

EMALAHLENI LOCAL MUNICIPALITY

PROJECT NO.: ELM/2/06/2022T

THE CONSTRUCTION OF INDWE PUBLIC ABLUTION FACILITIES

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PART C3.1 : SCOPE OF THE WORKS

SCOPE

The Project Specifications are set out in two portions.

C3.1 covers the general description of the Project, the facilities available and the requirements to be met.

C3.2 covers variations and additions to the SANS 1200 Standardised Specifications that are applicable to this Contract.

STATUS

In the event of any discrepancy between the SANS 1200 Standardized Specifications and the Project Specification listed in 1.2 below, the Project Specification shall take precedence and shall govern.

C3.1 : THE WORKS

C3.1.1. PREAMBLE

C3.1.1.1. Method of Measurement and Payment

The method of measurement and payment will be that provided for in the relevant standard specifications of the SANS1200, or as amended under the Variations and Additions to the standard specifications of SANS, as provided in Section 2 of the Pricing instructions.

C3.1.1.2. Applicable Standardised Specifications

Although not bound in nor issued with this document, the following SABS (SANS) 1200 standardised specifications shall form part of the Contract Document.

SANS 1200 A	:	PRELIMINARY AND GENERAL
SANS 1200 C	:	SITE CLEARANCE
SANS 1200 D	:	EARTHWORKS
SANS 1200 DA	:	SEWERS
SANS 1200 GB	:	ABLUTION FACILITIES

Variations and additions to the above SANS 1200 Standardised Specifications are given in Portion 2 of the Project Specifications.

The Contractor must obtain his own copies of the latest edition of the above-mentioned

standardised specifications.

C3.1.1.3. Use of Local Labour

The project is a labour intensive project. it is required that the Contractor shall use local labour as much as possible on this Contract.

C3.1.1.4. Quality control and quality assurance measures

The Contractor will solely be 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 undertake appropriate quality control and quality assurance measures on site. The Engineer will audit the Contractor's quality assurance system on a regular basis to ensure 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 problems.

C3.1.2. SCOPE OF WORKS

GENERAL

C3.1.2.1 Scope of the Project

This project involves the construction of Cacadu Public Ablution Facilities.

The Proposed project will comprise of the the following:

- Clear and Grubbing;
- Excavation of Foundations;
- Concrete floor;
- 2.5m high brickwall;
- Installation of windows and doors;
- Installation of toilet systems;
- Installation of hand-washing basins;
- Installation of sanitizer stands;
- Roofing and guttering;
- Painting works;
- Fencing of the structure
- Paving of the fenced area
- Electrification

The project is located at 40 Fletcher Street, opposite the old taxi rank public toilets and situated within the jurisdiction of the Emalahleni Local Municipality in the Province of Eastern Cape.

The co-ordinates for the proposed site are:

Location	Latitude	Longitude
Indwe	31°28'11.1"S	27°20'19.16"E

The project location is indicated on the Locality Plan attached as **Annexure 1**.

C3.1.2.3 Affected Communities

The project will benefit all Emalahleni LM community member.

C3.1.2.4 Construction Programme

A Five (5) months construction period has been allowed. If desired, Tenderers will be at liberty to offer an alternative period for completion in the appropriate section of the Tender and Contract Data. If no alternative period is stated therein the period for completion will be held to be five (5) months.

C3.1.3 DESIGN CRITERIA

C3.1.3.1 Design Guidelines

The design of the layout is in accordance with the guidelines set out in the Norms and Standards for Public Ablutions in South Africa

C3.1.4 ENVIRONMENTAL ISSUES

The works as envisaged in this contract will not have any adverse effect on the environment. When this project is complete and it will improve the quality of life for all residents in the area.

C3.1.5 EMPLOYMENT OF LOCAL LABOUR

All general workers will be employed from the local communities surrounding the project area. Priority will be given to unemployed youth and women. The target is to have a man/women employment ratio of 50/50.

Payment will be done on a task basis, where each person should reasonably complete one task in a normal working day. The task rate will be equal to the daily rate of R150 per day.

It is the condition of this Contract that the Contractor will have to provide training and skills development to local labours by an accredited service provider.

C3.1.6 PROJECT SPECIFIC REQUIREMENTS

Protection of Existing Works

The contractor shall take all the necessary steps to ascertain the location of existing services before commencing any section of the works and shall exercise the greatest care when working in the vicinity of such services. Moreover, no more than three weeks and no less than one week before commencing his operations in any particular area, the contractor shall request from the engineer the latest available drawings showing the

location of services already installed.

The contractor shall take all necessary steps to protect any existing works against damage which may arise as a result of his operations on site. The contractor shall bear the cost of the repair of damage to any known service, the possible existence of which could reasonably have been ascertained by him in good time.

Protection of Excavations

Unless otherwise permitted in writing by the engineer, all excavations are to be protected by means of fencing or other appropriate means including watchmen if necessary as the works are within a residential area.

No excavations may be left open over weekends and Public Holidays unless properly protected. The cost of backfilling any excavations and the re-opening thereof, to comply with this requirement shall be for the contractor's account.

Spoil Material

No indiscriminate spoiling of material will be allowed. All surplus or unsuitable material shall be spoiled in designated areas as directed by the engineer.

Finishing, Tidying and Period of Maintenance

In view of the intense concentration of construction activities likely to be experienced during the contract period, progressive and systematic finishing and tidying will form an essential part of this contract. On no account must spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others, and in the event of this occurring, the employer shall have the right to withhold payment for as long as may be necessary in respect of the relevant works in the area(s) concerned without thereby prejudicing the rights of others to institute claims against the contractor on the ground of unnecessary obstruction.

Finishing and tidying must not be deferred to the end of the contract. The contractor will be entitled, subject to reaching prior agreement with the engineer, to request that work in specific areas be inspected and certified as complete, prior to certification of completion of all the works included in the contract. Furthermore, in accordance with the provisions of Clause 51(2), provided always that the works in any such specific area will not be certified as complete, until the whole of the works within the specific area concerned, including all finishing and tidying, has been fully completed to the satisfaction of the engineer.

All finishing and tidying shall be carried out to the best advantage of the project as a whole.

Security of Contractor's Site

The provision of security for the Contractor's Site Establishment, for the full duration of the contract, shall be his own responsibility and no claims for additional security measures taken during the currency of the contract will be considered other than as provided for in Clause 54 of the Conditions of Contract.

