevant Sub Contractors shall ensure compliance with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing, and training those who use machinery

j) Portable Electrical Tools and Explosive Powered Tools

The Principal Contractor shall ensure that use and storage of all explosive powered tools and portable electrical tools are in compliance with relevant legislation. The Principal Contractor shall ensure that all-electrical tools, electrical distribution boards, extension leads, and plugs are kept in safe working order. Regular inspections and toolbox talks must be conducted to make workers aware of the dangers and control measures to be implemented e.g. personal protection equipment, guards, etc.

The Principal Contractor shall consider the following:

- A competent person undertakes routine inspections and records are kept;
- Only authorised trained persons use the tools;
- The safe working procedures apply;
- Awareness training is carried out and compliance is enforced at all times; and
- PPE and clothing is provided and maintained.
- A register indicating the issue and return of all explosive round;
- Ensure that the cartridges and explosive tool is lock up separately
- Signs to be posted up in the areas where explosive powered tools are being used. (**WARNING - EXPLOSIVE POWERED TOOL IN USE - KEEP CLEAR**).

k) High Voltage Electrical Equipment

No high voltage electrical equipment is present on, under or above the construction area.

l) Public and Site Visitor Health & Safety

The Principal Contractor shall ensure that every person working on or visiting the site, as well as the public in general, shall be made aware of the dangers likely to arise from site activities, including the precautions to be taken to avoid or minimise those dangers. Appropriate health and safety notices and signs shall be posted up, but shall not be the only measure taken.

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

Site visitors must be briefed on the hazards and risks they may be exposed to and what measures are in place or should be taken to control these hazards and risks. A record of these „induction" must be kept on site in accordance with the Construction Regulations.

m) Night Work

The Principal Contractor must ensure that adequate lighting is provided to allow for work to be carried out safely.

n) Transport of Workers

The Principal Contractor and other Sub Contractors shall not:

- Transport persons together with goods or tools unless there is an appropriate area or section to store them;
- Transport persons in a non-enclosed vehicle, e.g. truck; there must be a proper canopy (properly covering the back and top) with suitable sitting area. Workers shall not be permitted to stand or sit at the edge of the transporting vehicle.

C3.5.3.6. Occupational Health

a) Occupational Hygiene

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem and all Principal Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, and absorption of any hazardous substance and high noise level exposure. Site-specific health risks are tabled in Annexure C e.g. cement dust, wet cement, wood-dust, noise, etc.

The principal must provide a Covid 19 plan before the commencement of works. The plan must outline how the principal contractor plans to screen and curb the spread of the Corona virus.

b) Welfare Facilities

The Principal Contractor must supply Sufficient toilets (1 toilet per 30 workers), showers (1 for every 15 workers), changing facilities, hand washing facilities, soap, toilet paper, and hand drying material must be provided. Waste bins must be

strategically placed and emptied regularly. Safe, clean storage areas must be provided for workers to store personal belongings and personal protective equipment. Workers should not be exposed to hazardous materials/substances while eating and must be provided with sheltered eating areas.

c) Alcohol and other Drugs

No alcohol and other drugs will be allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription drugs must inform his/her superior, who shall in turn report this to the Principal Contractor forthwith. Any person suffering from any illness/condition that may have a negative effect on his/her safety performance must report this to his/her superior, who shall in turn report, this to the Principal Contractor forthwith. Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Principal Contractor or Sub Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

d) Medicals

The Contractor need to make sure that all the employees that are working on the construction site they have done a pre-employment medical and if the project is more than three months, the employees will have to do a Medical Exit and the Contractor shall make sure that all the medical information of the contractors. The Contractor will use Annexure 3 of the Construction Regulation 2014.

e) HIV and AIDS workshop

The Contractor need to make sure that workshop and training is done for the employees on the construction site and the contractor must make sure that there are marketing posters and pamphlets based on HIV and AIDS.

f) Covid 19

The Contractor must provide a detailed Covid 19 work plan as per government regulations. The Contractor need to make sure that training is done for the employees on the construction site and the contractor must make sure that necessary PPE is provided to all employees**.**

