



MOHOKARE LOCAL MUNICIPALITY

CONTRACT No SCM/MOH/14021/20242024.

THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA  
WATER TREATMENT WORKS (WTW)RE-ADVERT: THE  
COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER  
TREATMENT WORKS (WTW)

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PORTION 2: CONTRACT

PART C3.1  
Description of the Works

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Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

C3.11.1



**CONTRACT No SCM/MOH/024/2024**

## DESCRIPTION OF THE WORKS

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Contractor      Witness 1      Witness 2      Employer      Witness 1      Witness 2

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C3.11-3



MOHOKARE LOCAL MUNICIPALITY

CONTRACT No ~~SCM/MOH/33/2014~~SCM/MOH/01412/20242024.

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~~ROUXVILLE: UPGRADING WATER TREATMENT WORKS~~  
~~THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)~~  
~~RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)~~

THE WORKS

PS 1 GENERAL DESCRIPTION

~~The MOHOKARE Local Municipality endeavours to complete the construction of the Rouxville/Roleleathunya Water treatment works. The MOHOKARE Local Municipality endeavours to upgrade the existing raw water pumpstation and to construct a recovery dam for the Viljoenskroon / Rammulotsi raw water source located at the Renoster River.~~

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~~In addition, the Municipality would also like to develop three boreholes close to Viljoenskroon / Rammulotsi in order to augment the water supply. The borehole water will have to be treated in order to make it safe for human consumption.~~

PS 2 DESCRIPTION OF SITE AND ACCESS

~~The sites are accessible from national roads N6 and the provincial road R26 from Bloemfontein and Zastron in the Free State Province extend through the area from north to south. The Water Treatment Works are located north-east of the town next the Kalkoenkraans Dam. The sites are accessible from provincial roads P15/1 and P15/2 from Kroonstad to Klerksdorp in the North West Province extend through the area from north to south. The Water Treatment Works are located north of the town next the Renoster River.~~

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~~The Contractor must note that no additional payment will be made for the construction of temporary access roads to the construction site, borrow-areas or to the spoil sites, except for payment made under payment item 8.3.2.2 of SABS 1200 A.~~

~~The Contractor shall be held responsible to clear any spillage caused by his activities on or near any roads, by whatever means necessary, within 24 hours after such spillage has occurred. No additional payment will be made for the clearance of spillage and all relevant costs will be deemed to be covered under the relevant items.~~

PS 3 NATURE OF GROUND AND SUBSOIL CONDITIONS

~~No geotechnical information is availableavailable, and the contractor must avail himself of the conditions on site and take it into consideration when pricing the applicable items.~~

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PS 4      DETAILS OF CONTRACT

The work to be carried out under this contract consists mainly of the following:

The work to be carried out under this contract consists mainly of the following:

- (a) Establishment of the Contractor's camp, plant and material resources on site.
- (b) Informal training of local labour and the employment of local labour.
- (c) Installation and commissioning of electrical supply cables
- (d) Installation and commissioning of mechanical equipment.
- (e) Commissioning of a treatment facility to make the water safe for consumption.
- (f) Connecting and commissioning the system.
- (a) Establishment of the Contractor's camp, plant and material resources on site.
- (b) Informal training of local labour and the employment of local labour.
- (c) Construction of a new abstraction in the Renoster River
- (c) Construction of new raw water pipeline of 315 mm diameter.
- (c) Construction of two new concrete lined water recovery dams with linking pipework and valve chambers.
- (c) Construction of a pumpstation to return the recovered water from to the Water Treatment Works.
- (c) Equip three boreholes including pipework to pump the water to an existing pressure tower.
- (c) Construction of a treatment facility to make the borehole water safe for consumption.
- (c) Connecting and commissioning the system.

This description of the works is not necessarily complete and shall not limit the work to be carried out by the Contractor under this contract.

Estimated quantities of each type of work are given in the schedule of quantities and is re-measurable.

PS 5      CONSTRUCTION PROGRAMME

The Contractor shall submit a detailed programme within 14 days of the acceptance of the tender. The programme shall clearly show the order in which the Contractor proposes to carry out the Work, the critical path, the proposed rate of progress and a linked cash flow forecast.

The Contract Period shall include all Saturdays, Sundays, non-working days as well as an allowance for expected inclement weather and consequential delays during normal working days. The time for completion of the works shall be as stated in the Contract Data, Part C1.2, clause 42.1. A week shall consist of five working days. The programme shall be agreed between the Employer and the Contractor prior to the implementation of the construction works.

If the construction programme has to be revised in terms of Clause 12 of the Conditions of Contract because the Contractor is falling behind in his programme, the Contractor shall submit a revised programme of how he intends to regain lost time to ensure completion of the Works before the Due Completion Date. Any proposals by the Contractor to increase the tempo of work must incorporate positive steps to increase production either by the provision of more labour and Plant on the Site, or by using the available labour and Plant in a more efficient manner.

Failure on the part of the Contractor to submit or to work according to the programme or revised programmes shall be sufficient reason for the Engineer to take steps as set out in sub-clause 55 of the conditions of contract.

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**PS 6 SITE FACILITIES AVAILABLE**

**PS 6.1 Sources of Water Supply and Power Supply**

Limited water, electricity and sewerage services are available in the vicinity of the Site, and the Contractor shall, at his own expense, be responsible for connections to the available services, as well as for the distribution of water and electricity for construction and domestic use. The distribution of water and electricity shall be carried out in accordance with the applicable laws and regulations.

The Contractor shall make his own arrangements with the appropriate authority for water and electricity and sewerage connections.

No extension of time due to delays resulting from obtaining and maintaining these facilities will be granted.

**PS 6.2 Location of Camp and Depot**

The contractor will construct the site camp at location indicate by the MOHOKARE Local Municipality. The construction camp shall be near the Site.

**PS 6.3 Housing for the Contractor's Employees**

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements for housing his employees or transporting them to and from the site. The Contractor is in all respects responsible for the housing and transporting of his employees and for the arrangement thereof, and no extension of time due to any delays resulting from this will be granted.

**PS 7 SITE FACILITIES REQUIRED**

**PS 7.1 Facilities for the Engineer**

A site office, toilet and carport for the Engineer and his staff are required, and the Contractor must provide suitable facilities in his own offices for the holding of site meetings. The Engineer's Representative shall also be allowed the free use of the necessary survey equipment and survey assistants to enable him to carry out control work as and when required.

**PS 7.2 Equipment for engineering staff**

The Contractor shall allow for providing the following protective clothing for the engineering staff:

- Three high visibility vests (XL)
- Three hard hats
- Safety Boots

Office facilities shall be provided by the Contractor as described in SABS 1200 AB and PSAB of the Specification.

**PS 7.3 Water, eElectricity and sewage**

The Contractor shall, at his own expense, be responsible for obtaining and distributing the water and electricity required for construction and domestic use. The distribution of water and electricity shall be carried out in accordance with the applicable laws and regulations.

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No separate payment will be made for obtaining and distributing water and electricity, the cost of which will be deemed to be included in the tendered rates.

**PS 7.4 Excrement Disposal**

The Contractor shall, at his own expense, be responsible for safely and hygienically dealing with and disposing of all human excrement and similar matter generated on the Site during the course of the Contract, to the satisfaction of the responsible health authorities in the area of the Site and the Engineer. All such excrement shall be removed from the Site and shall not be disposed of by the Contractor on the Site.

The Contractor shall further comply with any other requirements in this regard as may be stated in the Contract.

No separate payment will be made to the Contractor in respect of discharging his obligations in terms of this sub clause and the costs thereof shall be deemed to be included within the Contractor's tendered Preliminary and General Items.

**PS 7.5 Site instruction book**

A triplicate book shall be provided by the Engineer to be used for site instructions. It shall at all times be kept on the site.

**PS 8 FEATURES REQUIRING SPECIAL ATTENTION**

**PS 8.1 Access to properties**

The Contractor shall organize the work in such a manner as to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work included in this contract.

—The Contractor may, with the approval of the Engineer, make arrangements with the occupiers of the affected erven and properties to close off a portion of a street, road, footpath or entrance temporarily, provided the Contractor duly notifies the occupiers of the intended closure and its probable duration and shall, as punctually as possible, re-open the route at the prescribed time. Where possible, the road shall be made safe and re-opened to traffic overnight. Any such closure shall be made by arrangement between the Contractor and the occupiers and shall not absolve the Contractor from his obligations under the contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions. The Contractor shall also comply with all the requirements of the Local Authority with regard to safety, signage and notices to the public.

**PS 8.2 Existing residential areas**

Access to the adjacent residential areas shall be maintained at all times, as shall access to individual houses.

Electricity and water supply interruptions to existing residential areas shall be kept to a minimum. Whenever it is necessary to interrupt these supplies, the Engineer's approval shall first be obtained. The affected residents shall then be notified in writing at least 3 days, but not more than 5 days in advance. Supplies shall be normalized by 16:00 on the same day.

Cognisance shall be taken by the Contractor of the possibility of residents from the adjacent residential areas having access, whether authorized or not, to the works. It is strongly emphasized that under no circumstances shall any claims be considered for delays or disruptions as a result of the presence of residents from the adjacent occupied areas.

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**PS 8.3 Facilities to other Contractors**

In addition to the requirements of clause 18 of the general conditions of contract, the Contractor must make allowance for the presence of other Contractors engaged on other contracts on the site, which may involve, inter alia, the adoption of his programme to fit in with work to be done by the other Contractors, as well as assuring other Contractors access to their sites along prescribed routes which may fall within the site of this contract.

**PS 8.4 Contractor's vehicles**

All equipment and vehicles used by the Contractor shall be roadworthy at all times and all drivers and operators shall be in possession of valid drivers' licences.

**PS 8.5 Site maintenance**

During the progress of the work and upon its completion, the site of the works shall be kept and left in a clean and orderly condition. The Contractor shall at all times store materials and equipment for which he is responsible in an orderly manner, and shall keep the site free from debris and obstruction. Workers shall lunch or have tea breaks only in a designated area with approved refuse and toilet facilities.

No open fires shall be permitted on the site.

Vehicles and workers must adhere to property demarcated access routes and not take or make short cuts.

**PS 8.6 Testing and quality control**

**PS 8.6.1 Contractor to engage services of an independent laboratory**

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

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

For the purposes of this clause, an "independent laboratory" shall mean an "approved laboratory" (as defined in sub clause PSA 7.2) which is not under the management or control of the Contractor and in which the Contractor has no financial interest, nor which has any control or financial interest in the Contractor.

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PS 8.6.2 Additional testing required by the ~~Engineer~~Engineer.

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In addition to the provisions of sub clause PS 8.6.1: Contractor to engage services of an independent laboratory, the Engineer shall be entitled at times during the Contract to require that the Contractor arrange with the independent laboratory to carry out any such tests, additional to those described in sub clause PS 8.6.1, at such times and at such locations in the Works as the Engineer shall prescribe. The Contractor shall promptly and without delay arrange with the independent laboratory for carrying out all such additional testing as required by the Engineer, and copies of the test results shall be promptly submitted to the Engineer.

PS 8.6.3 Costs of testing

(a) Tests in terms of sub clause 8.6.1

The costs of all testing carried out by the independent laboratory in accordance with the requirements of sub clause PS 8.6.1, above shall be borne by the Contractor and shall be deemed to be included in the tendered rates and prices for the respective items of work as listed in the Schedule of Quantities and which require testing in terms of the Specifications. No separate payments will be made by the Employer to the Contractor in respect of any testing carried out in terms of sub clause PS 8.6.1.

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

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(b) Additional tests required by the Engineer

The costs of any additional tests required by the Engineer in terms of sub clause PS 8.6.2: Additional testing required by the Engineer, shall be reimbursed to the Contractor against substitution of the Provisional Sum allowed therefore in the Schedule of Quantities; provided always that the costs of any such additional tests ordered by the Engineer, the results of which indicate that the quality of the materials utilised and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

PS 8.7 Subcontractors

The Contractor is responsible for work carried out on his behalf by subcontractors. The Engineer will not liaise directly with such subcontractors, and all problems relating to payments, programming, workmanship, etc, shall be the concern of the Contractor and the subcontractor, and the Engineer will not be involved.

PS 8.8 Existing Services

Before the Contractor commences operations, he must discuss with and have the approval of the Employer, authority or owner concerned regarding the method he proposes to use for relocating or ~~safe-guardings~~safe guarding any services and existing works he may encounter during construction.

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Available drawings of existing services may be viewed at the offices of the Engineer.

The positions of existing services shown on the Drawings are given in good faith and no guarantee can be given that:

- (a) these services ~~actually are~~are in the approximate positions indicated.  
(b) that these are the only services in the vicinity, and  
(c) that the nature and description of these services are correct.

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The Contractor shall be responsible to locate and safeguard any existing service or works he may encounter during construction and shall obtain clearance from the Employer, ~~authority~~authority, and the Engineer before commencing work in the proximity of existing services or works. The Contractor shall liaise with the local authority, electricity provider, telecommunication providers regarding the presence and location of any existing services. The Contractor shall arrange that a representative of such authorities or service providers to make known the location on ~~site~~, ~~before site before~~, the commencement of works.

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The Contractor shall be responsible for any damage to such existing services and works in the execution of this contract and shall reimburse the Employer, authority or the owner concerned for any repairs required and for damages.

The Contractor shall be responsible for immediately notifying the Engineer and the authorities concerned regarding any damage caused to public services and existing works.

Any alteration to public services shall be carried out by the Authority concerned unless the Contractor is instructed otherwise.

The Contractor shall provide the necessary assistance during any operations necessary in connection with the removal, alteration or ~~safe-guardings~~safeguarding of any public service.

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**PS 8.9- Construction Regulations 2014**

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 (the regulations) as promulgated in Government Gazette No 37305 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, Schedule of Quantity and Drawings, as well as in the Employers' health and safety specifications (regulation 5(1)(b) and (c)) of the Construction Regulations 2014, which is included with this document.

The Contractor shall in terms of regulation 7(1) (a) 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.

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**PS 9 INFORMATION SUPPLIED BY EMPLOYER**

Certain information contained in these contract documents, or provided separately, is being offered in good faith. However, in the circumstances pertaining to the type of information supplied, no guarantee can be given that all the information is necessarily correct or representative. More specifically this applies to all material surveys and reports and similar information, the accuracy of which is necessarily subject to the limitation of testing, sampling, the natural variation of material or formations being investigated and the measure of confidence with which conclusions can be drawn from any investigations carried out. It also applies to the positions of existing services as indicated on the drawings.

The Employer accepts no liability for the correctness or otherwise of the information supplied or for any resulting damages, whether direct or consequential, should it prove during the course of the

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contract that the information supplied is either incorrect or not representative. Any reliance placed by the tenderer on this information shall be at his own risk.

#### PS 9.1 Labour-intensive competencies of supervisory and management staff

Established contractors shall only engage supervisory and management staff in labour intensive works that have either completed, or for the period 1 April 2004 to 30 June 2005, are registered for training towards, the skills programme outlined in Table 1.

Emerging contractors shall have personally completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or for the period 1 April 2004 to 30 June 2005 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

**Table 1: Skills programme for supervisory and management staff**

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour Intensive <del>Construction Methods</del> to Construct and Maintain Roads and Storm water Drainage	
		Use Labour Intensive <del>Construction Methods</del> to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive <del>Construction Methods</del> to Construct, Repair and Maintain Structures	
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour Intensive <del>Construction Methods</del> to Construct and Maintain Roads and Storm water Drainage	
		Use Labour Intensive <del>Construction Methods</del> to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive <del>Construction Methods</del> to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e the contractor's most senior representative that is resident on the site)	5	Manage Labour Intensive Construction Processes	Skills Programme against this single unit standard
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail:gerard@ceta.co.za , tel: 011-265 5900)			

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## PS 9.2 Employment of unskilled and semi-skilled workers in labour-intensive works

### PS 9.2.1 Requirements for the sourcing and engagement of labour

Unskilled and semi-skilled labour required for the execution of all ~~labour-intensive~~labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

Tasks established by the contractor must be such that:

- the average worker completes 5 tasks per ~~week-in~~week in 40 hours or less; and
- the weakest worker completes 5 tasks per week in 55 hours or less.

The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the above requirements.

The Contractor shall, through all available community structures, inform the local community of the ~~labour-intensive~~labour-intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

- where the head of the household has less than a primary school ~~education;~~education.
- that have less than one full time person earning an ~~income;~~income.
- where subsistence agriculture is the source of income.
- those who are not in receipt of any social security pension ~~income~~income.

The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- 60 % ~~women;~~women.
- 20% youth who are between the ages of 18 and 25; and
- 2% on persons with disabilities.

### PS 9.2.1 Specific provisions pertaining to SANS 1914-5

#### Definitions

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

Terms and conditions for the engagement of targeted labour

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

Variations to SANS 1914-5

The definition for net amount shall be amended as follows:

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

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

## PS 10 EXTENSION OF TIME ARISING FROM ABNORMAL RAINFALL

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See Part C2.1, Contract Data, Clause 42.5.

**PS 11 CERTIFICATES OF PAYMENT**

The statement to be submitted by the Contractor in terms of clause 49 of the conditions of contract shall be prepared by the Contractor at his own cost, strictly in accordance with the standard payment certificate prescribed by the Engineer, in digital electronic computer format. The Contractor shall, together with a copy of the digital electronic computer file of the statement, submit two (2) A4 size paper copies of the statement.

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

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

Any delay by the Contractor in making the said adjustments and submitting to the Engineer the requisite copies of the adjusted statement for the purposes of the Engineer's payment certificate will be added to the times allowed to the Engineer in terms of sub- clause 49.4 of the conditions of contract to submit the signed payment certificate to the Employer and the Contractor. Any such delay will also be added to the period in which the Employer is required to make payment to the Contractor

**PS 12 CONSTRUCTION IN LIMITED AREAS**

In certain cases working space may be limited. The method of construction in these restricted areas will depend largely on the Contractor's plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and prices tendered shall be deemed to include full compensation for any difficulty encountered while working in limited areas and narrow widths, and that no extra payment will be made, nor will any claim for payment due to these difficulties be considered.

**PS 13 NON-WORKING DAYS**

The Contractor shall not work on Sundays or on the following statutory Public Holidays: New Years Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers Day, Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and Day of Goodwill. Whenever any of the above statutory Public Holidays fall on a Sunday, the following Monday shall be a Public Holiday.

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PS 14      **SSPOIL 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. Spoiling shall comply with the applicable statutory and municipal regulations.

PS 15      **DRAWINGS**

All "as built" information, as listed below, must be submitted to the Engineer's Representative before a certificate of completion will be ~~issued, the~~issued, the cost of which shall be included in the rates tendered for items PSA 8.3.1 and 8.3.2 under section 1200 A of the schedule of quantities.

PS 15.1      **List of "as built" information ~~required~~required.**

A Registered Land Surveyor shall be required to provide the above information.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the Engineer. The Engineer will supply any figured dimensions which may have been omitted from the drawings.