Courtesy

In all dealings with the public, the contractor shall bear in mind their right to enjoy the use of the roads and services and access to their properties and that the employer desires to interfere as little as possible with these rights.

At all points of contact with the public the contractor and his staff are requested to handle discussions and disputes with deliberate courtesy and understanding.

The Ward Councillor shall be contacted prior to commencement of any works and the contractor is obliged to work with the appointed representatives of the local community in all matters relating to the employment of local labour and related issues.

THE COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT (ACT 130 of 1993) (COID ACT)

Contractors are required to register as employers in terms of the COID Act.

Contractors must pay the assessments due in terms of the COID Act relative to their employee records including all sub-contractors and community based labour.

In this specific contract the contractor further acknowledges that the employer shall have the right, without prejudice, to deduct any shortfall in compensation due to any employee of the contractor (or sub-contractor) from monies due or which may become due to the contractor, and so effect settlement of the matter.

THE LABOUR RELATIONS ACT (ACT 66 of 1995) (LR ACT)

Contractors are required to register as employers in terms of the LR Act.

Contractors are required to pay all employee and employer contributions to the Unemployment Benefits Fund, other than in respect of casual employees defined as persons who work for less than eight hours in any one week, or in respect of persons who by virtue of lawful reasons are exempt therefrom.

THE BASIC CONDITIONS OF EMPLOYMENT ACT (ACT 3 of 1983) (BCE ACT)

Contractors in their capacity as employers are required to comply with the provisions of the BCE Act with special reference to their employee's terms and conditions of employment.

THE INCOME TAX ACT (ACT 58 of 1962)

Contractors in their capacity both as business enterprises and employers are obliged to register and comply with the requirements of the Receiver of Revenue.

THE VALUE ADDED TAX ACT (ACT 89 of 1991)

Contractors in their capacity as business enterprises are required, if their annual turnover exceeds or is expected to exceed the limit as determined by the SARS from time-to-time, to register as VAT vendors with the Receiver of Revenue for the purpose of paying, recovering, charging and returning VAT to the State via the Receiver of Revenue.

It is recorded that the employer in this contract is registered as a VAT vendor.

COMPLIANCE WITH LEGISLATION

Contractors will be deemed by virtue of submitting a tender to have undertaken to comply fully for all purposes under this contract with all current legislation and related regulations. The above Acts as amended from time to time, are listed for the attention and convenience of the contractor, without prejudice and without in any way relieving the contractor of the obligation to continuously comply with all the laws of South Africa for the entire duration of this contract including the defects liability period the cost of so doing being expressly included in the contract sum.

NON COMPLIANCE WITH LEGISLATION

The Employer in this contract will not under any circumstances be, or become party to, any act or omission by the contractor and/or the contractor's sub-contractors and/or employees, which contravenes South African law.

If at any time during this contract, including the defects liability period, the Employer and/or the engineer and/or the engineer's representative discover any such contravention, then the employer shall have the right without prejudice to terminate this contract forthwith, take possession of the works and declare any monies due or which may become due to the contractor as forfeited by the contractor, notwithstanding any other clause to the contrary.

C3.4.2.6 Extension of time due to abnormal rainfall

No extension of the time of completion shall be granted for normal rainfall.

- (a) The contract will be based on Table 1 hereunder, showing the number of working days per month which the contractor can expect to lose due to normal rainfall. Abnormal rainfall shall be the total aggregate of working days over the full contract period during which the contractor is unable to proceed with the majority of his operations as specified under (b), less the sum of the number of days calculated from the table as being due to normal rainfall.

EXPECTED NUMBER OF WORKING DAYS LOST DUE TO NORMAL RAINFALL			
Month	Days	Month	Days
January	3	July	1
February	3	August	1
March	3	September	2
April	2	October	2
May	1	November	3
June	1	December	3

- (b) A day shall be considered as lost when the Engineer agrees that no work was done or

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capable of being done on any item shown on the critical path of the updated and approved construction programme. Items which are not shown on the critical path and have been affected by rainfall shall not be considered for extension of time. Statutory, annual holidays and Sundays shall not be considered as working days.

C3.1.7 SITE INFORMATION

C3.1.7.1. Site Location

The project is located in the CBD of Indwe, and situated within the jurisdiction of the Emalahleni Local Municipality in the Province of Eastern Cape.

Location	Latitude	Longitude
Indwe	31°28'11.1"S	27°20'19.16"E

The project location is indicated on the Locality Plan attached as **Annexure 1**.

C3.1.7.2. Site Facilities Available

C3.1.7.2.1. Water Supplies

The contractor shall at his own cost, make all necessary arrangements for the supply and distribution of water required for construction purposes as well as for use in and about his site establishment and for human consumption.

C3.1.7.2.2. Site Camp

The contractor will be required to establish his own site camp adjacent to the works site. A suitable site camp area will be pointed out to the contractor by the respective ward councilor of the area. This site shall be restored to its original condition by the contractor on completion of the contract.

C3.1.7.2.3. Other Facilities

The contractor shall make his own arrangements for all other necessary facilities during the period of the contract.

C3.1.7.3. Site Facilities Required by the Employer and the Engineer

C3.1.7.3.1. Name Board (SANS 1200 AB Subclause 3.1)

The dimension of the name board is as per the standard detail included in this tender document.

C3.1.7.3.2. Temporary Office

The contractor will provide office for the daily running of site and reporting. The contractor must also provide an office for the engineer where monthly meetings will be held.

C3.1.7.3.3. Telephone and Facsimile Facilities

The contractor will be required to provide the engineer with cellphone airtime for the duration of the contract (R 3000 / month). This has been provided for in the bill of quantities.

C3.2 : VARIATIONS TO STANDARDISED SPECIFICATIONS

The following variations and additions to the SABS 1200 Standardized Specifications referred to in Portion 1 will be valid for this contract. The prefix "PSA" indicates an amendment to SANS 1200 A, (PSC) to SANS 1200 C, etc. The numbers following these prefixes are the relevant Clause numbers in the SANS 1200 Specifications.

C3.2.1. Scope

This part covers essential clauses and data and additional clauses to supplement and to complete those terms of the applicable standardised specifications to render the standardised specifications suitable for this contract.

C3.2.2. Status

Should any requirements of the project specification conflict with any requirement of the standardised specifications the requirements of the project specification shall prevail.