C3.5.3.7. MEASUREMENT AND PAYMENT

The sums provided (Fixed-charged and Time-related) shall cover all the cost for Occupational Health and Safety aspects. Possible items to consider may include, but is not limited to the following:

ITEM	DESCRIPTION
1	FIXED SAFETY RELATED COSTS
1.1	MEDICALS
	Entrance Medicals Core Employees
	Entrance Medicals Local Employees
	Exit Medicals Core Employees
	Exit Medicals Local Employees
1.2	INDUCTION
	Site Induction
1.3	IDENTIFICATION CARDS
	ID Cards
1.5	TRAINING
	Health and Safety Reps Training
	Basic Health & Safety Training
	First Aid Training
	Fire Fighting Training
	HIV and AIDS Training
	Covid 19 Training
1.7	FIRE PROTECTION
	Fire Extinguishers 9kg - Mobile Containers & Stores
	Fire Extinguishers 9kg - Site Use
1.8	FACILITIES
	Provision of Eating/Messing Areas
1.9	LIGHT VEHICLE UPGRADE FOR PROJECT / SITE (if and when applicable)
	Requirements of Scope of Works for Vehicles should be listed here
1.10	SURFACE MOBILE EQUIPMENT
	First Aid Kit
	Two Way Radio
	Identification Signage
	Reverse Camera

ITEM	DESCRIPTION
	Flag as per Procedure
	Emergency Triangles 6×
1.12	FLAMMABLE LIQUIDS STORAGE
	Storage Facilities (steel frame, 12 gauge wire mesh, IBR roof, lockable gate)
	Electrical Earthing of Facility
	Concrete Floor
	Drip Trays
	Spillage Containment (Bund Walls)
1.13	DIESEL STORAGE MAX 30 000 litres
	Storage Facilities (steel frame, 12 gauge wire mesh, locable gate)
	Electrical Earthing of Facility
	Concrete Floor
	Drip Trays
	Spillage Containment (Bund Walls)
1.15	FIRST AID
	First Aid Boxes
	Rescue Equipment and Stretchers
1.16	SIGNAGE
	Signage - Site Offices
	Signage - Site Stores
	Signage - Working Areas (Scaffold etc.)
	Signage - Flammable/Hazardous Stores
1.17	ELECTRICAL
	Locks Required for Lockouts
	Tags
	Permit Books
	Key Safes
1.18	DE-ESTABLISHMENT
	Eating/Messing Areas

ITEM	DESCRIPTION
	Flammable Liquids Storage
	Diesel Storage Facilities
	Barricading Equipment and Sundry
	Temporary Facilities and Plant

ITEM	DESCRIPTION
2	TIME RELATED SAFETY COSTS
2.1	HEALTH AND SAFETY PERSONNEL
	Safety Manager
	Safety Officer
2.2	REFRESHER TRAINING DOWN TIME
	Basic Health & Safety Induction Refresher WAGE Down Time
2.3	COMMUNICATION
	Daily Toolbox Discussions Down Time
2.4	PERSONAL PROTECTIVE EQUIPMENT
	Overalls – Core
	Overalls – LDC
	Waterproof Clothing
	Chemical and Fire Resistant Clothing
	High Visibility Vests – Core
	High Visibility Vests – LDC
	Hard Hats – Core
	Hard Hats – LDC
	Hard Hats with Chin Straps
	Safety Glasses
	Safety Boots – Core
	Safety Boots – LDC
	Impact Spectacles
	Visors

