

PART C3:

SCOPE OF WORK

PART C3: SCOPE OF WORKS
BID No: ALMT06/2023 - CONSTRUCTION OF PAVED ROAD FROM
NHLAZATSHE 3 TO ELUKWATINI (PHASE 2)

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Part C3: Scope of Work

3.1 DESCRIPTION OF WORKS

C3.1.1 EMPLOYERS OBJECTIVES

This project forms part of the Chief Albert Luthuli Municipality's overall development of infrastructure within the municipality's boundaries.

C3.1.2 OVERVIEW OF THE WORKS

The area of works is located within the larger formal town of Elukwatini. Elukwatini is located to the East of the town of Badplaas heading in easterly direction on the R38 thereafter on D481 until the town of Elukwatini. Turn right onto D2807. The entire developable area is approximately 1.5 hectares.

The existing road will be upgraded from gravel to paved standard, which will comprise 2 x 3,0m lanes and 0,5m gravel shoulders to shoulder breakpoint in fill conditions.

The cross drainage consists of pipe culverts, and concrete headwalls. Pipes diameters vary between 600mm to maximum of 1200mm diameter. The longitudinal drains will consist of lined/unlined "v" drains and trapezoidal drains. Gabions and stone pitching will be used as stormwater outlet controls.

The earthworks consists of cut and borrow to fill, cut to spoil, removal of unsuitable material, roadbed preparation and in-situ treatment of the roadbed. Cut material is variable, with poor quality materials spoiled at designated and approved spoil sites.

Labour-intensive works comprise the activities described in SANS 1921-5, Earthworks activities, which are to be performed by hand, and its associated specification data. Such works shall be constructed using local workers who are temporarily employed in terms of this Scope of Work.

C3.1.2.1 Extent of the Works

The work to be executed under this contract includes inter alia, for the supply of all prescribed materials, the plant and labour involved for the construction of the following, and not limited to the same for:

Road 1 (km 1+100 – km 2+100):

- The surfacing of approximately 5500m² of roadway, using 60mm heavy duty brick pavers.
- Importation of 150mm C4 crushed stone base course layer and a 150mm G6 sub base layer.
- Roadbed preparations/sub grade improvements
- Installation of mountable and barrier kerbing
- Construction of concrete/earth lines drains
- Construction of storm – water drainage and associated works
- Ducting and appurtenant works

Repairs and reconstruction of an existing causeway situated on Road 1 at Ch 1+110 and consists of 6 x 1200Ømm concrete precast culverts will be undertaken in under a separate contract. The causeway has been sized and a flood line design analysis has been undertaken and this structure has been designed to over top. The scope of works will consist of the following:

- The removal/demolition of the existing concrete slab and spoiling.
- The removal of the existing infill/insitu material below the slab and the importing of a G6 layer and spoiling of surplus material.

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- Roadbed preparations/sub grade improvements
- Installation of a concrete pavement in the form a reinforced slab.
- Construction of concrete headwalls and bollards.
- Installation of gabion protection works in the form of gabion retaining walls and reno mattresses.

C3.1.2.2 Location of the Works

The Nhlazatshe 3 to Elukwatini (Phase 2) road is located to the north-east of the town Carolina town within the Chief Albert Luthuli Local Municipality (CALLM) and falls under the jurisdiction of the Gert Sibande District Municipality (GSDM).

Co-ordinates Of The Existing Road

| Road Number | Approximate Length (m) | Start Co-ordinate | | End Co-ordinate | |
|-------------|------------------------|-------------------|-----------|-----------------|-----------|
| | | X | Y | X | Y |
| Road 1 | 1000m | 2883746.612 | 22226.357 | 2883568.215 | 21483.950 |

C3.1.3 Labour Intensive Construction

Labour Intensive Construction shall mean the economically efficient employment of as great a portion of labour as is technically feasible to produce a standard of construction as demanded by the Specifications with completion by the Due Completion Date, thus the effective substitution of labour for equipment.

Appropriate portions of the Works included in the Contract shall be executed using Labour Intensive Construction methods.

Except where the use of plant is essential in order, in the opinion of the Engineer, to meet the specified requirements by the Due Completion Date, the Contractor shall use only hand tools and equipment in the construction of those portion(s) of the Works that are required in terms of these Project Specifications to be constructed using Labour Intensive Construction methods.

These portions of the Works shall be constructed utilising only locally employed labour and/or the labour of local sub-contractors, supplemented to the extent necessary and unavoidable by the Contractors key personnel as provided for in sub-clause C3.1.3 unless otherwise instructed by the Engineer and in accordance with the further provisions of the relevant sections of Part C3 of the Scope of Works.

The portions of the Works to be executed using Labour Intensive Construction methods are:

- Clearing and grubbing of the Site;
- Excavation for structures up to 1,5 m deep;
- Bedding, selected fill, backfilling and compaction of all pipe trenches irrespective of depth, but assisted by mechanical compaction equipment in order to achieve the specified densities;
- Transportation and spoiling of all trench materials, where the disposal site is located within 20metres of source;
- Cleaning and tidying up of the Site;
- Dismantling and re-erection of fences;
- Construction of all brickworks required for structures;
- Mixing and placing of concrete work;

In respect of those portions of works which are not listed above, the construction methods adopted and plant utilised shall be at the discretion of the Contractor, provided always that the construction methods adopted and plant utilised by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

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C3.1.4 Sub-Contracting

- C3.1.4.1** Contractor shall appoint such authorities and/or specialist subcontractors and suppliers as may be designated or nominated by the Employer or the Engineer.
- C3.1.4.2** The Contractor shall sub-let to local small sub-contractors appropriate portions of the works that are designated in Clause C3.1.3 as being reserved for labour intensive construction methods.
- C3.1.4.3** As required by Clause 4.4.5 of the Conditions of Contract, the Contractor shall be responsible for all work carried out by sub-contractors (whether nominated by the Employer or selected by the Contractor) on his behalf. The Engineer will not liaise directly with any such sub-contractor, nor will he become involved in any problems and/or disputes related to payments, programming, workmanship, etc. unless provided for in the Conditions of Contract. Such problems and/or disputes shall remain the sole concern of the Contractor and his sub-contractors.
- C3.1.4.4** The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, and provided always that the Contractor has complied fully and in all respects with the provisions of the Contract pertaining to subletting to local sub-contractors or has utilised his best endeavours to comply therewith, authorise in writing that the Contractor may employ local residents with the sole intent of executing on-the-job training of such local residents to suitable levels of skill that will enable the Contractor to sub-let appropriate portions of the Works to such local residents.

Without limiting the generality of application of this sub-clause, circumstances, which may be considered by the Engineer to warrant such authorization, include:

- a) non-receipt of valid or acceptable tenders/quotations from local sub-contractors;
- b) serious default or failure of appointed local sub-contractors;

The Engineer shall not grant such authority in cases where it may reasonably be concluded on the available evidence that the invitation of further tenders/quotations in accordance with the terms of the Contract, is likely to result in the successful completion of the portions of the Works concerned by local sub-contractors.

Should the Contractor, after suitable due endeavour, be unable to identify local residents suitable for and desiring to train as sub-contractors for portions of the Works as specified in Clause 3.1.4.2, then the Contractor shall be permitted to undertake the Works in question with his own workforce as provided for in Clause 3.1.3 above.

The Engineer shall monitor progress achieved with subcontractor training, and successful completion of this training shall be subject to his approval or instruction. The Contractor shall tender rates for the training of sub-contractors and labour.

As specified in Clause C3.1.4, the Contractor shall approach the Labour Desk that is established for purposes of the Contract for assistance and advice regarding conditions of employment, minimum wages, disputes and disciplinary procedures in respect of local sub-contractors.

C3.1.5 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

C3.1.5.1 General

The Contractor is referred to SANS 1921: 2004 parts 1, 2, 3 and 5: Construction and Management Requirements for Works Contracts. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

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C3.1.5.2 Quality Assurance (QA) *(Read with SANS 1921 – 1: 2004 clause 4.4)*

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems, which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

C3.1.5.3 Management and disposal of water *(Read with SANS 1921 - 1: 2004 clause 4.6)*

The Contractor shall pay special attention to the management and disposal of water and stormwater on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

C3.1.5.4 Disposal of spoil or surplus material *(Read with SANS 1921 - 1: 2004 clause 4.10)*

The Contractor shall dispose all surplus and unsuitable material at a legal and registered landfill sites within the Municipal area. He shall be responsible for all arrangements necessary to obtain such legal and registered landfill sites from the Municipality.

C3.1.5.6 Testing *(Read with SANS 1921 – 1: 2004 clause 4.11)*

- **Process control**

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer.

The Contractor may establish his own laboratory on site or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

- **Acceptance control**

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

C3.1.5.7 Survey beacons *(Read with SANS 1921 - 1 : 2004 clause 4.15)*

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as benchmarks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

C3.1.5.8 Existing Services *(Read with SANS 1921 - 1 : 2004 clause 4.17)*

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.

The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services

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shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

C3.1.6 Programme to be supplied by the Contractor

The Contractor's programme shall be essentially in accordance with the overall requirements of the project.

The programme shall not be in the form of a bar chart only but shall show clearly the anticipated quantities of work to be performed each month, together with the manner in which the listed plant and other resources are to be used, as well as the anticipated earnings for the various sections of work.

A network-based programme according to the precedence method shall be required by the Engineer. The programme shall be updated monthly in accordance with the progress made by the Contractor. The updated programme shall be submitted to the Engineer at least two working days prior to monthly meetings.

Failure to comply with these requirements will entitle the Engineer to use a programme based on his own assumptions for the purpose of evaluating claims for extension of time or additional payments.

If, during the progress of the work, the quantities of work performed per month fall below those shown on the programme, or if the sequence of operations is altered or if the programme is deviated from in any other way, the Contractor shall, within one week of having been notified by the Engineer, submit a revised programme and network.

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 of completion as defined in Clause 5.7 of the General Conditions of Contract 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 Engineer to take steps as provided in Clause 9.2 of the General Conditions of Contract.

The approval by the engineer of any programme shall have no contractual significance other than the Engineer will be satisfied if the work is carried out according to such programme and that the Contract undertakes to carry out the work in accordance with the programme. It shall not limit the right to the Engineer to instruct the Contractor to vary the programme if required by circumstances. The Contractor is also referred to Clause 5.6 of the General Conditions of Contract when drawing up his programme.

Progress in advance of the programme on certain portions or phases of the Works shall not be considered adequate reason for poor progress on another portion or phase.

C3.1.7 Overhaul

No payment will be made for overhaul on this contract unless provision is made therefore in specific items.

C3.1.8 Site Facilities Available

C3.1.8.1 Location of Site and Depot

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and labourers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor. The Contractor must obtain written permission from the landowner and subsequently from the Engineer for the establishment of his camp.

(a) Contractor's Camp Site/Store Yard

Any clearing of the site that is necessary and the making good after de-establishment will be the responsibility of the Contractor.

In addition to the requirements of SANS 1200A clause 8.3.2.2 the following conditions shall also apply:-

(i) None of the existing roads shall be damaged in any way.

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- (ii) No waterborne sewerage facilities or potable water connection are available on the site. The Contractor shall make his own arrangements in this regard.
- (iii) No electrical facilities exist on site.
- (iv) It shall be the responsibility of the Contractor to make good any damage caused to the campsite area or any improvements on it, including services, and for reinstating it to its former condition when vacated. The standard of reinstatement must be to the satisfaction of the Engineer or the owner. Particular attention should be directed to these requirements and written clearances from the relevant Departments or other owners will be required.

C3.1.8.2 Source of Water Supply

The Contractor shall be responsible under the Contract for the supply and distribution at his cost of all water that he may require for purposes of constructing the Works. Accordingly, the Contractor shall pay all connection fees and consumption charges, and at his cost provide all connections, consumption meters, pipe work, storage tanks, transport and other items associated with the supply of water for the Works.

The Contractor shall, subject to the approval of the Engineer, make any necessary arrangements with the relevant authority for the connection(s), and shall provide in his tender for the payment of all charges and costs that are associated with making water available for purposes of constructing the Works.

C3.1.8.3 Source of Power Supply

The Contractor shall be responsible under the Contract for the supply and distribution at his cost of all electricity that he may require for purposes of constructing the Works. Accordingly, the Contractor shall pay all connection and consumption charges, and at his cost provide all connections, transformers, consumption meters, cables, distribution boards and other items that are associated with the supply of electricity for construction of the Works.

The Contractor shall, subject to the approval of the Engineer, make any necessary arrangements with the relevant authority for the connection(s), and shall provide in his tender for the payment of all charges and costs that are associated with making electricity available for purposes of constructing the Works. The distribution of electricity shall be in accordance with the applicable bylaws and regulations of the supply authority.

C3.1.8.4 Accommodation of Employees

No employees except for security guards will be allowed to sleep or be accommodated on the site.

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his campsite and the site of the works for the use of his employees. Chemical toilets only will be allowed where temporary facilities have to be provided.

C3.1.9 Features Requiring Special Attention

C3.1.9.1 Built-up Areas

The Contractor's attention is drawn to the fact that the Works will be constructed within built-up areas. The Contractor shall exercise all necessary precautions and take all necessary steps to ensure the safety and convenience of the public. In addition, the Contractor shall provide access for traffic over and through the works, and for residents to their places of abode, all as described in the Specifications. Allowance must be made by the Contractor in his programming for delays resulting from the aforesaid.