C3.2.3. Sub-clause Reference

Wherever a subclause appears in brackets it shall refer to the subclause in the relevant standardised/particular specification.

PSAA GENERAL (small works)**PSAA 1 CONTRACT NAMEBOARDS (Subclause 5.1)**

The contractor shall supply and install, and include in his rates, the standard nameboard provided in this tender document.

PSAA 2 COMPLIANCE WITH THE OHS ACT

The contractor shall at all times during the construction duration comply with all the requirements of the Occupational Health and Safety Act 2003 regulations.

PSAA 3 HEALTH AND SAFETY OFFICER

The contractor shall appoint Safety officer, who will be in charge for the duration of the project. Safety officer is expected to comply with the OHS Act regulations.

PSAA 4 ADDITIONAL TESTS REQUIRED BY ENGINEER

Over and above the regular testing that is required during the construction phase, the engineer, on written instruction to the contractor, may require additional testing to be done in order to settle disputes, carry out investigations, etc.

A provisional sum has been included in the schedule of quantities to cover the costs of the above and a handling fee, as a percentage of this provisional sum has also been included. Monies from this amount will be spent on the written instructions of the engineer.

PSAA 5 COMMUNITY LIAISON OFFICER

A full time officer from the local community will be employed for duration of the contract to assist both the contractor and the employer in community negotiations regarding general community and labour issues, etc.

A provisional sum has been included in the schedule of quantities to cover the costs of the above and a handling fee, as a percentage of this provisional sum has also been included. CLO will be given a salary and of R5000pm for the duration of contract.

PSAA 6 TELEPHONE (Subclause 5.4)

The contractor will provide to the engineer two thousand two hundred and fifty rands worth of airtime per month for the duration of the project.

PSAA 7 PSC MEMBER

PSC members will be employed for the duration of the contract. The project allow a maximum of 5 members for the duration of the contract at the rate of R 210 per month ,per member,per sitting.

PSAA 9 POWER SUPPLY

The contractor to supply 3 phase power supply from Eskom. In addition, allow 50m of telkom line to the public toilets.

PSAA 10 TRAINING

Employed local labourers to be trained by non accredited agent that will be nominated by the client.

PSAA 11 IN-SERVICE TRAINING

Experiential for maximum of one (1) students shall be granted for the duration of 5 months (Project period). The experience is for civil engineering students.

PSAA 12 ISD CONSULTANT

No Consultant is needed.

PSAA 13 OHS AGENT

Occupational health and safety agent shall be appointed for the duration of contract. OHS Agent is expected to comply with all the construction requirements of the OHS Act 2003 regulations.

PSAA 14 MATERIALS

PSAA 14.1 SPECIFIED MATERIALS TO BEAR SANS (SANS) MARK (SUBCLAUSE 3:1)

All materials that are specified to comply with any SANS (SANS) standard shall bear the SABS (SANS) mark. Samples for testing of materials to be used on the works are to be delivered to a suitable laboratory specified by the engineer.

PSAA 14.2 Ordering of Materials (Subclause 3.3)

The quantities set out in the schedule of quantities have been carefully determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The liability shall rest entirely and solely with the contractor to determine before ordering, the required types and quantities of the various materials required for the completion of the works in accordance with the specifications and the drawings issued to the contractor for construction purposes.

Any reliance placed by the contractor on the estimated quantities stated in the schedule of quantities issued for tendering purposes, or measurements made by the contractor from the drawings issued for tendering purposes, shall be entirely at the contractor's risk and the employer accepts no liability whatever in respect of materials ordered by the contractor on the basis of tender documents.

PSAA 15 RESTRICTIONS ON EMPLOYEE ACCOMMODATION (Subclause 4:2)

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

PSAA 16 ENGINEERS OFFICES AND FACILITIES (Subclause 8.1.2. 1)

Refer to clause PSAB.

PSAA 17 WATCHING BARRICADING LIGHTING AND TRAFFIC CROSSINGS (Subclause 5.6)

PSAA 17.1 BARRICADING

Work in public roads and private properties shall be barricaded off with white washed oil drums and two strands red/white plastic tape strung between drums. Warning signs with reflectorised paint shall be erected ahead of construction to warn traffic of obstructions. In addition, suitable warning safety lighting, operational during hours of darkness, is required to demarcate obstructions in the roadway.

PSAA 17.2 TRAFFIC SIGNS

Wherever the Works affect the operation or safety of public traffic, a full complement of metal traffic signs and road markings shall be erected and maintained to the satisfaction of the Engineer. The signs shall be in accordance with the latest issue of the South African Road Traffic Signs Manual. Adequate warning signs shall be placed at the entrance to all roads which have been closed at their furthest ends to the effect that the roads are not "through roads"

PSAA 17.3 COURTESY

In all dealings with the public, the Contractor shall bear in mind their right to enjoy the use of the road, and the Employers desire to interfere as little as possible with this right.

PSC SITE CLEARANCE**PSC 1 REMOVE AND RELOCATE EXISTING SERVICES**

The Contractor shall remove and relocate any existing water pipelines that may be interfering with the works. Electrical and Telkom services will be strictly relocated by the respective service providers. The Contractor shall not interfere with any electrical and Telkom services belonging to these service providers.

The allocated amount shall include for the relocation of these services as directed by the Engineer on site. The provisional sum shall also include for any additional materials and labour that may be required for this relocation. The item shall be measured as a provisional sum (Prov Sum).

PSC 2 DISPOSAL OF SURPLUS MATERIAL (Subclause 3.1)

All surplus material and vegetation shall be disposed of off site to the satisfaction of the Local Authority and the Engineer. No overhaul shall apply to material disposed of in this manner.

PSC 3 TOPSOIL STOCKPILE (Subclause 5.6)

Topsoil shall be stockpiled on site for later re-use. All haulage of topsoil shall be regarded as freehaul.

PSD EARTHWORKS**PSD 1 CLASSIFICATION OF EXCAVATION (Subclause 3.1)**

Soft and intermediate material shall NOT be classified separately. Material shall only be classified as Soft or Hard. Hard material shall be classified as material that cannot be efficiently removed without blasting or without wedging and splitting. All other material shall be classified as soft material.

Classification of material, other than soft material shall be agreed upon before excavation may be commenced.