ITEM	DESCRIPTION
	Gloves
	Dust Masks
	Respirators
	Ear Protection
	Breathalysers
	Hot Work PPE (See Calculations Wrksht for Breakdown)
2.5	FALL PREVENTION /PROTECTION
	Safety Harnesses with Double Lanyards
	Scaffold Hooks
	Lifelines and Vertical Fall Arrest Systems
	Scaffolding – material
	Labour for Erecting and Maintaining Barricading
2.6	FIRE FIGHTING
	Fire Extinguishers Maintenance
2.7	FACILITIES
	Toilets - (1 per 30 people) / Ladies separate Toilets
	Toilet Blocks
	Security Services
	Additional External Lighting
	Maintenance of Ablutions and Eating Areas
2.8	LIGHT VEHICLE UPGRADE
	Safety Equipment Maintenance Cost
2.10	LIFTING MACHINERY AND EQUIPMENT
	Inspections of Equipment
	Inspection of Lifting Gear
	Third Party Testing and Certification
2.11	DUST MANAGEMENT
	12kl Water Cart, Wet with Operator
2.12	INSURANCE

ITEM	DESCRIPTION
	Public Liability
	UIF
	COID
2.13	PERMITS
	Provision for applications for scaffolding permits
	Provision for applications for fuel storage permits
	Provision for applications for explosive power tool
	permits (required for each such tool on site)
	Provision for applications for lifting permits
2.14	EXTERNAL AUDITOR
	2nd Party Auditors
	Third Party Auditor

Project:

ANNEXURE A

The Principal Contractor and Sub-Contractors must submit proof of compliance with Annexure A with the construction phase H&S plan where applicable.

HSS Item No.	Requirement	OHSA Requirement	Submission Date
2.3.1	Notification of Intention to Commence Construction / Building Work	Complete Schedule 1 (Construction Regulations)	Before commencement on site
2.3.2	Assignment of Responsible Person to Supervise Construction Work	All relevant appointments, as per OHS Act and Construction Regulations.	Before commencement on site
2.3.3	Competence of Responsible Persons	Client Requirement & OHS Act	Together with H&S plan
2.3.4	Compensation of Occupational Injuries and Diseases Act (COIDA) 130 of 1993	COIDA Requirement	Together with H&S plan
2.3.5	Occupational Health and Safety Policy	OHS Act	Together with H&S plan
2.3.6	Health and Safety Organogram	Client Requirement	Together with H&S plan
2.3.7	Initial Hazard Identification and Risk Assessment based on the Client's assessment	Construction Regulations.	Together with H&S plan
2.3.8	Health and Safety Representative	OHS Act	Submit as soon as there are more than 20 employees on site
	Other		

ASSIGNMENT OF PRINCIPAL CONTRACTOR'S RESPONSIBLE PERSONS

Project:

ANNEXURE B

The Principal Contractor shall make the following appointments according to the initial risk assessment: (further appointments could become necessary as project progresses)

Appointment	OHSA Reference	Requirement
CEO Assignee	Section 16(2)	A competent person to assist with the on-site H&S overall responsibility – Contractor's Responsible Person
Construction Work Supervisor	CR 6.1	A competent person to supervise and be responsible of Health & Safety related issues on site. The person is appointed to assist the CEO with his/ her overall duties.
Subordinate Construction Work Supervisors	CR 6.2	A competent person to assist with daily supervision of construction / building work. The person assists the Construction Work Supervisor.
Health & Safety Representative(s)	Section 17	A competent person(s) to inspect H&S in reference to plant, machinery and Health & Safety of persons in the workplace.
Health & Safety Committee Member(s)	Section 19	A competent person(s) representing the employer to assist with the on site Health & Safety matters.
Incident Investigator	GAR 8	A competent person to investigate incidents / accidents on site and could be: - The employer - H&S Representative - Designated person - Member of the H&S Committee
Risk assessment coordinator	CR 7	A competent person to co-ordinate all risk assessments on behalf of the Principal Contractor. The same applies to Contractors.
Fall protection plan coordinator	CR 8	A competent person to prepare & amend the fall protection plan.
First Aiders	GSR 3	A qualified person to address all on site first aid cases.
Machinery Inspector	GSR 2.1	A competent person to supervise machinery.
Lifting machine & equipment Inspector	DMR 18	A competent person to inspect lifting machines equipment & tackle.
Scaffolding Inspector	SABS 085	A competent person to inspect scaffolding before use and every time after bad weather, etc.
Scaffolding erector	GSR 13D	A competent person to erect scaffolding.
Scaffolding supervisor	SABS 085	A competent person to supervise scaffolding.
Formwork & support work Inspector	CR 10	A competent person to inspect formwork & support work.
Excavation Inspector	CR 11	A competent person to inspect excavation work and ensure that approved safe working procedures are followed at all times.
Ladder Inspector	GSR 13A	A competent person to inspect ladders daily and ensures they are safe for use, keeping monthly record.
Stacking Supervisor	CR 26	A competent person to supervise all stacking and storage operations.
Explosive powered tools inspector/supervisor	CR 19	A competent person to inspect & clean the tool daily and controlling all operations thereof.
Temporary electrical installations supervisor	CR 22	A competent person to control all temporary electrical installations.
Fire-fighting equipment inspector	CR 27	A competent person to inspect fire-fighting equipment.

