



## EMALAHLENI LOCAL MUNICIPALITY



**BID NO: ELM 04/2021 (RE- ADVERT)**

**CONSTRUCTION WORK AT LEEUWPOORT LANDFILL SITE**

### **C3 SCOPE OF WORKS**

**C3.1** Description of the Works

**C3.2** Engineering

**C3.3** Procurement

**C3.4** Construction

C3.1.1

*Contractor*

*Witness 1*

*Witness 2*

*Employer*

*Witness 1*

*Witness 2*



## C3.1: DESCRIPTION OF THE WORKS

### 1 DESCRIPTION OF THE WORKS

#### 1.1 CONTRACT WORK

The installation shall be carried out entirely by the Civil Contractor's own staff and shall not in any way be sub-let. This part of the specification shall have preference to any other part of the specification.

The scope of works has been scheduled to be completed in a single financial year and the client reserves the right to reduce the scope of works, in any means or form or section as they may decide and reserve the right to sub-let out any work as defined under the provisional amounts in the bill of quantities.

#### 1.2. EMPLOYER'S OBJECTIVES

It is a specific goal of this project that the labour component be maximised where it is economically feasible, and that the use of this labour goes hand in hand with on the job training of the labour force. The project is thus process and product orientated, and it is expected that the contractor will pursue these goals in the execution of the project.

#### 1.3. SITE

The Tenderers must, before submitting their tenders, acquaint themselves with the local conditions, accessibility of the sites, soil conditions, availability of labour and labour conditions, transport, off loading store and custody conditions for materials and equipment necessary for the completion of the total contract. No claim based on ignorance in this regard shall be considered.

##### 1.3.1 DAMAGE TO OTHER/EXISTING SERVICES

The Contractor shall assume full responsibility in case he or any person in his service is directly or indirectly responsible for any damage caused to other services already installed (water, sewerage, storm water, roads, surveyor's pegs, etc.). Any such damage shall immediately be reported to the Engineer.

The Contractor shall be held fully responsible for the repair of such damage to the satisfaction of the Engineer and/or local municipality. The costs for the repair of such damage shall be borne by the Contractor. Claims by the Contractor in this connection will not be considered. All disturbed land surveyor pegs shall be re-surveyed and certified in the correct position at the cost of the contractor.

C3.1.2

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



**1.4. EXTENT OF WORK**

The work covered by this contract comprises the completion of the outstanding works of Phase1 “Construction Works at Leeuwoort Landfill Site and the Installation of 24m galvanized weighbridge with all associated civil works and instrumentation”.

**1.4.1 Main Building**

- The walls to be cleaned and repainted.
- 1x main burglar door to the offices is vandalized, to be replaced
- 6x in-doors are chipped and need repainting.
- 2x toilet tank lids to be replaced.
- 1x window frame and burglar to be replaced.
- The geyser is vandalized and all copper pipes stolen, to be replaced complete.

**1.4.2 Ablution block and Storage Room**

- The rain water goods (gutters, fascia’s board and down-pipe) were damaged and to be replaced.
- The roof to be fixed.
- The tiles in the storeroom are chipped and to be fixed.
- The apron outside the ablution block is damaged.
- The wash bay concrete has cracked at about 12m3, to be fixed.

**1.4.3 Fencing**

- ±200m Coil Type Concertina wire all around the landfill fence is damaged, to be replaced.
- ±1,8km of 1.8m height Concrete palisade fence is also damaged, to be replaced.

**1.4.4 Plant Parking**

- ±686m Welded razor concerting wire fencing at the maintenance plant parking was vandalized, to be

C3.1.3

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



replaced.

- Earthworks – 406m<sup>2</sup> with concrete stones.
- Concrete stones.
- Farm gate – 4,5m<sup>2</sup> with 2x posts.

#### 1.4.5 **Storm-water Control**

##### 1.4.5.1 **Berms**

- ±800m Berm alongside the fence to be re-constructed.
- ±29m Berm alongside the entrance to be re-constructed.

##### 1.4.5.2 **Cleaning**

- Storm-water pipe outlet is completely covered with sand, to be cleaned.
- Cleaning the ±22m<sup>2</sup> storm-water next to the ablution block.

##### 1.4.5.3 **Paving and Kerbing**

- 316m<sup>2</sup> of the concrete paving blocks to be re-installed.
- 11m fig.8c (1m long) kerbs are also to be re-installed.
- 3m (330mm long) fig.8c kerbs to be re-installed.
- 1x transition (1m long) kerbs to be re-installed.

##### 1.4.5.4 **Drift**

- Construction of the drift at the entrance to control the flow of running water.