The Contractor shall immediately inform the Engineer if and when the nature of the material being excavated changes to such an extent that a new classification for further excavation is warranted. Failure on the part of the Contractor to advise the Engineer thereof in good time shall entitle the Engineer to classify, at his discretion, such excavation as may have been executed in material of a different nature".

PSGA CONCRETE**PSGA 1 FINISH REQUIRED (Subclause 5.2. 1)**

All concrete surfaces from 200mm below ground level or otherwise obscured from view shall be in accordance with Sub Clause 5.2.1 (a)- Rough

All exposed surfaces above 200mm below final ground level in accordance with Sub Clause 5.2.1(b): Smooth

PSGA 2 STRENGTH CONCRETE (Subclause 5.4. 1.5)

The following concrete grades and maximum nominal size of coarse aggregate will apply to this project:

<u>Section</u>	<u>Strength</u>	<u>Max Nom Aggreg</u>
Concrete for foundations	25 MPa	19mm
Mass concrete, below foundation	15 MPa	38mm

PSGA 3 STORAGE OF CEMENT (Subclause 3.2.2)

Cement shall not be kept in storage for longer than 12 weeks without the Engineer's permission.

PSGA 4 TESTS (Subclause 7.1.2)

As the concrete used on this contract will involve small quantities the Engineer will decide when testing is to be done. The Contractor is required to provide the moulds and to make and cure the test cubes and to convey them to a

suitable testing laboratory. The unit rates for concrete shall include for the cost of testing.

PSGA 5 ADMIXTURES TO CONCRETE

Subject to the information to be provided in terms of subclause 3.5.1 of SABS 1200 G, admixtures will be acceptable.

PSGA 6 AIR-ENTRAINING AGENT

Subject to the information to be provided in terms of subclause 3.5.2 of SABS 1200G, no air entraining agents will be acceptable.

PSGA 7 EXPOSURE CONDITION

Subject to the information to be provided in terms of subclauses 5.5.1.5 and 5.5.1.6 of SABS 1200G. The exposure condition is mild and the minimum cement content shall be 340 kg/cubic metre.

PSGA 8 PUMPING OF CONCRETE

Subject to the information to be provided in terms of subclause 5.5.5.5 of SABS 1200G. Pumping of concrete will not be permitted.

PSG 9 PRESCRIBED MIX CONCRETE

Subject to the information to be provided in terms of subclause 5.5.1.6 of SABS 1200G. The Engineer shall not prescribe a mix design for concrete but shall approve a mix design submitted by the Contractor.

Maximum nominal size of aggregate = 19mm, maximum slump = 75mm

PSHB CLADDING AND SHEETING

PSHB 8 Measurement and Payment

PSH B 8.2.2 Supply and Install roof sheeting

Unit : m2

The rate tendered is to include for the supply and installation of the 0,6mm prepainted chromadek roof sheeting and bubblefoil insulation according to the manufacturer's specifications.

PSHB 8.2.3 Supply and Install Ancillaries

a) All ridge and gable end flashing ridge closures etc to complete the entire roof

Unit : Sum

The lump sum rate tendered is to include for the supply and installation all flashing required to complete and waterproof the edges.

b) All roof guttering, fixings downpipes, shoes etc complete in position.

Unit : Sum

The lump sum tendered is to include for all 100mm aluminium rolled

guttering downpipes shoes fixings etc as shown on the drawings complete in position.

PARTICULAR SPECIFICATIONS

PS 1.1: CEMENT

Cement shall be Portland cement complying with the requirements of SABS Specification 471 or PC15 complying with SABS Specification 831.

If bags of cement are to be stored they shall be stacked in a waterproof shed on a floor rendered damp-proof with a tarpaulin. The bags of cement shall be closely stacked in order to reduce air circulation.

PS 1.2: SAND

Sand for concrete work shall be clean, sharp, coarse river sand or other approved sand/grit. It is to be free from soft particles, clay, organic matter or other impurities. The fine aggregate shall comply with the requirements of SABS 1083 unless an approved aggregate, which has satisfactory test results, is available.

PS 1.3: STONE

The coarse aggregate shall comply with the requirements of SABS Specification 1083. All stone for concreting shall be clean, hard with durable particles and to the size as specified.

It will be the Contractors responsibility to ensure that the aggregates are not alkali reactive.

PS 1.4: CONCRETING

All concrete is to be mechanically vibrated during placing to ensure that no honeycombing occurs. Prior permission must be obtained from the Engineer or his/her representative in the event of the Contractor requesting to carry out patching of concrete after stripping concrete shuttering.

The placing of concrete shall be completed within half-an-hour after mixing or within half-an-hour after agitating and within 2,5 hours after mixing in the case of ready mixed concrete. On no account shall concrete be incorporated into the work after it has attained its initial set.

Concrete surface beds shall be laid in a sequence approved by the Engineer. Saw cutting of joint to take place at the interval specified on the drawings.

PS 1.5: VOLUME BATCHING

All concrete is to be mixed in an approved concrete mixing machine, under the supervision of a competent Artisan. All design mixes must be strictly adhered to as specified in the schedule of quantities.

In the event of the sand not being completely dry, an allowance must be made for bulking due to the moisture content.

PS 1.6: STRENGTH OF CONCRETE

The contractor shall be responsible for provision of concrete of the required strength. The

Contractor to include in his rates for cube testing by an approved laboratory to ensure that concrete complies with the specified design requirements.

PS 1.7: CURING OF CONCRETE

After concrete has been placed, all exposed surfaces shall be kept damp for at least 7 days by means of plastic covers, wet canvas or sacks or by continuous hosing.

PS 1.8: FORMWORK/ SHUTTERING

All formwork must be clean, straight and rigid with tight joints, which will prevent any leakage of the liquid matrix.

The Contractor will be responsible for:

- a) Designing all formwork and ensuring the stability and safety thereof.
- b) Any loss or damage arising from defective Design, materials or workmanship.

Formwork is to be accurately erected to ensure that it is in accordance with the drawings and specification.

Immediately before concreting, the formwork must be clean, wet and kept damp whilst the concrete is being placed.

The formwork must remain in place for a minimum period of 4 days in the case of ground slabs.

PS 1.9: REINFORCEMENT

Before being placed in position all reinforcing shall be thoroughly cleaned of all grease, oil, dirt, bitumen, scale and free of rust. Great care must be taken to retain reinforcing in the correct position during the entire period of concreting.