OTHER REQUIREMENTS

Project:

ANNEXURE C

The Principal Contractor shall comply but not be limited to the following requirements: report on these to the Client at progress meetings or at least monthly whichever is sooner.

What	When	Output	Accepted by Client & date
Induction training	Every worker before he/she starts work.	Attendance registers	
Awareness Training (Tool Box Talks)	At least weekly	Attendance registers	
Health & Safety Reports	Monthly	Report covering: - Incidents / accidents and investigations - Non conformances by employees & contractors - Internal & External H&S audit reports	
Emergency procedures	Ongoing evaluation of procedure	Table procedure in writing as well as tel. numbers	
Risk assessment	Updated and signed off at least monthly	Documented risk assessment	
Safe work procedures	Drawn up before workers are exposed to new risks	Documented set of safe work procedures (method statements) updated and signed off.	
General Inspections	Weekly & daily	Report OHS Act compliance: - Scaffolding - Excavations - Formwork & support work - Explosive tools	
General Inspections	Monthly	- Fire fighting equipment - Portable electrical equipment - Ladders - Lifting equipment/slings	
List of contractors	List to be updated weekly	Table list, number of workers and Company tel. numbers	
Workman's Compensation	Ongoing	Table a list of Contractors' workman's compensation proof of good standing.	
Construction site rules & Section 37.2 Mandatory Agreement	Ongoing	Table a report of all signed up Mandatories.	

APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK

Project:

ANNEXURE D

Application for a permit to do construction work (according to Regulation Gazette No. 10113: Vol. 584 – Annexure 1)

ANNEXURE 1

APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK

[In terms of Regulation 3(2) of Construction Regulations, 2014]

This application must be submitted with the following documents:

1. Health and Safety specification.
2. Health and Safety plan.
3. Baseline risk assessment.

1. Name, postal address and telephone numbers of the client:

   _____

   _____

2. Details of the Agent.
   a. Title, Surname and Initials._____
   b. Identity number/ Passport Number _____
   c. Registration number with SACPCMP_____
   d. Office Tel. number and/or Mobile number _____
   e. Postal address. _____

      _____

3. Name, postal address and telephone numbers of the appointed principal contractor:

   _____

   _____

4. Name, postal address and telephone numbers of designer of the project:

   _____

   _____

5. Name, postal address and telephone numbers of the following persons:

   a. Construction Manager:

      _____

   b. Construction Health and Safety Manager:

      _____

Construction Regulation 2014

c. Construction Health and Safety Officer:

_____

6. Exact physical address of the construction and site office:

_____

_____

7. Nature of construction work:

_____

_____

_____

8. Expected commencement date:

_____

9. Expected completion date:

_____

10. Estimated maximum number of persons on the construction site:

_____

11. Planned number of contractors on site accountable to principal contractor:

_____

12. Name(s) of contractors appointed:

_____

_____

_____

_____

_____

13. _____
Signature of Client/Client's Agent

14. _____
Signature of the Principal Contractor

FOR OFFICE ONLY

Authorization /Unique No.	LABOUR CENTRE	OFFICIAL APPROVAL STAMP

15. Date of application: _____

16. Submitted documents prescribed in Construction Regulation 5(4) (Please Tick √):

CR 5(1)(a)		CR 5(1)(b)		CR 5(1); (C-S)	