C3.1.4

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



#### 1.4.6 Electricity (Guard House)

- 1X Distribution Box complete with earth leakage, main switch and 5 circuit breakers to be replaced.
- Supply and Install 1x 50Kva Transformer (Three phase distribution transformer). Voltage: 11000/420V
- Installation of control box with 4 core (45m) cable complete

#### 1.4.7 Gate

- ±3,5m<sup>2</sup> gate rail is covered with heaps of sand and needs to be cleaned.
- The D5 gate motor is stolen and needs to be replaced.

#### 1.4.8 Paved Parking

- The paved parking is flooded with sand. The paving needs to be cleaned and a berm to be constructed to control the flow of water.

#### 1.4.9 Paving (Weighbridge)

- Installation of concrete paving blocks on both sides of the weighbridge.

#### 1.4.10 Guard House and Entrance

##### 1.4.10.1 Boom-gate

- Supply and Install 2x -2,5m Tyre-spike automatic boom-gates complete with all electronics, logic and loop detector including testing thereof.
- The Gate Motor kit for the 6m steel palisade gate is stolen and needs

to be C3.1.5

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



replaced.

- Supply and Install 2x CCTV units with 6 cameras each at the gate entrance.

#### 1.4.10.2 **Solar Street Lights**

- Supply and installation of 4x Falcus 15m solar powered street lights or similar approved.
- Poles are to be accordance with SABS 0225 Specification
- All products to be hot dip galvanised by a SABS Approved galvaniser in accordance to SANS 121/ SABS 1461 Specification.
- All poles to be manufactured from grade S 355 steel manufactured in accordance to SANS 657/1 and 3 Specification.
- All openings (i.e access doors, cable entries, etc) should be done by means of Plasma Arc.

#### 1.4.11 **Weighbridge (Specialised Work to be carried out by a SANAS Accredited sub-contractor)**

- Supply and Install aboveground 2 x – 24m fully electronic galvanized weighbridge complete with weighbridge foundations.
- The sub-contractor appointed should offer a turn-key package including excavation for the foundations, construction of the foundation, installation of the weighbridge, supply the software for data processing programs (should include training), licence plate recognition technology, CCTV camera system, boom barrier, high bright LED traffic robots.
- Construction of a control room, fully furnished with control equipment.
- Cabling and Electrical Installation.

C3.1.6



Contractor



Witness 1



Witness 2



Employer



Witness 1



Witness 2



**1.4.12 High Level Tank**

- Pipe for transferring water from the tank to the trucks, to be installed.
- 150mm PVC Flat hose, flexible hose poly pipe.

The works is scheduled to be carried out entirely on this phases, and the Client reserves the right to reduce the scope of the work, to a portion of the work or per phase or as the budget allows.

Items not priced within the Bill of Quantities will be deemed to be covered by other priced items or that the costs thereof is Zero (R 0.00) and the contractor will need to furnish/supply/deliver/install/commission such an item, as specified.

**1.5. STANDARD SPECIFICATION, STANDARDS AND DOCUMENTATION**

This specification shall be read in conjunction with the 'Standard Technical Specification' for the installation. The Standard Technical Specification of the tender is bound in the SANS 1200 series of specification, and is available from the South African Bureau of Standards .

Tenderers shall ensure that they are conversant with the contents of the Standard Technical Specification and other specifications referred to in this document.

**1.6. SYSTEM PARAMETERS**

**ALL MATERIAL AND EQUIPMENT USED FOR THIS CONTRACT SHALL BE SUITABLE TO OPERATE CONTINUOUSLY UNDER THE FOLLOWING CONDITIONS:**

1.6.1 Nominal System Voltage

- HV : 22kV
- MV : 11kV

1.6.2 Maximum System Voltage

- HV : 24kV
- MV : 12kV

1.6.3 Nominal System Frequency : 50Hz

1.6.4 Number of phases : 3

1.6.5 Minimum Symmetrical Fault level

- HV : 25kA/phase
- MV : 10kA/phase

C3.1.7

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



1.6.6 Impulse Level

- HV : 150kV
- MV : 95kV

1.6.7 Ambient Temperature

- Maximum : 42°C
- Minimum : -5°C
- Monthly average maximum : 28°C
- Monthly average minimum : 9°C

1.6.8 Relative Humidity

- Winter Maximum : 81%
- Winter Minimum : 44%
- Summer Maximum : 92%
- Summer Minimum : 58%

- 1.6.9 Atmospheric Condition : Dust
- 1.6.10 Lighting : Severe

**1.7 EXISTING SERVICES**

The Contractor shall so carry out all his operations as not to encroach on, or interfere with, trespass on, or damage adjoining lands, building properties, roads, structures, places and things in the vicinity of the Works, and he shall free and relieve the Employer of any liability that may be incurred in consequence of his failure to do so.