The Contractor shall give residents a minimum of 72 hours written notice of his intent to close access to residential stands. The Contractor shall acquire written confirmation from all owners that they are aware of any intended closures of access. No traffic access to a residential stand shall be closed for longer than 48 hours.

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C3.1.9.3 Protection of Buildings and Structures

The Contractor shall give all residents or other parties owning a building or structure within an appropriate radius (not less than 100m) from any point of blasting, a minimum of 48 hours notice of his intent to execute any blasting work.

The Contractor shall note all aspects relevant to the condition of the affected buildings and/or structures prior to blasting, and shall acquire the signature of the owners/occupants agreeing to such conditions.

Subsequent to blasting, both the Contractor and the owners/occupants shall sign the form confirming the condition of the buildings and/or structures. In the event of damage to existing buildings and/or structures as a result of blasting, remedial work shall be done to the satisfaction of the owners/occupants at the Contractor's expense.

Compliance with this clause will not relieve the Contractor of any of his responsibilities in terms of the Contract.

C3.1.9.4 Care of the Site

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

C3.1.9.5 Control of Water

The Contractor shall at all times and in all respects be responsible for the handling of stormwater from higher-laying areas above the Works, and for the handling of any sub-surface water that may affect the Works. No separate payment shall be made in this regard, as all costs related thereto shall be deemed to be included in the rates tendered for the various items of work that are included in the Schedule of Quantities.

C3.1.10 Management of the environment

The Contractor shall pay special attention to the following:

(a) Natural Vegetation

The Contractor shall confine his operation to as small an area of the site as may be practical for the purpose of constructing the works.

Only those trees and shrubs directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

(b) Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires, which may have been caused by him or his employees.

C3.1.11 Community Liaison and Community Relations

In all dealings with nearby communities and beneficiaries of the project, and in all dealings with workers employed from within such communities, the Contractor shall take due cognisance of the character, culture and circumstances of the specific community and/or any group of beneficiaries, and shall at all times use his best endeavours to avoid the development of disputes and rather to foster a spirit of co-operation and harmony towards the project.

The Contractor shall at all times, keep the Engineer fully informed regarding all matters affecting or negotiated between the Contractor and the community and/or beneficiaries, and he shall attend all liaison

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meetings as may be arranged by the Engineer and/or the Employer. All matters concerning the community and/or beneficiaries shall be discussed and where possible, resolved at such meetings.

Where any resolution during such negotiations or at such meetings shall be contrary to the terms and provisions of the Contract, the Contractor shall not give effect thereto without a prior written instruction from the Engineer. Where the Contractor is of the opinion that any instruction of the Engineer issued in terms of this clause will result in the incurring of additional costs which were not provided for in his tendered rates and prices and/or that a delay in the progress of the Works will result, he shall be entitled to submit a claim in terms of Clause 10 of the Conditions of Contract, provided always that the period of twenty-eight (28) days referred to in Clause 10 shall be reduced to three (3) normal working days in respect of all claims submitted in terms of this clause.

C3.1.12 Workmanship and Quality Control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and of the Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced engineers, foremen, surveyors, materials technicians, other technicians, technical staff and the user department, together with all transport, instruments and equipment to ensure adequate supervision and positive control of the quality of the Works at all stages of the Contract.

The cost of the Contractor's supervision and process control, including all testing carried out by the Contractor, will be deemed to be included in the rates tendered for the various items of work. The Contractor's attention is drawn to the provisions of the various Standardised Specifications regarding the minimum frequency of process control testing that is to be executed. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control of the quality of the Works at all times.

Upon completion and submission of each portion of the Works to the Engineer for examination, the Contractor shall furnish the Engineer with the results of relevant tests, measurements and levels, thereby indicating compliance with the Specifications.

The Engineer will not examine or inspect any portion of work submitted for approval unless the request for inspection and approval is accompanied by relevant tests, measurements and levels indicating compliance.

C3.1.13 Samples

Materials or work that do not conform to the approved samples, submitted in terms of Clause 7.4 of the Conditions of Contract, will be rejected. The Engineer reserves the right to submit samples for testing to ensure that the material represented by the samples meet the specification requirements.

C3.1.14 Notices, Signs, Barricades and Advertisements

Notices, signs and barricades (required in terms of Clause 8 of the Conditions of Contract) as well as advertisements may only be erected where approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

The Engineer shall have the right to have any sign, notice or advertisement moved to another location, or to have it removed from the Site of the Works, should it in any way prove to be unsatisfactory, inconvenient or dangerous to the general public.

C3.1.15 Requirements for Accommodation of Traffic

General

The Contractor will be responsible for the safe and easy passage of public traffic past and on sections of roads of which he has occupation or where work has to be done near traffic.

Accommodation of traffic, where applicable shall comply with SANS 1921-2: 2004: Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor shall obtain this specification from Standards South Africa if accommodation of traffic will be involved on any part of the construction works.

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Basic Requirements

The travelling public shall have the right of way on public roads, and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective and that courtesy is extended to the public at all times.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

The Contractor may not commence constructional activities affecting existing roads before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations.

The Contractor shall provide and grant access to persons whose properties fall within or adjoin the area in which he is working.

C3.1.16 Open Trenches

Trenches may not be left open during the builder's holidays, and shall be safeguarded at all times from danger to the public. Safe trench-crossings shall be provided at all intersections with accesses to properties and with public roads and paths. The length of trench left open at any one time may be restricted by the Engineer, should he consider such restriction to be in the interest of public safety.

C3.1.17 Statutory Regulations

The statutory requirement of the Occupational Health and Safety Act, Act 85 of 1993 (referred to as the Act below), and all regulations promulgated there under as well as the other relevant acts must be adhered to by the Contractor, with specific reference to the safety of all employees and the public, irrespective of whether such employees are employed by the Contractor or by his subcontractors (including local subcontractors). The Contractor, in entering into this Contract, hereby agrees with the Employer in terms of Section 37(2) of the Act, that the Contractor as an employer in its own right and in its capacity as Contractor for the execution of the Works, shall have certain obligations and that the following arrangement shall apply between the Contractor and the Employer to ensure compliance by the Contractor with the provisions of the Act, namely:-

- (a) The Contractor undertakes to acquaint the appropriate officials and the employees of the Contractor with all relevant provisions of the Act, and the regulations promulgated in terms of the Act;
- (b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and regulations will be fully complied with; and
- (c) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and regulations, and expressly absolves the Employer and the Engineer from being obliged to comply with any of the aforesaid duties, obligations and prohibitions in respect of the Works; and
- (d) The Contractor shall be obliged to report forthwith to the Employer and the Engineer any investigation, complaint, or criminal charge which may arise as a consequence of the provisions of the Act and regulations pursuant to work performed on behalf of the Employer, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.
- (e) The Contractor shall sign the agreement bound into Section C1.2 of this document.

The Contractor shall comply with all the conditions of the Record of Decision in terms of Section 22(3) of the Environmental Conservation Act, 1989.

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A time-related and a fixed-charge item have been provided in Schedule A of the Schedule of Quantities. The contractor shall allow for all obligations imposed by the Environmental Management Plan including the appointment of an environmental manager/control officer.

C3.1.18 Safety

“Pursuant to the provisions of the Conditions of Contract, and without in any way limiting the Contractor’s obligations there under, the Contractor shall at his own expense (except only where specific provision (if any) is made in the contract for the reimbursement to the Contractor in respect of particular items), provide the following:

- (a) The Principal Contractor must do a Risk assessment and compile an OHS Plan to be evaluated and approved by the Safety Agent prior to commencement of Construction.
- (b) The Contractor must ensure that regular safety meetings be held, and that the minutes of such meetings be kept in a Safety File, which must be available on site at all, times.
- (c) Provide to its Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational health and Safety Act, 1993 (Act No 85 of 1993) as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;
- (d) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;
- (e) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times;
- (f) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works;
- (g) Full compliance with all other requirements pertaining to safety as may be specified in the Contract (Also refer to Notice to Tenderers).

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractor’s compliance with the requirements of the Act.

For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer’s and/or Engineer’s representative may reasonably require. Where any such investigations reveal, or where it comes to the Engineer’s attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of clause 5.11 of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of penalties for late completion in accordance with the provisions of clause 5.13.1 of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of subclause 9.2.1 of the Conditions of Contract and for the Employer to cancel the Contract in accordance with the further provisions of the said clause 9.2.”

In addition to all above safety related requirements the Contractor shall take cognisance of the requirements of the construction regulations and OHS Specifications bound in C3.5.2 of this document.

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C3.1.19 Safety Officer

OHS must be provided.

The Contractor is required to ensure compliance with the Occupational Health and Safety Act (Act 85 of 1993) and its regulations, in particular the Construction Regulations, 2014, to appoint a Health and Safety Officer for the works.

The safety officer shall have a sound knowledge of the Occupational health and Safety Act. He shall preferably have completed the Safety Management Training Course (SAMTRAC) presented by NOSA. The Contractor shall submit details of the proposed

C3.1.20 Source of Material/Borrow pit

The contractor will be held responsible for locating legal, licenced and approved sources of all materials complying with the relevant minimum requirements to be used in this contract. No separate payment shall be made for this, as all costs related thereto shall be deemed to be covered by the tendered rates.

Where possible materials manufactured or produced locally shall be procured to promote local enterprise.

C3.1.21 Photographic Record

Prior to the commencement of the work, and during the contract period, a photographic record shall be made of all existing stands and structures to be effected by the project, and forwarded to the Engineer prior to the authorisation of the first progress payment.

A payment item is included in the Schedule of Quantities to cover the Contractor's cost for compliance with the above requirements.

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C3.2 ENGINEERING

C3.2.1 Design

- The Employer is responsible for the design of the permanent Works as reflected in the Contract Documents unless otherwise stated.
- The Contractor is responsible for the design of the temporary Works and their compatibility with the permanent Works
- The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as – built drawings

C3.2.2 Employer's Design

The Employer has designed the permanent works included in this contract. The detail of the works is indicated on the drawings and in the specifications. The Tenderer may submit alternative offers for designs prepared by himself subject to the conditions specified in clause 05 of the Standard Specifications.

C3.2.3 Drawings

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

All information in possession of the Contractor, required by the Engineer and/or the Engineer's Representative to complete the as-built/record drawings, must be submitted to the Engineer's Representative before a Certificate of Completion will be issued.

C2.3.1.1 Additional construction drawings will, in terms of Clause 5.9 of the General Conditions of Contract (2015), be issued to the Contractor by the Engineer/Employer on the commencement date and from time to time as required."

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C3.3 PROCUREMENT

C3.3.2 Restriction of the Utilisation of Personnel in the Permanent Employment of the Contractor

The Contractor shall limit the utilisation of his permanently employed personnel to that of key personnel only on the Works, as defined below, and shall execute and complete the Works utilising a temporary workforce employed directly by the Contractor and/or by his sub-contractors, using the assistance of the labour desk that will be established for the project in consultation with the various communities that are established in proximity to the Works or which will be allocated within the development.

Without derogating from the Contractor's obligations to complete the Works within the specified time for completion in terms of clause 1.1.1.14 of GCC 2015, the numbers in each category of the Contractor's key personnel, as stated by the Contractor in Part T2 of this document, will be strictly controlled during the contract period and any increase in numbers will be subject to the prior approval of the Employer.

"Key personnel" means all contracts managers, site agents, site clerks, materials and survey technicians, quantity surveyors, trainers, supervisors, foremen, skilled plant operators, welders, shutter hands and the like, and all other personnel in the permanent employ of the Contractor or his sub-contractors who possess special skills, and/or who play key roles within the Contractor's or his subcontractor's operations.

The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor, and where he deems the circumstances so warrant, authorise in writing that the Contractor may utilise in the execution of the Works, workers not being his key personnel but who are in his permanent employ.

Without limiting the generality of application of this sub-clause, circumstances which may be considered by the Engineer to warrant authorisation of the use of the Contractor's permanent employees other than key personnel, include:

- (a) The unavailability from local sources of sufficient numbers of temporary workers and/or sub-contractors to execute the Works provided always that the Contractor has satisfied the Engineer that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient temporary workers and sub-contractors from local sources as contemplated above.
- (b) The unavailability within the temporary worker pool and/or from subcontractor sources available to the Contractor in terms of the Contract, of sufficient skills necessary to execute the Works or specific portions thereof, in situations where the completion period allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of suitable training as contemplated in the Contract;
- (c) Any other circumstances which the Engineer may deem as constituting a warrant.

C3.3.3 Provision of Temporary Workforce for the Contract

The Contractor shall employ labour from the local community through the CLO except for approved key staff in the permanent employ of the Contractor, to the maximum extent that is compatible with the requirements of Clause 4.11 of the General Conditions of Contract 2015.

Although the Contractor shall adhere to the statutory minimum wage rates, he is however at liberty to negotiate additional incentive payments based on performance.

The Occupational Health and Safety Act must be adhered to with reference to the safety of any employee employed by the Contractor.

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The successful tenderer shall liaise with the Ward Councillor/Ward Committee whereby the Ward Councillor shall provide to the Contractor the following if necessary:

a) A Community Liaison Officer (CLO) for liaison with the recipient community for labour recruitment

The CLO shall attend all site and other meetings concerning the project.