PS 16      **TRENCHES**

No trenches may be left open during the Contractor's holiday during December and January. All trenches which have been excavated but which have not been finally backfilled and compacted at the commencement of the said holiday period shall be temporarily fully backfilled and compacted to a standard which ~~will~~will.

- (a) prevent damage occurring to the trenches or any other part of the ~~Works~~Works.
- (b) prevent damage to or physical loss of the property of any ~~person~~person.
- (c) eliminate the risk of injury to any ~~person~~person.

All costs involved in the temporary backfilling and compaction of such trenches and the subsequent reopening of the trenches after the holiday period shall be for the Contractor's account.

PS 17      **SAMPLES**

The Contractor shall at his own cost, supply all samples that may be required. Material or work not conforming to the approved samples shall be rejected. The Engineer reserves to himself the right to submit samples to any tests to ensure that the material represented by the sample conforms to the requirements of the specifications. The cost of all tests failed shall be for the Contractor's account.

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PS 18 MANUFACTURER'S INSTRUCTIONS

The recommendations of the manufacturers of patented materials must be strictly adhered to regarding the use, mixing, application, fastening, etc. thereof except when otherwise instructed in writing by the Engineer.

PS 19 PROPRIETARY MATERIALS

Where proprietary materials are ~~specified~~specified, it is to indicate the quality or type of materials or articles required, and where the terms "or other approved" or "or approved equivalent" are used in connection with proprietary materials or articles, it is to be understood that the approval shall be at the sole discretion of the Engineer.

PS 20 NOTICES, SIGNS, BARRICADES AND ADVERTISEMENTS

The Contractor shall erect the necessary signs, notices and barricades for the duration of the contract in order to safeguard both the works and the public.

Notices, signs and barricades as well as advertisements may be used only upon approval by the Engineer, and the Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

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

Such notices, signs and barricades shall be provided and erected at the Contractor's own expense.

A standard name board as per the included details shall be erected. The cost of which shall be included in the rates tendered for items PSA 8.3.1 and 8.3.2 under section 1200A of the Schedule of Quantities.

PS 21 SETTING OUT OF WORK

Reference and level beacons will be shown to the Contractor by the Engineer at the commencement of the Contract and the Contractor will be responsible for transferring the data to the Site of Works.

The Contractor shall check the condition and accuracy of all reference and level beacons and satisfy himself that they have not been disturbed and are true with regard to position and level. A beacon that has been disturbed shall not be used until its true position and level have been re-established and the new values have been certified by the Engineer. The Contractor shall thereafter be held entirely responsible for the protection of all reference and level beacons.

The Contractor shall employ a capable surveyor to set out the Works to the required lines and levels. The Engineer shall be informed immediately should any discrepancy be discovered between the levels or dimensions obtained by the Contractor and those shown on the drawings.

Where a beacon is likely to be disturbed during construction operations, the Contractor shall establish suitable reference beacons at locations where they will not be disturbed during construction. No beacons shall be covered over, disturbed or destroyed before accurate reference beacons have been established and details of the positions and levels of such beacons have been submitted to the Engineer. The Contractor's reference beacons shall be of at least the same accuracy and sturdiness of construction as the existing beacons.

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The Contractor shall submit the method of setting out he proposes to employ to the Engineer. Accurate control of line and level shall be provided by the Contractor at all stages of construction.

Work set out by the Contractor may be checked by the Engineer and any errors found shall be rectified by the Contractor at his own expense. The Contractor shall supply any instrument, equipment, material and labour required by the Engineer for this survey work. Any assistance, including checking given to the Contractor by the Engineer or any setting out done by the Engineer for Contractor shall not be held as relieving the Contractor of his responsibility for the accurate construction of the Works.

The Contractor's survey ~~instruments~~instruments, and survey equipment shall be suitable for the accurate setting out of the Works and shall be subject to the approval of the Engineer. They shall furthermore be checked and correctly adjusted by the authorized agents before the commencement of the contract and subsequently when required by the Engineer and when otherwise necessary.

When required the Contractor shall, at his own expense, provide two labourers to assist the Engineer. The Engineer shall have the sole right of approving of such a labourer.

Survey work shall not be measured and paid for directly and compensation for the work involved in setting out shall be deemed to be covered by the rates tendered and paid for the various items of work included under the contract.

**PS 22 WORKMANSHIP AND QUALITY CONTROL**

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

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

The Contractor's attention is drawn to the provisions of the various standardized specifications regarding the minimum frequency of testing that will be required for process control. The Contractor shall, at his own discretion, increase this frequency where necessary to ensure adequate control.

On completion of every part of the work and submission thereof to the Engineer for examination, the Contractor shall furnish the Engineer with the results of all relevant tests, measurements and levels to indicate compliance with the specifications.

**PS 23 TRANSPORT OF MATERIAL**

All costs of transporting material, including overhaul, shall be included in the applicable tendered rates. All references in the specifications to transport, overhaul and haul distances shall be deleted irrespective of whether or not the deletion is included in these project specifications.

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**PS 24                   LIAISON WITH LOCAL AUTHORITIES**

The Contractor will have to liaise with local authorities regarding the following matters:

(a)       Dealing with traffic.  
(b)       Locating of existing underground services.  
(c)       Protection of existing services during construction.

It is the Contractor's onus to immediately contact all these authorities and to accommodate their involvement in his programme of work. The Contractor should also warn the authorities at least 48 hours before the actual work commences. Compensation for delays, losses or accidents will not be considered should the Contractor at any time have failed to keep the local authorities informed.

The Engineer or Employer must immediately be notified, should the Contractor experience any problem regarding work which involves a local authority.

In all dealings with communities through which the Works are to be constructed, and in all dealings with workers employed from within such communities, the Contractor shall take due cognisance of the character, culture and circumstances of the specific community, and shall at all times use his best endeavours to avoid the development of disputes and rather to foster a spirit of co-operation and harmony towards the project.

The Contractor shall at all times, keep the Engineer fully informed regarding all matters affecting or negotiated between the Contractor and the community, and he shall attend all liaison meetings as may be arranged by the Engineer and / or the Employer. All matters concerning the community shall be discussed and where possible, resolved at such meetings.

Where any resolutions during such negotiations or at such meetings shall be contrary to the terms and provisions of the Contract, the Contractor shall not give effect thereto without a prior written instruction from the Engineer. Where the Contractor is of the opinion that any instruction of the Engineer issued in terms of this clause will result in the incurring of additional costs which were not provided for in his tendered rates and prices and/or that a delay in the progress of the Works will result, he shall be entitled to submit a claim in terms of Clause 51 of the Conditions of Contract, provided always that the period of twenty-eight (28) days referred to in Clause 51 shall be reduced to three (3) normal working days in respect of all claims submitted in terms of this clause.

**PS 25                   ALTERNATIVE TENDERS**

In the case of an Alternative Tender submitted by the Contractor having been accepted by the Employer, the provisions as set out hereunder shall, in addition to the other requirements of the Contract, apply in the Contract.

**PS 25.1               Completion ~~And~~ Submission of Final Designs and Drawings**

The Contractor shall, not later than one (1) month prior to the date on which he intends to commence work on the Works or any portion thereof which is the subject of the Contractor's alternative technical proposals in respect of the design or specifications of the Works contained in an Alternative Tender accepted by the Employer, submit to the Engineer for his approval in accordance with the provisions of sub-clause 13.7 of the conditions of contract, the complete set of final working drawings, including general layout drawings and bending schedules, final design calculations, specifications, the design assumptions and parameters on which the designs are based and all other documentation and details as may be required by the Engineer for the purposes of evaluating and approving the final design, specifications and drawings.

The information and details to be submitted by the Contractor in accordance with the above paragraph shall comply in all respects with the following:

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(a) Calculations

- Calculations shall include calculations of stresses in the structure and in the foundations as relevant, including calculations of the reinforcing or pre-stressed steel.
- The calculations shall be set out in a clear and logical manner to facilitate checking.
- A full description of the design assumptions shall accompany the calculations.

(b) Drawings

- Drawings shall show the whole structure in elevation, sectional elevation and in plan to a suitable scale.
- Sufficient large-scale sections and other details shall be submitted to show the concrete and other dimensions clearly.
- Foundation levels and foundation sizes, as well as the steel reinforcement at critical sections, shall be indicated on the drawings.
- The centroids of the cable profiles in pre-stressed concrete sections shall be shown with sufficient details of the pre-stressing system that the Contractor proposes to use.
- The standard of detailing and the quality of the prints shall be the same as that of the Contract Drawings supplied to the Contractor, or in the absence of any such Contract Drawings having been provided, of the same standard as that of the Tender Documents.
- The drawings shall be compiled in the official language of the Contract.

(c) Further details

- Should the Engineer conclude that the calculations, drawings, specifications or any other data submitted by the Contractor in accordance with the provisions of this clause are insufficient or inadequate for proper evaluation, the Engineer reserves the right to require the Contractor to submit such further calculations, drawings, specifications and any other such data as the Engineer may require. If such further details are not submitted within the time required by the Engineer, the Tenderer will be deemed to be in default of the provisions of this clause.
- The Contractor shall submit only drawings and other data which are complete in all respects and in accordance with this clause. If the final calculations, drawings and details do not comply with the specified requirements, the alternative designs will be rejected unless suitably amended by the Contractor.
- The Contractor will not be entitled to any claim for delays experienced as a result of submitting incomplete drawings or other documents and data which are not strictly in accordance with the requirements of this specification.
- The Contractor shall not commence executing the Works or any portion thereof which is the subject of alternative technical proposals in respect of the design or specifications of the Works contained in an Alternative Tender accepted by the Employer, until the Engineer's approval of the designs and calculations has been given in writing and the drawings signed by the Employer, or the Engineer on the Employer's behalf.

**PS 25.2 Status of Accepted Drawings**

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The accepted Drawings shall form an integral part of the Contract Documents, and the use of drawings not accepted and signed by or on behalf of the Employer will not be permitted for construction or manufacturing purposes.

Notwithstanding the approval and/or acceptance and signing of the Drawings, the Contractor shall, as provided in sub-clause 4.2 of the conditions of contract, remain fully responsible for the details, discrepancies, omissions, errors, and consequences in respect of the said Drawings. The approval of a design by the Engineer shall not in any way relieve the Contractor of his responsibility to produce a design that complies with all the specified requirements.

**PS 25.3 MEASUREMENT AND PAYMENT**

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**PS 25.3.1 Design, construction and remedy of defects**

(a) Amount

The Contractor shall be paid a fixed sum amount for the design, preparation of drawings, execution, remedy of defects in and completion of the Works or portions thereof which are the subject of the Contractor's alternative technical proposals in respect of the design or specifications of the Works contained in an Alternative Tender accepted by the Employer. The sum shall be the sum of the products of all the tendered rates and quantities listed by the Contractor in the Schedule of Quantities pertaining to the said Works or portions thereof, and which Schedule formed part of the Contractor's Alternative Tender, but shall exclude the amount of the Provisional Sum in respect of the Engineer's reviewing and checking the Contractor's designs, etc, included in the Alternative Tender Sum.

No other payments will be made to the Contractor in respect of his costs incurred in the design, preparation and submission of drawings and other documents pertaining to the accepted Alternative Tender, all such costs being deemed to be included in the said sum referred to above.

(b) Re-measurement

Notwithstanding anything to the contrary as may be contained in the Contract, the said Works or portions thereof (as applicable) which are the subject of the Contractor's alternative technical proposals in respect of the design or specifications of the Works shall not be subject to re-measurement, and the quantities listed by the Contractor in the Schedule of Quantities forming part of his Alternative Tender shall be fixed and not subject to any variation whatsoever during the Contract.

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(c) Contract Price Adjustment Factor

The tendered sum payable to the Contractor in terms of sub-clause PS 25.3.1: Design, construction and remedy of defects, paragraph (a) above shall not be subject to application of the Contract Price Adjustment Factor unless

- (i) the Works or portions thereof (as applicable) as originally specified in the Tender Documents and for which the Contractor's alternative technical proposals are substituted, were themselves subject to Contract Price Adjustment in terms of the Tender Documents, or
- (ii) the Alternative Tender was qualified by the Contractor to the effect that Contract Price Adjustment is to apply.

(d) Interim payments

The amounts which shall become due and payable to the Contractor in the monthly payment certificates in terms of clause 49 of the conditions of contract, in respect of the portions of the Works which are the subject of the Contractor's alternative technical proposals, shall be determined on the basis of

the quantities of work certified as having been completed in the period for which the payment applies, and

the rates listed by the Contractor in the said Schedule of Quantities pertaining to the alternative proposals;

provided always that no payment will be made in respect of quantities exceeding those listed by the Contractor in the said Schedule.

**PS 25.3.2 Engineer's costs in reviewing the Contractor's ~~design~~design.**

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The Engineer's costs incurred in reviewing, checking and approving the designs, drawings, calculations and other documents pertaining to the Contractor's accepted Alternative Tender (and which designs, drawings, calculations and other documents were submitted by the Contractor in accordance with the provisions of both the Tender Documents and the Contract) shall, on presentation of an account to the Contractor and certified in writing by the Employer, be paid by the Contractor to the Engineer.

The Contractor shall be reimbursed for the actual amounts of all such payments made in the subsequent payment certificate, in substitution of the Provisional Sum provided by the Contractor in the Schedule of Quantities forming part of his Alternative Tender in accordance with the requirements of the Tender Documents

**PS 25.4 VARIATIONS TO THE ACCEPTED ALTERNATIVE PROPOSALS**

**PS 25.4.1 Variations by the Engineer**

- (a) When the Engineer requires design modifications for reasons other than
  - (i) the Contractor's failure to comply with the design ~~requirements,~~ or requirements.

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- (ii) errors in the Contractor's designs (eg foundation conditions that differ materially from those indicated by the test holes),
- (iii) the Contractor shall make such modifications.
- (b) When such design modifications result in a variation in the quantities of work to be executed, such variations will be valued by the Engineer in accordance with the rates and prices in the Schedule of Quantities, and the tendered sum for the alternative will be adjusted up or down, depending on whether the modifications entail an increase or a decrease in the quantity of work.

**PS 25.4.2 Variations by the Contractor**

The Contractor shall not, subsequent to the approval of his alternative designs, specifications and drawings, deviate there from or make any alteration or variation thereto without the prior written permission of the Engineer. In such circumstances, the Engineer's approval shall be subject to the provisions of sub-clauses PS 25.1: Completion and submission of final designs and drawings, and 25.2: Status of accepted drawings.

**PS 25.5 DEFAULT OF THE CONTRACTOR**

Should it become apparent at any time during construction or during the Defects Liability Period that the Contractor's alternative design and/or specifications do not comply with the specified requirements, the Contractor shall be liable for all consequential damage and shall, at his own expense, do all the work required to ensure that the structure complies with the design requirements. In addition, the Contractor shall not be entitled to any additional payment in excess of the sum referred to in sub-clause PS 25.3.1: Design, construction and remedy of defects, paragraph (a) above.

When circumstances within the control of the Contractor arise after the acceptance of the Alternative Tender and when these circumstances, in the opinion of the Engineer, render construction of the alternative unacceptable, the Contractor shall construct the Works strictly in accordance with the original design as specified in the Tender Documents. In such circumstances, the Contractor shall not be entitled to any additional payment and the sum referred to in sub-clause 25.3.1 shall be in full and final settlement to the Contractor in respect of constructing the Works and remedying any defects in the Works as originally specified in the Tender Documents.

**PS 26 MISCELLANEOUS**

All payment clauses referring to this clause PS26 will be paid for as described in the Schedule of Quantities.

**PS 27 APPLICABLE STANDARDIZED SPECIFICATIONS**

For the purposes of this contract, the following SABS 1200 Standardized Specifications shall apply:

SANS 1200 A	<del>A</del>	1986	:	GENERAL
SANS 1200 AB		1986	:	ENGINEER'S OFFICE
SANS 1200 D		1990	:	EARTHWORKS
SANS 1200 DB		1989	:	EARTHWORKS (PIPE TRENCHES)

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SANS 1200 DK	1996	:	GABIONS AND PITCHING
SANS 1200 G	1982	:	CONCRETE (STRUCTURAL)
SANS 1200 L	1983	:	MEDIUM PRESSURE PIPELINES
SANS 1200 LB	1983	:	BEDDING (PIPES)
SANS 1200 DM	1981	:	EARTHWORKS (ROADS)

Variations and additions to the following SABS 1200 Standardized Specifications are given in portion 2 of the project specifications:

SANS 1200 A	1986	:	GENERAL
SANS 1200 AB	1986	:	ENGINEER'S OFFICE
SANS 1200 D	1990	:	EARTHWORKS
SANS 1200 DB	1989	:	EARTHWORKS (PIPE TRENCHES)
SANS 1200 DK	1996	:	GABIONS AND PITCHING
SANS 1200 G	1982	:	CONCRETE (STRUCTURAL)
SANS 1200 L	1983	:	MEDIUM PRESSURE PIPELINES
SANS 1200 LB	1983	:	BEDDING (PIPES)
SANS 1200 DM	1981	:	EARTHWORKS (ROADS)
SPEC QB		:	BUILDING MATERIALS AND WORKMANSHIP

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PART C3.2: ENGINEERING

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C3.2.1 DRAWINGS

A set of drawings for Tender Purposes Only is issued with the tender documents. The drawings that were issued during the tender stage are preliminary and final drawings will be issued during the award of the project to the successful tenderer.

C3.2.2 MANAGEMENT

Management of the Works

The management of the site shall be in accordance with the provisions of the SANS Standard Specification.

Setting-out Detail

The works should be set out according to the Construction drawings. Contractors should familiarize with the boundaries of region.

It remains the Contractor's responsibility to set out all work from the benchmarks and reference pegs.

C3.2.3 CHANGES TO SCOPE OF WORK

It is a condition of this contract that the employer reserves the right to limit the total expenditure on the Works due to possible budget constraints. Should the tender sum exceed the budgeted amount, the scope of the works may be reduced at any time before or during the contract period to ensure that the final contract amount does not exceed the budgeted amount.

For any particular works' instruction, all work shall be subject to the approval and issuing of a works order by the municipality.

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C3.2.4 TRAFFIC

C3.2.4.1 Access

Access to adjacent properties shall be maintained at all times. If closures are unavoidable and approved by the Engineer, property owners shall be warned by the contractor in writing, at least 3 days in advance, of any such intended closure and be advised of the extent of the closure.

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The Contractor shall organize the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work.

If, as a result of restricted road reserve widths and the nature of the work, the construction of bypasses is not feasible, construction shall be carried out under traffic conditions to provide access to erven and properties.

The Contractor may, with the approval of the Engineer, make arrangements with the occupiers of erven and properties via the PSC to close off part of a street, road, and footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration and re-opens the route as punctually as possible. Where possible, the road shall be made safe and re-opened to traffic overnight.