The services existing on the site will be either shown on the drawings or pointed out on site by the Engineer and / or the Municipality.

No excavation is to take place until a representative from the Municipality has been contacted and he has pointed out the position of existing services to the Contractor and confirmed it in writing. The same shall apply from all Telkom, sewer, water services in the area,

The Contractor shall assume full responsibility in case he or any person in his service is directly or indirectly responsible for any damage caused to other services already installed (water, sewerage, storm water, roads, surveyor's pegs, etc.) Any such damage shall immediately be reported to the Engineer.

The Contractor shall be held fully responsible for the repair of such damage to the satisfaction of the Engineer and/or local municipality. The costs for the repair of such damage and of any consequential damage shall be borne by the Contractor. Claims by the Contractor in this connection will not be considered. All disturbed land surveyor pegs shall be re-surveyed and certified in the correct position at the cost of the contractor.

C3.1.8

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



When any such service is encountered and is likely to impede the progress of the Contract, the Engineer shall arrange as far as possible for the re-location of the services.

**1.8. DETAILED TECHNICAL SPECIFICATION**

**1.8.1 PSA: SABS 1200 A – GENERAL**

**PSA 1 QUALITY AND SAMPLES (Subclause 3.1)**

Add to the Subclause:

All materials shall comply with the requirements of the South African Bureau of Standards, and shall bear the official standardization mark. Where SABS standard does not exist for a certain material, or a material does not bear the official standardization mark, the Engineers approval of such material must be gained before use thereof.

**PSA 2 CONTRACTOR'S OFFICE AND STORES (Subclause 4.2)**

Add to the Subclause:

Neither housing nor shelters will be provided for the contractor's employees, and the Contractor shall make his own arrangements to house his employees and transport them to the Site.

**PSA 3 SETTING OUT OF THE WORKS (Subclause 5.1.1)**

Generally, the positions of the works will be fixed according to the position of the existing pipes in the area. The Contractor is to confirm all exact pipe positions with the Engineer prior to commencement of excavations.

**PSA 4 SAFETY (Subclause 5.7)**

Add to the Subclause:

All work is to be carried out in accordance with the Occupational Health and Safety Act and Regulations (Act 85 of 1993) and Construction Regulations 2003 (copies of which must be kept on site), the Explosive Material Act of (Act 26 of 1956), the Minerals Act of 1991, and the Factories Machinery and Building Work Act (No 22 of 1941).

**PSA 5 GROUND AND ACCESS TO WORKS (Subclause 5.8)**

C3.1.9

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Add to the Subclause:

The Contractor shall where necessary on or adjacent to roads which carry traffic, provide all the necessary barricades and signs in accordance with the stipulations of the South African Road Traffic, Emalahleni Local Municipality and the OHS Act and Construction regulations.

The Contractor shall further ensure that all public roads that are used for access to the site are kept free of debris at all times. The Contractor shall also take adequate measures to ensure that dust is kept to an acceptable level. The term acceptable is to be deemed as acceptable to the Engineer.

**PSA 6 APPROVED LABORATORIES** (Subclause 7.2 of SABS 1200A General)

It is not required for the Contractor to supply a laboratory for testing materials on site, and he may submit the name and credentials of a local commercial laboratory, for approval by the Engineer if he so requires.

**PSA 7 ACCOMODATION OF TRAFFIC** (Subclause 5.2)

Add the following to the subclause:

It is expected of the Contractor to ensure that the free flow of traffic is possible throughout the construction period.

The Contractor is to provide all necessary barricades, signs and lighting in accordance with the stipulations of the South African Road Signs Traffic Manual, and the Protective Services of the Emalahleni Local Municipality. All work is to be to the satisfaction of the Engineer.

**PSAB: SABS 1200 AB – ENGINEERS OFFICE**

**PSAB 1 SURVEY ASSISTANT AND EQUIPMENT**

The Contractor will not be required to make any survey equipment available specifically for the use of the Engineer.

The Contractor will however make 2 survey assistants available to the Engineer as and when required, as well as a theodolite and/or level plus accessories.

**PSAB 2 NAMEBOARDS** (Subclause 3.1)

Two name boards shall be provided in positions as ordered by the Engineer. The Engineer will provide the lettering required once <sup>C3.1.10</sup> the tender is awarded.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



**PSAB 3 FACILITIES FOR ENGINEER**

No specific offices are required for the Engineer on this contract. The contractor is however expected to have enough space for the holding of site meetings.