- Only one CLO shall be appointed per project. If the project spans over more than one Ward, the relevant Ward Councillors shall agree on one CLO to be appointed by the Contractor. Should no agreement be found as envisaged, the relevant Project Manager together with the Engineer, will interview prospective appointees and in their discretion appoint such CLO.
- Notwithstanding the above, if the vastness of the project requires the use of more than one CLO, this will be permitted provided that the total monthly sum paid to all CLO's shall not exceed the amount allowed for in paragraph bill of quantities.
- Should the Contractor experience any difficulties with the community, these difficulties shall immediately be brought to the attention of the Municipality/Project Manager who shall arrange a meeting with the relevant Ward Councillor(s) and the CLO to resolve such difficulties.

The main Contractor shall ensure that any Sub-Contractor he may appoint shall adhere to these conditions but also subject to the provisos applicable to the duration of such sub-contract.

Should any of the above conditions be less favourable than any Bargaining Council Agreement or Act applicable to the Contractor, the more favourable condition will apply.

A contract of employment or subcontract should be signed between the Contractor and each of his employees or sub-contractors, as the case may be. Likewise contracts of employment must be entered into between each such sub-contractor, and each of the specific subcontractor's employees. Employment and subcontract agreements shall make clear reference to at least the following conditions.

- The minimum agreed wage rate per hour in respect of labourers;
- The agreed pay rate per unit of production where applicable;
- UIF and WCA payments;
- Minimum working hours per day;
- Start and end times of a daily shift;
- Lunch break times;
- Company policy regarding:
 - Rain time
 - Sickness and absenteeism
 - Disciplinary matters
 - Grievances
- Method and frequency of payment;
- Work clothes and safety equipment to be issued
- Labour Desk

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

The following specifications shall apply for the construction of the Works.

C3.4.1.1 Standard Specifications

The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 Edition) shall apply for the construction of the Works.

The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications.

The term "Engineer" must be replaced by "Employer's Agent" wherever it appears in these standardized specifications.

C3.4.1.2 National and International Standards

The SANS or BS Specifications and Codes of Practice shall apply for the construction of the Works.

Wherever any reference is made to the South African National Standards (SANS) and the British Standards Specification (BSS) in either these Bill of Quantities or the Specification of Materials and Methods to be used (OOG-001E), this reference shall be deemed to read "SANS or equivalent standard" and BS or equivalent standard" respectively.

C3.4.1.3 Particular Specifications

The following particular specifications shall apply for the construction of the Works.

Various other specifications specified in the COLTO Standard Specifications or the Project Specifications.

Latest Sabita Manual, Manual 25 entitled "*Quality Management in the Handling and Transport of Bituminous Binders*".

TG2 Second Edition May 2009, "*Technical Guideline for Bitumen Stabilised Materials (BSM)*" issued by the Asphalt Academy.

SANS 1058/2012, *Concrete Paving Blocks* – specifications for interlocking paving blocks.

C3.4.1.4 Variations and Additions to the COLTO 1998 Edition Standardized Specifications

The references to the General Conditions of Contract appearing in the COLTO Standard Specifications refer to the COLTO General Conditions of Contract which is superseded in this contract by the General Conditions of Contract for Construction Works 2015. The corresponding clause in the latter document pertaining to the reference in the COLTO Standard Specifications is listed in the table below.

| Clause No. in the Standard Specifications | Clause No. in COLTO GCC 1998 | Equivalent Clause No. in GCC 2015 |
|--|-------------------------------------|--|
| 1202 | 15 | 5.6.1 |
| 1206 | 14 | Deleted |
| 1209 | 52 | 6.10.1 |
| 1210 | 54 | 5.14.1 |

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| Clause No. in the Standard Specifications | Clause No. in COLTO GCC 1998 | Equivalent Clause No. in GCC 2015 |
|---|------------------------------|-----------------------------------|
| 1212(1) | 49 | 6.8 |
| 1215 | 45 | 5.5.1 |
| 1217 | 35 | 8.2.1 |
| 1303 | 49 | 6.8 |
| 1303 | 53 | 6.11.1 |
| 1303 | 12 | 5.3.1 |
| 1303 | 45 | 5.5.1 |
| 1403 | 40(1) | 6.4.1 |
| 1505 | 40 | 6.4.1 |
| 31.03 | 40 | 6.4.1 |
| 3204(b) | 40 | 6.4.1 |
| 3303(b) | 2 | 3.2.1 |
| 5803(c) | 40 | 6.4.1 |
| 5805(d) | 40 | 6.4.1 |
| 6103(c) | 40 | 6.4.1 |
| Item 83.03 | 22 | 5.15.1 |
| ALL SECTIONS | 48 | 6.6 |

Variations and additions to the COLTO 1998 Standardized Specifications are listed in section C3.4.1.1 of this document.

C3.4.1.5 Amendments to the COLTO 1998 Edition Standardized Specifications

There are no amendments to the Standard Specifications as issued by the Committee of Land Transport Officials (COLTO).

PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

This part of the project specifications deals with matters relating to the standard specifications. Where reference is made in the standard specifications to the project specifications this part shall also contain the relevant information e.g. the requirements where a choice of materials or construction methods are provided for the standard specifications.

In certain clauses, the Standardized Specifications allow a choice to be specified in the Specification Data between alternative material or methods of construction, and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the Specification Data. It also contains such additional specifications as are required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix "B" followed by a number corresponding to the number of the relevant clause or payment item in the Standardized Specifications. New clauses and payment items not covered by clauses or payment items in the Standardized Specifications if included here are also designated "B", followed by a number. The new numbers follow on the last clause or item number used in the relevant section of the Standardized Specifications.

Clauses and pay items referring to labor intensive methods are prefixed by "L" in the project specifications.

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C3.4.2 Variations and Additions to Standard and Particular Specifications

The following variations and additions to the Standard and Particular Specifications will be applicable to this Contract.

The various documents listed in section C3.4.1 shall be treated as mutually explanatory. However, should any requirement of section C3.4.2 conflict with any requirement of the Standardised Specifications or with any requirement of the Particular Specifications, then the requirement of section C3.4.2 shall prevail.

EPWP labour intensive specification

C3.4.3.1 Labour intensive competencies of supervisory and management staff

Contractors having a CIDB contractor grading designation of 4CE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2006, are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a contractor grading designation of 1CE, 2CE, 3CE and 4CE shall have personally completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for the NQF level 2. All other site supervisory staff in the employ of such contractors must have completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

| Personnel | NQF level | Unit standard titles | Skills programme description |
|--|-----------|---|---|
| Team leader / supervisor | 2 | Apply Labour Intensive Construction Systems and Techniques to Work Activities | This unit standard must be completed, and Any one of these 3 unit standards |
| | | Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage | |
| | | Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services | |
| | | Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures | |
| Foreman/ supervisor | 4 | Implement labour Intensive Construction Systems and Techniques | This unit standard must be completed, and Any one of these 3 unit standards |
| | | Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage | |
| | | Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services | |
| | | Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures | |
| Site Agent / Manager (i.e. the contractor's most senior representative that is resident on the site) | 5 | Manage Labour Intensive Construction Processes | Skills Programme against this single unit standard |

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C3.4.3.2 Employment of unskilled and semi-skilled workers in labour-intensive works

C3.4.3.2.1 Requirements for the sourcing and engagement of labour

1. Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.
2. The rate of pay set for the EPWP obtained from the Municipality for the use of local labour is set at a minimum of R200,00 per day.
3. Tasks established by the contractor must be such that:
 - a) the average worker completes 5 tasks per week in 40 hours or less; and,
 - b) the weakest worker completes 5 tasks per week in 55 hours or less.
4. The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of C3.4.3.2.1.3.
5. The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:
 - a) where the head of the household has less than a primary school education;
 - b) that has less than one full time person earning an income;
 - c) where subsistence agriculture is the source of income.
 - d) those who are not in receipt of any social security pension income
6. The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:
 - a) 60 % women;
 - b) 20% youth who are between the ages of 18 and 25; and
 - c) 2% on persons with disabilities.

C3.4.3.3 Specific provisions pertaining to SANS 1914-5

1. Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

2. Contract participation goals

- Is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

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C3.4.3.4 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

C3.4.3.5 Variations to SANS 1914-5

1. The definition for net amount shall be amended as follows:

Financial value of the contract upon completion, exclusive of any value added tax or sales tax, which the law requires the employer to pay the contractor.

2. The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

C3.4.3.6 Training of targeted labour

1. The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

2. The cost of the formal training of targeted labour will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

3. A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works – Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za Tel: 083 677 4026.

4. The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.

5. The contractor shall do nothing to dissuade targeted labour from participating in training programmes.

6. An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of C3.4.3.6.2 above.

7. Proof of compliance with the requirements of items above must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

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(A) SECTION 1100: DEFINITIONS AND TERMS

B1155 WORK IN RESTRICTED AREAS

Add the following:

“Any omission of payitems from the pricing schedule with regard to additional or extra over payment for work in restricted areas should be regarded as deliberate and any additional cost incurred shall be included in the bulk rates tendered. (Refer also to clause B1209(g))”

B1159 AGGREGATE SIZE

Where reference is made in this specification or the standard specifications to aggregate size, nominal aggregate size or maximum aggregate size, the aggregate size as listed shall be replaced with the new corresponding aggregate size as indicated in the following table:

| Aggregate size | New aggregate size |
|----------------|--------------------|
| 26,5 | 28 |
| 19 | 20 |
| 13,2 | 14 |
| 9,5 | 10 |
| 6,7 | 7 |
| 4,75 | 5 |
| 2,36 | 2 |
| 1,18 | 1 |

(B) SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS

B1222 USE OF EXPLOSIVES

Add the following sub-clauses:

“h) Definitions

(i) **“Specified excavation or Payment line”** means the excavation profile given on the Drawings or determined by the engineer for the Works, within which no unexcavated or loose material shall occur after the excavation is complete except as allowed within the specified tolerances. It is also the line to which payment for excavation will be made.

(ii) **“Pre-splitting”** comprises drilling a line of closely spaced parallel holes of appropriate diameter, spaced not more than ten times the hole diameter or 600mm, whichever is the smaller and charging the holes with an appropriate amount (decoupled if necessary) and type of explosive to shear the rock, forming a surface along the line of drill holes.

Either all the holes in a presplit line shall be drilled, charged and detonated simultaneously prior to drilling the production holes for the excavation adjacent to the presplit line, or pre-splitting shall be accomplished by delaying detonation in the production holes to allow the presplit holes to fire first. The first line of production holes next to the presplit face shall be lightly charged to ensure that the presplit face is not

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damaged when the charges in the production holes are detonated.

(iii) **“Smooth blasting”** comprises the drilling of a number of closely spaced parallel holes along the required excavation surface, with a suitable burden/spacing ratio, loading all the holes lightly with a uniform continuous charge of small diameter explosive and detonating all these charges simultaneously, after the detonation of the main production blast.

(iv) **“Line Drilling”** comprises drilling a line of holes of appropriate diameter spaced not more than twice the hole diameter to form a surface of weakness along which the rock will break. Blasting is not permitted in the line drilled holes, and the first line of production holes next to the line drilled holes shall be lightly charged to avoid damage to the line drilled break surface.

(v) **“Cushion Blasting”** comprises the separate removal of a protective zone of rock which has been purposely left within the specified limits of excavation for flat areas and shallow slopes. Drilling for cushion blasting shall consist of a regular pattern of holes at appropriate spacings and angles and to accurate depths.

The holes shall be lightly charged and detonated in relays to lift the rock progressively to form the final excavated surface without shattering the surrounding rock.

(vi) **“Overbreak”** means any excavation area which extends beyond the payment line, irrespective of the reason for such excavation.

i) General

A copy of all certificates issued to workmen to permit them to undertake blasting, and to the contractor to cover the purchasing, storage and transport of explosives shall be handed to the engineer before any blasting work is undertaken.

The contractor shall submit to the engineer at least 28 days before the commencement of any excavation work, full details of his proposed methods and sequence of excavation and programme for the use of explosives.

Within 2 weeks of receipt of the proposals, the engineer shall indicate acceptance in part or in whole, in writing, to the contractor. The engineer reserves the right to reject the proposals if, in his opinion, undesirable damage to permanent rock surfaces or existing structures will result from carrying out the blasting as proposed. If acceptance is withheld, new proposals in whole or in part shall be submitted. No drilling or blasting shall be carried out in areas for which the proposals have not been accepted by the engineer, and any changes to the accepted methods shall be subject to the engineer's approval.

The work shall be programmed so as to minimise blasting adjacent to previously constructed sections of the Works.

Where blasting is necessary every precaution including the use of blast mats, timber boarding or other means shall be exercised to protect the Works and persons, animals and property in the vicinity of the Site. The contractor shall accept responsibility for all injury or damage occasioned by any blasting operations and shall make good such damage without any additional payment.

The contractor shall, in particular, note the requirement that he must limit to the maximum extent practicable the spillage of material from surface excavations, whether by blasting or other means. To this end the contractor shall take all necessary precautions including, if necessary, covering the rock prior to blasting with sufficient loose material to prevent the blasted material being thrown. If, however, during the course of excavation on a hillside, the engineer is of the opinion that insufficient precautions are being taken to minimise the spillage of material, he may instruct the contractor to adopt further measures to reduce the spillage. No separate payment will be made for any such measures required.