Such closure shall not absolve the Contractor from his obligations under the Contract to provide access at all times. Barricades, traffic signs and drums shall be provided by the Contractor to suit the specific conditions.

**C3.2.4.2 Accommodation of traffic**

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

Failure to maintain road signs, warning signs, etc. in a good condition shall constitute ample reason for the Engineer to apply penalties as specified and to bring the Works to a stop until the road signs, etc. have been repaired to his satisfaction. All temporary road signs will be placed on stands with a minimum height from the ground of 750 mm. All road signs will be a minimum size of 900mm signs. The Contractor shall not be permitted to use traffic cones as a singular method for traffic accommodation and all traffic cones will be used alternating with delineators and the appropriate sign boards.

The Contractor shall not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the SADC Road Traffic Signs Manual, volume 13. Typical sections are indicated in the drawings.

The Contractor shall programme his activities, taking note of all the above-mentioned restrictions. The Contractor's tendered rates for the relevant items in the Schedule of Quantities shall include full compensation for all possible additional costs which may arise from the above and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered.

The Contractor shall take special precautions to ensure the safety of traffic on all roads that are affected by the works. Furthermore, the Contractor shall adjust his work program to ensure that the hazard posed to the traveling public by equipment and/or personnel working on the road during periods of reduced visibility or other unfavourable environmental or traffic conditions are limited as far as possible.

The Contractor's tendered rates shall include full compensation for all possible additional costs, which may arise from the above and no claims for extra payment or for an extension of time due to inconvenience as a result of the prescribed process will be considered. The Contractor shall nominate properly trained traffic safety officers who shall be approved by the Engineer, and who shall be responsible at all times, including after hours, nights, weekends and public holidays, for the traffic safety of the work area and the accommodation of traffic.

The traffic safety officer shall not be the site agent, contracts manager, foreman or any employee who is involved directly with the construction process. The duties of the traffic safety officer shall be dedicated to traffic safety and accommodation of traffic. The contractor shall provide for at least one day and one night person.

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Portion C2: ~~Contract~~Contract,  
Part C3: -Scope of Work  
Part C3.3: ~~Procurement~~



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## MOHOKARE LOCAL MUNICIPALITY

CONTRACT No ~~SCM/MOH/02/2024~~SCM/MOH/14/2024

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### ~~ROUXVILLE: UPGRADING WATER TREATMENT WORKS~~THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)

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#### PART C3.3: PROCUREMENT: GUIDELINES FOR SUBCONTRACTING AND LABOUR ENHANCEMENT

##### C3.3.1 DEFINITIONS

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"The community" means individual and communal property owners, organised groups of road users, other interest groups and departments or spheres of government that may be affected by the location, construction, operation and maintenance of the road to which this contract applies.

"Conventional contract" means any contract for the execution of civil engineering or building or similar construction works, in which the liabilities and responsibilities of the two parties thereto are assigned essentially in a manner which is consistent with that set out in the General Conditions of Contract for Road and Bridge Works for State Road Authorities, 1998 (as published by the Committee of Land Transport Officials) or other similar documents.

"Conventional subcontract" shall be similarly and appropriately construed.

"Contract Participation Goal" (or CPG), is the value of goods, services and works, excluding VAT, for which the Contractor proposes to engage labour and subcontractors.

"Contractor" means any person or group of persons in association, or firm, or body corporate who is registered with the Construction Industry Development Board (CIDB) and:

- a) have a contractor grading designation equal to or higher than a contractor grading designation specified for the Contract, or
- b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above

"Subcontractor" shall be similarly and appropriately construed.

"Emerging contractor" means an ABE that cannot reasonably be categorized as a conventional contractor defined above.

"Affirmable Business Enterprise (ABE)" means a business which adheres to statutory labour practices, is a legal entity, registered with the South African Revenue Service and a continuing and Independent Enterprise for profit, providing a Commercially Useful Function and:

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- a) Which is at least two thirds owned by one or more previously disadvantaged individuals or, in the case of a company, at least two thirds of the shares are owned by one or more previously disadvantaged individual; and
- b) Whose management and daily business operations are in the control of one or more of the previously disadvantaged individuals who effectively own it.

**"Key Personnel"** means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, and all other personnel in the permanent employ of the Contractor or his subcontractor who possess special skills and/or who play key roles in the Contractor's or subcontractor's operations.

**"Worker"** for the purposes of this specification means any person, not being one of the defined key personnel of the Contractor or his subcontractor, who is engaged by the Contractor or subcontractor to participate in the execution of any part of the contract works and shall include unskilled labour, semi-skilled and skilled labour, artisans, clerical workers and the like.

**"Workforce"** means the aggregate body comprising all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all his subcontractors.

**"Subcontractor"** means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the works are sublet or subcontracted by the Contractor in accordance with the provisions of the contract.

**"Level of subcontractor"** means the level of responsibility carried by and the assistance to be provided to the different grades of subcontractor in the execution of subcontracts.

**"Project Committee"** is the committee comprising out of the Employer's representative, The Engineer or his representative, the Contractor or his representative and the CLO.

**"CLO"** is the Community Liaison Officer as appointed by the Contractor and paid under the Contract.

**C3.3.2 LABOUR ENHANCED CONSTRUCTION**

The Contractor's attention is drawn to the fact that it is an objective of the contract to maximize the labour content of certain operations or portions thereof. In this regard, where the specified work allows for a choice between mechanical or labour-enhanced means, the former shall generally be kept to the practical minimum.

The Contractor shall submit on a monthly basis on the date as determined by the Employer, daily labour returns on the prescribed templates to the Engineer indicating the numbers of labour employed on the works and the activities on which they were engaged.

It is also an objective to utilize SMME's / ABE's in the vicinity of the project, the development of these resources in the execution of the project, and by maximizing the amount of project funds retained within the project locality.

**C3.3.3 TEMPORARY WORKFORCE**

**a) Record of workforce and subcontractors**

The Contractor shall maintain accurate and comprehensive records of all workers engaged on the contract and shall provide to the Engineer at monthly intervals from the

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commencement of the contract, interim records substantiating the actual numbers of employment opportunities which have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a format approved by the Employer. Labour records of emerging contractors, SMME or ABE subcontractors, where applicable, shall also be provided by the Contractor and shall be deemed to form part of the workforce.

The Contractor shall, on completion of the contract, and as a pre-requisite to the release of any retention money, provide the Engineer with independently audited documentary evidence of the total number of employment opportunities actually generated during the contract.

The value of the target amount (minimum Contract Participation Goal) spent on local labour is prescribed elsewhere in this document.

**b) Recruitment and selection procedures**

The Contractor shall be responsible for the final selection of workers and subcontractors to constitute the temporary workforce but in doing so, shall adhere to the procedures adopted by the CLO along the following guidelines:

The Contractor shall advise the Engineer in writing, of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognizance of the provisions of the contract relating to training).

The CLO shall take the necessary actions to identify potential workers for the temporary workforce from communities in the vicinity of the works. The details of all persons applying for employment shall be recorded, including inter-alia:

- Name, address, age and sex
- Marital status and number of dependants
- Qualifications and previous work experience (whether substantiated or not)
- Period since last economically active
- Preference for type of work or task.

The CLO shall make a selection of workers from amongst the applicants, taking due cognizance of his requirements for the workforce as supplied by the Contractor and the provisions of the contract in regard to the provision of training to selected members of the workforce and in accordance with the following principles:

No potential temporary worker shall be precluded from selection by virtue of a lack of skill in any suitable operation forming part of the works, unless:

- all available vacancies have been or can be filled by temporary workers who already possess suitable skills; or
- the completion period allowed in the contract, or the remaining portion of the contract period (as the case may be) is insufficient to facilitate the creation of the necessary skills.

The Contractor shall make a final selection from the list provided by the CLO using the following criteria:

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- preference shall be given to the long term unemployed and single heads of households.
- in so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected and shall not be prejudicial to youth over the age of fifteen years and women.

The same provisions shall apply as is in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the contract.

**c) Terms and Conditions pertaining to the Employment of the Temporary Workforce and subcontractors**

The onus shall be on the Contractor to ensure that all the requirements of all the acts relating to the employment of workers and subcontractors are observed.

**d) Labour Relations and Worker Grievance Procedures**

In accordance with the provisions of the General Conditions of Contract, the Contractor shall, at his own cost, be fully responsible for the establishment and maintenance of satisfactory labour relations on site and the resolution of all grievances of temporary workers and subcontractors as may occur.

The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the civil engineering construction industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the contract.

In the event of any temporary worker engaged by the Contractor in terms of the contract, being aggrieved on any issue, he shall have the right to nominate and be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor, by one member of the temporary workforce.

In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures described above, then either the Contractor or the worker concerned may require that the matter be referred to the PC for further consideration, with a view to facilitating resolution thereof.

**C3.3.4 TRAINING OF THE TEMPORARY WORKFORCE**

Selected members of the workforce are to be provided at least with structured training by a nominated subcontractor, in accordance with the provisions of this section. The Contractor shall make all necessary allowances in his program of work to accommodate and facilitate the delivery of such structured training.

ABE subcontractor's workforces will be entitled to receive accredited training that will improve on task skills necessary for the execution and successful completion of the various subcontracts. The Contractor, in conjunction with the Engineer, shall monitor each ABE's progress closely and shall identify those who will benefit from structured construction skills training.

The technical training shall comprise of items selected from the table in paragraph 7 of this section and which are relevant to this project.

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### **C3.3.5 ACCREDITED TRAINING AND ATTENDANCE**

Only qualified trainers employed by training agencies who are accredited by the Civil Engineering Industry Training Scheme (CEITS), or any other institution recognized by the Department of Labour shall deliver all training certificates affirming the successful participation in the various courses and shall be presented to each attendant.

The contractor shall facilitate in the delivery of training, by instructing and motivating the relevant subcontractor regarding his staff's attendance and participation therein.

The contractor shall further make all reasonable efforts to co-ordinate subcontractor's work with that of the delivery of the structured training.

The provision of structured training shall not relieve the Contractor of any of his obligations in terms of the Conditions of Contract and the Contractor shall remain fully liable for the provision, at his own cost, of any other training of the workforce, additional to the structured training, as deemed to be necessary by the Contractor to achieve the execution and completion of the works strictly in accordance with the provisions of the contract.

### **C3.3.6 PENALTIES FOR NON-COMPLIANCE**

Any deliberate failure or neglect by the Contractor to comply with the provisions of this specification, or any deliberate omission or neglect by the Contractor in adhering to or applying the principles as are described and inherent in this specification, shall be deemed to constitute a warrant for the Engineer to act in terms of the Conditions of Contract or the penalties specified for non-attaining the prescribed CPG's will be applied and doubled.

### **C3.3.7 TASK RATE GUIDE**

When determining task rates, the conditions in the area must be taken into consideration.

### **C3.3.8 MEASUREMENT AND PAYMENT**

ITEM	UNIT
------	------

<b>C3.3.8.1 Community Liaison Officer Salary</b> .....	provisional (Prov) sum
--	------------------------

The provisional sum provided shall cover the salary of the duly elected and approved CLO.

#### **C3.3.8.2 Training**

a) Training of the temporary workforce

i) Technical training ..... provisional (Prov) sum

ii) HIV/AIDS ..... provisional (Prov) sum

The provisional sums provided shall cover all the cost for the training of the temporary workforce.

<b>C3.3.8.3 Handling costs and profits in respect of items</b> <b>C3.3.1 and C3.3.2</b> .....	percentage (%)
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Part C3.3: ~~Procurement~~

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The tendered percentage is a percentage of the amounts actually spent under the items, which shall include full compensation for the handling costs of the Contractor, and the profit in connection with the training.

**C3.3.6 Penalties**

b) Targeted Labour ..... percentage point

The penalty for item (b) for not attaining at least the tendered number of person-days (refer to Part T2: Returnable Documents) will be calculated as follows:

In the event that the Tenderer fails to substantiate that any failure to achieve the Contract Participation Goal was due to quantitative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, it shall be liable to pay to the Employer a financial penalty calculated in the following manner:

$$P = \frac{1.0 \times (D - D_o) \times N_A}{(100)}$$

Where

D = tendered Contract Participation Goal percentage  
D<sub>o</sub> = the Contract Participation Goal which the Engineer based on the credits passed, certifies as being achieved upon completion of the Contract  
N<sub>A</sub> = Net Amount (Contract expenditure, excluding VAT)  
P = Rand value of penalty payable.

The Minimum set-aside on this contract for Targeted Labour is 7.5%

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## MOHOKARE LOCAL MUNICIPALITY

### CONTRACT No SCM/MOH/02/2024 SCM/MOH/14/2024

#### ROUXVILLE: UPGRADING WATER TREATMENT WORKS THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW) RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)

#### PART C3.4: CONSTRUCTION

##### C3.4.1 Site Establishment

The contractor shall erect the permanent site camp at the location as indicated by the MOHOKARE Local Municipality. Campsites within the road reserve will not be permitted. The site for the Engineer's offices and laboratories shall not be used for the accommodation or housing of the Contractor's personnel and employees.

The Contractor shall make his own arrangements concerning the supply of electrical power, water, telephone and all other services, both for use at the site establishment area as well as for the use in the construction of the Works. No direct payment shall be made for the provision of any service and the cost thereof shall be deemed to be included in the rates tendered for the various items of work for which these services are required.

##### C3.4.2 Survey Control and Setting Out of the Works

Reference and level beacons will be shown to the Contractor by the Engineer at the commencement of the Contract and the Contractor will be responsible for transferring the data to the Site of Works.

The Contractor shall check the condition and accuracy of all reference and level beacons and satisfy himself that they have not been disturbed and are true with regard to position and level. A beacon that has been disturbed shall not be used until its true position and level have been re-established and the new values have been certified by the Engineer. The Contractor shall thereafter be held entirely responsible for the protection of all reference and level beacons.

The Contractor shall employ a capable surveyor to set out the Works to the required lines and levels. The Engineer shall be informed immediately should any discrepancy be discovered between the levels or dimensions obtained by the Contractor and those shown on the drawings.

Where a beacon is likely to be disturbed during construction operations, the Contractor shall establish suitable reference beacons at locations where they will not be disturbed during construction. No beacons shall be covered over, disturbed or destroyed before accurate reference beacons have been established and details of the positions and levels of such beacons have been submitted to the Engineer. The Contractor's reference beacons shall be of at least the same accuracy and sturdiness of construction as the existing beacons.

The Contractor shall submit the method of setting out he proposes to employ to the Engineer. Accurate control of line and level shall be provided by the Contractor at all stages of construction.

Work set out by the Contractor may be checked by the Engineer and any errors found shall be rectified by the Contractor at his own expense. The Contractor shall supply any instrument, equipment, material

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and labour required by the Engineer for this survey work. Any assistance, including checking given to the Contractor by the Engineer or any setting out done by the Engineer for Contractor shall not be held as relieving the Contractor of his responsibility for the accurate construction of the Works.

The Contractor's survey instruments, and survey equipment shall be suitable for the accurate setting out of the Works and shall be subject to the approval of the Engineer. They shall furthermore be checked and correctly adjusted by the authorized agents before the commencement of the contract and subsequently when required by the Engineer and when otherwise necessary.

When required the Contractor shall, at his own expense, provide two labourers to assist the Engineer. The Engineer shall have the sole right of approving of such a labourer.

Survey work shall not be measured and paid for directly and compensation for the work involved in setting out shall be deemed to be covered by the rates tendered and paid for the various items of work included under the contract.

#### C3.4.3 Inspection of Adjoining Properties

The Contractor shall take cognizance of the following:

Before any construction work commences in any section of the Works, the Contractor shall inspect all properties adjoining that section, preferably in the company of the relevant property owner or representative of the owner, and record the following:

- A photographic record of each property.
- All existing visible cracks in the adjoining buildings.
- Alternative accesses to the property.
- Location of services entering the property.

#### C3.4.4 Construction in Confined Areas

It will be necessary for the Contractor to work within confined or restricted areas. No additional or extra over payment will be made as described for in "restricted areas" in the Standard Specifications. The Contractor shall note that measurement and payment will be in accordance with the specifications, excluding payment for work in restricted areas, irrespective of the method used, and that the rates and amounts tendered shall be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined or restricted areas and narrow widths at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

#### C3.4.5 Existing Services

The scope of works for this contract shall be affected by existing services. Where necessary the Contractor must familiarize himself with the position and extent of existing services and to carry out the works in such a manner as not to cause damage to existing services. All manhole covers in the road must be clearly referenced and absolutely no surfacing shall be allowed on any manhole cover.

Any cost of repairs, replacement and/or installation of services and equipment resulting from the Contractor's negligence or unauthorized action shall be to the Contractor's account.

Where applicable, the employer's standard specification for repairing and installation of water and sanitation services shall be used.

#### C3.4.6 Plant and Materials

The Contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the Engineer with certificates of compliance.



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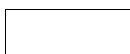
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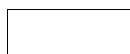
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Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the Engineer's office on the site free of charge.

Where proprietary products have been specified, similar products may be used subject to the prior written approval of the Engineer.

Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the relevant manufacturer's current published instructions.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the Contractor for the permanent works shall be unused and fresh, not older than three months or as approved by the engineer.

Existing structures on the site shall remain the property of the employer and except as and to the extent required elsewhere in the contract, shall not be interfered with by the Contractor in any way.

Materials to be included in the works shall not be damaged in any way and, should they be damaged on delivery or by the Contractor during handling, transportation, storage, installation or testing they shall be replaced by the Contractor at his own expense.

All places where materials are being manufactured or obtained for use in the works, and all the processes in their entirety connected therewith shall be open to inspection by the Engineer (or other persons authorised by the Engineer) at all reasonable times, and the Engineer shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

The Contractor shall satisfy himself that any quarry selected for use provides the necessary mined material in accordance with the specification and that the quarry or borrow pits are in compliance with the latest environmental and mining legislation.

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Part C3.5.2: Variations to Additions to Specifications3-Procurement

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**MOHOKARE LOCAL MUNICIPALITY**

**CONTRACT No SCM/MOH/1402**  
**/2024**

**THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA**  
**WATER TREATMENT WORKS (WTW)RE-ADVERT: THE**  
**COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER**  
**TREATMENT WORKS (WTW)**

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**PORTION 2: CONTRACT**

**PART C3.5.2**  
**Variations and Additions to Standard**  
**And Particular Specifications**

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Part C3.5.2: Variations to Additions to Specifications3-Procurement



**CONTRACT No** SCM/MOH/02/2024SCM/MOH/14/2024

**THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW) RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)**

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<u>PSAB</u>	Engineer's Office .....	C3.5-16
<u>PSC</u>	Site Clearance .....	C3.5-18
<u>PSD</u>	Earthworks .....	C3.5-19
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<u>PSLB</u>	Bedding (Pipes) .....	C3.5-36
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<u>PSPB</u>	Zone Meter Installation .....	C3.5-43
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**MOHOKARE LOCAL MUNICIPALITY**

**CONTRACT No ~~SCM/MOH/02/2024~~SCM/MOH/14/2024**

**THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)**

**VARIATIONS AND ADDITIONS TO THE STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS FOR THIS CONTRACT**

The following variations and additions to the SABS 1200 Standardized Specifications referred to in clause PS 26 will be valid for this contract. The prefix "PSA" indicates an amendment to SABS 1200 A, "PSC" to SABS 1200 C, etc. The numbers following these prefixes are the relevant clause numbers in SABS 1200.