**PSC: SABS 1200 C – SITE CLEARANCE**

**PSC 1 DISPOSAL OF SURPLUS MATERIAL (Subclause 3.1)**

The disposal site is at the discretion of the Contractor but with approval from the Engineer.

**PSDB: SABS 1200 DB – EARTHWORKS (PIPE TRENCHES)**

**PSDB 1 PRECAUTIONS (Subclause 5.1)**

Add the following to Subclause 5.1.1 General:

Delete the first four lines and substitute the following:

The Contractor or his agent or representative appointed in writing shall be deemed to be and shall be both the “excavator” and “a person who is competent to pronounce on the safety” of all bracing and shoring as set out in regulation 13 (demolition and excavation) of the General Safety Act No 6 of 1983 as published in the Government Gazette no 10252 Volume 251 page 30 of May 1986 (as amended).

**PSDB 2 PROGRAMMING OF TRENCH EXCAVATION**

The Contractor shall program his works in such a way that excavation and backfilling for all types of trenches will be completed before the construction of the subbase layer.

**PSDB 3 BACKFILLING (Subclause 3.5b and 5.7.2)**

All trenches that cross the roadway will be provided with the material and compacted to the specification as per the original layerworks of the road that has been crossed.

**PSDB 4 BEDDING CLASS (Clauses 8.2.3, 8.3.2a & 8.2.3b)**

Unless shown otherwise on the drawings all bedding shall be of a class B type for concrete pipes, and bedding for flexible pipes (if utilised) as per section 1200 DB of SABS 1200

**PSDB 5 EXISTING SERVICES (Subclause 5.1.4)**

C3.1.11

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Add to the subclause:

All existing services on the site may not be shown on the drawings or be visible on the site. The Engineer may order excavation by hand in order to search for and expose services. An item has been included in the Schedule of Quantities to cover the cost of such work if so ordered by the Engineer. Where a service is damaged because of the Contractors negligence he shall be liable for the cost involved in the repair of the services and any other consequent cost that may arise due to the interruption of the damaged services.

No excavation is to take place until a representative from the Municipality has been contacted and he has pointed out the existing services to the Contractor and confirmed it in writing. The same shall apply to all Telkom services in the area.

**PSDB 6 TRANSPORT FOR EARTHWORKS AND TRENCHES** (Subclause 5.6.8)

Add the following to clause 5.2.6.1 of SABS 1200 DA:

- c) Notwithstanding anything stated to the contrary, the free haul distance on this contract will be taken as 2,0km.

**PSDB 7 EXCAVATION** (Subclause 5.4)

Add to the subclause:

Excavation through surfaced roads is to be carried out in such a way that the edge of the surfacing forms a straight and true line after excavation.

**PSDB 8 BARRICADING AND LIGHTING** (Subclause 5.1.1.1)

Delete the Subclause and substitute the following:

In terms of the Occupational Health and Safety Act and Construction Regulations 2003 (as amended), every excavation that is accessible to the public or that is adjacent to a public road or thoroughfare, or by which the safety of persons may be endangered, shall be

- a) For Excavations Other Than Trenches:
  - i) Adequately protected by a barrier or fence at least one-metre-high erected as close to the excavation as is practicable; and
  - ii) Provided with red warning lights or any other visible boundary indicators at night or when visibility conditions are poor; and
  - iii) Inspected by watchmen employed by the Contractor to ensure that barricades and lights are effective at all times.

C3.1.12

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



b) For Trench Excavations

- i) Adequately protected by means of at least two horizontal double sided 'red/white' Chevron Tapes approved by the Engineer. The tapes shall be stretched tightly between suitable supports along both sides and ends of the excavation at levels approximately 0,45 m and 1,25 m above the ground. The supports shall consist of poles or iron standards securely planted in solid ground at not more than 10 m centres so as to enclose the spoil and the excavations.
- ii) Provided with red warning light or any other visible boundary indicators at night or when visibility conditions are poor. The spacing between lamps along an open trench shall be not greater than 10 metres. All lamps shall be kept in good order and continuously lit from dusk to dawn and the Contractor shall employ a night watchman to ensure that the lamps remain lit.
- iii) Provided with a sufficient number of steel plates at least 2 m x 1,20 m x 8 mm thick which may be laid across open excavated trenches to provide bridges for vehicles along the route of the work as and where may be considered necessary by the Engineer. The Contractor shall make such plates available on Site at all times.
- iv) Provided with protection for a private vehicular or a pedestrian crossing over an open trench. Such crossings shall be protected on each side by a stout two rail timber fence, at least 1 m high, consisting of 150 mm x 75 mm timber verticals set 0,50 m into the ground, with 75 mm x 50 mm rails securely nailed to them. Where timber is used for bridges, it must be battened underneath to prevent tipping. At least 4 lamps must be provided at each crossing.
  - v) Provided with warning barriers in addition to the barricading and light requirements set out above, where construction is in, or across, public roads. The barriers shall comprise 225 mm x 40 mm timbers firmly fixed to heavy supports. The barriers shall be located at least 20 m distance from the obstruction in the directions of all approaching traffic; and the requisite ROAD CLOSED, DEVIATION and other
  - vi) signs shall be prominently displayed well in advance of the work. All such signs and
  - vii) positioning thereof shall comply with the requirements set out in the S.A. Road Traffic Signs Manual.