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Each separate blast shall be designed in accordance with modern blasting practice to break out the rock with the minimum explosive force. Full details of each blast shall be submitted to the engineer for scrutiny not later than 24 hours prior to the commencement of drilling for that blast, unless such blast is unchanged from the previous one. The details shall include the location, depth and area of blast holes, the type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast, the sequence and pattern of delays, the maximum expected level of shockwaves on adjacent structures, and the description and purpose of any special methods to be adopted by the contractor.

The consent by the engineer to any blasting proposals shall not relieve the contractor of his responsibilities under the Contract and the law.

Should the contractor excavate to dimensions in excess of those specified or instructed by the engineer, whether to remove damaged material or for reasons of safety or for his own convenience, he shall at his own expense and when required by the engineer, fill in the excess excavation with concrete or sprayed concrete of approved quality or with other material approved by the engineer, or carry out additional trimming to the satisfaction of the engineer.

The contractor shall provide the engineer each day with a copy of the record for the previous day's excavations. Where applicable the following data shall be recorded for each working area together with other such data as the engineer may request:

- location of the excavation and position within the excavation,
- drilling pattern,
- type and amount of explosive used, including blasting pattern and delays used,
- details of rock support,
- surface area of classification of labour and plant,
- number and classification of labour and plant,
- unusual occurrences, rock falls, unstable or soft ground and inflows of water,
- progress, delays and reasons for delays,
- name and permit number of blaster,
- date, and
- distance of blasts to structures and existing services.

j) Quality of Excavated Surface

Unless otherwise instructed by the engineer all blasting work shall be carried out using controlled blasting techniques to minimise any damage to the final profile.

Use shall be made of approved special explosives and/or blasting techniques which will minimise blasting induced fractures, or disturbance, on the rock faces outside the excavation line so preserving the rock in the soundest possible condition. No separate payment will be made for cushion blasting. The cost of using cushion blasting techniques shall be included in the rates for excavation.

The surface after blasting shall exhibit a regular fracture plane between barrels without back break and with half barrels visible over the major portion of the surface. The surface shall be scaled down of all loose and hollow sounding rock to leave a solid, intact surface. Light charges shall be used for enlarging or correcting the excavated profile and also for excavating trenches.

If in the opinion of the engineer, the methods of blasting are at any time causing excessive or undesirable disturbance of the rock mass surrounding the excavated space, he may order the contractor to change his methods of blasting and/or carry out blasting trials until the desired results are achieved. No additional payment shall be made for any change or further trials ordered by the engineer or any delays resulting there from.

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The spacing of holes and explosive charges shall be adjusted so that a minimum of oversize material is produced (a maximum particle size of 600mm). The engineer shall have the right to order the contractor to adjust his blasting pattern and/or carry out secondary blasting at his own cost, should he be of the opinion that the contractor is not taking sufficient care to produce rock of the required size.

k) Monitoring of Blasts

The contractor shall supply and operate an approved tri-axial particle velocity meter equipped with a permanent paper trace output, which shall be used as and where directed by the engineer to monitor blasting work.

The paper trace output records shall show the time and location of each blast, the type and amount of explosive used, together with any other relevant data.

l) Notification of Blasts

Prior to any blasting, 7 days' notice is to be given to the engineer, relevant authorities and the media. The contractor shall further notify the engineer of the intention to blast at least 24 hours before that operation is carried out. The notification shall show the location of and the intended time of each blast and the name of the licensed blaster and shift foreman responsible.

The contractor shall distribute written notification to all organisations on site, and relevant authorities, 24 hours prior to undertaking blasting. Any delay or postponement of any blasts shall be notified to all organisations immediately. The firing of explosives shall be restricted as detailed in Item B1222(r) of this specification.

m) Blasting near Structures

The amount of explosives that may be detonated shall not result in a ground vibration with a peak particle velocity in excess of 25mm/sec at the nearest point of any part of Permanent Works. Where circumstances dictate, such as when blasting near to partially cured concrete, the peak particle velocity permitted may be reduced by the engineer.

Blasting shall not be carried out within 10m of any Works, unless otherwise agreed to in writing by the engineer.

n) Controlled Blasting

Controlled blasting methods shall comprise pre-splitting, smooth blasting, line drilling or cushion blasting techniques.

All charges shall be accurately made up and inserted into the holes at the correct spacing, and all holes shall be correctly stemmed and connected in the correct sequence, with detonators being correctly delayed.

If at any time the methods of drilling and blasting do not produce the desired results of a uniform profile and shear face without overbreak, all within the tolerances specified, the contractor shall be required to undertake tests as until a technique is arrived at that will produce the desired results.

Controlled blasting shall be used in the widening of the cuttings or otherwise where called for by the engineer.

o) Drilling

In all controlled blasting, drilling accuracy of perimeter holes is of prime importance and the contractor

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shall take particular care and make use of sight lines and guide rails in surface work to control the alignment and depth of blast holes. Holes which are likely to protrude more than 100mm beyond the excavation profile, shall not be charged up, but shall be redrilled.

The blast pattern shall be accurately set out and holes shall be collared within 50mm of the required position. Holes which are overdrilled shall be fully stemmed to the required depth before charging up takes place.

The length of perimeter holes for any individual lift shall not exceed 10m or any lesser depth detailed on the drawings. All perimeter holes for surface blasting shall be drilled to a depth of 1m below the bottom of any production holes adjacent to the perimeter plane.

p) Use of Explosives

Both cartridge and bulk explosives may be used where appropriate.

In controlled blasting the type, size, decoupling and charge concentration of perimeter and bulk charges shall be within established parameters unless otherwise proven acceptable by site trials.

The bottom charge of a pre-split hole shall not be larger than the line charges unless otherwise directed. The top charge of the pre-splitting hole shall be placed far enough below the collar to avoid overbreaking the final profile.

Adequate stemming shall be used to avoid blow-outs.

q) Checking and Correcting the Excavated Profile

The excavated profile shall be checked for line, level and underbreak using methods approved by the engineer. No projections of rock shall protrude within the payment line, except as allowed within the specified tolerances.

The contractor shall submit his proposals for removing any underbreak to the engineer for his consent prior to carrying out any such work of removal. Any work executed or delays, which are due to the contractor having to re-excavate underbreak and then re-install support shall be carried out without additional payment, and no extension of time will be allowed for this work.

r) Accommodation and Protection of Existing Services and Infrastructure

In the event of the laid-down vibration parameters as detailed in (m) above being exceeded or in the event of a valid recording not being made available as stipulated above, the engineer reserves the right to ascertain by whatever means, whether damage was caused by the blast to the service or structure. All costs incurred in establishing such possible resultant damage and the repair thereof will be to the contractor's account.

Cover blasting shall be used in the vicinity of overhead services (e.g. telephone and power lines) where overhead services may be damaged or affected by blasting activities. The cover blasting shall be such that it sufficiently protects overhead services to prevent any damage to such services."

INSERT SECTION C HIGHLIGHTED IN RED IN OTHER DOCUMENT HERE!

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THE CONTRACT PART C3: SCOPE OF WORKS

Particular Specifications

Occupational Health and Safety Specification for Principal Contractors and Contractors for Construction Work

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Appendices

| | | |
|-----------|---|--|
| Annexure: | A | Notification of Construction Work |
| | B | Appointment Form [Example] |
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| | D | Agreement with Mandatories |

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1. Introduction

In terms of Construction Regulation 7 this document describes the health and safety specifications required for any principal contractor whom is making a bid for or whom has been appointed to perform construction work on behalf of the client. [Ref. CR 5(1)(a)]

- A principal contractor is required to compile their Health and Safety Plans based on these specifications detailed and referred to, in this document.
- In other words, the Health and Safety Plan must specify how the Principal Contractor will control and manage all health and safety aspects on the construction site.
- The Health and Safety Plan must be relevant to the construction work being carried out and if possible refer to the numbering system of this document.
- A principal contractor is to ensure that these specifications are communicated to all contractors under his/her agreement.

2. Reference Documents

The following documents are referred to:

2.1. Occupational Health and Safety Act, (Act No. 85 of 1993) - [OHSA] and Regulations.

2.2. Civil, Mechanical, Structural and Electrical Drawings [CME]

1..1 Drawing References:

1..1.1 Drawing No:___

1..1.2 Drawing No:___

1..1.3 Drawing No:___

1..1.4 Drawing No:___

1..1.5 Drawing No:___

2.3 Compensation for Occupational Injury and Diseases Act – [COIDA]

3. Scope of Work

Detailed Description of work to be carried out

- Earthworks
- Excavations
- Work @ Height
- Pressure Testing
- Vehicle & Mobile Plant
- Concrete Works
- Support and Formwork
- Structures
- Electrical Works

List of plant, machinery and tools to be used during the project:

- Construction & Mobile Plants
- Hand Tools
- Portable Electrical Tools
- Ladders

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- Further Information to be provided by contractor

List of Major hazards identified in the design risk assessments:

- Working at Heights
- Earth Works & Excavation
- Construction vehicles and Mobile plants
- Pouring Concrete
- Use of Power Tool
- Structures / False Work
- Shuttering
- Steel work

4. Definitions

The following definitions apply. (Abbreviations and legal references in brackets where applicable):

Construction Work

Means any work in connection with –

- a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or an addition to a building or any similar structure;
- b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- c) The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- d) The moving of earth, clearing of land or making of an excavation or work on any similar type of work.

Hazard Identification, Risk Assessment and Risk Control (HIRA)

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

Site

Means the area in the possession of the Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Contractor, and approved for such use by the client.

Hazard

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

Risk

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

Construction Supervisor [CR 8(7)]

Means a full time, competent employee appointed in writing by the Contractor to supervise construction work. The appointment, as required by the OHS Act, shall stipulate health and safety responsibilities, area of responsibility and the proposed duration of the project.

Construction Plant

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

Contractor

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Means an employer who performs construction work and includes principal contractors and sub-contractors.

Health and Safety Plan (HSP)

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

The plan shall be applied from the date of commencement of and for the duration of construction work.

Health and Safety File (HSF)

The file holding all documentation and records on health and safety for the project, which shall be available at all, times for evaluation, and a copy of which will be forwarded to the client upon completion of the project.

Disabling Injury Frequency Rate (DIFR)

The number of disabling injuries (DI"s) multiplied by a constant (man hours relative to period worked) divided by total man hours worked over a rolling period (usually 12 months, but can be less)

Disabling Injury Severity Rate (DISR)

The number of days lost due to DI"s multiplied by a constant (man hours relative to period worked) divided by total man hours worked over a rolling period (usually 12 months, but can be less)

Confined Space

An enclosed, restricted or limited space in which, because of it's construction, location or contents, or any work carried on therein, a hazardous substance may accumulate or an oxygen deficient atmosphere may occur, and includes any chamber, tunnel, pipe, pit, sewer, container, valve, machinery or object in which a dangerous liquid or dangerous concentration of gas, vapour, dust or fumes may be present

5. Responsibilities of Contractors for Construction Work

5.1. Notification of Intention to Commence with Construction Work

The principal contractor shall notify the Provincial Director of the Department of Labour before any work commences, in accordance with the following requirements:

- The demolition of a structure exceeding a height of 3 meters; or
- The use of explosives to perform construction work; or
- The dismantling of fixed plant at a height greater than 3 meters; or
- The work exceeds 30 days or will involve more than 300 person days of construction work; and
- Includes excavation work deeper than 1 meter; or
- Includes working at a height greater than 3 meters above ground or a landing.

The notification must be completed in the **Annexure 2** form and a copy of the proof of fax or delivery to the Department of Labour to be kept in the Health and Safety File for inspection by an inspector, the client or an employee.

5.2. Principal Contractor's Responsibilities

Compile a Health and Safety Plan

Ensure co-operation between all contractors to comply to the Act

- Ensure compliance to the Act in terms of:
 - a) Provide relevant sections of these specifications to contractors as required
 - b) Appoint each contractor in (a) above in writing. Only contractors who have the necessary competencies and resources may be appointed
 - c) Ensure each contractor's Health and Safety Plan is implemented and maintained on site

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- d) Stop any contractor from work which is not in accordance with Health and Safety Plan's or which pose a threat to health and safety of persons
- e) Sufficient information is provided to contractors where there are changes to design and construction
- f) Ensure every contractor is registered and in good standing with the Compensation Commissioner
- g) Ensure potential contractors have made provision for the cost of health and safety measures. Negotiate and approve the Health and Safety Plan of each contractor.

- All Health and Safety File's including the principal contractor's to be available on site.
- A consolidated Health and Safety File to be handed over to the client on completion of construction including records of drawings, designs etc.
- Health and Safety File to include updated list of all contractors, the agreements and their type of work.

5.3 Contractor's Responsibilities (including sub-contractors)

- Provide their Health and Safety Plan to the principal contractor.
- Where a contractor appoints another contractor (sub-contractor) it is the responsibility of that contractor to apply 4.2 above as if he were the principal contractor.
- No contractor to appoint another contractor (sub-contractor) unless the latter has the necessary competency and resources to perform the required work.
- To provide any information which affects the health and safety of any persons at work to the principal contractor.