**PSA                    GENERAL (1986)**

**PSA 1                SCOPE**

Replace sub clause 1.1 with the following:

"1.1 This specification covers requirements, principles and responsibilities of a general nature which are normally applicable to all civil engineering contracts as well as the requirements for the Contractor's establishment on site."

**PSA 2                INTERPRETATIONS**

**PSA 2.3            Definitions**

**a)    General**

Add the following definitions:

"General conditions: The general conditions of contract specified for use with this contract and the special conditions of contract as applicable.

Specified: As specified in the standardized specifications, the drawings or the project specifications. Specifications shall have the corresponding meaning."

**c)    Measurement and payment**

Replace the definitions for fixed charge, time-related charge and value-related charge with the following:

"Fixed charge: A charge that is not subject to adjustment on account of variation in the value of the contract amount or the contract time of completion.

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Time-related charge: A charge, the amount of which is varied in accordance with the time for completion of the work as adjusted in accordance with the provisions of the contract.  
Value-related charge: A charge, the amount of which is varied pro rata the final value of the measured work executed and valued in accordance with the provisions of the contract."

**PSA 2.4 Abbreviations**

a) Abbreviations relating to standard documents

Add the following abbreviation:

"CKS: SABS Co-ordinating Specification."

**PSA 2.8 Items In Schedule of Quantities**

**PSA 2.8.1 Principle**

In the fourth line after the word "Specification" add "or in the measurement and payment clause of the standard or particular specification or section or project specification".

**PSA 2.8.2 Preliminary and General Section**

Add the following to A 2.8.2:

Should the sum of Section A: Preliminary and General exceeds 15% of the tender sum (excluding VAT), the Tenderer shall state his reasons in writing for tendering in this manner. See also PSA 8.2.1.

**PSA 3 MATERIALS**

**PSA 3.1 Quality**

Add the following:

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified in accordance with SABS specifications shall bear the SABS mark, whether so specified or not."

Add the following:


"The Contractor must provide the Engineer with at least 48 hours notice prior to control testing being required. Furthermore, the Contractor must make provision in his programme for the undertaking, and calculation of results, of such testing. Construction of any work that depends on control testing, for which test results are not available will be undertaken at the Contractors own risk."


Add the following sub clause(s):


**"PSA 3.3 Ordering of Materials**


The quantities set out in the schedule of quantities have been determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The Contractor shall, therefore, verify the quantities before ordering materials of any kind. No liability or responsibility whatsoever shall be attached to the employer for materials


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Witness 2

  
Employer

  
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Witness 2



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ordered by the Contractor except if they have been ordered in accordance with written confirmation issued by the Engineer.

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PSA 3.4 Materials Supplied by the Employer

Materials designated in the Contract documents to be supplied by the Employer shall not be obtained by the Contractor from any other source than from the Employer. Requisitions for materials to be supplied by the Employer shall be submitted in writing and shall be signed by the Contractor or his authorised representative and the Engineer. The Contractor or his authorised representative shall sign a receipt upon delivery of all such materials that, having been accepted by the Contractor, will be deemed to be in a sound and satisfactory condition and will thenceforth be his sole responsibility.

The onus shall be entirely on the Contractor to ensure that he accepts only sound materials from the Employer, and the Engineer is authorised to reject as unsuitable any material on the Site of the Works that, in his opinion, is unsound or defective in any way. The Contractor shall immediately remove such rejected materials from the Site of the Works and shall replace them, at his own expense, with new and sound materials to the satisfaction of the Engineer."

PSA 4 PLANT

PSA 4.2 Contractor's Offices, Stores and Services

Add the following paragraph before the first paragraph:

"The Contractor's construction camp shall be fenced off and shall contain all offices, stores, workshops, testing laboratories, toilet facilities, etc. The camp shall always be kept in a neat and tidy condition.

No personnel will be allowed to reside on the site. Only night-watchmen may be on the site after hours."

The Contractor shall make arrangements as necessary for the removal of night soil."

Add the following to clause 4.2:

Storage of Materials

Rubber articles, including pipe insertion or joint rings, shall be stored in a suitable shed and kept away from sunlight, oil or grease. Living accommodation shall not be used for the storage of materials.

Large items not normally stored in a building shall be neatly stacked or laid out on suitable cleaned areas at the Site. Grass or vegetation shall not be allowed to grow long in the storage areas and the material shall be kept free of dust and mud and be protected from stormwater. Pipes shall be handled and stacked in accordance with the manufacturer's recommendations, special care being taken to avoid stacking to excessive heights and placing over hard objects. uPVC pipes shall be protected from direct sunlight by suitable covers.

Every precaution shall be taken to keep cement dry and prevent access of moisture to it from the time it leaves the place of manufacture until it is required for use on the Site. Any bags of cement which show any degree of hydration and setting shall be removed from the Site of the Works and replaced at the Contractor's own expense.

PSA 5 CONSTRUCTION

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## PSA 5.1 Survey

### PSA 5.1.1 Setting Out of the Works

Substitute the first sentence in clause 5.1.1 with the following:

Setting out of the works shall be done from survey pegs along the street reserve boundaries and from benchmarks as indicated on the drawings. The Contractor shall, within two (2) weeks after the site has been handed over to him, ascertain the correctness of all pegs and benchmarks. Any discrepancy shall immediately be reported in writing to the Engineer. Any costs or subsequent costs arising from discrepancies which had not been reported to the Engineer within the aforementioned period, shall be the sole responsibility of the Contractor.

### PSA 5.1.2 Preservation and replacement of survey beacons and pegs subject to the Land Survey Act

~~DELETE THE WORDS "in the vicinity of boundaries" IN THE SECOND SENTENCE OF SUB-CLAUSE 5.1.2 AND REPLACE THE WORDS "under the direction of" IN THE SAME SENTENCE WITH "in consultation and liaison with".~~

~~ADD THE FOLLOWING AFTER THE SECOND SENTENCE OF SUB-CLAUSE 5.1.2:~~

~~"The Contractor and the Engineer shall record on the said list, their concurrence or disagreement (as the case may be) regarding the completeness and accuracy of the details recorded therein."~~

~~REPLACE THE THIRD SENTENCE OF SUB-CLAUSE 5.1.2 WITH THE FOLLOWING:~~

~~"At the completion of the Contract, the Contractor shall expose all pegs that were listed at the commencement of the construction as being in order and the Contractor shall arrange with a registered Land Surveyor for the checking of the positions of all such pegs and the replacement of those that the Land Surveyor's check reveals have become disturbed or damaged. The Contractor shall, as a precedent to the issue of the Certificate of Completion, provide to the Engineer, a certificate from the registered Land Surveyor, certifying that all the pegs listed at the commencement of construction in accordance with the provisions of this clause, have been checked and that those found to have been disturbed, damaged or destroyed have been replaced in their correct positions, all in accordance with the provisions of the said Act.~~

~~The costs of all checking, replacement and certification as aforesaid shall be entirely for the Contractor's account. This, with the provision always that the Contractor shall not be held liable for the cost of replacement of pegs which:~~

- ~~a) cannot reasonably be re-established in their original positions by reason of the finished dimensions of the permanent works, and~~
- ~~b) the Contractor can prove beyond reasonable doubt to the satisfaction of the Engineer, were disturbed, damaged or destroyed by others beyond his control."~~

## PSA 5.2 Watching, Barricading, Lighting and Traffic Crossings

Add the following to clause 5.2:

The Contractor shall employ competent watchmen to guard the works both day and night.

From the time work on any portion of the Works commences, until the Completion of the Works and the issue of the Certificate of Completion of the Works, the Contractor shall be responsible

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for protecting the property of the Municipality and all persons having business on the Site from anything dangerous or likely to cause damage or injury. The Contractor shall take all practical precautions to avoid nuisance or inconvenience to the owners or occupiers of properties near to the Site and to the public generally whilst carrying out the Works and shall at all times keep the Site clean and in safe and satisfactory condition. Dust control shall be exercised by frequently and whenever required spraying cleared surfaces and bypasses with water.

The crossing of any tarred roads to connect to the water and sewer mains must be done in half widths, or as required by the Engineer.

#### PSA 5.3 Protection of Existing Structures

REPLACE "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" WITH "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," AND INSERT THE FOLLOWING AFTER "(Act No. 27 of 1956)": "as amended".

#### PSA 5.4 Protection of Overhead and Underground Services

REPLACE THE HEADING AND THE CONTENTS OF SUB-CLAUSE 5.4 WITH THE FOLLOWING:

#### PSA 5.4 Location and Protection of Existing Services

##### PSA 5.4.1 Location of existing services

Before commencing with any work in an area, the Contractor shall ascertain the presence and actual position of all services which can reasonably be expected by an experienced and competent Contractor to be present on, under, over or within the Site.

Without in any way limiting his liability in terms of the Conditions of Contract in relation to damage to property and interference with services, the Contractor shall, in collaboration with the Engineer, obtain the most up-to-date plans as are available, showing the positions of services existing in the area where he intends to work. Neither the Employer nor the Engineer offers any warranty as to the accuracy or completeness of such plans and because services can often not be reliably located from plans, the Contractor shall ascertain the actual location of services depicted on such plans by means of careful inspection of the Site.

Thereafter, the Contractor shall, by the use of appropriate methodologies, carefully expose the services at such positions as are agreed to by the Engineer, for the purposes of verifying the exact location and position of the services. Where the exposure of existing services involves excavation to expose underground services, the further requirements of sub-clauses 4.4 and 5.1.2.2 of SABS 1200 D (as amended) shall apply.

The aforesaid procedure shall also be followed in respect of services not shown on the plans but which may reasonably be anticipated by an experienced Contractor to be present or potentially present on the site.

All services, the positions of which have been determined as aforesaid at the critical points, shall henceforth be designated as 'known services' and their positions shall be indicated by the

Contractor on a separate set of drawings, a copy of which shall be furnished to the Engineer without delay.

As soon as any service which has not been identified and located as described above is encountered on, under, over or within the site, it shall henceforth be deemed to be a known service

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and the aforesaid provisions pertaining to locating, verifying and recording its position on the balance of the site shall apply. The Contractor shall notify the Engineer immediately when any such service is encountered or discovered on the Site.

Whilst he is in possession of the Site, the Contractor shall be liable for all loss of or damage as may occur to

a) known services, anywhere along the entire lengths of their routes, as may reasonably be deduced from the actual locations at which their positions were verified as aforesaid, due cognisance being taken of such deviations in line and level which may reasonably be anticipated, and

b) any other service which ought reasonably to have been a known service in accordance with the provisions of this clause.

The Contractor shall also be liable for consequential damage in regard to (a) and (b), whether caused directly by the Contractor's operations or by the lack of proper protection.

No separate payment will be made to the Contractor in respect of his costs of providing, holding available on the Site and utilising the said detecting and testing equipment, nor for any costs incurred in preparing and submitting to the Engineer the Drawings as aforesaid. These costs shall be deemed included in the Contractor's other tendered rates and prices included in the Contract.

Payment to the Contractor in respect of exposing services at the positions agreed by the Engineer and as described above will be made under the payment items (if any) as may be provided for in the respective sections of the specifications pertaining to the type of work involved.

PSA 5.4.2 Protection during construction

The Contractor shall take all reasonable precautions and arrange its operations in such a manner as to prevent damage occurring to all known services during the period which the Contractor has occupation and/or possession of the Site.

Services left exposed shall be suitably protected from damage and in such a manner as will eliminate any danger arising there from to the public and/or workmen, all in accordance with the requirements of the prevailing legislation and related regulations.

Unless otherwise instructed by the Engineer, no services shall be left exposed after its exact position has been determined and all excavations carried out for the purpose of exposing underground services shall be promptly backfilled and compacted. In roadways, the requirements of Sub clause 5.9 of SABS 1200 DB should be observed. In other areas compaction is to be to 90% modified AASHTO density.

Before any work that involves services to any property is carried out, the Contractor shall serve notice on the resident, occupier and/or owner of every property at least 3 working days in advance of any temporary disconnection, advising the nature, time and duration. The Contractor shall comply with any additional requirements of the Local Authority.

PSA 5.4.3 Alterations and repairs to existing services

Unless the contrary is clearly specified in the Contract or ordered by the Engineer, the Contractor shall not carry out alterations to existing services. When any such alterations become necessary, the Contractor shall promptly inform the Engineer, who will either make arrangements for such work to be executed by the owner of the service or instruct the Contractor to make such arrangements himself.

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Should damage occur to any existing services, the Contractor shall immediately inform the Engineer, or when this is not possible, the relevant authority, and obtain instructions as to who should carry out repairs. In urgent cases, the Contractor shall take appropriate steps to minimise damage to and interruption of the service. No repairs of telecommunication cables or electric power lines and cables shall be attempted by the Contractor.

The Employer will accept no liability for damages due to delay in having such alterations or repairs effected. The Contractor shall provide all reasonable opportunity, access and assistance to persons carrying out alterations or repairs of existing services.

**PSA 5.7 Safety**

REPLACE THE CONTENTS OF SUBCLAUSE 5.7 WITH THE FOLLOWING:

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

- a) Provide to its Employees on the site of the works, all safety materials, clothing and equipment necessary to ensure full compliance with the provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) as amended (hereinafter referred to as the Act) at all times, and shall institute appropriate and effective measures to ensure the proper usage of such safety materials, clothing and equipment at all times;
- b) Provide, install and maintain all barricades, safety signage and other measures to ensure the safety of workmen and all persons in, on and around the site, as well as the general public;
- c) Implement on the site of the works, such procedures and systems and keep all records as may be required to ensure compliance with the requirements of the Act at all times;
- d) Implement all necessary measures so as to ensure compliance with the Act by all subcontractors engaged by the Contractor and their employees engaged on the works;
- e) Full compliance with all other requirements pertaining to safety as may be specified in the Contract.

The Employer and the Engineer shall be entitled, although not obliged, to make such inspections on the site as they shall deem appropriate, for the purpose of verifying the Contractor's compliance with the requirements of the Act. For this purpose, the Contractor shall grant full access to the site of all parts of the site and shall co-operate fully in such inspections and shall make available for inspection all such documents and records as the Employer's and/or Engineer's representative may reasonably require.

Where any such investigations reveal, or where it comes to the Engineer's attention that the Contractor is in any way in breach of the requirements of the Act or is failing to comply with the provisions of this clause, the Engineer shall, in accordance with the provisions of clause 39 of the Conditions of Contract, be entitled to suspend progress on the works or any part thereof until such time as the Contractor has demonstrated to the satisfaction of the Engineer, that such breach has been rectified.

The Contractor shall have no grounds for a claim against the Employer for extension of time and/or additional costs if the progress on the works or any part thereof is suspended by the Engineer in terms of this clause, and the Contractor shall remain fully liable in respect of the payment of

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penalties for late completion in accordance with the provisions of clause 43 of the Conditions of Contract should the Contractor fail to complete the Works on or before the specified due completion date in consequence of the suspension.

Persistent and repeated breach by the Contractor of the requirements of the Act and/or this clause shall constitute grounds for the Engineer to act in terms of sub clause 55 of the Conditions of Contract and for the Employer to cancel the Contract in accordance with the further provisions of the said clause 55."

ADD THE FOLLOWING SUB-CLAUSE TO CLAUSE 5:

**"PSA 5.9 Site Meetings**

The Contractor or his authorised agent will be required to attend regular site meetings, which shall normally be held once a month on dates and at times determined by the Engineer, but in any case, whenever reasonably required by the Engineer. Unless otherwise indicated in the Contract or instructed by the Engineer, such meetings shall be held at the Contractor's offices on the site. At such monthly meetings, matters such as general progress on the works, quality of work, problems, claims, payments, and safety shall be discussed, but not matters concerning the day-to-day running of the Contract."

**PSA 6 TOLERANCES**

Add the following sub-clause:

**"PSA 6.4 General**

No guarantee is given that the full specified tolerances will be available independently of each other, and the Contractor is cautioned in regard to the fact that the liberal or full use of any one or more of the tolerances may deprive him of the full or any use of tolerances relating to other aspects of the work.

Except where the contrary is specified or when clearly not applicable, all quantities shall for purpose of measurement and payment be determined from the 'authorized' dimensions. This shall be taken to mean the dimensions as specified or shown on the drawings or, if changed, as finally instructed by the Engineer, without any allowance for the tolerances specified. Save as hereinafter specified to the contrary, all measurements for determining quantities for purposes of payment will be based on the "authorized" dimensions.

If the work is therefore constructed in compliance with the "authorized" dimensions plus or minus any tolerances allowed, quantities will be based on the "authorized" dimensions regardless of the actual dimensions to which the work has been constructed.

When the work is not constructed in accordance with the 'authorised' dimensions plus or minus the tolerances allowed, the Engineer may nevertheless, at his sole discretion, accept the work for payment. In such cases no payment shall be made for quantities of work or material in excess of those calculated for the 'authorised' dimensions, and where the actual dimensions are less than the 'authorised' dimensions minus the tolerance allowed, quantities for payment shall be calculated based on the actual dimensions as constructed."

**PSA 7 TESTING**

**PSA 7.1.1 Checking**

Replace the last sentence with the following:

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"The Contractor shall obtain the services of an independent testing laboratory at his own expense (Refer sub-clause PS 8.6 of portion 1 of the project specifications) to carry out such checks as are prescribed in the various standardized specifications."

PSA 7.1.2 Standard of finished work not to specification

Replace the words "Where the Engineer's checks reveal . . ." with "Where the checks by the approved laboratory reveal . . ."

PSA 7.2 Approved Laboratories

Add the following:

"The independent laboratory used by the Contractor and approved by the Engineer shall also be deemed to be an approved laboratory."

PSA 7.4 Statistical Analysis of Control Tests

Substitute A 7.4 with the following:

Test results shall not be evaluated by statistical methods. All results shall comply with the specified minimum requirements of the materials concerned.

PSA 8 MEASUREMENT AND PAYMENT

PSA 8.1 Measurement

PSA 8.1.2 Preliminary and general items or section

PSA 8.1.2.1 Contents

Replace the contents of item (c) with the following:

"The 'duration of construction' applicable to a time-related item shall be the tendered contract period."

PSA 8.1.2.2 Tendered sums

Replace the contents of this sub-clause with the following:

"The Contractor's tendered sums under items PSA 8.3 and PSA 8.4 shall collectively cover all charges for:

- Risks, costs and obligations in terms of the General Conditions of Contract, Special Conditions of Contract and of this Standardized Specification, except to the extent that provision is made in these Project Specifications to cover compensation for any of these items of work.
- Head-office and site overheads and supervision.
- Profit and financing costs.
- Expenses of a general nature not specifically related to any item or items of permanent or temporary work.