Where only a portion of the roadway is closed suitable empty drums or pipes painted white shall be placed along the traffic side at distances not more than 20 m apart.

Lamps in good order shall be provided one to each drum or pipe and at least five to each barricade, in addition all poles and warning notices shall be clearly

C3.1.13

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



marked by means of approved reflecting material.

- vi) Regularly inspected by watchmen employed by the Contractor to ensure that barricades, bridges, warning barriers and lights are effective at all times.

**PSGA SABS 1200 GA – CONCRETE (SMALL WORKS)**

**PSGA 1 CEMENT** (Subclause 3.2)

Unless written consent to the contrary is received from the Engineer, all cement used on the contract will be Ordinary Portland cement (CEM I 42,5).

**PSGA 2 FINISH** (Subclause 4.4.2)

All exposed concrete surfaces shall be floated off to the necessary gradients and planes, and while still green, will be finished off to a smooth surface with a wooden trowel.

**PSGA 3 STRENGTH CONCRETE** (Subclause 5.4.1.5)

The strength concrete necessary for the different portions of the work is as follows:

| GRADE | ITEM                                                    |
|-------|---------------------------------------------------------|
| 20/20 | All valve and meter box covers and bases, thrust blocks |
| 20/20 | Encasement of pipes                                     |
| 20/20 | Reinstatement of driveways                              |

Should concrete for the works be mixed on site, the Contractor is to provide the Engineer with a mix design carried out by an approved laboratory for approval. The Contractor is also to furnish the Engineer with the methodology and equipment to be used for the mixing of concrete for approval by the Engineer. Six tests cubes are to be taken prior to the first concrete pour, and the 7-day result will be utilized as a first indication of suitability of the mix design. Approval will however be based on the 28 day strength.

**1.1.8.1 PSL: SABS 1200 L – MEDIUM PRESSURE PIPELINES**

**PSL 1 uPVC PIPES** (Subclause 3.7.1) ISO 4422.”

**PSL 2 DEPTHS AND COVER** (Subclause 5.1.4)

5.1.4.5 The minimum depth of cover to the main pipeline is to be 900 mm except at road crossings where the cover is to be at least 1200

C3.1.14

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



mm.

**PSL 3 LAYING – GENERAL** (Subclause 5.1.1)

Add the following to Subclause 5.1.1:

“Pipelaying shall not be carried out in trenches which have not been approved by the Engineer. The total length of water main which has not been tested and approved may not exceed 500 m.”

**PSL 4 VALVES**

All valves shall be right hand closing with non-rising spindle and cap.

**PSLB: SABS 1200 - BEDDING (PIPES)**

**PSLB 1 SELECTED FILL MATERIAL** (Subclause 3.2)

In the second line delete "PI not exceeding 6" and substitute with "PI not exceeding 10".

**PSLB 2 BEDDING** (Subclause 3.3)

All pipes under this Contract will be considered as being flexible pipes.

**PSLB 3 SUITABLE MATERIAL AVAILABLE FROM TRENCH EXCAVATIONS** (Subclause 3.4.1)

Delete the Subclause and substitute the following:

The excavation of a pipe trench shall comply with the requirements of Subclause 5.4 of SABS 1200 DB and the provisions of Subclause 3.7 of SABS 1200 DB (in terms of which, for the purpose of providing bedding materials, the Contractor is not required to use selective methods of excavating) shall apply. Nevertheless, the Contractor shall take every reasonable precaution to avoid burying or contaminating material that is suitable and is required for bedding or covering the pipeline. If, in the opinion of the Engineer, bedding material can be produced from the excavated material, the Contractor, if so ordered by the Engineer, shall screen or otherwise treat (as Scheduled) the excavated material in order to produce material suitable for bedding (see also Subclause 8.1.2).