The welded fabric reinforcement shall comply with the requirements of SABS Specification 1024. Reference 193 welded steel fabric reinforcing shall be used in the floor slab with spacers as lifting of the reinforcing during pouring concrete will not be permitted.

PS 1.10: BUILDING SAND

The sand must be clean, free of clay, impurities and vegetable matter and comply with the requirements of SABS specification 1090.

PS 1.11: MORTAR MIX

Unless otherwise stated the cement mortar shall be composed of five parts sand to one part of cement by volume. The material shall be mixed dry until it is a uniform colour and then water added whilst the mixture is turned over until the ingredients is thoroughly incorporated. Cement mortar shall be mixed in small quantities and must be used within 1 hour of mixing. No mortar that has commenced to set shall be used in any way

PORTION 2

STANDARD PREAMBLES

A: BRICKLAYING

All face bricks shall be burnt clay bricks of approved manufacture and to meet the requirements of SABS 227 specifications. They shall be new, well burnt, of uniform colour, size and shape, with sharp arises, rectangular, and free from defects either in quality or shape. When struck the bricks shall give a clear ringing metallic sound. No cracked or broken bricks will be permitted.

1. MORTAR

All face brickwork shall be built in cement mortar composed of 5 parts of clean sieved sand and one part of cement.

2. BRICKWORK

All bricks prior being laid and during process of being laid to be kept damp,
All brickwork to be built in sizes and thickness shown, all brickwork to be in stretcher bond with approved NHBRC brickforce placed every fourth course vertically. Four courses of brickwork to measure 345mm vertically.

Where solid floor construction is applicable, four courses under level of lowest sill and at lintel height to be grouted up solid with 3 : 1 cement mortar and have two courses of brickforce or similar approved reinforcing continuous throughout external walls. All in accordance with detail supplied. Brick lintels over window openings to have 4x2xR8 reinforcing taken 670mm past the opening in four layers of brickwork over brick on edge lintel. R 8 reinforcing to be installed in foundation brickwork as detailed on the drawings. The cost of installation shall be included in the average price of brickwork per square meter.

3 QUARRY TILES

Quarry tiles unless otherwise specified are to match face brickwork in colour.

4 FACEWORK

Building facework to be carried out with brickwork specified by the Client. Grout up each and every course as the work proceeds. Where facework is above floor level, inside skin of brickwork to be bagged and receive 2 coats bitumen waterproofing prior to building up outside skin. Bricks joints to be recessed and smoothed by means of square jointing tool. All to the approval of the Engineer.

All facebrickwork to be kept clean at all times during building operations. Any mortar or other stains to be cleaned off with an acid brick cleaner.

5 BRICKFORCE

Provide and lay NHBRC approved brickforce in all brickwork as follows.

220 brickwork – every 4th course.

110 brickwork – every 4th course.

All brickforce shall be used in continuous and unbroken lengths except at movement joints as specified.

6 DAMP COURSE

Form damp course to all walls at level shown or as directed, consisting of approved 375 micron Brickgrip sheeting the full width of walls. All joints and passings to be lapped a

minimum of 300mm.

7 ROOF RAFTER WALL TIES AND STORM CLIPS

All roof rafter ties shall be 38mm galvanised hoop irons or double No. Gauge galvanised wire at least 1,5 metre in length built into brickwork at approximately 0,76 meter centres. Ties must be well secured to wall at least 5 courses below wall plate and nailed over rafters. Storm clips to be placed in pairs around entire outer perimeter of lower level roofs and internally diagonally across every alternate rafter /purling intersection. In terms of the National Building regulations.

8 BEAM FILLING

Build all beam fillings as requested and flush up underside of roof covering; brickwork between all joists and etc to be laid flat.

9 JOBBING

Neatly perform all jobbing for and after all trades, and leave all in a perfect conditions.

10 GULLIES

Building all gullies or grease traps 114mm away from all main walls in 114mm brickwork on a concrete base 100mm thick. Allow for building in all pipes . Allow for plastering internally and externally and dishing to bottom. Top of concrete bases to be level with top of concrete foundations to main building.

11 BRICK LINTELS

All openings and frames in face brick walls must be spanned by using brick lintels to the specifications detailed above.

12 PLACING OF CONCRETE

No concrete shall be placed or poured without the prior approval of the Engineer or his representative.

B: ROOF COVERINGS

FACTORY FABRICATED METAL CONNECTED TIMBER ROOF TRUSSES:

To be fabricated in a factory by specialists approved by the Engineer. Timber for trusses to be South African softwood and shall be in accordance with Merchantable grade as defined in SABS Specification No. 563-1966 or any amendments thereof, and have a density of not less than 380 kg/ms or Mechanically stress graded timber shall be used employing the mechanical stress grader, designed and supplied by CSIR, to derive permissible stress by values in the timber. The timber shall be of cross-sectional dimensions shown, cut to correct lengths with ends square or cut to the required angle, and shall be assembled in truss fabricating jigs with the truss having the proper camber, and tightly clamped together and joints secured with toothed connector plates of not less than 1,25mm thick galvanised steel sheet, pressed into the timber simultaneously on both sides of the truss with hydraulic presses capable of exerting such pressure as will ensure

complete penetration of the teeth into the timber. The connector plates shall be of such size as will ensure that the joints so made will adequately withstand the forces exerted on the joints. The metal connector plates shall be fabricated out of 1,2mm or 2,0mm drawing quality galvanised

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steel. The steel shall have a minimum yield strength of 228 Mpa and a minimum ultimate tensile strength of 330 Mpa. The corrosion resisting coating shall be 0.38kg/m² commercial class hot dipped galvanized before stamping. The connector plates shall be capable of transmitting on interaction of the forces between the members of a truss as set out in the following table.

Design Values of Connector Plate in Mpa SA Pine Minimum Density = 480 kg/m³.

1,2mm (18 gauge)	1.25
2,0mm (14 gauge)	0,90

The connector plates shall have the following Design Plate Strength:

	<u>For pairs of plates in Newtons per lineal m</u>	
	<u>1,2mm</u>	<u>2,0mm</u>
Longitudinal Tension	770	1450
Lateral Tension	340	1110
Longitudinal Shear	340	810
Lateral Shear	340	425

The Longitudinal Axis is normal to the width of the plate. The connector plates shall be shown to be capable of transmitting these forces in Merchantable quality SA Pine in tests conducted by the Timber Research Unit of the CSIR. The trusses shall be constructed with jigs especially designed to provide correct cambers and pitches. All joints are to be close fitted butt joints and made by precision pressing the metal connector plates into each side of the joints simultaneously.