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- Providing facilities on site for the Contractor's personnel, including offices, storage facilities, workshops, ablutions, for providing services such as water, electricity, sewerage, sewage and rubbish disposal, for access roads and all other facilities required as well as for the maintenance and removal on completion of the works of these facilities (Excluding the permanent structures).and the cleaning-up of the camp site on completion of the works.
- Providing facilities for the Engineer and his staff as specified in Portion 1: Site facilities required, SABS 1200 AB and PSAB.
- All costs related to the supply, erection, maintenance and removal of two contract name boards as detailed in the drawings."

**PSA 8.2 Payment**

**PSA 8.2.1 Fixed-charge and value-related items**

Replace the contents of this sub-clause with the following:

"Payment of fixed charges in respect of item 8.3.1 will be made as follows:

Eighty per cent (80%) of the sum tendered will be paid once the facilities have been provided and approved. The remaining twenty per cent (20%) will be paid once the works have been completed, the facilities removed, and the camp site cleared and cleaned.

Payment for the sum tendered under item 8.3.2 will be made in three separate instalments as follows:

- a) The first instalment which is 40% of the sum, will be paid when the Contractor has met all his obligations to date under this specification, the general conditions of contract and the special conditions of contract, and where the value of work certified for payment, excluding materials on site and any payments under preliminary and general items is equal to not less than 5% of the total value of the work listed in the schedule of quantities.
- b) The second instalment, which is 40% of the sum, will be made when the amount certified for payment, including retention monies but excluding the second instalment referred to herein, exceeds 50% of the tender sum.
- c) The final payment, which is 20% of the sum, will be made when the works have been certified as completed and the Contractor has fulfilled all his obligations to date under this specification, the general conditions of contract and the special conditions of contract.

Should the value of the measured work finally completed be more or less than the tender sum, then the sum tendered under item 8.3.2 will be adjusted pro rata up or down in accordance with clause 53 of the General Conditions of Contract and this adjustment shall be applied to the third instalment. No adjustment will apply to item 8.3.1 in respect of variations in the value of work done or the time for completion finally authorized."

**PSA 8.2.2 Time-related items**

Replace the contents of this sub-clause with the following:

"Subject to the provisions of 8.2.3 and 8.2.4, payment under item 8.4.1 (time-related item) will be made monthly in equal amounts, calculated by dividing the sum tendered for the item by the

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tendered contract period in months, provided always that the total of the monthly amounts so paid for the item is not more than in proportion to the progress of the work as a whole.

Should the Engineer grant an extension of the time for completion of the works, the Contractor will be entitled to an increase in the sum tendered for the time-related item, which increase shall be in the same proportion to the original tendered sum as the extension of time is to the original time for completion of the works.

Payment for such increased amounts will be taken to be in full compensation for all additional time-related preliminary and general costs that result from the circumstances pertaining to the extension of time granted."

### **PSA 8.3 Scheduled Fixed-Charge and Value-Related Items**

PSA 8.3.1 Contractual requirements .....Unit: Sum

Add to end of last sentence:

"but excluding insurance as required in terms of Part T1.3, Clause 2.9 and Part C1.2"

Add new payment item:

PSA 8.3.1 a) Contractors all risk insurance provided by Contractor (if not by Municipality as stated in Part T1.3, clause 2.9 and Part C1.2) ..... Unit: Sum

The rate shall cover the cost to provide insurance as required in GCC38.1 for the duration of the contract.

### **PSA 8.3.2 Establishment of Facilities on the Site**

#### **PSA 8.3.2.1 Facilities for Engineer**

Substitute or add the following subclasses:

Substitute A 8.3.2.1(a) and (b) with:

a) Furnished office for Resident Engineer suitable for site meetings .....Unit: Sum

b) One cellular phone .....Unit: Sum

d) One survey assistants and equipment .....Unit: Sum

Add the following sub-clauses:

e) One carport as specified .....Unit: Sum

f) Provision of monthly "as-built" records to the Engineer .....Unit: Sum

g) Ablution and latrine facilities .....Unit: Sum

The payment remains as specified in Sub clause 8.3.2.3.

### **PSA 8.4 Scheduled Time-Related Items**

#### **PSA 8.4.2.1 Facilities for Engineer**

Substitute A 8.4.2.1(a) and (b) with:

a) Furnished office for Resident Engineer suitable for site meetings ..... Unit: month

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b) One cellular phone ..... Unit: month

d) Two survey assistants and equipment ..... Unit: month

Add the following sub-clauses.

e) One carport as specified ..... Unit: month

f) Provision of monthly "as-built" records to the Engineer ..... Unit: month

g) Ablution and latrine facilities..... Unit: Month

#### PSA 8.4.2.2 Facilities for Contractor

Add the following:

k) One facsimile facility ..... Unit: month

l) Digital camera to take digital photographs of existing structures and obstructions on the pipeline routes and submit to the Engineer ..... Unit: month

The unit of payment for item 8.4.2.1 will be "month".

#### PSA 8.5 Sums Stated Provisionally By Engineer

Add the following:

c) Provision for day works ..... Unit: Sum

#### PSA 8.6 Prime Cost Items

Add the following new sub-clauses:

d) Additional quality control tests by approved laboratory instructed by the Engineer. (The cost of tests not conforming to standards shall not be included for payment) ..... Unit: Sum

e) Contractor's superintendence and administration of item (d) above..... Unit: %

f) Disconnect existing legal/illegal water connections when instructed by the Engineer ..... Unit: No

g) Overheads, charges, handling fee and profit on item (f) above Unit: %

#### PSA 8.7 Day work

Replace A8.7 with the following:

Day work will be paid according to the tendered rates in the Day work Schedule attached as an annexure. These tendered rates include all allowances for the Contractor's and subcontractor's profits, timekeeping, clerical work, insurance establishment, superintendence and the use of hand tools. The percentage allowances stated in the appendix to the tender form are only applicable to day work items not listed in the Day work Schedule. These day work costs will be valued according to clause 40(4)(b) in the General Conditions of Contract as amended.

#### PSA 8.8 Temporary Works

PSA 8.8.2 Accommodation of Traffic ..... Unit: Sum

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Add the following to A 8.8.2:

The rate shall cover all costs pertaining to the provision, erection, moving, re-erection and maintenance of all temporary barricades, road signs, lights, flagmen, etc. as required, for the guarding and protection of the works, for the construction, gravelling and maintenance of access roads and detours to the site of the works, borrow pits or spoil sites, as well as for the later removal or the cleaning and tidying up thereof, for making the necessary traffic arrangements and arrangements with regard to the moving and/or re-erection of existing traffic signs, as well as all other costs to accommodate the traffic during construction.

#### PSA 8.8.4 Existing Services

Add the following to A 8.8.4:

Where the Contractor is responsible for the cost of repairs carried out by the Municipality or others, the costs will be recovered by means of a deduction from the Contractor's monthly payment certificate. The Municipality will attend to the payment of monies due to others.

#### PSA 8.8.5 Cost of Survey in Terms of the Land Survey Act .....Unit: Sum

Substitute A 8.8.5 with the following:

The sum shall cover the cost of all labour, plant and material required for the searching and compilation of a list, all in accordance with the requirements as set out in clause A 5.1.2. The cost of the Contractor's responsibility for the setting out of the Works in terms of Sub clause 5.1.1 and the preservation and replacement of beacons and pegs subject to the Land Survey Act in terms of Sub clause A 5.1.2 will be held to be covered by the sums tendered for other obligations under Sub clauses 8.3.3 and 8.4.5.

#### PSA 8.9 Additional Survey

- a) As instructed by the Engineer .....Unit: PC Sum  
b) Overheads, changes and profit on item (a) above.....Unit: percentage (%)

#### PSA 8.10 Training Courses

- a) Cost of courses .....Unit: PC Sum  
b) Handling costs and profit on item (a) above .....Unit: percentage (%)

The tendered percentage is a percentage of the amount actually spent under sub item (a) above, which shall include full compensation for the handling costs of the Contractor, and the profit in connection with the organisation of the courses given.

#### PSA 8.11 Management of Subcontracts

Management of approved emerging local subcontractors .....Unit: % (percentage)

The unit of measurement is the percentage paid on the aggregate of the amounts actually paid to the subcontractor, appointed on the respective basic levels of subcontracts. The amount will be in accordance with the provisions of the subcontract and as certified by both the Contractor and the Engineer for payment by the Employer.

The items shall be paid extra-over to the tendered rates and prices for executing the various items of work (or portions thereof) listed in the Schedule of Quantities using small

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Contractors/subcontractors in accordance with the requirements of Portion 1 of this Specification.

The tendered percentage shall include full compensation for all the Contractor's additional costs arising from executing the particular works using small Contractors/subcontractors, including but not limited to the identification, assessment and categorisation of potential tenderers, formulation of the subcontracts, the invitation, adjudication of tenders/ quotations, and award of the subcontracts, as well as the provision of all assistance, guidance and mentoring the administration of the subcontract.

The quantity used in the Schedule of Quantities is for tender purposes only and is not an indication of the estimated tender value. During the Contract this quantity will be adjusted as described above.

ADD THE FOLLOWING ITEM:

PSA 8.12.1 Health And Safety Requirements ..... Unit : Sum

The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the health and safety measures required in terms of Clause 5 (Principle Contractor and Contractor) of the Construction Regulations (2003) of the Occupational Health and Safety Act. No other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PSA 8.12.2 Health And Safety Plan ..... Unit : Sum

The rate shall cover all costs pertaining to the provision and maintenance for the duration of the contract of the health and safety plan as required in the Construction Regulations (2003). The rate shall include for all risk assessments required as well as for the development and implementation of safe work procedures and method statements. No other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PSA 8.12.3 Health and Safety File ..... Unit: Sum

The rate shall cover all costs pertaining to the provision and/or collection of data (drawings, design, materials, operation and maintenance manuals, etc) to be contained in the file, co-operation with other parties, compilation and maintenance of the file during the duration of the contract and the handing over of the file to the Client on completion of the contract. No other sum shall be paid in this respect and Tenderers must therefore ensure that adequate provision has been allowed for.

PSAB ENGINEERS OFFICE (1986)

PSAB 3 MATERIALS

PSAB 3.1 Name boards

Substitute "South African Institution of Civil Engineers" in the first paragraph of AB 3.1 with "South African Association of Consulting Engineers".

PSAB 3.2 Office Building(S)

Add the following to AB 3.2:

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The office must have an adjacent carport with minimum dimensions of 6 m x 3 m with a free draining, wearing course floor. The roof must be built in such a way that a vehicle will always be shielded against the sun throughout the day. An approved shade net may be used for the sides to comply with above-mentioned requirement.

Add the following:

"The Contractor shall provide an air conditioner for both cooling and heating. At least 2 single phase plug points shall be provided. A plan hanger for A0 plans shall be provided."

#### PSAB 4 PLANT

##### PSAB 4.1 Telephone

Replace AB 4.1 with the following:

The Contractor shall make available a cellular phone for the exclusive use of the Engineer's Representative for official purposes.

#### PSAB 5 CONSTRUCTION

##### PSAB 5.1 Name boards

Add the following to AB 5.1:

The name boards shall be erected within one month after receipt of the letter of acceptance and shall be placed at the position indicated by the Engineer and kept in good repair for the duration of the contract and the defects liability period. Any damage to these boards shall be repaired within fourteen days. No payment shall be made in terms of the contract prior to the erection of the name boards.

The Contractor will be permitted to erect a maximum of two of his own name boards, in positions approved by the Engineer. The Engineer reserves the right to order the removal of these boards if they are not kept in good condition.

##### PSAB 5.5 Survey Assistants

Substitute "two or more" in the first sentence of AB 5.5 with "two".

##### PSAB 5.6 Survey Equipment

New clause

The Contractor shall provide the following tested and approved survey equipment on site for the duration of the contract and for the use of the Engineer whenever needed:

- one tachimeter capable of reading to minimum 20 seconds and maximum 6 seconds of arc, plus tripod.
- one automatic level plus tripod.
- two tachimeter staffs and one level staff, all graduated metrically; and
- one 5 m and one 100 m tape measure.

The above-mentioned equipment may by arrangement be shared between the Contractor and the Engineer's representative.

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The Contractor shall keep the equipment continuously insured against any loss, damage or breakage, and he shall indemnify the Engineer and the Municipality against any claims in this regard.

The Contractor shall maintain the equipment in good working order and keep it clean throughout the contract period.

**PSC SITE CLEARANCE (1982)**

**PSC 1 SCOPE**

Add the following:

"This section also covers the removal of foreign materials such as sand, rubbish, etc from areas within the site boundary where work must be executed by the Contractor."

**PSC 3 MATERIAL**

**PSC 3.1 Disposal of Material**

Substitute the first sentence of C 3.1 with the following:

Material obtained from clearing and grubbing and demolition of structures shall be disposed of at one of the allocated municipal dump sites or alternative dump site as approved by the Engineer.

**PSC 5 CONSTRUCTION**

**PSC 5.1 Areas to Be Cleared and Grubbed**

Add the following:

"Pipeline routes shall be cleared to a distance of 1,5 m on both sides of the pipeline centre line. Route pegs or markers shall not be destroyed or damaged during clearing operations."

**PSC 5.2 Cutting of Trees**

Add the following:

"The Contractor shall make all due allowance for protection of trees. NO TREE/S SHALL BE REMOVED WITHOUT PRIOR CONSENT OF THE ENGINEER IN CONSOLATION WITH THE EMPLOYER. Branches may not be trimmed in any way except by the Employer or his appointed agent. Damage to any tree/s, which is in the sole discretion of the Engineer constitutes permanent defacement of such tree/s, shall result in a penalty of R5 000 (Five Thousand Rand) per mature tree damaged. Such penalty will be offset against monies due to the Contractor in terms of certificates issued by the Engineer, should such tree require to be replaced, the cost of such replacement shall be entirely for the account of the Contractor.

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Penalties for the damage of smaller trees, shrubs, etc shall be R1000.00/per tree or shrub damaged. Replacement or making good shall be entirely for the account of the Contractor.

The Contractor shall also be held accountable for damage to plants resulting from placement of fill or removal of soil, except as directed by the Engineer.

#### **PSC 5.3 Clearing**

Add the following:

"The tenderers attention is drawn to the fact that all items described under sub clause 5.3 which are not separately listed in the bill of quantities must be included in the price for item PSC 8.2.1."

#### **PSC 5.5 Re-clearing of Vegetation**

Add the following:

"Where areas have to be re-cleared on the written instructions of the Engineer, such re-clearing shall be carried out at the Contractor's own cost and the Contractor is advised therefore, not to clear areas at such an early stage that re-clearing may become necessary."

#### **PSC 8 MEASUREMENT AND PAYMENT**

##### **PSC 8.1 Basic Principles**

Add the following:

"The thickness of the layer that will unavoidably be stripped during clearing of vegetation will be taken as 100 mm. This implies that levels used in earthworks quantity calculations will be 100 mm lower than the original levels."

##### **PSC 8.2 Payment**

###### **PSC 8.2.1 Clear and grub**

REPLACE THE FIRST LINE WITH THE FOLLOWING:

"The area designated by the Engineer to be cleared and grubbed will be measured in square metre to the nearest square metre or sum with separately scheduled items for different areas or, "

Add the following:

"The rate shall also include the cost of reinstating existing lawns/gardens and/or tarred surfaces in and surrounding the cleared area that are damaged during the clear and grub activity." The rate shall include the cost of buying new material where required and all liaisons with the relevant property owners.

###### **PSC 8.2.5 Take down existing fences and re-erect after completion of the works to original state ..... Unit: m**

The unit of measurement will be metre and the rate will include re-erection thereof as soon as possible after construction work is completed.

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Add the following:

PS C 8.2.8 Demolish and remove structures/buildings and cart away unwanted material to spoil at dump site

- a) Informal toilet structures and buildings smaller than 2,5 m<sup>2</sup> irrespective of type of material..... Unit: No
- b) Buildings larger than 2,5m<sup>2</sup> irrespective of type of material.... Unit: No

PS C 5.8 d) Provide temporary toilet structure with replaceable bucket per erf where an existing informal toilet structure is demolished to be able to make the new sewer and water system operational..... Unit: No

## PSD EARTHWORKS (1988)

### PSD 2 INTERPRETATIONS

#### PSD 2.1 Supporting Specifications

Replace sub clause 2.1.2 with the following:

"PSD 2.1.2 Any of the other SABS 1200 specifications may form part of the contract documents."

#### PSD 2.3 Definitions

Replace the definition "Borrow" with the following:

"Borrow material: Material, other than material obtained from excavations required for the works, obtained from sources such as borrow pits or the authorized widening of excavations. 'Borrow' shall have a corresponding meaning."

Replace the definition "Specified density" with the following:

"Specified density: The specified dry density expressed as a percentage of modified AASHTO dry density."

Replace the definition "Stockpile" with the following:

"Stockpile (Verb): The process of selecting and, as maybe necessary, loading, transporting and offloading material in a designated area for later use and a specific purpose."

Add the following definitions:

"Commercial source: A source of material provided by the Contractor, not the Employer, and including any borrow pit, provided by the Contractor."

"Fill: An embankment or terrace constructed from material obtained from excavations or borrow. In roads it includes the earthworks up to below the selected subgrade level."

Fill (material): Material used for the construction of an embankment or terrace.

Roadbed: The in-situ material on which a fill is to be constructed.

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Placing: Placing shall mean spreading of backfilling material, watering, mixing, compacting, final grading, complying with the required tolerances and providing for testing, all in accordance with the requirements of the specification."

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**PSD 3 MATERIALS**

**PSD 3.1 Classification for Excavation Purposes**

**PSD 3.1.1 Method of classifying**

Add the following:

"Classification of material other than 'soft excavation' 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 the 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."

**PSD 3.2 CLASSIFICATION FOR PLACING PURPOSES**

**PSD 3.2.1 Material suitable for embankments and terraces**

Replace the contents of this sub clause with the following:

**"PSD 3.2.1.1 General**

Save as provided below or instructed by the Engineer, all material resulting from excavations shall be used for purposes of constructing fills and shall only be removed to spoil when surplus to requirements and on the written instructions of the Engineer. Other material that may be approved and ordered for use includes dump rock, ash (mixed with soft fill) and mine-dump material.

**PSD 3.2.1.2 Classification**

Fill material shall be classified as follows:

**a) soft fill**

Fill consisting predominantly of material which, after compaction, is sufficiently fine, and contains sufficiently few stones or rock particles, to generally permit the determination of the field density of the compacted fill by means of the sand replacement test (TMH.1 test No A10(a)). Such material will generally include soil, sand and soft rock.