5.4 Legal Appointments

The principal contractor shall ensure copies of the appointment letters of all responsible persons appointed on site will be kept in the Health and Safety File. All legal appointments shall be conducted in accordance with the requirements set out in the OHSA and as per this specification. The tables below set out the appointment protocols for CR and OHSACT. It should be noted that these represent a complete list and not all these appointments may be required:

Construction Regulations

| Reg. | Appointment | Appointee | Competency Required |
|-----------|-----------------------------------|-----------------------|---|
| CR 7 (1) | Principal Contractor | 16(2) for the company | Curriculum Vita on file and Supervisor training (legal liability) |
| CR 5 (3b) | Contractor | Competent person | Proof of induction |
| CR 8 (1) | Contracts Manager | Competent Person | Certificate & CV |
| CR 8 (2) | Ass Construction Manager | Competent Person | Certificate & CV |
| CR 8 (7) | Construction Supervisor | Competent person | Curriculum Vita on file and Supervisor training (legal liability) |
| CR 8 (8) | Assistant Construction Supervisor | Competent person | Curriculum Vita on file and Supervisor training (legal liability) |
| CR 8 (5) | Safety Officer | Competent person | Curriculum Vita on file and SAMTRAC or similar |
| CR 9 (1) | Risk Assessor | Competent person | Curriculum Vita on file and HIRA or similar |
| CR 10 (1) | Fall Protection Planner | Competent person | Curriculum Vita on file and Fall Plan Developer |
| CR 12 (1) | Temporal Works | Competent person | Curriculum Vitae |
| CR 13 (1) | Excavation Work Inspector | Competent person | Curriculum Vita on file and Supervisor training (legal liability) |

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| | | | |
|------------|---------------------------------|------------------|---|
| CR 23 (1j) | Construction Vehicle Inspector | Competent person | |
| CR 23 (1d) | Construction Vehicle Operator | Competent person | Certificate of Competency for relevant construction vehicle |
| CR 28 (a) | Stacking and Storage Supervisor | Competent person | |
| CR 29 (h) | Fire Equipment Inspector | Competent person | |
| CR 29 (i) | Fire Team Members | Competent person | Fire Fighting Certificate |

OHS Act

| Reg. | Appointment | Appointee | Competency Required |
|-------------|---|---------------------------|--|
| OHSA 17 (1) | Health & Safety Rep | Nominated employee | Health and Safety Representative Certificate |
| OHSA 19 (1) | Health & Safety Committee Member | Management representative | Curriculum Vita on file and Supervisor training (legal liability) and IRCON or similar |
| GAR 9 (2) | Incident Investigator | Competent person | Curriculum Vita on file and RCAT or similar |
| GSR 3 (4) | First Aider | Competent person | First Aid Certificate |
| GSR 13 | Ladder Inspector | Competent person | In house Training |
| DMR 18 (11) | Lifting Equipment Operator | Competent person | Code 1, 2, 3, 32, 33, 35 or 46 |
| DMR 18 (5) | Lifting Equipment Inspector | Competent person | |
| | Hand Tools Inspector | Competent person | In house Training |
| | Pneumatic Tools Inspector | Competent person | In house Training |
| EMR 9(4) | Portable Electrical Equipment Inspector | Competent person | |

The responsibilities of each appointment are detailed in the relevant form, which are signed by both the authorised person and the appointee and kept in the Health and Safety file. An example of an appointment form for a Construction Supervisor can be found under **Annexure B**.

5. Documentation and Procedures

All required documentation for the construction work, shall be kept in the Health and Safety File, which shall be available on site. The Construction Supervisor shall be responsible for the file on site and the Project Manager shall ensure that documentation is valid and up to date.

It is required that the documentation is filed in an orderly fashion for easy access. The following sections are suggested:

1. Company insurances and information

- Letter of good standing
- Public liability
- Emergency contact numbers
- Notification of construction work
- Company organogram
- Health and Safety policy

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- HIV & Aids Policy
- Drug & Alcohol policy
- Personal Protective Equipment Policy

2. Health and safety plan and specifications

3. Appointments

4. Inspection registers and checklists

5. Risk assessments

- Risk matrix
- Risk assessments
- Method statements
- Record of internal training
- Review of risk assessments

6. Safe work procedures

- Safe Working procedure training
- Planned task observations
- Emergency procedures
- Fall protection plan
- Permits to work

7. Incident management

- WCL2 forms
- Annexure 1 forms
- Injury on duty reporting and investigation procedure
- Resumption reports

8. Training records and medical fitness certificates

- Certificates of formal training
- Induction training records
- Medical fitness certificates for all employees

9. Audits

- Client's Health and Safety audits
- Site inspection reports
- Site safety instructions

10. Contractor control

- List of contractor's and type of work
- Contractor appointments
- 37 (2) agreements

11. Health and safety communication

- Toolbox talks to be held weekly
- Health and Safety notice board
- Schedule D
- Memo's to employees

12. OHS Act and Regulations

6. Application of COIDA and OHS Act to Construction Work

6.1 Compensation of Occupational Injuries and Diseases Act, Act No. 130 of 1993 (COIDA)

Every contractor shall provide proof of registration and an updated letter of good standing with the Compensation Commissioner or a licensed compensation insurer.

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6.2 Occupational Health and Safety Policy

- Every contractor's Occupational Health and Safety Policy statement should be available for scrutiny and as evidence of their commitment their employees' occupational health and safety and the environment.
- Every contractor's Occupational Health and Safety Policy statement is to be signed off by the Chief Executive Officer.
- Proof of communication to all is to be available on requests.

6.3 Health and Safety Training and Competency

Training of personnel is a necessity and a legal requirement when required. A record of all training shall be kept and provided on request.

6.3.1 Induction Training

- The principal contractor shall be responsible to co-ordinate all inductions on site to ensure that no contractor allows or permits any employee/s or person/s to enter any construction site , unless such employee, visitor or person has undergone induction training which is pertinent to the hazards prevalent on the site at the time of entry.
- Every employee, visitor or person on site shall be in possession of proof of the Health and Safety induction.
- Records of attendance shall be kept on the Health and Safety file for the duration of the contract.

6.3.2 Awareness Training

- Awareness training to be carried out weekly in the form of Toolbox Talks on relevant topics e.g. manual lifting, wearing PPE, safe use of portable electric tools etc.
- All attendees are to be made to sign an attendance register and such register is to be held on the Health and Safety file for the duration of the project.

6.3.3 Competency and CV's

- All supervisors and where applicable, valid copies of certificates of competency of appointed personnel to be provided and kept in the Health and Safety file. (Reference can be made to pages 10, 11 and 12 of this document).
- Other training requirements such as those identified through the High-risk Assessment process, to be completed and proof of that training also kept in the Health and Safety File.
- Where competency is achieved through experience, a brief CV will be required.

6.3.4 Specific OH&S training

- Valid certificates of training from registered service providers preferably accredited by the appropriate SETA are required for First Aiders, H&S reps, Fire Fighters etc.

6.3.5 Medical Fitness

- All work in elevated positions [tower crane operators, workers on elevated structures requiring fall protection, suspended platform workers and;
- Operators of construction vehicles and mobile plant require certificates of physical and psychological fitness carried out by an occupational medical practitioner.
- All employees who are employed in a construction site must have medical Fitness done

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by an Occupational Health & safety Practitioner before commencement of work.

- No employee will be allowed to perform any duties except deemed to be medical fit to do so.

6.4 Health and Safety Reps [OHS 17 and 18]

- Where 20 or more employees are employed at a workplace, one health and safety representative shall be appointed in writing.
- The Principal Contractor shall ensure that a minimum of one health and safety representative is appointed for ratio of each 50 employees employed.
- Each health and safety representative shall be in possession of a certificate of competency.
- The employer is to ensure that a delegation process has been followed and recorded in term of the requirement of General Administrative Regulation 6
- Monthly checks are to be conducted by the appointed representatives in their designated areas and all findings are to be recorded in a register. Such register is to be held on the health and safety file for the duration of the project.
- Health and Safety Representative are to investigate any staff complaints and ensure that documented feedback is forwarded to the respective managers.

6.5 Health and Safety Committee [OHS 19 and 20]

- Where two or more representatives have been appointed the employer shall ensure that a health and safety committee is formed.
- The number of management representatives shall not outweigh the number of representatives.
- Meetings shall be held at a minimum of three monthly.
- Minutes of such meeting shall be kept and placed on the health and safety file for the duration of the project.
- A register of attendance is to be kept of attendees at such meetings; such a register is to be attached to the minutes.

6.6 General Record Keeping

All contractors shall ensure that all Health and Safety records, required by OHS and Regulations are kept up to date for reference purposes and auditing.

6.6.1 Inspections

- All contractors shall keep all records of inspections undertaken during the duration of the project.
- An example of the total list of minimum legally required inspections can be found under **Annexure C**.
- An assessment list must be drafted of what inspections are required and their frequency.
- The principal contractor is responsible to ensure compliance to this requirement by all contractors.

6.6.2 Audits

- The client's agent shall carry out regular audits on the principal contractor at least once per month.
- Principal contractors shall be responsible for carrying out regular audits on their contractors at least once per month
- The Principal contractor is to draft a table which reflects contractors company name, description of work, dates of audits and scores achieved.

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- The results shall be tabled for action and discussed at the Health and Safety Committee meetings or the site meetings, as appropriate.

6.7 Incident management and emergency plans

- The principal contractor shall create an Emergency Plan for the construction site.
- The plan is to be clearly displayed in conspicuous locations around the site.
- The plan shall be clearly laid out for all types of emergencies including responsibilities, evacuation routes, siren, emergency no."s etc.
- The plan shall be fully explained to all personnel during the induction training.
- All contractors will become completely familiar with the requirements of the plan and will participate in any evacuation drills that may take place

6.7.1 First Aid [GSR 3]

- Where an employer has 5 or more employees in his employment, he/she shall ensure that at least one first aid box is made available in the workplace.
- Such first aid box is to be stocked covering the 18 items addressed in the Annexure attached to the General Safety Regulations as a minimum requirement.
- Where an employer has 10 employees or more in his/her employment, he/she shall ensure the at least one person readily available at the workplace whom is in possession of a valid first aid certificate.
- Every employer shall ensure that a minimum of one trained persons is made available for every 50 person in the workplace.
- All identified hazardous chemical are to have a material safety data sheet which is to be kept for first aid emergencies in the first aid box.
- All special needs addressed in the Material Safety Data Sheets are to be made available in addition to stock required in the Annexure.

6.7.2 Incidents and Injuries

Incidents

- A record of all incidents which have occurred shall be opened and held open until the handover of the project.
- All incidents such as near misses, unsafe situations, first aid injuries, etc shall be investigated fully and the result of such investigation shared with the Health and Safety Committee.
- The employer shall ensure that an investigation team is formulated which will consist of management representative, safety representative and an employee representative as a minimum requirement.
- All incidents that occur shall be filtered into a statistic format which is to determine the sites Incident Rate. Such rate is to be shared with all employees and all contractors on a monthly basis.
- Exclusion of incidents in record keeping shall result in fines being issued.

Injuries

- A first aid register is to be held in the first aid box as to record all first aid injuries that may occur.
- An injury on duty procedure is to be created which detail the process of treating an injured and methodology which may be use in order to ensure their safe arrival at a local hospital.
- All injuries are to be recorded in an Annexure 1

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6.7.3 Accident and Incident Reporting and Investigation

Should an incident or accident investigation need to be conducted, the appointed incident investigator (competent person with a valid certificate of training on file) shall conduct the said investigation. The procedure to be followed will be in accordance with Annexure 1 of GAR 9 – “Recording and Investigation of incidents”. A copy of this annexure can be found under **Annexure D** in this document.

Particular attention is also drawn to OHS Act 24, the reporting of certain incidents to an inspector of the Department of Labour.

The principal contractor shall ensure that the investigations are kept for record purposes and he shall ensure that the outcome of the investigation is communicated to all affected parties as required i.e. the client and contractors.

The client reserves the right to participate in all investigations into accidents or incidents and to conduct their own investigation if required.

6.8 Contractors and suppliers [OHS Act 37(2)]

The client shall enter into an “Agreement with Mandatory” in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993, with all appointed principal contractors, a copy of which can be found under **Annexure E**. Likewise all principal contractors shall enter into a similar agreement with all contractors, sub-contracted to them for any period of the contract. Please note that if contractors hire any construction vehicles or mobile plant, the companies from which the equipment is hired must provide any maintenance and test certification as required. In addition, if operators are hired with the equipment, proof of competence and medical certification must be provided.

The principal contractor shall ensure that all contractors are issued with this safety specification where reasonably practicable including any contractor pack for the project, should they not be contained in the safety specification.

The principal contractor shall assist and ensure that contractors engaged comply with all of these requirements and adhere to the requirements set out in the OHS Act. Contractors will be stopped from working in the event of unsafe conditions and activities being observed.

All contractors shall be subject to the requirements specified in the HSP and will be issued with a copy of the plan. If the contractor is not able to comply with the requirements set out in the plan, he shall not be appointed as contractor.