The trusses to be pitched at one and half degrees unless otherwise stated. All designs are to be prepared by a qualified Engineer and to be in accordance with Contract No. 5131/9845 of the National Building Institute of the South African Council for Scientific and Industrial Research and the design specification for light metal plates connected wood trusses unless otherwise described. Trusses to be designed to carry IBR sheeting and asbestos ceiling. Prices are to include for hoisting in position in accordance with the manufacturer's instructions and for plumb cutting ends of rafters after fixing.

Suppliers of Portal Frame and Timber Roof Structures are to supply design/erection certificates in terms of quality and proper design/erection. No payment will be made without the engineer's certificate for proper design/erection.

C: CARPENTRY AND JOINERY

1 PRE-TREATMENT OF TIMBER

All timber throughout this contract is to be pre-treated as a precaution against termites as specified below.

All hardwood joinery in finished moulded dimension prior to framing up is to be soaked for 30 minutes in a 5% pentachlorophenol 1 solution as approved by the Government, and all sections subsequently cut are to be re-treated as previously specified.

NOTE: While timber are to be stained, oiled or painted the solution used for protection against termites is to be such as will not bleed or spoil the final stained, oiled or painted finish, or alternatively measures must be taken after treatment to ensure that the painted, oiled or stained finish will not be adversely affected.

2 CEILINGS

All gypsum ceilings to be constructed in accordance with the manufacturers specifications and all to the entire satisfaction of the Engineer.

3 WINDOWS

Supply and built in galvanized steel windows of types as shown on the drawings and scheduled in the Bill of quantities.

4 GENERAL AND JOBBING

Neatly perform all jobbing for and after all other trades and leave all in perfect condition.

5 DOORS

1) Internal

As per door schedule in the Schedule of Quantities.

2) External

As per Schedule

3) Internal Door Frames

Galvanised steel as per door Schedule

D: PLASTER/WALL TILER

1 MORTAR

For internal plastered walls to be composed of 5 parts clean sieved pit sand and 1 part Portland cement. For internal plastered ceilings and concrete beams to be composed of 4 parts clean sieved pit sand and 1 part Portland cement. For external plastered walls to be composed of 4 parts clean sieved pit sand and 1 part Portland cement. Rendering for all concrete floors, steps, coves, skirting and pavings etc, to be composed of 2 parts clean sieved umgeni sand and 1 part Portland cement. Tint required.

2 INTERNAL WALLS : 5:1

Except where otherwise stated all internal wall surfaces to be face brickwork .

3 FLOOR SCREEDING AND SKIRTING : 3:1 (WATERPROOF)

Concrete floors in offices and toilets to be screeded 25mm thick grano finish and to be waterproofed with approved brand waterproofer mixed in accordance with manufacture's instructions, finished off with steel trowel free of any trowel or other marks to a true and level surface. Concrete floors to be properly hacked and slushed prior to screeding. All coves and skirting to be rendered in 2:1 cement mortar projecting 13mm thick past face of finish plastered wall.

4 THRESHOLDS

At all external door openings form threshold, using a non-slip tile on the external 114mm half of the opening, and fix a brass water bar the full width of the door opening and grout in with 2:1 sand/cement mortar.

E: PLUMBING

NOTE: All plumbing and drainage work to be strictly in accordance with Municipal regulations and to the satisfaction of the Engineer.

1 FLASHING (WHERE APPLICABLE)

All valleys and ridge flashing to be 24 gauge galvanised iron turned up and beaded on edge. All finishings to be 2kg lead with 24 gauge galvanised iron counter flashing neatly wedged and pointed on completion. Flashing to vent pipe to be 2kg lead.

2 EAVES GUTTER

All eaves gutters to be approved rolled aluminium to manufacturers specification fixed with approved brackets screwed to rafters with brass screws to fall outlets and to have all joints to approval. Prove all necessary angles, stopped ends, outlets etc all to the satisfaction of the Engineer.

Upper level roof gutters to be fixed to edge of roof sheet with downpipes taken down to ground to meet with underground stormwater outlet pipes.

3 DOWNPIPES

All downpipes to be as per drawings fixed to walls with approved non-ferrous holderbats and screws. Provide all necessary off-sets, branches shoes, etc. no loose collars to be used. All to carry and discharge into soak pits as described elsewhere.

4 WASTE PIPES

All waste pipes to sinks and basins to be as short as possible, and taken to the outside with all necessary traps and bends. Fix cleaning eye to each bend and trap. Fix vent pipes as required. All waste pipes to be G.I or PVC 52mm in diameter. Allow for all jointing etc. All waste pipes to be concealed and shall not be carried through external walls.

5 WATER PIPES

All hot and cold water pipes to be "poly cop" plastic piping of their respective sizes, fixed on the outside walls with holdersbars and not underneath foundations. All piping to have screw jointed and painted joints. Provide all necessary elbows, tees, sockets and reducers, etc. make 13mm connection to all WCs, sink and lavatory basins. Allow for all excavating, filling and ramming of trenches and connecting to main. Isolating valves to be installed at all plumbing fittings.

F: IRONMONGERY

1 HINGES

Provide and fix 1 pair 100mm brass butts to all doors. To all hinged external hardwood doors provide and fix pair 100mm brass butts as specified in the schedule of quantities.

2 LOCKS

Provide and fix locks to doors as follows:

- A. External doors: 4 lever mortice locks with 2 keys per lock.
- B. Internal doors: 2 lever mortice locks with 2 keys per lock.

3 BARREL BOLTS

Supply and fix where required all CP barrel bolts 152mm.

4 CABIN HOOKS

Supply and fix where required 100mm brass cabin hooks fixed on to chamfered hardwood blocks plugged into wall.

4 DOOR STOPS

Provide and fix approved rubber doorstops where required.

5 JOBBING

Perform all jobbing for and after all other trades and leave all in perfect order on completion.

6 BURGLAR GUARDS

Provide burglar guards to all opening windows in office and kitchen. All in accordance with manufacturers specification as scheduled in the schedule of quantities.

G: PAINTING AND GLAZING

1 PRIMING

All steel door frames and structural steelwork , windows, barge boards, fascias, etc to receive one undercoat zink plumbate and two top coats alkyd enamel paints before fixing doors.