**b) Coarse fill**

Fill other than rock fill containing so much stone, rock particles and rock fragments that, after compaction, it will generally be impracticable to determine the field density of the fill by the sand replacement method.

**c) Rock fill**

Fill constructed from material consisting predominantly of rocks and boulders with possibly some fine material in between, which material, on account of the mechanical interlock of the large fragments, cannot be compacted effectively by construction methods normally used for soft and coarse fill.

**PSD 3.2.1.3 Specified properties of fill material**

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a) Soft fill

The material shall have a CBR of not less than 3% at the relative density specified for compaction. It shall not contain stones or rock fragments in excess of 150 mm maximum dimension and the PI shall not exceed 18 unless otherwise authorized by the Engineer.

b) Coarse fill

The fraction of the material smaller than 50 mm shall conform to the requirements for soft fill.

The material shall not contain stones or rock particles in excess of 500 mm maximum dimension.

Coarse fill may include dump rock obtained from existing stockpiles.

c) Rock fill

Rock fragments and boulders shall not exceed 750 mm maximum dimension."

PSD 3.2.3 Material suitable for backfill or fill against structures.

Replace the contents of this sub clause with the following:

"Material used for backfilling behind structures shall generally be the material excavated but subject to the following:

a) The material shall not contain an excessive number of stones retained on a 50 mm sieve.

b) The material shall not contain large clay lumps that do not break up under the action of the compaction equipment being used.

c) The liquid limit of the material shall not exceed 40, neither shall the PI exceed 18."

PSD 3.3 Selection

PSD 3.3.1 General

Replace the second paragraph with the following:

"The Contractor shall deal selectively with materials from all excavations to ensure that no acceptable backfill or bedding material is contaminated by material unfit for use. No additional payment shall be made in this regard and all costs related to the above selection process shall be included in the applicable payment items. Should useful material be contaminated to such an extent that it is regarded as unfit for use the Contractor shall at his own cost dispose of this material and replace it with material of an equivalent standard to the acceptable in situ material."

Add the following sub clause:

"PSD 3.3.3 Selection in borrow pits.

The approval of a borrow area for a certain purpose does not necessarily mean that all material within that area is suitable for the specified purpose. What it does mean, is that the borrow area contains some suitable material. The onus is on the Contractor to ensure that only material that is indeed suitable is removed and used for the specified purpose."

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Where the Contractor is required to select material from excavations for a specific purpose, the above provisions relating to borrow areas shall apply mutatis mutandis to excavations.

The Contractor shall not waste or contaminate material that has been selected for a specific purpose."

**PSD 4 PLANT**

**PSD 4.4 Detectors**

REPLACE THE CONTENTS OF SUBCLAUSE 4.4 WITH THE FOLLOWING:

"The Contractor shall, for the purposes of detecting and locating underground services in accordance with the provisions of sub clause 5.4 of SABS 1200 A and sub clause 5.1.2 of SABS 1200 D, at his own cost, provide and use detecting equipment which is suitable for the detection of underground cables and pipes."

**PSD 5 CONSTRUCTION**

**PSD 5.1 Precautions**

**PSD 5.1.1 Safety**

**PSD 5.1.1.1 Barricading and lighting**

Replace "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" with "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

PSD 5.1.1.2 Replace "Machinery and Occupational Safety Act, 1983 (Act 6 of 1983)" with "Occupational Health and Safety Act, 1993 (Act 85 of 1993)".

**PSD 5.1.1.3 Explosives**

Replace the contents of this sub clause with the following:

"The Contractor will generally be permitted to use explosives for breaking up hard material during excavations, for demolishing existing structures and for such other purposes where they may normally be required, subject to the following conditions:

- a) The Engineer shall be authorized to prohibit the use of explosives in cases where, in his opinion the risk of injury to persons or damage to property or adjoining structures is too high. Such action by the Engineer shall not entitle the Contractor to any additional payment for having to resort to other less economical methods of construction.
- b) The Engineer's prior approval shall be obtained in writing in respect of each and every blasting operation carried out. Such approval may be withheld in the event of the Contractor not acting responsibly and carefully in his use of explosives.
- c) The requirements of the Explosives Act, Act 6 of 1956, and the requirements of the Inspector of Explosives shall be complied with.
- d) Before any blasting is undertaken the Contractor shall satisfy the Engineer that he has established whether or not the insurers concerned require pre- and post-blasting

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inspections of buildings and structures within a certain radius of the proposed blasting to be carried out.

Should such inspections be required, the Contractor shall, together with the Engineer and the insurer, examine and measure any buildings, houses or structures in the vicinity of the proposed blasting and establish and record, together with the owner, lessee or occupier thereof, the extent of any cracking or damage that may exist before the commencement of blasting operations. It shall be the responsibility of the Contractor to make good at his own expense any further damage to such houses, buildings or structures which is a result of the blasting.

- e) Where there is a reasonable possibility of damage to power and telephone lines or any other property, the Contractor shall suitably adapt his method of blasting and the size of charges and shall use adequate protective measures, such as cover-blasting, to limit the risk of damage as far as possible.
- f) All accidents, injury to persons and damage to property shall be reported in detail and in writing to the Engineer as soon as is practicable.
- g) The Engineer shall be given 24 hours' notice by the Contractor before each blasting operation is carried out."
- h) When blasting to specified profiles, the Contractor shall so arrange the holes and charges that the resulting exposed surfaces are as sound as the nature of the material permits. The Contractor shall make good at his own expense, any additional excavation necessitated by the shattering of rock in excess of any over break allowances specified in the Project Specifications or given on any Drawing.

Notwithstanding the Contractor's compliance with the above provisions, the Contractor shall remain liable for any injury to persons and animals and loss of or damage to property occurring as a result of blasting operations."

PSD 5.1.2 Existing services

PSD 5.1.2.2 Detection, location and exposure

REPLACE THE CONTENTS OF SUBCLAUSE 5.1.2.2 WITH THE FOLLOWING:

"The exposure by the Contractor of underground services, as required in terms of sub clause 5.4 of SABS 1200 A (as amended) shall be carried out by careful hand excavation at such positions and to such dimensions as are agreed to by the Engineer.

Unless otherwise instructed or agreed by the Engineer, no service shall be left exposed after its exact position has been determined and all excavations carried out for the purposes of exposing underground services shall be promptly backfilled and compacted to the following densities:

- a) In roadways: 93% Mod AASHTO density; and
- b) In all other areas: 90% Mod AASHTO density.

Where hand excavations to expose underground services have to be carried out in roadways, the Contractor shall reinstate the road layer works in accordance with the provisions of sub clause 5.9 of SABS 1200 DB.

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Payment in respect of exposing the services by means of hand excavation as described above, will be made in accordance with sub clause PSD 8.3.8.1.

Payment in respect of reinstating layer works in roadways will be made in accordance with sub clause 8.3.6.1 of SABS 1200 DB (as amended)."

PSD 5.1.2.3 Protection of cables

REPLACE SUBCLAUSE 5.1.2.3 WITH THE FOLLOWING:

"5.1.2.3 Protection during construction

Further to the requirements of sub clause 5.4.2 of SABS 1200 A (as amended), major excavating equipment and other plant shall not be operated dangerously close to known services. Where necessary, excavation in close proximity to known services shall be carefully carried out with suitable hand tools, excluding picks wherever their use could damage the services. No additional payment will apply to such more difficult work.

Should any service not being a known service be discovered or encountered during the course of the Contract, the Contractor shall, in addition to complying with the requirements of sub clause 5.4.2 of SABS 1200 A (as amended), immediately notify the Engineer thereof and implement such measures as will prevent damage of such service or, if it was damaged in the course of discovery, will prevent and minimise the occurrence of any further damage occurring."

PSD 5.1.2.4 Negligence

DELETE SUBCLAUSE 5.1.2.4.

PSD 5.1.3 Stormwater and groundwater

ADD THE FOLLOWING:

"The Contractor shall, where applicable and at the earliest practicable opportunity, install the permanent drainage specified or shown on the Drawings and shall at his own cost provide the temporary drainage required to protect the works."

PSD 5.1.5 Reinstatement and maintenance of roads

ADD THE FOLLOWING:

"Where crossings have been made, the roads shall be reinstated in accordance with the details specified in sub clause 5.9 of SABS 1200 DB."

PSD 5.1.6 Road traffic control

DELETE THE SECOND SENTENCE OF SUBCLAUSE 5.1.6.

PSD 5.2 Methods and Procedures

PSD 5.2.2 Excavation

PSD 5.2.2.1 Excavation for general earthworks and for structures

Add the following to paragraph (b):

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"Where the nature of the material precludes the above procedure, additional excavations shall be made to provide working space for the erection of formwork. In general payment will be made for a working width of 600 mm, but the Contractor may excavate a greater working width at no additional cost to the employer.

Immediately before any permanent construction is commenced, all loose material shall be removed or thoroughly compacted."  
Replace the first sentence of paragraph (e) with the following:

"Where excavations have been carried out below the authorized levels, the Contractor shall backfill such excavations to the correct level with approved gravel compacted to 90% of modified AASHTO density or to the density of the surrounding material.

Where excavations for structures in hard material have been carried out, the Engineer may however require the over-excavation to be backfilled with a weak concrete if there is a danger of settlement or differential settlement of the foundations.

Where the sides of excavations against which concrete is to be cast have been over-excavated or have collapsed partially, the Contractor shall retrim the excavations if necessary and, unless other remedial measures are agreed to by the Engineer, shall cast the concrete for the structure, including any additional concrete which may be required as a result of the over-excavation or partial collapse. The cost of the additional concrete or remedial measures shall be for the Contractor's account."

PSD 5.2.2.2 Borrow pits.

Add the following:

"A commercial source shall, for the purposes of this specification, mean a source of material provided by the Contractor, not the employer.

Where it is specified that material shall be obtained from commercial sources, the Contractor shall be responsible and include in his prices for borrow to fill from commercial sources, for finding a source of suitable material, for making all arrangements for procuring the material with the owner of the source, for the payment of any royalties, charges or damages and, for transporting the material to the site regardless of the distance involved. No payment will be made for the removal of overburden or stockpiling at the commercial source and no extra over payment for excavating in intermediate, hard or boulder material shall apply."

PSD 5.2.2.3 Disposal

Add the following:

"The Contractor shall provide the necessary spoil sites and shall make the necessary arrangements with the owner of the site where the material is disposed of and shall include in his rates for all charges in this regard and for transporting the material regardless of the distance involved."

Add the following subclasses:

"PSD 5.2.2.4 Selection and stockpiling

Approval or designation of the material in a particular borrow pit or excavation for a particular purpose does not imply that all the material in the borrow pit or excavation is suitable for the

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particular purpose to which the said approval or designation relates, nor that all material in the borrow pit or source should be used for the particular purpose. The Contractor shall select suitable material from that borrow pit or source, discard unsuitable material and reserve material for other purposes as necessary.

The Contractor shall organise and carry out his operations in such a manner as will prevent the contamination of suitable embankment and backfill material with unsuitable materials. Any excavated material which becomes, in the Engineer's opinion, unsuitable for use in embankments or backfill as a result of contamination, shall be disposed of in a manner acceptable to the Engineer and shall be replaced by the Contractor with materials acceptable to the Engineer, all at the Contractor's cost.

#### PSD 5.2.4.2 Topsoiling

Replace the last sentence with:

"The final thickness of the topsoil shall be as directed by the Engineer or as indicated on the drawings.

Drainage ditches shall be excavated, topsoiled and seeded in February prior to any stormwater system being channelled into the ditches. Stormwater shall only be permitted to enter the ditches once the grass has been established."

#### PSD 5.2.5 Transport for Earthworks

##### PSD 5.2.5.2 Overhaul

Replace the contents of this sub clause with the following:

"No overhaul will be paid under sections 1200 D, 1200 DM, 1200 DK or 1200 DB. All transport costs must be included in the relevant payment clauses."

#### PSD 7 TESTING

##### PSD 7.2 Taking and Testing of Samples

Replace the contents of this sub clause with the following:

"The Contractor shall arrange with an approved laboratory to carry out sufficient tests on a regular basis as agreed between him and the Engineer to determine whether the degree of compaction, and, where applicable, the quality of materials used, comply with the specification and shall submit the results of these tests to the Engineer in a form approved by him. The Engineer may likewise carry out such tests.

Testing by the Engineer will not relieve the Contractor of his obligations to provide materials and workmanship in accordance with the specifications.

The requirements of the density for a particular lot shall be deemed to be satisfied if at least 75% of the dry-density tests show values equal to or above the specified density and no single value is more than five percentage points below the specified value."

#### PSD 8 MEASUREMENT AND PAYMENT

##### PSD 8.1 Basic Principles

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Add the following paragraph:

"PSD 8.1.4 Where backfilling is part of the activities described under a payment clause, the word backfilling includes the supply of the approved backfilling (regardless of the source and distance), as well as the placing of the material as described under subclause PSD 2.3."

#### **PSDB EARTHWORKS (PIPE TRENCHES) (1989)**

#### **PSDB 3 MATERIALS**

#### **PSDB3.1 Methods of classifying (Clause 3.1)**

Replace the contents of this sub-clause with the following:

PSDB3.1.1 Save and except in respect of those portions of the Works which are specified in Portion 1 of the Project Specifications to be executed utilising Labour-Intensive Construction Methods, the Contractor may use any method he chooses to excavate any class material, but his chosen method of excavation shall not determine the classification of the excavation. The Engineer will determine the classification of the materials.

PSDB3.1.2 The classification will be based on the specified construction methods, inspection of the material to be excavated and on the criteria given in PSDB3.2 below, as applicable.

PSDB3.1.3 Where the utilisation of Labour Intensive Construction Methods is specified in Portion 1 of the Project Specification for certain classes of excavation only, the material for those classes of material to be excavated using Labour Intensive Construction Methods will be classified in terms of PSDB3.2.2 and for those classes of excavation which are not required to be executed by Labour Intensive methods, classification will be based on the criteria given in PSDB3.2.1

(i.e. Where it is specified that the excavation of soft materials only shall be executed using Labour Intensive Construction Methods, the classification of the soft material to be so excavated will be based on the criteria given in PSDB3.2.2(a) and the Contractor will be required to excavate all such soft material by Labour Intensive methods. However, when the material is classified in terms of PSDB3.2.2 (b) to be "intermediate" and is thus no longer required to be excavated by Labour Intensive methods, the classification of the material not required to be excavated using Labour Intensive methods will be based on the criteria given in PSDB3.2.1 (thus a material classified as "intermediate" in terms of PSDB3.2.2 (b) may in terms of PSDB3.2.1 be deemed to be "soft" and will be measured and paid as such under such circumstances.).

PSDB3.1.4 All tools and equipment referred to in PSDB3.2 shall be in good mechanical and operational condition.

PSDB3.1.5 "Efficiently" as used in PSDB3.2.2 (a) - (c) shall be taken to mean "in a manner that can be reasonably expected of a Contractor, having regard to the production achieved".

PSDB3.1.6 The classification of material other than "soft excavability" shall be agreed upon before excavation may commence.

PSDB3.1.7 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 is warranted for further excavation. Failure on the part of the Contractor to advise the Engineer in good time shall entitle the Engineer to reclassify, at his discretion, such excavated material.

#### **PSDB3.2 Classes of Excavation (Sub-Clause 3.1)**

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Add the following new sub-clause:

PSDB3.2.1 Classes of excavation where Labour Intensive Construction Methods are NOT specified.

The excavation of material will, in the case of work which is NOT required in terms of the Contract to be executed utilising Labour-Intensive Construction Methods, be classified according to SABS 1200D for the purpose of measurement and payment.

Add the following new sub-clause:

PSDB3.2.2 Classes of excavation where Labour Intensive Construction Methods are specified.

The excavation of material will, in the case of work which is required in terms of the Contract to be executed utilising Labour-Intensive Construction Methods, be classified as follows for purposes of measurement and payment:

a) Soft excavation

i) Class 1

Soft excavation Class 1 shall be excavation, including the excavation of boulders not exceeding 0.04 m<sup>3</sup>, in material that can be excavated and removed from the excavation by an average able-bodied labourer or group of such labourers, at a rate of not less than 2.0 m<sup>3</sup> per 9.25 hour working day per labourer, using only picks, "gwalas", shovels and similar hand tools.

ii) Class 2

Soft excavation Class 2 shall be excavation, including the excavation of boulders not exceeding 0.04 m<sup>3</sup>, (excluding soft excavation Class 1) in material that can be excavated and removed from the excavation by an average able-bodied labourer or group of such labourers, at a rate of not less than 1.0 m<sup>3</sup> and not more than 2.0 m<sup>3</sup> per 9.25 hour working day per labourer, using only picks, "gwalas", shovels and similar hand tools.

b) Hard rock excavation

Hard rock excavation shall be excavation of undecomposed boulders exceeding 0.04 m<sup>3</sup> and excavation in solid rock occurring in bulk or in banks or ledges, which requires loosening or breaking up by drilling, wedging, splitting or blasting or by other approved quarrying methods, prior to being excavated and removed from the excavation utilising only picks, "gwalas", shovels and similar hand tools.

(NOTE: Such excavation generally includes materials such as formations of unweathered rock that can be removed only after blasting.)

The Engineer will give written approval, for which portions of the Works, based on the evidence provided from trial holes excavated at approximately 200 m spacing by the Contractor for this purpose, will be executed utilising conventional Construction methods. The Trial hole shall be excavated to trench depth utilising a Cat 416 Backacter or similar.

### PSDB 3.5 Backfill Materials

Add the following paragraphs:

"c) Cement stabilized backfilling

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Backfilling shall be stabilized with 5% cement were directed by the Engineer. Aggregate shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed with 5% cement and shall be compacted in layers of 100 mm thick to 90% of modified AASHTO density.

d) Soilcrete backfilling

Aggregate for soilcrete shall be mixed with 5% cement and shall consist of approved soil or gravel containing stones not bigger than 38 mm and with a plasticity index not exceeding 10.

The soil or gravel shall be mixed in a concrete mixer with the cement and enough water to such a consistency that the mixture can be placed with vibrators to fill all voids between the pipe and the sides of the trench. Shuttering shall be used where necessary."

### PSDB 3.6 Materials for Reinstatement of Roads and Paved Areas

#### PSDB 3.6.1 Subbase and Base

Substitute DB 3.6.1 with the following:

Where trenches cross or run adjacent to surfaced roads and paved areas of which the surfaces are scheduled to be reinstated, the material excavated from the existing base and/or subbase pavement layer(s) shall be set aside and used in the reconstruction of the subbase layer. Where applicable, new material complying with the requirements of SABS 1200 MF shall be used in the reconstruction of the base layer. Any shortfall in material for the reconstruction of the subbase layer shall be made up by the use of material complying with the requirements of SABS 1200 ME.

### PSDB 3.7 Selection

Replace the words "if he so wishes" in the first line of the second paragraph with the words "at his own cost".