17. Result of the application (Please Tick √):	**Approved**		**Declined**	

18. Reason for declining the application:

_____

_____

_____

_____

19. _____
Signature of the Supervisor

20. _____
Signature of revoking Officer/ Inspector

Project:

ANNEXURE E

Notification of Construction Work (according to Regulation Gazette No. 10113: Vol. 584 – Annexure 2)

ANNEXURE 2

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
(Regulation 4 of the Construction Regulations, 2014)

NOTIFICATION OF CONSTRUCTION WORK

1.(a) Name and postal address of principal contractor:

_____

(b) Name and tel. no of principal contractor's contact person:

_____

2. Principal contractor's compensation registration number:

_____

3.(a) Name and postal address of client:

_____

(b) Name and tel. no of client's contact person or agent:

_____

4.(a) Name and postal address of designer(s) for the project:

_____

(b) Name and tel. no of designer(s) contact person:

_____

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 8(1).

_____

6. Name/s of principal contractor's sub-ordinate supervisors on site appointed in terms of regulation 8(2).

_____

7. Exact physical address of the construction site or site office:

_____

8. Nature of the construction work:

_____

_____

_____

9. Expected commencement date: _____

10. Expected completion date: _____

11. Estimated maximum number of persons on the construction site.

Total: _____ Male:_____Female:_____

12. Planned number of contractors on the construction site accountable to principal contractor: _____

13. Name(s) of contractors already selected.

_____

_____

_____

_____ _____

Principal Contractor Date

_____ _____

Client's Agent (where applicable) Date

_____ _____

Client Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR TO COMMENCEMENT** OF WORK ON SITE.

Construction Regulation 2014

MEDICAL CERTIFICATE OF FITNESS

Project:

ANNEXURE F

Medical Certificate of Fitness (according to Regulation Gazette No. 10113: Vol. 584 – Annexure 3)

Annexure 3

OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 Construction Regulations, 2014

Medical Certificate of Fitness

Name of Employee _____ ID Number _____ Co. Number _____

	*Possible Exposures e.g. noise, heat, fall risk, confined space etc.	* Job Specific Requirements e.g. Operating Mobile Crane, Digging Trenches, Erecting Formwork & Supportwork etc.	*Protective Equipment e.g. Dust Respirator (Light Duty), Welding Gloves etc.
*Occupation e.g General Worker, Welder, Bricklayer, Steel fixer, Mobile Crane Operator, etc.			

* The Employer to complete the information in the spaces marked with an * before sending the Employee for a medical examination

Declaration by the Medical Examiner:

I certify that I have, by examination and testing, using the above criteria specified by the employer, satisfied myself that the abovementioned employee is fit to perform the duties as described by the employer in the matrix above.

Occupational Medicine Practitioner/Occupational Health Nursing Practitioner: (Please Print Name) _____

Signature _____ Practice Number: _____ Date: _____

Address: _____

Section C3.7

MANAGEMENT

C3.7 MANAGEMENT

C3.7.1 Management of the Works

C3.7.1.1 Applicable Specifications

The Standard Specifications for Civil Engineering Construction SANS 1200 published by the South African Bureau of Standards and referred to as the "Standard Specifications", including the variations and additions specified in Section C3.6, shall be applicable to this project.

C3.7.1.2 Contractor's Project Management Plan

The Contractor is required to prepare and submit a project management plan for the construction. The particular contents that should be included in the Contractor's Project Management Plan are listed below:

- Project structures and agreements

  The Contractor shall indicate how responsibility for the various work packages will be divided between joint venture partners (where applicable) and sub-contractors. A contract organogram shall be provided showing work apportionment and project management responsibilities. The particular division of work shall match the established capabilities and capacities of each particular partner or subcontractor.