**PSLB 4 STONE BEDDING** (New Subclause 5.2.5)

Add new Subclause:

C3.1.15

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Where ordered by the Engineer, special drains consisting of a 40 mm thickness of 6mm to 20mm graded stone extending the full width of the trench shall be provided below the bedding to the pipes. The excavation for these drains will be measured in cubic metres at the contract rate applying to unsuitable excavation below the bottom of the trench. The stone filling will be paid for per cubic metre. All measurements in this connection will be to a width equal to the base widths and depths ordered.

**PSLB 5 SELECTED FILL BLANKET** (Subclause 5.3(b))

Delete the words "200 mm" from title.

**PSLB 6 CONCRETE CASING TO PIPES** (Subclause 5.4)

Add to the Subclause:

Where concrete encasing is ordered by the Engineer it is to be of grade 20/19 concrete with a minimum thickness of 150 mm above the top of the pipe.

**PSLB 7 MOISTURE CONTENT AND DENSITY** (Subclause 6.1)

Add to the Subclause:

The permissible deviations applicable are to be to Degree of Accuracy II.

**PSLB 8 VOLUME OF BEDDING MATERIALS** (Subclause 8.1.3)

Add to the Subclause:

(c) The volume of bedding material shall be measured nett i.e. the volume of the pipe is to be deducted.

**PSLB 9 FREEHAUL** (Subclause 8.1.6)

The freehaul that applies to selected granular and selected fill material shall be 1,5km.

**PSLE: SABS 1200 LE - STORMWATER**

**PSLE 1 PIPE CULVERTS** (Subclause 5.2.2)

C3.1.16

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



Add the following to the subclause.

"Pipes shall be:

Concrete pipes are to be Ogee type reinforced concrete pipes according to SABS 667 of a class as depicted on the drawings or in the project specification. Class B bedding shall be used throughout the contract, unless otherwise stipulated."

**PSLE 2 SKEWED ENDS** (Subclause 3.1.d)

The Contractor shall be permitted to cut skewed ends on site, provided the final end product is to the satisfaction of the Engineer. No extra payment will be made for the cutting of skewed ends and the Contractor is to allow in his rates for this operation.

**PSME: SABS 1200 ME - SUBBASE**

**PSME 1 REGIONAL FACTOR**

The regional factor for site shall be 0,6.

**PSME 2 STABILIZING AGENT**

The subbase if required, shall be stabilized with Ordinary Portland cement (CEM I 42.5), at an application rate as stipulated by the Engineer. Should the contractor wish to use any other stabilizing agent than that specified by the Engineer, he shall provide the necessary test results on the subbase material which prove that the alternative stabilizing agent will give a final product at least as good as that originally specified, all being subject to the approval of the Engineer, and the Contractor is to provide the Engineer with tests from any commercial sources he wishes to utilise prior to importation thereof.

**PSME 3 RATE OF APPLICATION**

The rate of application of stabilizing agent shall be determined by the Engineer.

**PSMJ: SABS 1200 MJ – SEGMENTED PAVING**

**PSMJ 1 LAYING OF UNITS** (Subclause 5.4)

Add to the subclause: "All paving blocks on this contract shall be laid in the herringbone pattern".

**PSMJ 2 COMPACTION OF UNITS** (Subclause 5.6.2)

C3.1.17

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



The paving on this contract shall be subject to wheel loads that exceed 30Kn.

**PSMK: SABS 1200 MK - KERBING AND CHANNELLING**

**PSMK 1 BEDDING MATERIAL** (Subclause 3.9)

Add to the subclause after "13,2 mm" the following.

"for bedding thicknesses of 0 - 30 mm.

The following materials are to be used in the bedding of the kerbs for thicknesses greater than 30mm:

- 30 - 60 mm - 1 part cement to 5 parts of the concrete sand
- over 60 mm - 1 : 4 : 8 concrete"

**PSMK 2 CONCRETE FOR EXTRUDED - IN-SITU KERBING AND CHANNELLING** (Subclause 3.7)

All kerbs and edge strips on this contract shall be as per the design.

**1.10.8. REMOVAL AND DISMANTLING OF EXISTING SERVICES**

All existing streetlight poles and overhead conductors must be removed. The conductors must be neatly rolled onto a cable drum. All removed materials not reinstalled as per the next clause, must be taken to the Emalahleni Municipal Stores and delivery thereof must be signed by an Approval Council representative.

**1.10.9 AS BUILT DRAWINGS, MAINTENANCE AND OPERATING MANUALS:**

As each portion of the work is completed, the Contractor shall provide the Engineer with 'as-built' drawings maintenance and operating manuals and other documents which are called for in the Standard Technical Specification, the Detail Technical Specification or any other specifications or documentation forming part of this contract or as agreed upon.