### PSDB 4 PLANT

#### PSDB 4.1 Excavation Equipment

Add the following paragraph:

"All excavations in excess of the specified depth and width, must be backfilled with approved backfilling material. No additional payment regarding this will be made, it will be assumed that payment is included in the tendered rates for the applicable items."

#### PSDB 4.3 Compaction Equipment

Add the following to DB 4.3:

Heavy mechanical rammers shall not be used until the fill has reached a depth of 300 mm above the top of the pipe.

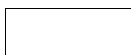
### PSDB 5 CONSTRUCTION

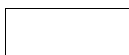
#### PSDB 5.1 Precautions

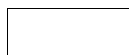
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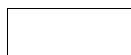
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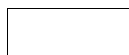
  
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PSDB 5.1.3 Accommodation of traffic and access to properties

REPLACE THE SEMICOLON AND THE WORD "and" AT THE END OF SUBCLAUSE 5.1.3(a) WITH A FULL STOP AND REPLACE ITEM (b) WITH THE FOLLOWING:

- "b) Where necessary to achieve compliance by the Contractor with his obligations in terms of subclause PS 8.1 of Portion 1 of the Project Specifications to provide and maintain pedestrian and vehicular access to properties affected by the works, the Contractor shall construct and maintain to the satisfaction of the Engineer, such temporary access roads around, and/or steel or timber bridges over excavations in roads, pavements, entrances or accesses to properties.
- Temporary pedestrian access bridges shall be at least 1,2 m wide and temporary access bridges for vehicles shall be at least 3,6 m wide. All temporary access bridges shall be fitted with handrails as well as protective mesh fencing on both sides.
- On completion of the work, the Contractor shall dismantle and remove all such temporary constructions and reinstate these areas to their former condition.
- Except only where the Engineer has included in the Schedule of Quantities, particular payment items specifically therefor, the Contractor will not be paid directly for the construction and maintenance of temporary access roads and/or the provision and maintenance of bridges as aforementioned, and the costs thereof shall be deemed included in the Contractor's tendered rates for excavation."

PSDB 5.2 Minimum Base Widths

- Replace paragraph (a) with the following:
- "Where two or more pipes are placed in the same trench, the specified base width shall be as per the drawings."
- Add the following to DB5.2:
- c) The minimum base width for HDPE water pipe used for erf connections may be 300mm provided that the pipe is laid without connections. On the stands the trench depth may be such that the pipe has a cover of at least 300mm to final ground level.

PSDB 5.4 Excavation

- Add the following:
- "All excavation for pipes must be done according to the trench excavation method, and not to the fill method. No additional payment extra over to that listed under item 8.3.3 will be made for pipes, culverts or any other structure that falls within the road or fill layers. Trenches shall be of such a depth that the minimum cover over he pipes shall be as indicated on the detail drawings."

PSDB 5.5 Trench Bottom

- Add the following to DB 5.5:
- Unsuitable material shall only be removed from the trench bottom after an instruction in writing from the Engineer to this effect. Payment for over excavation and backfill of over excavation

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will not be made unless the work is carried out according to written instructions from the Engineer.

All over excavation in the trench bottom shall be backfilled with selected material complying with the requirements of SABS 1200 LB Clause 3.2 and shall be compacted to 90% mod. AASHTO density.

#### **PSDB 5.6 Backfilling**

##### **PSDB 5.6.3 Disposal of Soft Excavation Material**

Add the following to DB 5.6.3:

All surplus and unsuitable material as described in DB 5.6.3 shall be disposed of at an allocated municipal dump site or other dump site as approved by the Engineer. The free haul distance is unlimited.

##### **PSDB 5.6.6 Completion of Backfilling**

Backfilling of all pipe services to the top of the selected blanket cover shall be done within three days after laying of pipes, except that pipe joints of pipes to be tested will be left open for a distance of 0,5 m both sides of the joint until the pressure test has passed after which the backfilling of pipe joints will be completed in accordance with requirements of this document.

##### **PSDB 5.6.8 Transport for Earthworks for Trenches**

Delete the Sub-Clause and substitute:

"No overhaul shall be measured and rate must include for overhaul"

Add the following:

##### **"PSDB 5.6.9 Backfilling around structures**

Backfilling around a structure shall not be commenced before it has been approved by the Engineer.

Approved granular material shall be used as backfill material around structures as shown on the drawings and shall be placed in layers not exceeding 150 mm compacted thickness, each layer being thoroughly compacted as specified on the drawings."

#### **PSDB 5.7 Compaction**

##### **PSDB 5.7.2 Areas Subject to Traffic Loads:**

Add the following:

"All pipe trenches that fall within 1 000 mm of the road edges shall be regarded as areas subject to traffic loads."

#### **PSDB 5.9 Reinstatement of Surfaces**

##### **PSDB 5.9.5 Bitumen Roads: Surfacing**

##### **PSDB 5.9.5.1 General**

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Add the following to DB 5.9.5.1:

Asphalt thickness to equal at least the existing bitumen wearing course.

## PSDB 8 MEASUREMENT AND PAYMENT

### PSDB 8.1 Basic Principles

Replace the rest of the clause from "along the route of the pipeline" in DB 8.1.1 with "at an allocated municipal dump site or other dump site approved by the Engineer with unlimited freehaul distance applicable.

#### PSDB 8.1.2 Add the following:

"In the road prism the ground surface from which depth will be measured will always (irrespective of operation sequenced) be the roadbed level at centre-line."

Insert the following heading for Clause 8.1.2:

"Trenches not required to be excavated by Labour Intensive Construction methods".

Add the following new sub-clause: (Clause 8.1.5)

"Works required to be executed utilising Labour-Intensive Construction methods

Separate items will be provided for works covered by this Specification which are required to be executed by Labour Intensive Construction methods and for works for which the utilisation of such methods is not required.

The trench depth increments referred to in Clause 8.1.2(b) and the trench depth increment for 8.1.5 shall be:

- a) up to 1.5 m in depth
- b) over 1.5 m in depth but not exceeding 2.5m
- c) over 2.5 m in depth but not exceeding 3.5 m

Trenches shall be measured volumetrically, irrespective of length.

Measurement and payment for works covered by this Specification and required to be executed utilising Labour-Intensive Construction (LIC) methods shall, unless otherwise stated, be mutatis mutandis in accordance with the provisions of SABS 1200DB as amended in this Project Specification.

### PSDB 8.2 Computation of Quantities

#### PSDB 8.2.4 Shoring

Add the following to DB 8.2.4:

Shoring will not be measured and paid for but is deemed to be included in the rates for excavation and backfill.

### PSDB 8.3 Scheduled Items

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#### PSDB 8.3.2 Excavation

Substitute:

- a) Excavate in all materials for trenches, backfill, compact and dispose of surplus material, for pipes up to 700 mm dia for total trench depth .....  
Unit: m<sup>3</sup>

Add the following to D 8.3.2(a):

The removal and backfilling of the top layer of the trench with topsoil compacted as described in clause 5.7.1 shall be included in this item. The use of local labour will be as specified in PS 10.

Add the following:

- b) Extra-over item (a) above for:

- 3) Excavation in soft material by labour-based methods for trenches shallower than 1.5 m and where the total depth of the trench can be classified as excavation in soft material. Compaction by labour-based methods is excluded. .... Unit: m<sup>3</sup>

- d) Hand Excavation to expose existing services in a careful manner .....  
Unit: m<sup>3</sup>

The provisions of DB 8.3.2(a), and DB 8.3.2(c) shall apply mutatis mutandis for hand excavation.  
Payment shall only be made if so ordered by the Engineer.

- e) Excavate in all materials for combined sewer and water pipe trenches, backfill, compact and dispose of surplus material ..... Unit: m<sup>3</sup>

The Municipality may decide to lay both the new sewer and water pipes in one wide combined trench that may be excavated in one process. The two pipes will not necessarily be laid at the same depth with the result that one half of the trench width may have to be excavated deeper.

- f) Extra over item e) above for

- 2) Hard Rock excavation ..... Unit: m<sup>3</sup>

- 3) Excavation in soft material by labour-based methods for trenches shallower than 1.5 m and where the total depth of the trench can be classified as excavation in soft material. Compaction by labour-based methods is excluded. .... Unit: m<sup>3</sup>

#### PSDB 8.3.3 Excavation Ancillaries

##### PSDB 8.3.3.1 Make up deficiency in backfill material (provisional) ..... Unit: m<sup>3</sup>

Add the following to the last paragraph of DB 8.3.3.1:

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No payment will be made for the transport of material from commercial sources or sources outside the site that the Contractor has selected.

PSDB 8.3.3.3 Compaction in road reserves ..... Unit: m<sup>3</sup>

Add the following to DB 8.3.3.3:

This item is applicable where the requirements of DB 5.7.2 are applicable. This item is only applicable to the backfill above the bedding and fill blanket.

PSDB 8.3.3.4 Overhaul

Substitute DB 8.3.3.4 with the following:

No overhaul will be paid for. The specified free haul distance is unlimited.

Replace item 8.3.5 with the following:

"PSDB 8.3.5 Existing Services That Intersect or Adjoin A Pipe Trench

PSDB 8.3.5.1 Services that intersect a trench

Add the word "fences" after "erf connections" in this paragraph

PSDB 8.3.5.2 Services that adjoin a trench

Replace the last phrase "measured for shoring" with the words "protected by shoring". The rate for this item shall cover the cost of any necessary shoring.

PSDB 8.3.7 Accommodation of traffic

REPLACE THE HEADING AND CONTENTS OF ITEM 8.3.7 WITH THE FOLLOWING:

PSDB 8.3.7 "Accommodation of traffic..... Unit: sum

The tendered sum shall, (except where particular items are scheduled to cover particular costs) include full compensation for compliance with the requirements of 5.1.3 of SABS 1200 DB (as amended), including the construction and maintenance of bypasses and the use of existing roads as bypasses during the construction period.

It shall also include full compensation: for the provision, maintenance and removal of all traffic control measures, including temporary traffic signs, road markings, lighting, barricading, flagmen and, where necessary, communications equipment to regulate traffic; for the construction of temporary drainage works; for the maintenance of drainage works; and for arrangements for moving and subsequently reinstating services for the purposes of accommodating traffic, attending to traffic problems and complying with the requirements of the Road Traffic Ordinance and the relevant local authorities.

The tendered lump sum shall not be adjusted in the event of any extension of time for completion being granted by the Engineer in accordance with clause 42 of the Conditions of Contract.

Payment shall be made in equal monthly instalments over the entire period allowed for completion, provided that where any extension of time for completion is granted, the amount which shall be payable under this item in any subsequent monthly payment certificate shall be the outstanding unpaid amount of the lump sum, divided by the number of months remaining

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until the due completion date of the Contract, as revised in accordance with the Conditions of Contract."

ADD THE FOLLOWING ITEM:

"PSDB 8.3.8 Safety measures for open trenches at night..... Unit: sum

The tendered sum shall include full compensation to keep the excavations safe during the night.  
All the applicable requirements of the different Acts shall be adhered to."

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## **PSGA CONCRETE (SMALL WORKS) (1982)**

### **PSGA 3 MATERIALS**

#### **PSGA 3.2 Cement**

##### **PSGA 3.2.1 Applicable Specifications**

Add the following:

"Only the use of Portland Cement shall be allowed."

### **PSGA 5 CONSTRUCTION**

#### **PSGA 5.2 Formwork**

##### **PSGA 5.2.1 Classification of Finishes**

Replace the contents of this subclause with the following:-

"All concrete finishes shall be classified as Smooth unless shown otherwise on the drawings. Imperfections such as small fins, bulges, irregularities, surface honeycombing and unacceptable surface discolorations shall be made good and repaired by approved methods. The finished dimensions shall be to Degree of Accuracy II as defined in Clause 6 of SABS 1200 G."

#### **PSGA 5.4 Concrete**

##### **PSGA 5.4.1.6 Ready Mix Concrete**

The production of concrete at a central production facility shall be permitted. In all cases a design mix shall be submitted for the Engineer's approval.

### **PSGA 7 TESTS**

#### **PSGA 7.2 Testing**

##### **PSGA 7.2.1 General**

Replace the contents of this subclause with the following:-

"A test shall consist of 6 cubes taken on the site of the specific work. Of these, 3 shall be tested at 7 days and 3 at 28 days at an approved laboratory. Should these tests not meet the requirements of the specification the concrete shall be rejected unless the Contractor can prove, at his own cost, the acceptability thereof. Tests taken at a central production facility for ready mixed concrete as part of their quality control shall not be acceptable for evaluation."

## **PSL MEDIUM PRESSURE PIPELINES**

### **PSL 3 MATERIAL**

#### **PSL 3.1 General**

Substitute the first sentence of L 3.1 with the following:

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Types and classes of pipes shall be as scheduled.

### PSL 3.3 CI Pipes, Fittings and Specials

Add the following to L 3.3:

All cast iron fittings for use with uPVC pipes shall be coated with two coats of bitumen paint.

### PSL 3.8 Jointing Materials

#### PSL 3.8.1 AC Pipes

Add the following to L 3.8.1:

Cast iron fittings, except valves, may be jointed to AC pipes with AC 3-ring sleeve-type couplings. If the pipe differs from the class of the cast iron fittings, class to class adapters shall be used and the cost shall be included in the cost of the fitting.

#### PSL 3.8.4 Loose Flanges

Substitute the first sentence of the last paragraph of L 3.8.4 with the following:

Bolts and nuts shall comply with the requirements of SABS 135.

### PSL 3.9 Corrosion Protection

#### PSL 3.9.2.1 Steel pipes of nominal bore up to 150 mm

Add the following:

Steel pipes shall be galvanised.

#### PSL 3.9.5 Joints, Bolts, Nuts and Washers

Substitute L 3.9.5 with the following:

All joints, bolts, nuts and washers shall be cadmium-plated or stainless steel.

### PSL 3.10 Valves

Add the following sub clauses:

#### PSL 3.10.1 Gate Valves

All gate valves shall comply with the requirements of SABS 664 and shall be suitable for a working pressure of 1,6 MPa. All gate valves must be supplied with a square spindle cap, suitable to be used with a valve key.

Gate valves shall have spigot ends unless shown differently on the drawings and shall close clockwise. The direction for opening and closing shall be permanently displayed on the valves. Valves shall have non-rising spindles.

Compression shut-off valves with rubber protected gate and smooth finish without recess inside, shall be used.

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All flanged gate valves shall be drilled according to SABS 1123 Table 1600/3. Pipes shall not be tested against a closed valve.

All valves shall be corrosion protected before despatch from the manufacturer. All surfaces shall be sand blasted prior to receiving the coating. The coating for the inside surfaces shall be suitable for use with potable water supply.

**PSL 3.10.3 Fire Hydrants**

Fire hydrants shall be of the screw-down underground type and shall be suitable for a working pressure of 1,6 MPa. The outlet shall be 63 mm dia gun-metal with bayonet connection with cap top and chain. It shall open clockwise with a square spindle cap of the same size that is specified for the gate valves.

**PSL 3.11.6 Surface Boxes**

Add the following to L 3.11.6:  
The type of boxes shall be as specified on the drawings.

**PSL 4 PLANT**

**PSL 4.3 Testing**

Add the following to L 4.3  
The Contractor must ensure that the test equipment is in good order and that it is calibrated. The Contractor must make his own arrangements with regard to water for testing. All costs for obtaining water for testing and re-testing are deemed to be included in the rates.

**PSL 5 CONSTRUCTION**

**PSL 5.6 Valve and Hydrant Chambers**

**PSL 5.6.1 General**

Substitute the first sentence of L 5.6.1 with the following:  
The drawings of valve and hydrant chambers which are supplied with the document shall supersede the corresponding drawings in the standard specification.  
Add new clause:

**PSL 5.11 Disruption in Water Supply**

**PSL 5.11.1 Planned Disruption**

The contractor may not open or close any valves on existing water lines.  
The contractor must give the Maintenance Division of the Municipality 36-hour notice if a disruption of water supply is needed.  
The Contractor shall notify all affected households of a planned disruption of water supply at least 24 hours in advance. This notice shall be in English and delivered to each household.

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#### PSL 5.11.2 Unplanned Disruption

In case of unplanned breakage of pipes (accidental), the Contractor may close valves to reduce water losses only with the permission of one of the above-mentioned officials. The time and date of this permission must be recorded in the site diary and site instruction book.

After the broken pipe is repaired, the Contractor shall report back to the official that gave permission for the valves to be closed. With his permission the valves may be reopened. The time and date of this permission must be recorded in the site diary and site instruction book.

Where the maintenance division undertook the maintenance work, the Contractor shall record the event as above. The Contractor may be held liable for the costs incurred by the maintenance division.

#### PSL 7 TESTING

##### PSL 7.3 Standard Hydraulic Pipe Test

##### PSL 7.3.1 Test Pressure and Time of Test

Add the following to L 7.3.1.1:

Pipes shall not be tested against isolating valves. Special blank flanges or end caps, fully anchored, shall be provided for testing.

Substitute L 7.3.1.2 with the following:

The test pressure for field testing shall be 1.5 times the rated maximum working pressure of the pipe e.g. class 12 AC pipe (0.6 MPa rated working pressure) shall be tested to 0.9 MPa and class C AC pipe (0.9 MPa rated working pressure) to 1.35 MPa. and a class 9 PVC pipe (0.9 MPa rate working pressure) to 1.35 MPa.

Substitute L 7.3.1.3 with the following:

The test pressure applied according to L 7.3.1.2, must, with allowance for any level differences along the pipeline, be such that the pressure at any point in the pipe line will be at least 1.25 times and not more than 1.5 times the rated working pressure of the pipe.

#### PSL 8 MEASUREMENT AND PAYMENT

##### PSL 8.2 Scheduled Items

PSL 8.2.1 Supply, lay and bed pipes complete with couplings ..... Unit: m

Add the following:

"No additional measurement and payment will be applicable for cutting of pipes and supplying and fixing of extra couplings".

PSL 8.2.3 Extra-over 8.2.1 for the Supplying, Fixing and Bedding of Valves ..... Unit: No

Add the following to L 8.2.3:

Valves are measured and paid for per item, complete with the inclusion of the cutting of pipes, couplings, extra excavation and all extra material and labour that is required, including tees.

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fittings, isolating valves (e.g. under air valves), complete as shown on the drawings. Flanged distance pieces shall be included in the rate for fire hydrants.

PSL 8.2.4 Extra-over 8.2.1 for the cutting of the pipe and the supplying and fixing of the extra coupling ..... Unit: No

Delete item 8.2.4.

PSL 8.2.11 Anchor/Thrust Blocks and Pedestals ..... Unit: m<sup>3</sup>

Substitute L 8.2.11 with the following:

Anchor and thrust blocks shall be measured per cubic metre concrete and the tendered rate shall include for all formwork and reinforcement (where specified) for the required dimensions. The tendered rates shall also include the wrapping of PVC pipes and fittings with Densopol 80 or a similar approved material where the pipes and fittings come into contact with concrete.

