KZN DEPARTMENT OF AGRICULTURE & RURAL DEVELOPMENT

APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF CONCRETE BUTTRESS WEIR, AGRICULTURAL SUBSURFACE DRAINAGE, VEHICLE CULVERT CROSSINGS AND REMEDIAL REPAIRS ON EXISTING CONCRETE STORMWATER CANAL. MAKHATHINI IRRIGATION SCHEME

BLOCK 6 A

UMKHANYAKUDE DISTRICT

JOZINI MUNICIPALITY

agriculture
& rural development

Department:
Agriculture
& Rural Development
PROVINCE OF KWAZULU-NATAL

Table of Contents

C3. SCOPE OF WORK AND PROJECT SPECIFICATIONS

In the event of any discrepancy between the Scope of Works and a part or parts of the SANS1200 Standardized Specifications, the Bill of Quantities or the Drawings, the Projects Specifications shall take precedence and prevail in the Contract.

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The Employer requires the installation of subsurface drainage, at Makhathini Block 6 in the Jozini Local Municipality area, KwaZulu-Natal Province.

The Employer desires that the work required be of a high standard and be completed in the shortest practical time whilst making use of local labour where practical possible.

The sucessful contractor would be required to supply proof and intricate knowledge required to implement agricultural subsurface drainage installation.

C3.1.2 OVERVIEW OF THE WORKS

The contract comprises the civil engineering and related works to agricultural subsurface drainage including outlet structure, canal crossings, maintaining & clearing of vegetation.

C3.1.3 EXTENT OF WORKS

The Works to be carried out by the Contractor under this Contact comprise mainly the following:

Location and protection of existing services
Site clearance
Excavations
Earthworks
Formwork
Concrete work
Remedial works on existing concrete storm water canal
Installation of Agricultural Subsurface Drainage (Pipe works) 29500 m subsurface drains
Installation of Agricultural Subsurface Drainage junction boxes and outlet structures.
Construction of piped vehicle crossings over existing drainage canal x 2
Construction of concrete outlet buttress weir structure
Repair of existing irrigation services within construction area
Re-Establishment of agricultural crops within work area when damaged during construction
Construction of surface water management structures

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 Bill of Quantities.

Provision is made for a specialist geotechnical drainage engineer to be on site during the contract period to test the soil conditions as well as absorption rate of the material for each plot. All excavations and backfilling for trenches will be done by the civil contractor and his attention is drawn to the fact that he will not receive any additional payment for re-programming of the works and/or any delays that may be caused by poor coordination between him Mjindi Farming, the individual farmers or other contractor, unless otherwise agreed by the Engineer.

All costs as a result of liaison by the civil contractor with Mjindi Farming or farmers and the accommodation of the main contractor's activities on the site must be allowed for by the contractor in the bill of quantities. The same applies to all the insurances. The main contractor will be fully responsible for the required insurances as prescribed in the Tender Data notwithstanding the fact that the sub-contractor will move onto site and work on the civil contractor's work.

Sufficient information of existing areas and services that have to be crossed must be taken by the Contractor and handed over to the Engineer before such operations commence. No payment will be done in this regard and it shall be deemed covered in the preliminary and general items.

The existing irrigation supply pipelines should remain in operation throughout the duration of the contract.

C3.1.4 LOCATION OF THE WORKS

The site of the works is located on small individual farming units within the Makhathini Irrigation Scheme, Block 6, Jozini Local Municipality, KwaZulu-Natal Province.

Co-ordinates:

27° 25' 10.7735"S
32° 10' 01.7359" E

C3.2 ENGINEERING

C3.2.1 DESIGN

(a) The Employer is responsible for the design of all Permanent Works as reflected in the Contract Documents unless otherwise stated.

(b) The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

C3.2.2 EMPLOYER'S DESIGN

The Employer's Design is contained in the Tender Documentation and Drawings. Amendments to the design, if necessary, will be issued during the construction phase.

C3.2.3 CONTRACTOR'S DESIGN

Where the Contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional engineer's design certificate.

C3.2.4 DRAWINGS

The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimension shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, at the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the drawings.
The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updates by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

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

The Drawings prepared by the Employer for the permanent Works are listed below and are bound in a separate document or is attached at the back of this volume. The Employer reserves the right to issue and / or amend additional drawings during the Contract.

DRAWINGS LIST :-

The following drawings are enclosed in the document.