6.9 Personal Protective Equipment, Intoxication, Signage and Access Control [GSR 2]

6.9.1 Personal Protective Equipment (PPE) [GSR 2]

- The principal contractor shall through the Risk Assessment process identify all specific PPE needs per each activity. Such identified PPE shall be captured in the form of a PPE matrix and displayed in the site office. Such matrix is to make reference to the task and the specific PPE requirements required to do the task.
- All Contractors will be responsible for the issuing of the required PPE as identified by the matrix.
- Should PPE be lost or stolen, then the employee will be issued with new PPE.
- No person/s shall be permitted entry into the site unless they are properly equipped with the required PPE as identified in the matrix.
- Should PPE be worn out or damaged, the user shall return the worn or damaged PPE and will be issued with a replacement.
- Training in the use, care and limitation of such PPE is to be provided and proof of such

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training is to be held in the health and safety file.

- Visitors shall be informed of PPE requirements **prior** to their visit so that they may make necessary arrangements to ensure their arrival well equipped with the correct PPE.

6.9.2 Intoxication [GSR 2A]

The principal contractor shall be responsible to ensure that no persons may enter or remain at the construction site if under or apparently under the influence of intoxicating liquor or drugs. It may become necessary from time to time for contractors and their workers could be required to do a breathalyser test before entering the site.

6.9.3 Display of signs [GSR 2B]

The principal contractor should make use of signage to assist in enforcing compliance to any requirement specified in this document or as required by law. Standard symbolic signs are acceptable for conveying these requirements where applicable.

6.9.4 Access control [GSR 2C]

The principal contractor shall be responsible to ensure control of access to all persons entering the construction site. The reasons for this are as follows:

- The principal contractor is the „employer“ on the site and for all intents and purposes is responsible for section 8 of OHSA for employees and contractors and section 9 for any other person on site such as visitors and inspectors
- All persons entering the site must undergo induction training to inform them of the hazards present on the site. This includes contractors, visitors, inspectors etc
- The construction supervisor will be aware of who is on site and their function
- The construction supervisor will be able to control tasks that may impact on other work being carried out on the site by a permit to work system
- The number of people and their purpose on the site must be known in case of emergency and evacuation security reasons

The principal contractor shall post conspicuous notices at the site informing all those entering the site of these requirements

6.10 Ladders [GSR 13A]

The following requirements shall be complied with regarding Ladders and Ladder work:

- A competent person shall be identified and appointed as the ladder inspector.
- Where aluminium ladders cannot be used, then wooden ladders shall be straight grained, unpainted to allow for proper inspection of the grain for cracking.
- Ladders shall be secured at the top and chocked at the base to prevent slipping.
- Where chocking of the base is not possible, then the user shall ensure that the ladder is held in position by another employee when ascending the ladder.
- No person is permitted to work longer than 15 minutes on a ladder. Should work take longer than 15 minutes to complete then alternative means of elevation is to be used.
- Ladders shall be inspected a minimum once per month and results recorded in a register by the person appointed as the ladder inspector.
- Proper storage shall be provided for all ladders when not in use.

6.11 Portable Electrical Tools [EMR 9]

This regulation shall be complied to as a minimum requirement. Regular inspections of all Portable Electrical Tools such as drills, angle grinders etc, shall be carried out. In particular:

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- Only trained personnel shall operate such equipment.
- The Construction Supervisor shall ensure operation of the equipment is in accordance the HRA requirements and Safe Working Procedure (SWP).
- All users shall undergo regular awareness training (toolbox talk) to ensure compliance.
- The Construction Supervisor shall ensure the required PPE is used.

6.12 Permit to work

The permit holder shall be responsible to ensure that:

- All work being carried out on the site has been approved through the necessary project control system
- All work is being done in compliance with the issued permits.
- Permits required from third parties such as town councils for utility and sewage services are in place
- A permit system is operational so that work consisting of many tasks related to the construction on site, can be carried out without endangering the health and safety of personnel on site, neighbours and the public surrounding the site and/or causing damage to property.
- In particular, attention is drawn to GSR 9, which details the requirements for welding, flame cutting, soldering and similar operations (hot work)

6.13 Work in confined spaces

The permit holder shall be responsible to ensure that:

- All work being carried out on the site has been approved the necessary project control system
- All work is being done in compliance with the issued permits.
- Permits required from third parties such as town councils for utility and sewage services are in place

7. Application of the Construction Regulations [CR]

[Please note: this is the complete list. Item 7.1 is compulsory and the rest are applicable if relevant to the work being carried out]

7.1 Hazard Identification, Risk Assessment and Risk Control (HIRA) [CR 9]

- The contractor shall prior to the commencement of any construction work perform a HIRA exercise, which will form part of the HSP for the project.
- A copy of the HIRA shall be made available for viewing to the client's agent and shall be kept in the Health and Safety File.
- The contractor shall ensure that the outcome of all HIRA exercises will be conveyed to all relevant employees with respect to the hazards and the related control measures before any work commences.

The control of several of these risks may be specified in the OHSA does not mean that the HIRA exercise does not have to be carried out.

7.2 Fall Protection [CR 10]

Section 1 (a) of this regulation states that a contractor shall cause the designation of a competent person, responsible for the preparation of a fall protection plan. The control of several of these risks may be specified in the OHSA or the CR but this does not mean that the HIRA exercise does not have to be carried out.

7.3 Structures [CR 11]

The appointed civil contractor shall meet the requirements of this regulation. Attention is drawn, which requires the designer to inspect the structure at appropriate times and the record of these inspections to be available on site.

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7.4 Excavations [CR 13]

Section 1 of this regulation states that this work must be carried out under the supervision of a competent person who has been appointed in writing. All the requirements of CR 13 shall be met. For inspection of excavations, attention is drawn to section 3 (h), the records of which must be available on site.

7.5 Construction vehicles and mobile plant [CR 23]

It will be the responsibility of each contractor on site to ensure compliance of their vehicles and mobile plant to these regulations. This includes vehicles to be used for transporting personnel to and from site, which will be subject to relevant requirements such as licensing and roadworthiness checks. In addition the following will apply:

- Safe transport for personnel working on the project to and from the workplace, which shall include proper seating, side restraints and cover.
- Road safety principles shall be adhered to on and off staff.

If a mobile crane or other mobile plant is hired, only approved hire companies shall be contracted to provide such equipment. The Construction Supervisor shall ensure compliance of the provider to these regulations. In particular, attention is drawn to the competence and fitness of the operator [section 1 (d)] and the inspection of the equipment [section 1 (j)]

7.6 Temporal Electrical installations[CR 24], including [EIR] and [EMR]

The requirements of these regulations shall be met as required, by the appointed electrical contractor. A competent person will be appointed for inspection and control of all temporary electrical installations as per CR 24 (d) and (e) respectively.

7.7 Water Environments [CR 26]

The requirements of this regulation shall be met.

7.8 Housekeeping [CR 27] including [ERW(6)]

All contractors shall ensure that housekeeping standards as per these regulations shall be maintained at all times.

7.9 Stacking of Materials [CR 28] including [GSR (8)]

All contractors shall ensure that materials are only stored in defined and allocated storage areas and that materials being stored are stacked in accordance with sound stacking principles as per these regulations.

7.10 Fire Precautions [CR 29]

All contractors on site will comply fully with the requirements of this regulation. In particular, the principal contractor will be responsible for the evacuation plan (section (I)) the details of which will be imparted to contractors, visitors etc through the site induction.

7.11 Construction welfare facilities [CR 230]

The principal contractors shall be responsible for implementing this regulation and shall ensure that adequate facilities are provided for the personnel on site in terms of the following:

- Change room facilities
- Sheltered eating area
- Adequate toilets
- Hand wash facility
- Potable water.

No food preparation shall be conducted on site. Eating and drinking will only be permitted in the designated eating areas, which must be provided with adequate seating. Waste bins shall be strategically placed and clearly regularly.

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8 Site-specific and Design Risks

Please note: this is not a complete or exhaustive list. The principal contractor is expected to assess all risks to which his employees may be exposed during the construction and/or demolition process, as well as the hazards identified and listed below.

The following jobs or activities are classified as High

- Confined Space Entry
- Excavation
- Construction vehicles and mobile plant
- Traffic accommodation
- Pouring Concrete
- Working at Heights

8.1 Hazard Identification and Risk Assessment Methodology

8.1.1 Baseline Risk Assessment

A Baseline Hazard Identification and Risk Assessment must be carried out during the preliminary stages of the construction/demolition project for the purposes of attempting to reduce the possibility of accidents or ill health occurring.

Taking into account the constraints of time and resources, every effort must be made to identify the hazards and recommend possible solutions. It is not reasonably practicable to expect the baseline risk assessment to identify all hazards, which is why task risk assessments are carried out on site.

8.1.2 Task risk assessment

Once on site, every contractor shall perform task risk assessments, using the baseline risk assessment as a guide.

The Risk Assessment should be reviewed once on site and thereafter after any incident or every one-year period, whichever occurs first. Additional hazards highlighted or a change in the risk factor should have a separate risk assessment carried out and filed.

The Risk Assessment is based on the combination of the CONSEQUENCE and PROBABILITY associated with each hazard.

8.1.3 Definitions

| <i>Term</i> | <i>Meaning</i> |
|---------------------|--|
| HAZARD: | Anything that can cause harm |
| RISK: | The chance, great or small, that someone will be harmed by the hazard |
| CONSEQUENCE: | The possible outcome of an accident / incident, e.g. broken leg, explosion |
| PROBABILITY: | The possibility of the accident / incident occurring |

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8.1.4 Risk assessment

The following evaluation must be used to determine risk:
 Probability X Consequence = RISK

Risk Matrix:

| | | | | |
|--------------------|---|-------------------------------------|-------------------------|------------------------|
| Consequence | (3) Critical (Fatal/Permanent Disabling Injury) | (3) Medium risk | (6) High risk | (9) CRITICAL |
| | (2) Major (Temporary Disabling Injury) | (2) Low risk | (4) Medium risk | (6) High risk |
| | (1) Manageable | (1) Low risk | (2) Low risk | (3) Medium risk |
| | | (1) Remote | (2) Possible | (3) Likely |
| | | Probability (Likelihood) | | |

RED = High Risk (6 – 9)
 ORANGE = Medium Risk (3 – 4)
 GREEN = Low Risk (1 – 2)

| Activity | Hazard | Risk Eval. | Precautions and Control Measures |
|------------------|----------|---------------------|--|
| | | | <ol style="list-style-type: none"> 1. Eliminate the risk 2. Control the risk at its source 3. Follow a safe working procedure 4. Provide PPE |
| 1. describe task | Hazard 1 | 9, 6, 4, 3, 2, or 1 | <ul style="list-style-type: none"> • Precaution 1 • Precaution 2 • Etc. |
| | Hazard 2 | | <ul style="list-style-type: none"> • Precaution 1 • Precaution 2 • Etc. |

8.2 Site-specific risks

The following site-specific risks have been identified for this project. These must be catered for in the contractor's health and safety plan (that which is applicable to their scope of work), and included in the site-specific risk assessment:

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8.2.1 Traffic – restrictions, existing systems, site traffic

Traffic accommodation must be arranged with the principal agent.

8.2.2 Site security and access –

This is controlled by the individual contractor responsible.

8.3 Design risks

The following design risks have been identified by the designer for this project. These must be catered for in the contractor's health and safety plan (that which is applicable to their scope of work), and included in the site-specific risk assessment:

8.3.1 Excavations

8.3.2 Traffic Accommodation

8.3.3 Vehicle and mobile plants

9 Fines and Penalties

9.1 Minor Health or Safety Transgression

Not wearing PPE; e.g. safety helmet, eye protection, high visibility vests or foot protection. Fine: R1000-00 will be issued to the contractor.

9.2 Serious Health or Safety Transgression

Not contributing to good housekeeping practices, improper stacking and storage, lack of supervision on site, failure to carry out risk assessments for tasks or activities, failure to carry out toolbox talks, failure to train employees in risk assessments and/or safe work procedures, failure to issue PPE to employees. Fine: R2000-00 will be issued to the contractor

9.3 Major Health or Safety Transgression

A life-threatening activity, condition, act or contribution by an employee in creating an unsafe working environment for himself or herself or other persons, failure to wear critical PPE (safety harness, eye protection, respiratory equipment, or as stipulated in the risk assessment).

Fine: Up to R3000.00 will be issued to the contractor

9.4 Repeat Offences

A contractor that receives more than three (3) major transgressions for the same offence and may, at the discretion of the project manager, be required to leave site

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ANNEXURE A (Notification of Intention to Commence Construction Work)

ANNEXURE 2

**NOTIFICATION OF CONSTRUCTION WORK
Regulation 4 of the Construction Regulations, 2014**

1. (a) Name and postal address of principal contractor:
(b) Name and telephone number of principal contractor's contact person:
2. Principal contractor's compensation registration number:
3. (a) Name and postal address of client:
(b) Name and telephone number of client's contact person or agent:
4. (a) Name and postal address of designer(s) for the project:
(b) Name and telephone number of designer's contact person:
5. Name and telephone number of principal contractor's construction manager on site appointed in terms of regulation 8(1):
6. Name/s of principal contractor's sub-ordinate manager 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:
 1. Estimated maximum number of persons on the construction site:
 - Total _____ Male _____ Female _____
 -
12. Planned number of contractors on the construction site accountable to principle contractor:
13. Name(s) of contractors already chosen:

Principal contractor

Date

Client

Date

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ANNEXURE B (Example: Appointment - Construction Supervisor)

APPOINTMENT OF A CONSTRUCTION MANAGER

CONSTRUCTION REGULATION 8 (1)

8(1) The contractor shall appoint a full time, competent employee in writing as the construction supervisor with the duty of supervising construction work

APPOINTMENT

I, _____ (contractor's name), having been appointed in terms of section 16 (2) of the Occupational Health and Safety Act (85 of 1993) to ensure full compliance with the Act, do hereby appoint:

_____ (name of appointee), being a full-time employee, as the **Construction Manager** responsible for:

_____ (site address)

,to supervise construction work for the duration of the project/ contract or until you are relocated to another site/ project or leave the employ of the company.