- Plant, materials and equipment

  The Contractor shall prepare a Plant and Materials procurement plan, indicating the source of key Plant and Materials designated for inclusion in the Works, and demonstrating that such Plant and Materials have a proven track record of successful maintenance support in South Africa.

  The Contractor shall also prepare a plan of Contractor's Equipment, indicating the source and details of construction equipment planned for use on the Contract and based on the Contractor's particular approach.

- Staffing plan

  The Contractor shall prepare a detailed staffing plan showing in an organogram all key members of the Contractor's Personnel, providing a detailed CV for each such key position. The Contractor shall also show the numbers and source of all non-key staff and indicating the particular local content offering of the Contractor.

- Method statements

  The Contractor shall clearly describe the overall methodology proposed for construction of the Works and include particular method statements for each work discipline included in the Works.

C3.7.1.4 Construction Programme

The Contractor shall submit within the period stated in the Contract Data a suitable and realistic construction programme for the consideration of the Employer's Representative.

The programme shall be in the form of a Gantt chart and shall include the following details:

- A work breakdown structure, identifying the major activity groups.
- For each activity group further details shall be provided with regard to the scheduled start and end dates of individual activities.
- The linkages between activities shall be clearly indicated and the logical network upon which the programme is based shall be separately submitted to the Employer's Representative if requested. Any constraints shall be classified as being time-related or resource-related.
- The critical path(s) shall be clearly indicated and floats on non-critical activities shall be shown.
- The Contractor shall indicate the working hours per day, night, week and month allowed for in the programme.
- Where relevant the Contractor shall state the production rates for key activities, e.g. earthworks, etc.

Together with the programme as detailed above the contractor shall submit to the Employer's Representative a cash flow projection, indicating projected monthly invoice amounts. The cash flow projection shall be updated at monthly intervals to reflect actual payments to date and anticipated further payments.

The programme will be reviewed at the monthly site meetings at which the Contractor shall provide sufficient detail that will allow the comparison of completed work per activity that has fallen behind. The updated programme shall be submitted to the Employer's Representative at least two days prior to the monthly meetings.

If the programme has to be revised by reason of the Contractor falling behind his programme, he shall produce a revised programme showing how he intends to regain lost time in order to ensure completion of the Works within the time for completion or any

granted extension of time. Any proposal to increase the tempo of work must be accompanied by positive steps to increase production by providing more labour and plant on site, or by using the available labour and plant in a more efficient manner.

Failure on the part of the Contractor to submit the programme or to work according to the programme or revised programmes shall be sufficient reason for the Employer's Representative to take steps as provided in the General Conditions of Contract.

The approval by the Employer's Representative of any programme shall have no contractual significance other than that the Employer's Representative will be satisfied that the work is carried out according to such programme and that the Contractor undertakes to carry out the work in accordance with the programme. It shall not limit the right of the Employer's Representative to instruct the Contractor to vary the programme if required by circumstances.

C3.7.1.5 Quality Assurance

The Contractor shall institute a quality assurance system and provide experienced personnel as well as all the necessary transport, instruments and equipment, to ensure adequate supervision and positive control of the works at all times in order to comply with the requirements. The Contractor shall deliver to the Employer's Representative, for his consideration, quality assurance programmes prior to the Contractor's appointment of any suppliers or commencement of the Works. Failure to comply with these requirements shall be just cause for the Employer's Representative to order supervision of the Works without additional remuneration or for him to recommend termination to the Employer in terms of the Conditions of Contract.

The Contractor shall do at least the quality control tests at the frequencies specified in the Scope of Works. If the scale of the works, construction methods or any other circumstances dictates, the Contractor shall do more tests when required for quality assurance purposes.

The Contractor shall keep systematic records of the test results and all worksheets relating thereto. All test results obtained by the Contractor in the course of his process control of the Works shall be submitted to the Employer's Representative or his Representative prior to requesting inspection of the relevant portions of the Works. Any request for inspection shall be submitted on the prescribed forms.

The employer is at liberty to carry out such tests as he deems necessary to determine compliance with the contract requirements and will make available the results of all tests to the contractor.