Drawing Number	Title Description
KZNDARD/MAK/BL6/000	Cover page
KZNDARD/MAK/BL6/001	Locality Map
KZNDARD/MAK/BL6/002	Site Map
KZNDARD/MAK/BL6/003	Subsurface Drainage - System Layout
KZNDARD/MAK/BL6/004	Subsurface Drainage - Typical sections
KZNDARD/MAK/BL6/005	Subsurface Drainage - General Notes
KZNDARD/MAK/BL6/006	Subsurface Drainage - Envelope Material Notes
KZNDARD/MAK/BL6/007	Subsurface Drainage - Manholes Detail
KZNDARD/MAK/BL6/008	Subsurface Drainage - Excavation Detail
KZNDARD/MAK/BL6/009	Subsurface Drainage - Construction Guidelines
KZNDARD/MAK/BL6/010	Existing Storm Water Canal - Drainage Pipe Junction
KZNDARD/MAK/BL6/011	Storm Water Canal – Vehicle Crossing - 1
KZNDARD/MAK/BL6/012	Storm Water Canal – Vehicle Crossing - 2
KZNDARD/MAK/BL6/013	Remedial Works - Existing Concrete Storm Water Canal
KZNDARD/MAK/BL6/014	Outlet Structure - Buttress Weir (part 1)
KZNDARD/MAK/BL6/015	Outlet Structure - Buttress Weir (part 2)
	Contract Name Board Detail, Would Be Supplied Upon Award

C3.2.5 DESIGN PROCEDURES

Not applicable.

C3.3 TECHNICAL EXPERTISE REQUIRED

C.3.3.1 PREFERENTIAL PROCUREMENT

C.3.3.1.1 Competency Requirements

a) Tenders will be evaluated in terms of the Department of Agriculture & Rural Development Preferential Procurement Policy. Points will be awarded for price, equity ownership by HDI`s and for locality of enterprises.
b) This bid is open for contractors with a Construction Industry Development Board (CIDB) database grading of **minimum 7CE/ME**. The contractor is to submit evidence of his/her OWN Active registration.
c) It shall be vital for the appointed supplier to have sufficient financial resources and capacity to finance and execute as per terms and conditions of the contract.

C.3.3.1.2 Resource standard pertaining to targeted procurement

The Preferential Procurement Policy (PPP) of the Department of Agriculture & Rural Development will be applicable to this project. Relevant sections of the PPP are included in C1.2 Contract Data.

C.3.3.2 JOINT VENTURES

a) In terms of the Preferential Procurement Regulations, 2017 pertaining to the Preferential Procurement Policy Framework Act 5 of 2000, a trust, consortium or joint venture must submit a consolidated BBBEE Status Level Verification Certificate for every separate bid.
b) Should this bid be submitted by a joint venture, the joint venture agreement must accompany the bid document before the closing date and time of bid. The joint venture agreement must clearly specify the percentage of the contract to be undertaken by each company participating therein.
c) The non-submission of a BBBEE Certificate by a trust, consortium or joint venture shall result in zero (0) preference points being allocated for evaluation purposes.
d) Each party to a Joint Venture/ Consortium must submit an original valid Tax Clearance Certificate together with the bid before the closing date and time of bid.
e) The joint venture or consortium must submit a formal agreement that outlines the roles and responsibilities of each member of the joint venture or consortium, nomination of an authorised person to represent the joint venture or consortium in all matters relating to this bid and the details of the bank account for payments to be effected.

f) The joint venture or consortium must comply with Central Suppliers Database (CSD) registration requirements as per National Treasury directive.

C.3.3.3 SUBCONTRACTING

C.3.3.3.1 Scope of mandatory subcontract works

Not applicable

However, local suppliers and emerging contractors should be considered provided they are capable. Implementing Subsurface Drainage works is complex and requires special expertise and resources to implement the works.

C.3.3.3.2 Preferred subcontractors/suppliers

a) The contractor shall not sub-contract the entire contract.

b) However, local suppliers and emerging contractors should be considered provided they are capable. Implementing Subsurface Drainage works is complex and requires special expertise and resources to implement the works.

c) Only bidders who meet both of the following prequalification criteria may respond:-

d) Subcontracters with CIDB 7 CE/ME Minimum with previous experience in Subsurface or Concrete works

e) Bidders must submit documentary proof of compliance with the above prequalification criteria of the Subcontractors.

f) Bidders and subcontractors who fail to comply with the above-stipulated prequalification criteria or fail to submit documentary proof of the compliance with the prequalification criteria shall not be considered for this bid.