PSL 8.2.16 Work On Existing Water Lines

a) Cut into and Connect to Existing Mains ..... Unit: No

State type and size of pipe

b) Connect to end of existing pipe by removing end cap or cutting off pipe .....Unit: No

State type and size of pipe

The cutting into existing mains shall be measured by the number of each type and diameter of pipe cut into.

The tendered rate shall include full compensation for all arrangements with the relevant authorities, isolating the main, cutting into the main to accommodate the supplied connecting fitting, dewatering, excavating, removing of excess material, taking steps to prevent the ingress of soil, stones and other material into the main as well as all material and labour to connect the pipe. The indicated size and type of existing water mains may not be correct and shall be exposed and verified by the Contractor before any material is ordered.

PSLB BEDDING (PIPES) (1983)

PSLB 3 MATERIALS

PSLB 3.1 Selected Granular Material

Replace the contents of this subclause with the following:

"Selected granular material shall have a PI not exceeding 6 and shall be free from sharp-edged particles exceeding 19 mm."

PSLB 3.2 Selected Fill Material

Add the following:

"Where required, selected fill material used for bedding, is to be stabilized with 5% cement as specified under subclause PSDB 3.5(c)."

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**PSLB 3.3 Bedding**

\_\_\_\_\_ Add the following:  
\_\_\_\_\_ "uPVC and HDPE pipes are considered to be flexible pipes for the purpose of this subclause."

**PSLB 3.4 Selection**

PSLB 3.4.1 Suitable material available from trench excavation  
\_\_\_\_\_ Replace the words "(but is not required)" in the fifth line with the words "(at his own cost)".  
\_\_\_\_\_ Add the following to sub-clause LB 3.4.1:  
\_\_\_\_\_ Notwithstanding the requirements of Clause 3.7 of SABS 1200 DB and Subclause 3.4.1 of SABS 1200 LB with regard to the use of selective methods of excavating, the Contractor shall utilise selective excavating methods and provide and use equipment which shall prevent covering or mixing of materials suitable for bedding.

**PSLB 5 CONSTRUCTION**

**PSLB5.1 General**

PSLB 5.1.2 Details of bedding  
\_\_\_\_\_ Not withstand the prescriptions of this or other clauses, the cover over the pipe of bedding/selected fill blanket may be reduced to 150mm with the permission of the Engineer.

PSLB 5.1.3 Placing  
\_\_\_\_\_ Add the following new subclause:

PSLB 5.1.3.5 Selected fill  
\_\_\_\_\_ The selected fill blanket shall be completely placed and compacted within three (3) days after laying of the pipe, except for 0.5 m both sides of every pipe joint. The Engineer shall have the right to stop any further pipe laying until compliance with the above requirement is achieved and the Contractor shall not be allowed to claim any payment or extension of time for completion due to this requirement.

**PSLB 8 MEASUREMENT AND PAYMENT**

**PSLB 8.1 Principles**

PSLB 8.1.3 Volume of Bedding Materials  
\_\_\_\_\_ Add the following to paragraph (b):  
\_\_\_\_\_ "The depth of bedding as specified in PSLB 5.1.2. is applicable. The volume of bedding material displaced by the pipeline shall not be included in the calculation of the volume of bedding material."

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**PSLB 8.1.5 Disposal of Displaced Material**

Add the following to LB 8.1.5:

Surplus displaced material shall be transported and disposed of at an allocated municipal dump site or other dump site approved by the Engineer with unlimited free haul applicable.

**PSLB 8.1.6 Free haul**

Add the following to LB 8.1.6:

Unlimited free haul is applicable to selected granular and selected fill material:

**PSLB 8.2.6 Encasing of Pipes in Soilcrete**

Add the following item:

Encase pipe in soilcrete consisting of 1 part cement and 12 parts selected granular material mixed with water to a stiff consistency and mechanically vibrated as concrete. The rate shall include the cost of formwork, material, transport plant and labour

**PSLB 8.2 Scheduled Items**

**PSLB 8.2.1 Provision Of Bedding From Trench Excavation**

REPLACE THE PARAGRAPH "THE RATE SHALL ....." WITH THE FOLLOWING

"The rates shall cover the cost of acquiring, from within the site boundaries, bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, and of disposing of displaced material outside the site boundaries."

**PSLB 8.2.2 Supply only of bedding by importation**

**PSLB 8.2.2.3 Supply only of bedding by importation from commercial sources.....Unit: m<sup>3</sup>**

Delete the paragraph "The rate shall ...." And substitute with the following:

"The rate shall cover the cost of acquiring from commercial sources bedding that complies with the relevant requirements of the specification, of delivering it to points alongside the trench spaced to suit the Contractor's methods of working, including all haul and disposing of displaced material outside the site boundaries."

ADD THE FOLLOWING ITEMS:

**"PSLB 8.2.6 Extra over items 8.2.1 and 8.2.2 for bedding stabilised with 5% cement .....Unit : m<sup>3</sup>**

The tendered rate shall include full compensation for selecting, mixing, backfilling and compacting the stabilised material to 90% of modified AASHTO density."

**PSLB 8.2.7 Extra over items 8.2.1 and 8.2.2 for 5% soilcrete bedding .....Unit : m<sup>3</sup>**

The tendered rate shall include full compensation for supply, delivery, mixing, placing, backfilling and compacting the soilcrete bedding".

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## **PSPA SITE FINISHING**

### **PSPA 1 GENERAL**

No section of the work will be regarded as satisfactorily completed until the final cleaning up has been performed.

### **PSPA 2 SCOPE**

All completed work shall be trimmed and all the debris of construction, such as unsuitable or rejected materials and spillage, shall be removed.

The site of the work shall be cleaned of all rubbish, excess materials, falseworks, temporary structural installations, and abandoned equipment.

All construction scars resulting from this contract shall be treated to blend with the contour and vegetation of the surroundings.

All trench subsidence shall be made good and surcharged backfill materials shall be removed unless otherwise directed.

### **PSPA 3 ACCEPTANCE**

Three weeks before the anticipated date of completion of any section to be handed over, the Contractor shall formally request a check list of defects from the Engineer.

Within one week the Engineer will detail in writing the particulars of the work to be done in finishing the work, and the general standard of aesthetics to be observed in trimming and cleaning.

Before offering the work for acceptance on a completion certificate the Contractor shall satisfy the Engineer's site representative that all the work scheduled on the checklist has been attended to.

### **PSPA 4 PAYMENT**

Payment shall be the tendered lump sum and shall become due on the date of signature of the Certificate of Completion.

## **PSPB: ZONE METER INSTALLATIONS**

### **PSPB 1 SCOPE**

This particular specification covers the supply, manufacture, delivery, installation, calibration, testing and commissioning of meters and associated equipment for the measuring of flow in water.

### **PSPB 2 TURBINE FLOW METERS**

The flow meter shall be Meinecke Cosmos WPD or an approved equivalent.

The instrument shall be of a type suitable for application in domestic water. It shall have high stability properties and shall require negligible maintenance over extended periods. The required flow rates will be as follows:

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Meter size (mm)	Maximum Flow (m³/h)	Minimum Flow (m³/h)	Continuous Flow (m³/h)	Transitional Flow (m³/h)
50	90	0.3	50	0.7
100	300	0.8	230	1.8
150	600	1.8	450	4.0
200	1 200	4.0	800	6.0
250	1 600	6.0	1 250	11.0
300	2 000	12.0	1 400	15.0

The meter shall be an inferential meter operating on the horizontal axis rotor principle. A helical vane rotor shall be driven by the flow of water and revolve in direct proportion to the quantity of water passing through the meter. The revolutions of the rotor shall be transferred by appropriate reduction gearing and a magnetic drive to a straight reading sealed counter calibrated in cubic metres. The loss of head shall be minimal as the water passes through the meter without changing direction.

The meter shall be designed with the minimum of components. All materials in the meter shall be selected for their ability to withstand wear and corrosion to give long working life with the minimum maintenance.

The meter shall be designed for high and sustained flows associated with bulk metering and also have the ability to measure low flows accurately. The meter shall have an accuracy of  $\pm 2\%$  or better over the range between the transitional flow and the continuous flow, and  $\pm 5\%$  or better for flows less than the transitional flow.

The meter shall be suitable for fitting in horizontal, vertical or inclined pipelines without affecting its accuracy. The meter shall be able to withstand pressure surges associated with the pumps starting or stopping, without any effect to the accuracy of the meter.

An arrow cast on the body and cover shall indicate the direction of flow and the meter shall be fitted accordingly. Before the meter is installed, the pipe work shall be thoroughly flushed to remove any foreign matter, which will otherwise collect in the meter and choke or damage it.

The meter shall have ports for Reed Opto pulsers.

If instructed by the Engineer, strainers shall be provided to protect the flow meter from damage. Strainers shall have a stainless-steel sieve element which can be removed with ease for cleaning purposes.

**PSPB 6 TESTING AND COMMISSIONING**

The meters and equipment shall be tested and commissioned together with the relevant pipework and other equipment.

**PSPB 7 MEASUREMENT AND PAYMENT**

**PSPB 7.1 Supply and delivery of flow meters:**

- a) (State size and type) .....Unit: No  
b) Etc. for other .....Unit: No

The unit of measurement shall be the number of flow meters supplied and delivered as specified.

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The tendered rate shall include full compensation for the corrosion protection, patent rights, royalties, transport and all other costs and actions required for the supply and delivery of flow meters as specified.

Different items will be specified in the schedule of quantities for flow meters which are to be installed on pipework of different diameters.

**PSPB 7.2 Installation, testing and commissioning of flow meters as specified:**

a) (State size and type) .....Unit: No

b) Etc. for other .....Unit: No

The unit of measurement shall be the number of flow meters installed, tested and commissioned as specified.

The tendered rates shall include full compensation for the site handling, positioning, installation, testing and commissioning of the flow meters as specified, including all other costs and actions required to obtain a fully functional system for flow measurement.

Different items will be scheduled in the schedule of quantities for flow meters which are to be installed on pipework of different diameters.

**PSPB 7.3 Pressure ports .....Unit: No**

The unit of measurement shall be the number of pressure ports installed as shown on the drawings. The tendered rate shall include full compensation for the supply and delivery of all the required materials, labour and plant required to construct and install the pressure ports to the detail as specified.

**PSPB 7.4 Supply and installation of strainer for protecting the flow meter**

a) (State diameter and type) .....Unit: No

b) Etc for others. ....Unit: No

The unit of measurement shall be the number of strainers as specified.

The tendered rate shall include full compensation for supply and installing each type of strainer.

**PLIS: LABOUR INTENSIVE SPECIFICATION**

**PLIS 1 SCOPE**

**PLIS1.1 Scope of Specification**

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) storm water drainage.

c) low-volume roads and sidewalks

**PLIS 1.2 Precedence**

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

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Contract No SCMMOH/33/2014SCM/MOH/01214/20242024  
Portion G2: ~~Contract~~Contract  
Part C3:- Scope of Work  
Part C3.5.2: Variations to Additions to Specifications3-Procurement

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PLIS 1.3 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 isolate 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 material are with a particle size greater than 200 mm.  
2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kq 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 stick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 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	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; can not 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.

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PLIS 1.4 Trench excavation

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Part C3:- Scope of Work  
Part C3.5.2: Variations to Additions to Specifications3-Procurement

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

**PLIS 1.5      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.

**PLIS 1.6      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.

**PLIS 1.7      Clearing and grubbing.**

Grass and small bushes shall be cleared by hand.

**PLIS 1.8      Shaping**

All shaping shall be undertaken by hand.

**PLIS 1.9      Loading**

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

**PLIS 1.10      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.

**PLIS 1.11      Offloading**

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

**PLIS 1.12      Spreading**

All material shall be spread by hand.

**PLIS 1.13      Compaction**

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

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**PLIS 1.14      Grassing**

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

**PLIS 1.15      Stone pitching and rubble concrete masonry**

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must 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.

**PLIS 1.16      Manufactured Elements**

Element 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.

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Part C3: Scope of work  
Part C3.5: -Standard Specifications



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**~~ROUXVILLE: UPGRADING WATER TREATMENT WORKS~~THE  
COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER  
TREATMENT WORKS (WTW)RE-ADVERT: THE COMPLETION OF  
THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT  
WORKS (WTW)**

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**PORTION 2: CONTRACT**

**PART C3.5  
Standard Specifications**

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**ROUXVILLE: UPGRADING WATER TREATMENT WORKS**  
**THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER**  
**TREATMENT WORKS (WTW)RE-ADVERT: THE COMPLETION OF**  
**THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT**  
**WORKS (WTW)**

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**STANDARD SPECIFICATIONS**

**APPLICABLE STANDARDIZED SPECIFICATIONS**

For the purposes of this contract, the following SABS 1200 Standardized Specifications shall apply:

<u>SANS 1200 A</u>	<u>1986</u>	<u>:</u>	<u>GENERAL</u>
<u>SANS 1200 AB</u>	<u>1986</u>	<u>:</u>	<u>ENGINEER'S OFFICE</u>
<u>SANS 1200 D</u>	<u>1990</u>	<u>:</u>	<u>EARTHWORKS</u>
<u>SANS 1200 DB</u>	<u>1989</u>	<u>:</u>	<u>EARTHWORKS (PIPE TRENCHES)</u>
<u>SANS 1200 DK</u>	<u>1996</u>	<u>:</u>	<u>GABIONS AND PITCHING</u>
<u>SANS 1200 G</u>	<u>1982</u>	<u>:</u>	<u>CONCRETE (STRUCTURAL)</u>
<u>SANS 1200 L</u>	<u>1983</u>	<u>:</u>	<u>MEDIUM PRESSURE PIPELINES</u>
<u>SANS 1200 LB</u>	<u>1983</u>	<u>:</u>	<u>BEDDING (PIPES)</u>
<u>SANS 1200 DM</u>	<u>1981</u>	<u>:</u>	<u>EARTHWORKS (ROADS)</u>
<u>SPEC QB</u>		<u>:</u>	<u>BUILDING MATERIALS AND WORKMANSHIP</u>

**END OF SECTION**

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Contract No SCM/MOH/012/2024  
Portion 26: Contract  
Part C4: Site Information



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## MOHOKARE LOCAL MUNICIPALITY

**CONTRACT No** ~~SCM/MOH/02/2024~~ SCM/MOH/14/2024

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### **THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW) RE-ADVERT: THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT WORKS (WTW)**

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## **PART C4: SITE INFORMATION**

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### **CONTENTS**

<b>Section</b>	<b>Description</b>	<b>Page No</b>
C4.1	SCOPE OF SITE INFORMATION .....	C4.1-1to1
C4.2	SUBSOIL INVESTIGATION .....	C4.2-1to1
C4.3	EXISTING SERVICES .....	C4.3-1to1
C4.4	EXISTING BUILDINGS & STRUCTURES .....	C4.4-1to1

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C4.1:1



Contract No SCM/MOH/012/20242024,  
~~Portion G2: ContractContract~~  
Part C4: Site Information  
Part C4.1: Scope of Investigation

**MOHOKARE LOCAL MUNICIPALITY**

**CONTRACT No SCM/MOH/02/2024SCM/MOH/14/2024**

**THE COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA  
WATER TREATMENT WORKS (WTW)RE-ADVERT: THE  
COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER  
TREATMENT WORKS (WTW)**

**PART C4.1: SCOPE OF SITE INFORMATION**

The documentation included in this section describes the site as at the time of tender so as to have enabled tender pricing, determining work methods, programming and all other requirements for award of contract.  
Only actual information about physical conditions on the site and its surroundings are included in this section.

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Employer

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Witness 2





Contract No SCM/MOH/024/2024  
Portion 26: Contract  
Part C4: Site Information  
Part C4.2: Subsoil Investigation

PART C4.2: SUBSOIL INVESTIGATION

No Subsoil investigation was done, the tenderer must familiarize themselves with the conditions on site.

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Contract No SCM/MOH/14012/2024/2024  
Portion C2: Contract Contract  
Part C4: Site Information  
Part C4.3: Existing Services

PART C4.3: EXISTING SERVICES

CONSTRUCTION RESTRAINTS

It is to be noted that there are existing services such as water and sewer, within the site boundaries and their positions and levels are to be confirmed on site. There will be possible clashes of storm water with some of these existing services. It remains the responsibility of the contractor to relocate the service if instructed to do so and to recommission the same.

The following existing services are present in these areas:

- Water network.
- Sewer network
- Telkom services.
- Electrical service with underground and overhead cables.

The known services are indicated on the drawings, but it remains the responsibility of the Contractor to detect and protect the existing services. The Contractor must liaise with all service owners before any excavation begins. The contractor's attention is drawn to the fact that cables running down a pole into the ground, consumer distribution units, miniature substations, substations, pillar boxes, indentations in roads, are all indications of the presence of existing services.

It is hence deemed that the contractor will obtain the necessary authorisation to open up existing services so as to ascertain the proximity thereof in relation to where construction is to take place and in respect of cover to protect such works. It must be noted that the Engineer will use the factual circumstances as indicated above to adjudicate if the contractor has observed the necessary precaution when damage to or interruption of an existing service occurs.

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractors' Plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used, and that the rates and prices tendered will be deemed to include full compensation for difficulties encountered while working in restricted areas. This will also apply to over-break during any excavation. Payment will always be based on specified cross sections and dimensions. No extra payment or any claim for payment due to these difficulties will be considered.

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Contract No SCM/MOH/14012/2024  
Portion C2: Contract  
Part C4: Site Information  
Part C4.4: Existing Building & Structures

**PART C4.4: EXISTING BUILDINGS & STRUCTURES**

Existing structures and buildings are as indicated on the layout drawings.

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~~Portion 26: Contract~~  
~~Part C5: Annexures~~

**MOHOKARE LOCAL MUNICIPALITY**

**CONTRACT No ~~SCM/MOH/02/2024~~SCM/MOH/14/2024**

**~~ROUXVILLE: UPGRADING WATER TREATMENT WORKS~~THE  
~~COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER  
TREATMENT WORKS (WTW)~~RE-ADVERT: THE COMPLETION OF  
THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT  
WORKS (WTW)**

**PART C5: ANNEXURES**

~~The Tender Drawings are issued as a separate document.~~

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~~Portion 26:~~ Contract  
~~Part C5:~~ Annexures

**MOHOKARE LOCAL MUNICIPALITY**

**CONTRACT No SCM/MOH/02/2024SCM/MOH/14/2024**

**ROUXVILLE: UPGRADING WATER TREATMENT WORKSTHE  
COMPLETION OF THE ROUXVILLE / ROLELEATHUNYA WATER  
TREATMENT WORKS (WTW)RE-ADVERT: THE COMPLETION OF  
THE ROUXVILLE / ROLELEATHUNYA WATER TREATMENT  
WORKS (WTW)**

**PORTION C: CONTRACT**

**PART C5: ANNEXURES**

**PART C5.1: LOCALITY PLAN**

Locality Plan are issued as separate drawing.

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