Acceptance control, record keeping and payment certificates shall be done in accordance with the Employer's Representative's standard system except if the Employer's Representative approves that the Contractor's standard system may be

used. An index to the Employer's Representative's standard site administration forms is appended as Annexure A to section C3.7.

C3.7.1.6 Site Administration

- Daily Site Diary

  The daily site diary in accordance with the pro forma appended in section C3.8 shall be kept up to date by the Contractor's Site Representative and will be signed on a daily basis by the Employer's Representative's Representative.

- Information in Respect of Plant

  Information relating to plant on Site shall be recorded in the daily site diary. In addition, the Contractor shall deliver to the Employer's Representative, on a monthly basis, a detailed summary of construction plant kept on the Site, full particulars given for each day of the month. Distinction shall be made between plant in working order and plant out-of-order. Such inventory shall be submitted by the first day of the month following the month to be reported.

- Information in Respect of Employees

  Information relating to labour and management on Site shall be recorded in the daily site diary. In addition, the Contractor shall deliver to the Employer's Representative, on a monthly basis, a detailed summary of supervisory staff, labour employed (own and local labour) by category, and sub-contractors (both local and imported) for each day of the month. Such return shall be submitted by the first day of the month following the month to be reported.

- Rainfall Records

  Rainfall records for the period of construction shall be taken on Site and recorded in the daily site diary. The Contractor shall provide and install all the necessary equipment for accurately measuring the rainfall. The Contractor shall also provide, erect and maintain a security fence plus gate, padlock and keys at each measuring station, all at his own cost. The Employer's Representative or his Representative shall take and record the daily rainfall readings. The Contractor shall be permitted to attend these readings, in the company of the Employer's Representative's Representative. Access to the measuring gauge(s) shall at all times be under the Employer's Representative's control.

C3.7.1.7 Site Instructions

Site instructions by the Employer's Representative, addressed to the Contractor at his office on the Site, will be numbered consecutively and will be deemed to have been

received by the Contractor's Representative unless a break in the sequence of numbers is brought to the notice of the Employer's Representative in writing immediately.

C3.7.1.8 Site Meetings

The Contractor and his authorised representative shall attend all meetings held on the Site with the Employer and the professional team at dates and times to be determined by the Employer's Representative. Such meetings will be held to evaluate the progress of the Contract, and to discuss matters pertaining to the Contract which any of the parties represented may wish to raise. It is not the intention to discuss day-to-day technical matters at such meetings.

C3.7.1.9 Payment Certificates

Monthly Progress Payment Certificates shall be submitted to the Employer's Representative's Representative on Site not later than the 20th of each month (or on the last working day prior to this date) in order to allow for checking and reconciliation of all quantities, rates, extensions and additions in the certificate. Each progress payment certificate shall include work executed or reasonably expected to be executed up to the 30th day of the specific month. The Employer's Representative's Representative shall have a period of five (5) calendar days to review the draft certificate in collaboration with the Contractor. All quantity calculations and certificates submitted by the Contractor for checking shall be in accordance with the Employer's Representative's standard site administration forms and formats as referred to in C3.7.

Upon agreement by the Employer's Representative's Representative by not later than the 25th of each month, the certificate shall be submitted by the Contractor in a neat typed form in accordance with the prescribed format, and with the correct spelling, to the Employer's Representative by not later than the 28th of each month (or on the first working day thereafter), together with four additional copies, for certification.

Where dayworks have been instructed by the Employer's Representative, the Contractor shall submit the returns to the Employer's Representative for signature and approval within twenty-four (24) hours of the end of the working day on which the work was executed. Daywork returns shall be submitted on forms according to the Employer's Representative's standard format as referred to in Section C3.7. Failure to comply with the terms of this clause ill result in non-payment for such dayworks.

The tax invoice submitted with the certificate shall be dated the 1st of the month following the period certified. All costs for the preparation and submission of progress certificates shall be borne by the Contractor.