C.3.3.3.3 Sub-Contracting procedures

Not applicable

C.3.3.3.4 Attendance on Sub-Contractors

Not applicable

C3.4 CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

C3.4.1.1 Applicable SANS 1200 Standardized Specifications

(a) The following SANS 1200 Standardized Specifications for civil engineering construction are applicable

SANS 1200 A:	General (1986)
SANS 1200 AB:	Engineer's office (1986)
SANS 1200 C:	Site clearance (1982)
SANS 1200 D:	Earthworks
SANS 1200 DB:	Earthworks (pipe trenches) (1989)
SANS 1200 DM:	Earthworks (roads, sub-grade) (1981)
SANS 1200 G:	Concrete (structural) (1982)
SANS 1200 L:	Medium-pressure pipelines (1983)
SANS 1200 LB:	Bedding (pipes) (1984)
SANS 1200 LE:	Storm water drainage (1983)
SANS 1200 LD:	Sewers (1982)

(b) The term "Project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications.

C3.4.1.2 National and International Standards

Not applicable

C3.4.1.3 Particular Specifications

The following Particular Specifications for work not covered by the SANS 1200 Standardized Specification Specifications are also included hereunder:

PB : Building Work

C3.4.1.4 Variations and Additions to the SANS 1200 Standardized Specifications

Variations and additions to the SANS 1200 Standardized Specifications listed in C3.4.1 and the Particular Specification listed in C3.4.1 are given in clause C3.4.6.

C3.4.2 SITE ESTABLISHMENT

C3.4.2.1 Services and facilities provided by the Employer

(a) Water source

Reticulated potable water supply is available in the vicinity of the Site.

The responsible water supply authority in the area of the Site is Mjindi Water within Jozini Local Municipality.

Should the Contractor, in complying with his obligations in terms of sub- clause C3.4.2.2(b): Water, wish to utilize such water supply, he shall himself be responsible for making his own arrangements with the responsible water supply authority for the supply of all water that may require from such reticulation network for construction purposes as well as for domestic consumption.

If so required by the responsible water supply authority, the Contractor shall further be responsible, at the his own cost, for making or otherwise providing metered connections to the available services at the positions specified by the water authority, as well as for the removal of such connections on completion of the Contract.

No warranty is offered or given by the Employer that the existing available reticulated water supply will necessarily be adequate for the Contractor's purposes nor that such supply is in any way guaranteed.

All charges as may be levied by the responsible water supply authority in respect of water consumed by the Contractor shall be for the Contractor's account and payment to the Contractor in respect thereof shall, in accordance with the provisions of sub-clause C3.4.2.2(b), be deemed to be included in the sums tendered by the Contractor for the various Preliminary and General items listed in the Schedule of Quantities, as well as in the rates tendered by the Contractor for the various other items listed in the Schedule of Quantities which require the consumption of water.

The Contractor shall, when reasonably required by the Engineer, produce documentary proof that all amounts as may have become due and payable by the Contractor to the responsible water authority have been promptly paid in full.

(b) Electricity supply

Reticulated electrical power supply is available in the vicinity of the Site.

The responsible electricity supply authority in the area of the Site is Jozini Local Municipality.

Should the Contractor, in complying with his obligations in terms of sub- clause C3.4.2.2(c): Electricity, wish to avail himself of such supply, he shall, in accordance with the provisions of sub-clause C3.4.2.2 (c), and at his own cost, be responsible for making his own arrangements with the responsible electricity supply authority for the supply of all electrical power he may require from such reticulation network for construction purposes as well for domestic consumption.

If so required by the responsible electricity supply authority, the Contractor shall, at his own cost, be responsible for making metered connections to the available services at the positions specified by the electricity supply authority, as well as for the removal of such connections on completion of the Contract.

No warranty is offered or given by the Employer that the existing available reticulated electrical power supply will necessarily be adequate for the Contractor's purpose nor that its supply is in any way guaranteed. All charges as may levied by the responsible electricity supply authority in respect of electrical power consumed by the Contractor shall be for the Contractor's account and payment to the Contractor in respect thereof shall, in accordance with the provisions of sub-clause C3.4.2.2©, be deemed to be included in the sums tendered by the Contractor for the various Preliminary and General items listed in the Schedule of Quantities, as well as in the rates tendered by the Contractor for the various other items listed in the Schedule of Quantities which require the consumption of electricity.