Where 'as-built' layout drawings are required and where such electrical layouts are drawn on Architectural drawings, the Engineer will supply sepias of the Architectural drawings on request and at the current market costs to enable the Contractor to accurately detail the completed installation. The Contractor shall obtain his own 'base' material and information for all workshop, design, schematic and wiring diagrams or other drawings which must be provided 'as-built'.

In addition, a complete reticulation and schematic diagram showing all supply cables and

C3.1.18

Contractor

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Employer

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Witness 2



switchboards or other equipment shall be provided behind a clean plastic cover in the substation or adjacent to the Main Switchboard if not located in a substation.

The installation will not be regarded as complete until all of the requirements of this section have been met.

**1.10.11. INSPECTION, TESTING, COMMISSIONING AND HANDING OVER:**

**1.10.11.1 PHYSICAL INSPECTION PROCEDURE**

On completion of the Installation or before any inspection or testing is required, the Contractor shall carry out his own inspections to ensure that the installation and equipment comply with the Specifications and the quality of workmanship and materials are to the specified standards. The Engineer will not act as the Contractor's inspector or quality control official.

Once the Contractor has completed the installation, written notice shall be given to the Engineer in order that a mutually acceptable date can be arranged for a joint inspection.

During the course of the inspection, the representative of the Engineer will compile a list of items (if any) requiring further attention. A copy of this list will be provided to the Contractor who will have a period of 7 days in which to rectify the offending items of the installation.

The Contractor shall then provide written notice that he is ready for an inspection of the remedial work to the offending items.

This procedure will continue until the entire installation has been correctly completed in accordance with the specifications.

After the first inspection all time and travelling costs incurred by the Engineer for further inspections or re-inspections will be payable by the Contractor.

**1.10.11.2 FACTORY INSPECTIONS AND TESTS**

The Contractor shall advise the Engineer in writing of any routine, type or specific tests to be carried out on equipment during the course of manufacture in the manufacturer's factory or works or of any stage of

completion in the manufacturing process which requires inspections in terms of the Contract and Specifications.

Such notice shall be given at least (7) seven days prior to the testing or inspection being required.

The Contractor will despatch equipment from the factory at his own risk if tests have not been witnessed and inspections not been carried out by the Engineer or his authorised representative and approval given by the Engineer for despatch.

The Contractor's Project Engineer shall in all instances do his own inspections and ascertain that equipment will be ready for inspection or testing before the Engineer's attendance is requested. The Engineer also reserves the right to inspect any equipment at the manufacturer's works at any stage during the manufacture.

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The Contractor's Project Engineer will also be required to attend all inspections and tests with the Engineer or his authorised representative.

1.10.11.4 TYPE TESTS, TEST CERTIFICATES AND SPECIALISED TESTS

The Tenderer must submit with his tender one copy of each of all the type test certificates called for in the Specifications.

All tests shall be carried out in accordance with the requirements of the specified and recognised standards. Where tests have not been detailed in the documents, the Contractor shall provide comprehensive documentation of the standards and procedures he intends using in testing.

Such additional tests in the manufacturer's works, on site or elsewhere as in the opinion of the Engineer are necessary to determine that the contract works comply with the specifications may be called for. The general principle regarding payment of such tests shall apply i.e. the tests will be paid for if they are additional to those specified, however, payment will in all cases only be made for tests with positive results. Retest will in no circumstances be paid for.

The Contractor will be required to submit certified copies of all type, routine and rating test certificates to the Engineer.

**1.10.12. SPECIAL CONDITION / REQUIREMENTS OF THE LOCAL MUNICIPALITY**

a. CONSTRUCTION AND INSTALLATION:

a. General Conditions of Contract for Works of Civil Engineering Construction (**GCC**) as supported by the Civil Engineering Advisory Council (**CEAC**) shall form part of this Agreement.

b. **Internal Services**

c. 4.2.1 The **Applicant** shall be responsible for the installation and construction of the **Internal Services** in accordance with the approved and finalized plans attached hereto as **Annexure "D"** and the **Applicant** shall bear all risks involved in and related to such construction and installation. The applicant shall appoint a contractor who is registered with **CIDB** before the commencement of construction of **Works** and proof of registration shall be submitted to Council for verification.

d. 4.1.2 The **Applicant** shall not be allowed to conduct any work in terms of this **Agreement** on the structures, pipelines, or other infrastructure of the **Council** without the prior written consent of the **Council** and such consent shall only be granted by the **Engineer** in his/her sole discretion.