C3.7.1.10 Drawings, Operation and Maintenance Manuals

All information in the possession of the Contractor that is required by the Employer's Representative's Representative in order to complete the As-Built drawings and to

prepare a completion report for the Employer must be submitted to the Employer's Representative's Representative before a Certificate of Practical Completion will be issued for the Works. Similarly, the Contractor will be required to submit full details of all pipes, valves, meters and specials in a suitable loose bound format, including any special operational and maintenance procedures related thereto, for incorporation in the overall operation and maintenance manual for the Scheme prior to the issue of a Certificate of Completion for the Works.

Only figured dimensions on the Drawings may be used in the interpretation thereof, and the Drawings shall not be scaled unless the Contractor is so instructed by the Employer's Representative in writing. The Contractor shall notify the Employer's Representative in writing of any lack of information or conflict in the information on the Drawings. The Employer's Representative will upon written request provide any dimensions that may have been omitted from the Drawings.

C3.7.1.11 Environmental Management Plan

The Contractor shall comply with all the conditions of the Record of Decision and the Environmental Management Plan included in Section C4 – Site Information

Section C3.9

C3.9 TYPICAL STANDARD CONTRACT ADMINISTRATION FORMS

C3.9 TYPICAL STANDARD CONTRACT ADMINISTRATION FORMS

C3.9.1 DAILY SITE DIARY

CONTRACT: _____

_____

DATE: _____ / _____ / _____

WEATHER CONDITIONS:

Sunny / Cold	Windy	Rain am / pm	mm	OTHER

LABOUR			
	IMPORT	LOCAL	

PLANT	

DELIVERIES:
(Specify) _____

PROGRESS: _____

_____

INFORMATION /
DAWINGS

_____

REQUIRED: Information: _____

Drawings: _____

Site instructions issued: _____

DELAYS: Specify: _____

VISITORS: _____

GENERAL: _____

SIGNED:

_____ _____

EMPLOYER'S REPRESENTATIVE'S CONTRACTORS REPRESENTATIVE`s

C3.9.2 SITE INSTRUCTION

PROJECT: _____

CONTRACT NO: _____

CLIENT: _____

CONTRACTOR: _____

SITE INSTRUCTION NO: _____

SUBJECT: _____

_____

INSTRUCTION:	

ESTIMATED COST OF INSTRUCTION: _____

METHOD OF PAYMENT: 1. BILLED RATES
2. DAY WORKS
3. CONTRACTOR'S COST
4. NEW RATES
5. OTHER (SPECIFY) _____

_____ _____

EMPLOYER'S REPRESENTATIVE CONTRACTOR'S REPRESENTATIVE

_____ _____

DATE

C3.9.2 MONTHLY LABOUR REPORTING SCHEDULE

MONTHLY LABOUR REPORTING SCHEDULE

Month: …… Number of working days in specific month: ……

Imported Labour					
Occupation Category	Total Number Of Person Days	Person days Supplied by Adult men	Person days supplied by Adult Women	Person days supplied by youth men (<25)	Person days supplied by youth women (<25)
Clerical					
Labourer					
Managerial					
Semi-Skilled					
Skilled					
Supervisor					
Totals					

Local Labour					
Occupation Category	Total Number Of Person Days	Person days Supplied by Adult men	Person days supplied by Adult Women	Person days supplied by youth men (<25)	Person days supplied by youth women (<25)
Clerical					
Labourer					
Managerial					
Semi-Skilled					
Skilled					
Supervisor					
Totals					

Total amount paid to Local Labour	R

Section C4

Site Information

C4.1 Site Information

C4.1.1 LOCATION OF THE WORKS

The replacement work is scattered within Bultfontein town, Phahameng and Bultfotein Rural area.

C4.1.2 DESCRIPTION OF THE SITE AND ACCESS

Contractor to organise access in consultation with the municipality.

C4.1.1 GEOLOGICAL AND GEOTECHNICAL ASPECTS

Contractors must acquaint themselves of the conditions on site.

C4.1.2 EXISTING STRUCTURES

There is existing infrastructure present on the site.

Section C5

DRAWINGS

C5 TENDER DRAWINGS