You are reminded that you are required to be conversant with all relevant statutory provisions and regulations of the Occupational Health and Safety Act (85 of 1993) in the regard to carrying out of construction work.

Signature _____ Date _____

Designation _____

ACCEPTANCE

I, _____ (name of appointee) hereby accept and understand the requirements of this appointment as **Construction Manager** and confirm that I have the necessary competence required and that I am conversant with all the relevant statutory provisions of the Occupational Health and Safety Act (85 of 1993).

Signature _____ Date _____

Designation _____

Certificate(s)
Training&CV _____

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| |
|-----------------------------------|
| ANNEXURE C Inspection List |
|-----------------------------------|

Inspections Required

| No. | Inspection | By who | Frequency | Record |
|-----|--|-------------------------|--------------------------------|----------------------|
| 1 | Excavations | Appointed Person | Daily before shift, plus other | Checklist |
| 2 | Construction Vehicles and Mobile Plant | Appointed Person | Daily | Inventory/ checklist |
| 3 | Electrical Installations (temporary) | Appointed Person | Weekly | Inventory/ checklist |
| 4 | Fire Equipment | Appointed Person | Manufacturer's spec | Inventory/ checklist |
| 5 | First Aid Box Contents | First Aider | Monthly | Inventory |
| 6 | Ladders | Competent Person | Monthly | Inventory/ checklist |
| 7 | Lifting Tackle | Appointed Person | 3- monthly | Inventory/ checklist |
| 8 | Hand Tools | Appointed Person | Monthly | Inventory/ checklist |
| 9 | Portable Electrical Equipment | Appointed Person | Monthly | Inventory/ checklist |
| 10 | Health & Safety Rep | H&S Rep/ Safety Officer | Monthly | Checklist |
| 11 | Good Housekeeping | H&S Rep/ Safety Officer | Monthly | Report |
| 12 | Stacking and Storage | Appointed Person | Monthly | Report |
| 13 | Change Rooms and Toilets | H&S Rep/ Safety Officer | Monthly | Inventory/ checklist |
| 14 | Pneumatic Tools | Appointed Person | Monthly | Inventory/ checklist |

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ANNEXURE D (Recording and Investigation of Incidents)

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993(ACT NO 85 OF 1993)

REGULATION 9 OF THE GENERAL ADMINISTRATIVE REGULATIONS

RECORDING AND INVESTIGATION OF INCIDENTS

A. RECORDING OF INCIDENT

1. Name of Employer _____
2. Name of affected person _____
3. Identity Number of affected person _____
4. Date of incident _____
5. Time of Incident _____

| | | | | | | |
|-------------------------------------|--------------------|----------------------------|-----------------|--------------|------------------------------------|--------|
| 6. Part of the body affected* | Head or neck | Eye | Trunk | Finger | Head | |
| | Arm | Foot | Leg | Internal | Multiple | |
| 7. Effect on the person. * | Sprains or strains | Contusions or wounds | Fractures | Burns | Amputation | |
| | Electric Shock | Asphyxiation | Unconsciousness | Poisoning | Occupational Diseases | |
| 8. Expected period of disablement.* | 0-13 days | 2-4 weeks | >4-16 weeks | >16-52 weeks | >52 weeks or permanent disablement | Killed |

9. Description of Occupational disease** _____

10. Machine/ process involved/ type of work performed/ exposure* _____

11. Was the incident reported to the Compensation Commissioner and Provincial Director?

| | |
|-----|----|
| Yes | No |
|-----|----|

Make a cross in the appropriate square

12. Was the incident reported to the Police?

| | |
|-----|----|
| Yes | No |
|-----|----|

13. SAPS office and reference _____

- *To be completed in case of a fatal incident
- **in case of a hazardous chemical substance, indicate substance exposed to.

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B. INVESTIGATION OF THE ABOVE INCIDENT BY A PERSON DESIGNATED THERETO

1 Name of investigator _____ 2 Date of investigation _____

3 Designation of investigator

4 Short Description of incident

5 Suspected cause of incident

6. Recommended steps to prevent a recurrence

Signature of investigator

Date

C. ACTION TAKEN BY THE EMPLOYER TO PREVENT THE RECURRENCE OF A SIMILAR INCIDENT

Signature of investigator

Date

D. REMARKS BY HEALTH AND SAFETY COMMITTEE

Remarks _____

Signature of chairperson of health and safety committee

Date

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ANNEXURE E (Section 37(2) – Agreement with Mandatory)

AGREEMENT WITH MANDATORY

OCCUPATIONAL HEALTH AND SAFETY ACT, (Act No 85 of 1993)

AGREEMENT WITH MANDATORY In terms of Section 37(1) and (2)

WRITTEN AGREEMENT ENTERED INTO AND BETWEEN

(Hereinafter referred to as the Company) AND

**CONTRACTOR
(Hereinafter referred to as The Contractor) Compensation Fund Number:**

AGREEMENT WITH MANDATORY TO BE COMPLETED IN BLACK INK. INITIAL EACH PAGE AND ANY CHANGES.

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Definition of MANDATORY

Includes an agent, a contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or user.

Occupational Health and Safety Act (No. 85 of 1993)

1. You are requested to, as far as you reasonably can, comply with the requirements of the OHS ACT and Regulations.
2. Your attention is drawn to “**General Duties of Employers to their Employees**” as required by Sect 8 of the Act.
3. You are required to:
 - 3.1 Sign a written “**Agreement with Mandatory**” as required by Sect 37(1)(2) of the Act with us before you commence any work on my / our premises / site.
 - 3.2 Provide the **client / principal contractor** with a documented health and safety plan.
 - 3.3 Provide the **client / principal contractor** with written appointment of the person who is going to supervise the construction work as per Construction Regulation 6(1).
Note: Electrician to provide copy of certificate of registration as per Elect. Install Reg. 9(3).
 - 3.4 Provide the **client / principal contractor** with written designation of your nominated Health and Safety Representative as per Sect 17(1).
 - 3.5 If you employ more than five (5) persons, you are required to provide your own First Aid Box. (General Safety Regulation 3 (2).)
 - 3.6 If you employ more than ten (10) persons, you are required to provide your own qualified First Aider as per General Safety Regulation 3(4).
 - 3.7 When working with hazardous chemical substances, comply with Hazardous Chemical Substances Regulation
3. *Note: Asbestos and Lead regulations are separate.*
 - 3.8 When using a Materials Hoist , comply with Construction Regulation 17.
 - 3.9 When using Lifting Machines and Lifting Tackle, comply with Driven Machinery Regulation 18.
 - 3.10 When using Explosive Powered Tools, comply with Construction Regulation 19.
 - 3.11 When using Scaffolding, Formwork and support work, comply with Construction Regulation 10 and 14.
 - 3.12 When Excavating or Demolishing, comply with Construction Regulation 11 and 12.
 - 3.13 When Welding, Flame Cutting, Soldering, comply with General Safety Regulation 9.
 - 3.14 When working in confined spaces, comply with General Safety Regulation 5.
4. You are responsible for providing your own **legal safety documents and registers** to comply with the Act's

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requirements. *A copy of the OHS Act of 1993 should be available in the main contractors office.*

5. You are required to comply with General Safety Regulation 2(1) to (7) and provide employees with: personal protective equipment which will allow them to carry out their work in a safe manner, e.g. hard hats, safety belts, gloves, safe footwear, eye protection, ear protection, waterproof clothing etc.

5. Reporting of Incidents and Occupational Diseases shall be done as per General Admin. Regulation 6. (Also see Sect 24 of the Act.)

•

Compensation for Occupational Injuries and Diseases Act (No 130 of 1993)

You are required to provide the **client** proof of registration with the Compensation Commissioner/Federated Employer's Mutual within seven (7) days after signing this agreement. Failure to do so would result in the **client** notifying the agent of the Commissioner to investigate and make an assessment of your wage return and the applicable levy you have to pay, which will be liable for a deduction from your monthly progress payments and paid over to the Commissioner. (Copies of proof of payment will be provided to the contractor) **See Section 89(1) of the COID**

THE CONTRACT

PART C3: SCOPE OF WORKS

Particular Specifications

Portion 2

PROJECT SPECIFICATIONS

PORTION 2: VARIATIONS AND ADDITIONS TO THE SPECIFICATIONS

The following variations and additions to the SANS 1200 and other Standardised Specifications referred to in the last clause of Portion 1 apply to this Contract. The prefix PS indicates an amendment to the referred specification. **This section relates to proposed Mechanical and Electrical Installation to be undertaken by a nominated sub-contractor approved by the Employer and the Employers Agent.**

STATUS

Should any requirement of the Project Specification conflict with any requirement of the standardized and particular specifications, the requirements of the Project Specifications shall prevail.

PSA GENERAL

PSA1 SPECIFICATION DRAWINGS (Clause 2.7)

Specification Drawings may be included in this document as annexure to the Project and Particular Specifications. Where such Specification Drawings depict items and standard structures according to layouts and details differing from those shown in the Standardised Specifications, the layouts and details shown in the annexure to the Project and Particular Specifications shall be adopted.

PSA2 QUALITY (Clause 3.1)

All material used in the Works shall, where such mark has been awarded for a specific type of material, bear the SABS mark. Alternatively, the Contractor shall furnish the Engineer with certificates of compliance of materials, which bear the official mark of the appropriate standard.

PSA2.1 DEFINITIONS

PSA2.1 Definitions

Add the following:

| | |
|-------------------|---|
| Task | - a quantified activity or operation. |
| Daily task | - a task that is required to be completed within a working day. |
| Task remuneration | - remuneration as paid for a completed task or job. |
| Daily rate | - the remuneration of a day's work. |
| Daily wage | - see daily rate. |

Daily task remuneration - the remuneration for a completed daily task.

Labour-intensive construction - the economically efficient employment of as great a portion of labour as is technically feasible to produce as high a standard of construction as demanded by the specifications and allowed by the funding available, thus the effective substitution of labour for equipment.

(Note: This definition is not Contract specific but applies to the project as a whole. This Contract is a part of such a project).

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PSA3 BEACONS AND PEGS (Sub-Clause 5.1.2)

The Contractor shall be responsible for the safeguarding of all survey reference marks and erf boundary pegs.

PSA4 WATCHING BARRICADING, LIGHTING, SIGNAGE AND TRAFFIC CROSSINGS

While the responsibility for the efficient barricading, signage, lighting and watching of all trenches and stacks of material shall rest upon the Contractor, he shall be required to make the following minimum provisions in this respect.

Where a vehicular or pedestrian crossing is required over an open trench, it shall be protected on each side by a stout two-rail fence, at least 1m high, consisting of 150 x 75mm deal vertically set 0,6m into the ground, with 75 x 50 mm rails securely nailed to them. Where deals or board are used as bridges, they must be battened underneath to prevent tipping.

The Contractor shall make available on the site at all times a sufficient number of steel plates at least 2m by 1m by 81mm thick, complete with approved suitably sized barriers at spacing which will accommodate the most likely traffic loading for this area, which may be laid across open excavated trenches to provide bridges for vehicles along the trafficked route of the work as and where this may be considered necessary by the Engineer.

Appropriate signage in accordance with the Local Traffic Authority and at least four lamps must be provided at each trafficked crossing. The spacing between lamps along an open trench running longitudinally in a road shall be not greater than 20 meters, lamps shall be kept in good order and continuously lit from dusk to dawn.

PSA5 SERVICES (Sub-Clause 5.4)

Protection: Where, in the course of excavation, the Contractor shall lay bare any water mains, pipes, cables, telegraph or telephone poles, or any existing structures, these shall be securely shored, shuttered or slung and sufficiently protected to ensure that no damage shall be done to them until filling has been placed around them. In the case of electric and telephone cables, if these shall be exposed in the course of excavation, the Contractor shall not refill the excavation around such cables until the cables have been inspected and passed as intact by their respective owners. (Also refer to Project Specifications PS 10.2 and PSDB3.)

PSA6 GROUND AND ACCESS TO WORKS (Sub-Clause 5.8)

While the accompanying plan shows the routes of the services and generally indicates the roads available, it does not purport to give full information with regard to the most suitable means of access to the Site. At all times during the execution of the Contract, the Contractor shall be responsible for the closing of all gates and for the proper protection of property of every description which may have been entered upon or interfered with in any way by him in carrying out the Works. All fences and other structures that have been damaged or interfered with by the Contractor shall be restored to a condition at least equivalent to their original condition.

PSA7 SITE CORRESPONDENCE

PSA7.1 Instructions by the Engineer

Site instructions by the Engineer, 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 Engineer in writing immediately.

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PSA7.2 Site Diary

A site diary, which will be supplied by the Engineer, must be filled in on a daily basis and submitted to the Engineer on a monthly basis. No claims will be considered without the site diary's schedule properly completed (on a daily basis) and submitted.