All materials used shall be the best quality available, and the Engineer shall reserve the right to nominate the suppliers. Tenderes must take this into account and include for this when tendering. Backs of all steel door jamb linings to receive two coats black bituminous paint prior to building in. All galvanised steelwork to receive one coat calcium plumbate primer to conform to SABS Specification CSS 183/5 01/BS 2660/3-042.

2 EXTERNAL AND INTERNAL WOODWORK

All external/internal woodwork except hardwood to be knotted, primed stopped up and painted two coats oil paint to approved colours. Priming and one top coat to be applied before fixing.

External hardwood to be stopped up with putty coloured match and receive three coats exterior quality double marine vanish.

3 INTERNAL WOODWORK

All internal woodwork to be stopped up with putty coloured to match and all once stained and twice vanished with approved marine varnish.

4 WALLS INTERNAL

All internal walls to be face brickwork & no painting is required.

5 CLEANING

Clean down all face brickwork and tile Sills.

6 GLAZING

All windows to be glazed with 6mm clear float glass.
All glazing to be installed to manufacture's specifications.

7 JOBBING

Perform all jobbing, replace all broken glass, wash all thoroughly, clean all glass, etc and leave all painting and other works free from fingers and other marks.

8 FACE BRICK

At the completion of the works the facebrickwork shall be cleaned down, using a solution of spirits of Salts and water or approved chemical, and when a perfectly clean and perfect surface is obtained 1 coat of approved masonry oil shall be applied.

H: ELECTRICIAN

The building is to be wired for all lights and plugs, where directed in accordance with the specification, schedule and drawings. Install earth leakage protection on all plug circuits. A certificate of compliance to be issued by the electrical contractor on completion of the work. Final municipal connection to the prepaid meter may not be immediately available and a generator to be provided by the Contractor may be required to test the circuits.

All wiring to be hidden internally or surface mounted and no chasing for conduits on face brickwork will be permitted.

1 WORKMANSHIP

All work covered by this specification must be carried out by a registered electrical contractor in accordance with the conditions in clauses set out in this preamble. Where any aspect of the work is not specifically mentioned in these clauses, the Standard Regulations for the wiring of premises, Second Edition, as amended September 1966, shall apply. Workmanship shall be of high standard and all tubing and wiring must be carried out by licenced electrical wireman assisted by competent employees. The engineer may, at any time during the course of construction reject any work is not carried out to his satisfaction and it shall be brought up to standard at the expense of the Contractor. For the purpose of this condition, tubing shall mean bending, placing, assembling and fixing of all conduit and accessories used in the electrical installation.

Before submission of completion notice, the electrical contractor must carry out his own testing to ensure that the installation complies with the Standard Regulations for the wiring of premises read with the Electricity Supply bylaws and the detailed requirements as set out in the specification.

On completion, the whole installation will be required to be tested by an Installation Inspector of the Council's Electricity Department and approved as satisfactory.

2 EARTHING

The contractor must provide for the satisfactory earthing of the whole Installation.

A continuous earth wire of not less than half the cross sectional area of the mains must be run from the point of entry of the water main, the meter position and distribution board. Where necessary, an approved earth spike must be provided.

3 MATERIALS

All materials and fittings must be approved and conform to those specified in the schedule of this specification. Manufacturers names and catalogue numbers referred to in the schedule are to be strictly adhere to. Any variance from those standards will not be allowed except with written consent of Council's representative. Any materials or fittings found to be inferior or not of an approved type will be rejected, and if installed, will have to be replaced at the expense of the contractor.

In all cases reference should be made to the relevant SABS Specifications where such specifications apply and are available for general application.

A neutral bar with provision for connecting each neutral conductor into a separate position, corresponding to the line conductor, must be provided. In the case of three phase loads the distribution boards must consist of triple pole MCBs or 3 single pole MCBs arranged so that tripping is simultaneous.

The Distribution Board must be complete with an isolator of suitable current carrying and where necessary an approved cable entry gland must be provided.

The MCBs neutral bar and isolator and time switch (if required) must be contained in an approved flush type metal box of 16 gauge sheet steel with a hinged lid. A suitable earthing terminal must be fixed inside the box.

Provision of conduit entry holes or knockouts and where necessary cable glands must be made.

The box must be of sufficient size to allow for easy access for leading in and connection cables or wires.

The Distribution Board and its metal component parts is to be treated with "Rustem" (cleaner). A protecting coat of "Galvallay" is to be applied. If prepainted DB is not used then tow coats of Alkyd enamel is to be used the colour of which must be approved by the Engineer.

The type, rating and number of ways must be shown in the schedule of points. All circuits must be clearly marked and the voltage of supply must be clearly shown.

Readiboard to be supplied as required, all to the manufacturer's specifications on materials and installation.

4 SPARE WAYS

Allow spaces for two additional space MCBs with the equivalent number of space conduits which may terminate in the roof space where applicable. All conduit ends to be plugged.

5 CABLES

All cables used must be specified and conform with SABS 168-1952. All cables underground must be run at a depth of not less than 610mm.

6 VARIATION RATES

Unless otherwise stated by the Sub-Contractor the Schedule of minimum rates for additions and/or omissions as laid down by the Electrical Contractor's Association (Eastern Cape Branch) shall apply.

7 EXPANSION JOINTS

Where conduit passes across expansion gaps in the building structure, 25mm conduit shall be cut from the run of conduit at the gap and the ends well reamed. The gap thus formed in the conduit shall be covered with a 0.5m length of conduit of the next size making a sliding fit on the outside. This length of the conduit shall be fitted across the gap and the ends sealed with black insulating tape to prevent ingress of moisture during concreting.

The two conduits approaching the gap shall be solidly bonded together with 71,044 tinned copper earth wire which must be bolted at the points of attachment with 6mm galvanised mild steel nuts and bolts. The earth wire and joints shall be protected overall with two layers of PVC and black insulating tapes.

8 FITTINGS

All fittings, etc to be complete with switches, shades, globes and plugs.

9 PREPAID METER BOX

The Supply and installation of a prepaid meter box to the DCB to be arranged by the Municipality.

10 ELECTRICAL CONNECTION

To be by underground mains. All necessary fees and connection costs to be paid for by the contractor.