If any work is necessary for the provision of the services to the **Council's** infrastructure and property which may be necessary as a result of the establishment of the **Township**, same will be done by the **Council** for the account of the **Applicant**. Should provision for this work not have been made in the calculations of the **Consulting Engineers**, it will not be done before the **Applicant** has paid the **Council** the amount required for such work or alterations.

i. Should the **Engineer** so require, the **Applicant** shall, at the cost of the **Applicant**, register satisfactory servitudes in favour of the **Council** with regard to any services laid over private property after the owner of such property has given his/her

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Contractor

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Witness 1

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Witness 2

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Employer

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Witness 1

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Witness 2



written acceptance of the basic conditions of servitude determined by the **Council**.

1. *Servitudes for any services which are not situated within the proposed and/or established servitude of the Township must be registered and separate servitude diagrams should be drawn up and potential owners must be informed by the developer of the proposed servitude line within the Erf.*
  2. *The proposed servitude diagrams must be submitted to Council prior to the proclamation of the Township and should the Council require any servitude to be registered, servitude diagrams must be submitted to the Council, The Engineer is entitled to withhold the Section 82 certificates until such diagrams etc. have been submitted.*
- ii. The design and supervision of the Works shall be carried out by an appropriately qualified and experienced firm of **Consulting Engineers**.
  - iii. All Engineering Practitioners must register with **ECSA** and proof thereof, shall be submitted to **Council**, before the Services agreement can be finalized, and shall be governed by the code of professional conduct published under board notice 15 of Government Gazette No 28605 of 17 March 2006 in terms of Engineering Profession Act 2000 (Act 46 of 2006), and shall carry a Professional indemnity insurance to the satisfaction of the Council.
  - iv. The **Consulting Engineer** shall sufficiently design and effectively supervise all stages of the construction of the **Works** and such engineer shall at the completion of such **Scheme** certify in writing that:
    1. All material used for the construction of the **Scheme** complies with the **Engineers** specification;
    2. The **Scheme** has successfully undergone the prescribed tests under his supervision;
    3. He himself and the firm of **Consulting Engineers** with which he is associated undertake professional responsibility for the Engineering **Works**;
  - v. The **Engineer** shall be notified in writing when the **Works** has been commenced and when it has been completed.
  - vi. The **Engineer** shall be notified in writing of the name and telephone number of the representative of the **Consulting Engineer** and an Engineering Practitioner who will accept responsibility for the **Works** after normal working hours; and the **Works** inspector shall at all times be present while work is in progress and more than one **Works** inspector shall be appointed should the **Engineer** so require.
  - vii. Any person whom the **Engineer** regards as unfit at the **Works** shall be replaced should he so require and the **Engineer** reserves the right to refuse such person's entrance to the work site.
  - viii. The **Engineer** reserves the right to suspend the **Works** if it is not being executed satisfactorily in his opinion, until circumstances have in his opinion changed in such a way that the **Works** shall indeed be executed satisfactorily. The **Engineer** shall report the person(s) or company to the relevant authorities.

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Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



e. External Services

- i. The **Applicant** may be requested by the **Council** to install and construct the **External Services** in accordance with the plans, specifications and calculations as approved by the **Council** and the completion of such **External Services** in accordance with the calculations contained in **Annexure "E"** before or on expiry of the **Construction period** a memorandum of understanding shall be entered into between the **Applicant** and the **Council** before work commences.
- ii. The **Applicant** shall bear all responsibility and assume all risks relating to the **External Services**.
- iii. The Council reserves the right to follow its procurement policy for the appointment of the **Contractor** and or **Consultant** to execute such works.
- iv. All authorizations required in terms of legislation governing the environment namely:
  - a. Environment Conservation Act.1989 (Act No. 73 of 1989)
  - b. National Environmental Management Act 107 of 1998
  - c. Water Act 36 of 1998

f. Must be obtained by the **Applicant** prior to the commencement of any construction activities.

- i. Any specific conditions stated in the Record of Decision (ROD) by NW (DACE) and permits issued by Department of Water Affairs and Forestry (DWAF) must be adhered to by both the Consultant and the Contractor in all the phases of development.

g. Site Meetings

h. The **Applicant** shall notify the **Council** two (2) weeks prior to the meeting of all site meetings to be held.

- i. The **Applicant** shall minute all site meetings and have the minutes approved by the members. (A certified copy to be sent to **Council**.)

i. Relocation of Existing Services

- i. The **Applicant** shall be responsible for the relocation of existing services within the **Township** area to the satisfaction of the **Council**.
- ii. The **Applicant** shall be responsible for the alteration or relocation of services which affects the existing external services and such alterations or relocation shall be to the satisfaction of the **Council**.

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Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2