PSA8 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 Engineer. 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.

PSA9 SUMS STATED PROVISIONALLY (Clause 8.5)

PSA9.1 Contingencies

No percentage mark-up will be applicable to any payments made using contingency money other than those included in prices for variations determined in terms of Clause 37 of the Conditions of Contract.

PSA9.2 Contract Price Adjustment

As per formula in Conditions of Contract.

PSA9.3 Electric and Telkom Cables

A provisional sum has been included in Schedule 1 for reimbursement (if any) of the applicable authority for repair work or relocation of electric or Telkom cables in the event of such being required due to the construction of the civil works. In addition to the abovementioned amount, provision is made in Schedule 1 for a mark-up on any payments made by the Contractor in this regard. The mark-up shall be regarded as full compensation for overheads, charges and profits as provided for in Clause 45 of the Conditions of Contract.

PSPM 1 Mechanical Equipment

Details of all the mechanical equipment to be installed, on the contract is given in this section. Details given are amongst others:

- Size, capacity, production etc;
- Materials of manufacture;
- Operational procedures; etc

PSPM 2 General

The mechanical contractor to be appointed for this project will be responsible for the scope of works as described in the scope of works.

PSPM 3 INFORMATION

PSPM 3. 1 Information to be submitted with the Tender

Tenders shall supply all information and technical data specified in the particular Specifications for mechanical equipment. All information sheets have to be completed. As much as possible information to evaluate the equipment, and the suitability of the equipment to fulfil its duty, has to be provided at tender stage. This is the only way to convince the Tender Adjudicator of the

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quality and the suitability of the proposed plant to meet the design requirements.

PSPM 4 START-UP PROCEDURES

Commissioning of the proposed plant is described in Particular Specification PM: Mechanical Equipment.

The following has to be added to the start-up procedures:

- The plant will be "dry commissioned" at a pre-determined date. On this occasion, the Contractor shall convince the Engineer that his plant is installed and ready for commissioning;
- Following the dry commissioning, the "wet" commissioning of the plant will be discussed and finalised. The date of "wet" or final commissioning has to be determined to ensure that all contractors still meet their target commissioning dates.

PSPM 5 MEASUREMENT AND PAYMENT

PSPM 5.1 Preliminary and General

The Preliminary and General items shall be measured and paid for as specified in Clause 8 of SANS 1200A: General.

PSPM 5.2 Measurement of Mechanical Equipment

PSPM 5.2.1 The unit of measurement for the individual items of mechanical equipment shall be as specified in the detail specification of each item.

PSPM 5.2.2 The different items shall generally be included in the Schedule of Quantities for different stages of the Contract, viz:

- Detailed Design, Planning and Drawings
- Manufacture, Supply and Delivery on Site
- Erection, installation, site testing and Commissioning
- Maintenance

PSPM 5.3 Payment for Mechanical Equipment

PSPM 5.3.1 Payment for Detailed Design, Planning and Drawings

This item shall be applicable to all sections.

When an item to be supplied does not require any detail design, planning or drawings, this clause will be regarded as part of PSPM 5.3.2 and falls away.

The tendered rate shall cover all costs of detail design, planning and drawings as specified in Clause PM 2.2 of Particular specification PM: Mechanical

Equipment and may not exceed 15% of the total amount tendered for all items of a specific item of mechanical equipment.

In respect of the amount tendered against the relevant items of the priced Schedule of Quantities, payment will be made as follows:

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- (a) 90% (ninety percent) of the amount tendered against each item when the detailed drawings and design details have been delivered to and approved by the Engineer;
- (b) 10% (ten percent) of the amount tendered against each item when the Certificate of completion is issued; and
- (c) 10% (ten percent) Retention Money will be withheld on the above and will be paid out as specified in the Conditions of Contract.

PSPM 5.3.2 Payment for the manufacture, Supply and Delivery on Site at Point of Installation

This item shall be applicable to all sections.

The tendered rate shall cover the cost of manufacture, procurement, supply, loading, offloading, crange in the place of manufacture and on site, transport storage and delivery on the site, including all costs for labour, plant, equipment, tools, consumables attendance, overheads, profit and all other costs to execute all the work as specified in Clause PM 2.3 of the particular Specification PM Mechanical Equipment.

In respect of all amounts tendered against the relevant items of the priced Schedule of Quantities, payment will be made as follows:

- (a) 90% (ninety percent) of the amount tendered against each item when the equipment and materials under each item have been delivered to the site, including copies in triplicate of Packing lists, Shipping Documents as referred to in the Special Conditions of Contract and Consignment Notes, railing or transport specifications all to the satisfaction of the Engineer;
- (b) 10% (ten percent) of the amount tendered against each item when the Certificate of Completion is issued; and
- (c) 10% (ten percent) Retention Money will be withheld on the above and will be paid out as Specified in the Conditions of Contract.

PSPM 5.3.3 Payment for the Erection, Installation, Testing on Site and Commissioning

This item shall be applicable to all sections.

The tendered rate shall cover the costs of loading, offloading, storage on site, transport on site, hoisting, erection, installation, painting, grouting, liaison, testing on site, commissioning and production of both the draft and final Operation and Maintenance manuals, as well as maintenance, if no separate item is scheduled, including all cost as for labour, plant, equipment, tools, consumables, attendance, overheads, profit, additional site visits and all other costs to execute all the work as specified in Clause PM 2.4 of Particular Specification PM : Mechanical Equipment. The tendered rate shall not be less than 20% of the total amount tendered for all the items of a specific piece of mechanical equipment.

In respect of the amounts tendered against the relevant items of the priced Schedule of Quantities, payment will be made as follows:

- (a) in respect of the amounts tendered against each item in accordance with

the progress of the work on a pro rata basis of the value of the work carried out to the total value of the work in completion of such other basis as the Engineer may determine up to a maximum of ninety (90) per cent of the amount tendered against each item on completion of Site testing;

- (b) ten (10) percent of the total amount tendered against each item when the Certificate of Completion is issued; and

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(c) ten (10) percent Retention Money will be withheld on the above and will be paid out as specified in the Conditions of Contract.

PSPM 5.3.4 Payment for Maintenance

This item will not be applicable to all Sections, but only where itemised in the Schedule of Quantities.

The tendered rate shall cover the cost of all site visits, liaison, labour, plant equipment, tools, consumables, spares (if breakdown is not due to incorrect operation by the personnel of the Employer), attendance, overheads, profit and all other costs to execute the maintenance over the full maintenance Period as Specified in Clause PM 2.5 of specified Particular Specification PM: Mechanical Equipment.

If Maintenance is not itemised separately, the cost of maintenance shall be deemed to be included in the rates for the other items.

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C3.5 MANAGEMENT

C3.5.1 Applicable SANS and SABS standards

a) The following SANS 1921 Construction Works standards and associated specification data are applicable:

- i) SANS 1921-1, General
- ii) SANS 1921-2, Accommodation of traffic on public roads occupied by the contractor
- iii) SANS 1921-4, Third party management support
- iv) SANS 1921-5, Earthworks activities which are to be performed by hand
- v) SANS 1921 -6, HIV/AIDS Awareness

The abovementioned South African National Standards make several references to the Specification Data for data, provisions and variations that make these standards applicable to this contract. The Specification Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and these standards.

Each item of Specification Data given below is cross-referenced to the clause in the standard to which it mainly applies.

The associated Specification Data is as follows:

| SANS 1921-1, Construction and management requirements for works contracts – Part 1: General engineering and construction works | |
|---|--|
| Clause | Specification data |
| Essential data | |
| 4.1.7 | There are no requirements for drawings, information and calculations for which the contractor is responsible |
| 4.3.1 | Refer to scope of works |
| 4.7.3 | No over break allowances for blasting is provided for |
| 4.14.3 | Refer to scope of works |
| 4.14.5 | The Contractor is required to provide latrine and ablution facilities |

| SANS 1921-5, Construction and management requirements for works contracts – Part 5: Earthworks activities which are to be performed by hand | |
|--|---|
| Clause | Specification Data |
| Essential Data: | |
| 5.1 | The depth of trenches which are to be excavated by hand is 1,5 metres |

| SANS 1921-6, Construction and management requirements for works contracts – Part 6: HIV/AIDS awareness | |
|---|--|
| Clause | Specification Data |
| 4.2.1(a) | A qualified service provider is one that is accredited or a provisionally accredited training service provider in the HIV/AIDS field. A list of accredited service providers can be obtained from the Construction SETA (CETA) (tel 011-265 5900), Health and Welfare SETA (HWSETA) (011-622 6852) or on the Health and Welfare SETA website: www.hwseta.org.za |
| Additional clauses | |
| | The duration of each workshop is not to be less than 2 ½ hours. |

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C3.5.2 Planning and Programming

The time for completion will be 6 months, which includes the allowance for inclement weather. All statutory holidays for the Civil Engineering Industry falling within the authorised contract period, will be allowed as extensions to this period, but the Contractor will not be paid additional Time-Related charges for these days (Ref. PSA 8.4.1).

The Contractor shall submit to the Engineer within 14 days of the Commencement Date, a detailed programme setting out clearly the sequence of work, and the resources, which he intends to use.

C3.5.3 Environment

a) Sand and dust control

The Contractor shall, for the duration of the contract, take appropriate measures to control the dust and soil movement, which may arise due to his operations.

b) Precautions Against Nuisance

Operations are being conducted in an urban area and in the presence of passing traffic. Precautions shall be taken to protect the public and to prevent unnecessary noise, dust or other nuisance.

Any rock or debris falling from trucks on the roads in use by the public shall be removed immediately. Precautions shall be taken to prevent fouling of public roads and completed construction by trucks transporting muddy material. The Engineer may order the Contractor to broom off and clean roads continuously where the mud tracking of vehicles or falling debris may constitute a danger to the travelling public.

c) Silencing of Plant

Plant used on the Works shall be efficiently silenced and comply with the Noise Control By-Laws as appeared in the Administrator's Notice No. 1784 of 29 November 1978. Noise operations will be permitted only between the hours of 7:00 am and 5:00 p.m. Any work outside normal hours will be permitted only on the written authority of the Engineer, laid down in Clause 26 of the General Conditions of Contract.

C3.5.4 Accommodation of Traffic On Public Roads Occupied By The Contractor

The works involves the construction of new roadways and stormwater within an established residential community. The works will be undertaken in such a manner to provide access to residential property accesses and special attention must be drawn to the accommodation/deviation of traffic on the affected area of the works.

The need to accommodate the traffic safely and with the least amount of inconvenience to the travelling public is necessary throughout the construction period. The travelling public shall have the right of way on public roads and the Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on the road.

Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to stop the execution of the works until the road signs, etc, have been repaired to his satisfaction. The Contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the specifications.

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C3.5.5 Testing, Completion, Commissioning, and Correction of Defects

Materials of work that do not conform to the approved samples submitted in terms of the General Conditions of Contract will be rejected. The Engineer reserves the right to submit samples to tests, to ensure that the material represented by the samples meet the specification requirements. 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 experienced engineers, foremen, surveyors, material 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 costs 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 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 Engineer for examination, the Contractor shall furnish the Engineer with the results of the relevant tests to indicate compliance with the specifications.

C3.5.6 Recording Of Weather

Daily temperature and rainfall data shall be recorded in the site diary, and a copy shall be provided to the engineer's representative on a weekly basis. A rainfall gauge shall be located at the contractor's site camp. Temperature readings shall be taken at commencement and closure of the site on a daily basis. Additional readings will be required during construction of layer works, concrete works and surfacing.

C3.5.7 Format of Communications

Communication throughout the contract will be undertaken via written communication either by fax, site instruction or post. Email communication will only be considered as proof of communication when followed up by a written communication on the letterheads of the author or via a site instruction. Request for inspection of the works will be accepted telephonically, however this request must be recorded in the site diary and site instruction book.

C3.5.8 Key Personnel

A schedule of key personnel to be employed with curriculum vitae of relevant experience shall be provided to the employers' representative prior to site handover.

C3.5.9 Management Meeting

The Engineer will conduct site meetings, prepare and circulate minutes, as determined by him at the beginning of the contract. The Contractor shall attend these meetings and shall ensure that when necessary, the required sub-contractor is represented. The approved minutes shall become part of the contract documents.

The Contractor shall be required to conduct safety meetings at intervals agreed to between the Employer or his Safety Agent and the Contractor as specified in the Health and Safety Specification bound in this document.

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C3.5.10 Payment Certificates

The contractor shall submit to the engineer after the end of each month a statement in the required format, showing the estimated amount due to him, calculated in accordance with the General Conditions of Contract. The statement to be submitted by the contractor shall consist of 2 copies of the schedule of quantities.

C3.5.11 Protection of the Public

The Contractor shall at all times ensure that his operations do not endanger any member of the public. As the area is adjacent to a residential area the Contractor shall take special precautions to prevent public access to any danger areas on the Works, e.g. by temporary barricades and/or fencing.

C3.5.12 Site Visitors Book

A Site Visitors Book must be kept on site. All visitors visiting to the site must report to the site office and sign in the Site Visitors book before entering the construction site. The Agent and/or the Safety Officer must always accompany the Visitor. The Visitor must wear a hard hat, safety shoes and safety clothing when required.

C3.5.13 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 Engineer, 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.

C3.5.14 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 Engineer, 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.