11 CONDUIT

All conduit and accessories must conform with BSS 31-1940 or 162-1951. It must be smooth inside and must not be cramped when the conduit is bent, the smallest size to be used is 76mm diameter. Before use, conduit must be carefully scrutinized to ensure smoothness of bore and that it is not damaged in any way. Any conduit which is damaged during bending or which has been split, flattened or damaged in any way, must be rejected. Joints must be tightly screwed up and where embedded in concrete, be water tight. Unless otherwise specified all conduits must be placed above bottom reinforcement in concrete slab.

Conduit not placed in concrete or plaster must be fixed by means of galvanised saddles. Hooks, crampets or tungsten pins are not permitted. Walls should be drilled with tungsten tipped bit and either patented lead, greeted bolts or raw plugs may be used for fixing of saddles or other accessories.

All conduits must be finished with brass bushnuts.

12 PLACING AND CHASING OF CONDUIT

All conduits will be mounted flush in the case of flush work, all conduits are to be placed above bottom reinforcement in slabs to allow full concrete cover as indicated on Electrical drawings or

in chases in walls and the surface made good and watertight so that no part of the tubing will be exposed. Chases to be cut in with Carborundum saw or similar.

The proposed runs are to be marked on the wall or and approved by the Wiring Inspector before chasing commences and the Prices of Electrical Work are to include for all necessary chasing in brick or concrete and making good. No chasing allowed in face brickwork except to fix light switches of other components fed from behind.

13 WIRES

All wires must be of suitable size and covered with an approved insulation. The wires must conform with SABS 168-1952 or BSS 7 – 1953 and be of 250 volts grade

14 GENERAL

Contractor shall supply his certified electrician's layout drawings to the Engineer for approval thereof before electrical work commences.

PLI: GENERIC LABOUR-INTENSIVE SPECIFICATION

PLI 1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- (a) trenches having a depth of less than 1,5 metres
- (b) stormwater drainage
- (c) low-volume roads and sidewalks.

PLI 2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

PLI 3 Hand excavatable material

Hand excavatable material is material:

(a) Granular materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or
- (ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100 mm.

(b) Cohesive materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

- (ii) where the material is a gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

Note:

- (1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.
- (2) A dynamic cone penetrometer is an instrument used to measure the insitu shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

Granular materials		Cohesive materials	
Consistency	Description	Consistency	Description
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30 - 40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in upto 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

PLI 4 Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

PLI 5 Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100 mm. Each layer shall be compacted using hand stampers

(a) to 90% Proctor density;

(b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10 mm and contains no

isolated boulders, or

- (c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

PLI 6 Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

PLI 7 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

PLI 8 Shaping

All shaping shall be undertaken by hand.

PLI 9 Loading

All loading shall be done by hand, regardless of the method of haulage.

PLI 10 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

PLI 11 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

PLI 12 Spreading

All material shall be spread by hand.

PLI 13 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

PLI 14 Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

PLI 15 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must to be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Grout shall be mixed and placed by hand.

PLI 16 Manufactured elements

Elements manufactured or designed by the contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320 kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

BILL OF QUANTITIES

Note: *Labour-intensive works must be highlighted in the bills of quantities for the payment items relating to labour-intensive works.*

The following wording, as appropriate, may be included in the preamble or pricing instructions to the bills of quantities in the contract with the contractor:

- 1 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters LI in a separate column filled in against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.
- 2 Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

C3.5 MANAGEMENT OF THE WORKS**C3.5.1 GENERIC SPECIFICATIONS**

The SANS 1200 Standardized Specifications listed in 4.1.1 are applicable.

C3.6 HEALTH AND SAFETY

The OCCUPATIONAL, HEALTH AND SAFETY ACT (ACT 85 OF 1993) (OHS ACT) covers inter alia "any work in connection with -

- a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of an addition to a building;
- b) the installation, erection or dismantling of machinery;
- c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, railway, street, runway, sewer or water reticulation system or work on any similar project;
- d) the moving of earth, clearing of land or making of an excavation or work on any similar project." (General Administrative Regulations Clause 1).

It is recorded that the subject of this contract falls within the scope of the foregoing work definition, and that the Employer in terms of this contract is the Mandator and that the Contractor is the Mandatory in terms of the OHS Act.

The arrangements and procedures to ensure compliance by the Mandatory with the provisions of the OHS Act referred to in the Agreement, in Part 10 : Pro-forma's, between the Employer and the Contractor in this contract are:

- 1 The Mandatory shall keep a record of all incidents in terms of Clause 10 (1) of the General Administration Regulations (GAR).
- 2 The Mandatory shall cause every incident to be investigated in terms of Clause 10 (2) of the GAR.
- 3 The Mandatory shall cause all such records to be examined by a Safety Committee in terms of Clause 10 (3) of the GAR.
- 4 The Mandatory shall on demand furnish the divisional inspector with such returns as may be required in terms of Clause 14 of the GAR.
- 5 The Mandatory shall charge a full-time employee designated in writing by the Mandatory with the duty of supervising the performance of the work (or the Mandatory may personally undertake this duty) in terms of Clause 11 of the General Safety Regulations.
- 6 The Mandatory shall before commencing or carrying out the work, inform the divisional inspector in writing of:-
 - a) the address of the premises on which such work will be carried out,
 - b) the nature of such work,
 - c) the date on which it is expected that such work will be commenced, and
 - d) the date on which it is expected that such work will be completed;

all in terms of Clause 15c of the GAR

- 7 The Mandatory shall comply with all other aspects of the OHS Act relative to the nature of the works and shall scrupulously observe and execute any instruction given by an official inspector with reference thereto.

C3.6.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES**(a) Construction Regulations, 2003**

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2003 (the regulations) as promulgated in Government Gazette No 25207 and Regulation Gazette No 7721 of 18 July 2003. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Project Specifications, Bill of Quantities and Drawings, as well as in the Employers' health and safety specifications (regulation 4(1)) of the Construction Regulations 2003, which are bound in the Contract document.

The Contractor shall in terms of regulation 5(1) provide a comprehensive health and safety plan detailing his proposed compliance with the regulations, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan as well as the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

Payment items are included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

(b) Project Safety Specification

It is recorded that this project will be undertaken in accordance with the guidelines and requirements included under the **Safety Specification: Construction, Health and Safety as attached under Appendix '1'** and the sub-sections thereto. The contents of the specification are based on the minimum requirements as stipulated under the Occupational Health and Safety Act No 85 of 1993 (OHS) and the Construction Regulations of July 2003 (CR).