The full Contractor shall, when reasonably required by the Engineer, produce documentary proof that all amounts as may have become due and payable by the Contractor to the responsible electricity supply authority have been promptly paid in full.

(c) Excrement/Sewage disposal

Reticulated water-borne sewage disposal system does not exist in the vicinity of the site.

The responsible sewage disposal authority is Jozini Local Municipality.

Should the Contractor, in complying with his obligations in terms of sub- clause C3.4.2.2 (d): Excrement disposal, wish to avail himself of such facility, he shall, in accordance with the provisions of sub-clause C3.4.2.2 (d), and at his own cost, be responsible for making his arrangements with the responsible disposal authority, and for making such arrangements he may require to the available services.

If so required by the responsible sewage disposal authority, the contractor shall, at his own cost, be responsible for making such arrangements to available services at the positions specified by the sewage disposal authority, as well as for the removal of such services on completion of the contract.

No warranty is offered or given by the Employer to cater for the sewage disposal for the Contractor's purposes nor that of its operation is in any way guaranteed.

All charges as may be levied by the responsible sewage disposal authority in respect of the disposal of sewage generated by the Contractor shall be for the Contractor's account and payment to the Contractor in respect thereof shall, in accordance with the provisions of sub-clause C3.4.2.2 (d), be deemed to be included in the sums tendered by the Contractor for the various Preliminary and General items listed in the Schedule of Quantities.

The Contractor shall, when reasonably required by the Engineer, produce documentary proof that all amounts that may have become due and payable by the Contractor to the responsible sewage disposal authority have been promptly paid in full.

(d) Area for contractor' establishment

A specific area in close proximity to or on the Site of the Works will be made available by the Employer to the Contractor for the Contractor's site establishment. The specific area for the Contractor's site establishment will be identified to the Contractor by the Engineer and the Contractor shall have sole use of such area, for the duration of the Contract. The Contractor shall use this area only for the purposes of erecting his site offices, workshops, stores and other facilities required for the execution of the contract.

The Contractor shall not use the area nor allow it to be used for any purposes not directly associated with the execution of the Contract.
The Contractor shall be responsible for arranging, at his own cost, for the provision of all services he may require in the area, as well as elsewhere on the Site.

Should the Contractor deem the area made available by the Employer to be inadequate or unsuitable for the Contractor's particular needs, then the Contractor shall be at liberty to make his own arrangements with the owners of other sites which he considers are better suited to his needs; provided always that the use by the Contractor's of any area other than that made available to him by the Employer shall be subject to the prior written approval of the Engineer, which approval shall not be subject to the prior written approval of the Engineer, which approval shall not be unreasonably withheld; and provided further that the Contactor shall have no claim against the Employer in respect of any incurred by him, either directly or indirectly in consequence of utilizing any area other than that made available to him by the Employer, and which costs exceed those costs allowed for by the Contractor in his Tender.

(e) Rail facilities

The nearest goods station is Mkuze Station which is located approximately 40 km by road from the Site.

C3.4.2.2 Facilities provided by the Contractor

Facilities for the Engineer

The Contractor shall provide on the Site, for the duration of the Contract and for the exclusive use of the Engineer and / or his Representative (as applicable), the various facilities described hereunder. All such facilities shall be provided promptly on the commencement of the Contract and failure on the part of the Contractor to provide any facility required in term of this specification shall constitute grounds for the Engineer to withhold payment of the Contractor's tendered Preliminary and General items untilthe facility has been provided or restored as the case may be.

(i) Office accommodation

Separate office space is required for the Engineer or his Representative. Refer to PS AB 3.2

The Engineer and his Representative shall be allowed free use of all the Contractor's site facilities.

The Engineer and his Representative shall be allowed free use of survey equipment and assistants to carry out control work as and when required, and the Contractor shall provide all pegs, concrete, tools and other necessary items as well as all necessary labour for excavation, bush clearing, stake subsurface drainage allignments, as and when required for the control of the setting out of the works.

(ii) Carport

The Contractor shall provide on Site for the duration of the Contract, one (1) carport for the sole use of the Engineer and his staff. The carport shall be constructed so that the vehicle parked under it is always protected against the direct rays of the sun.

The carport area shall be at least 20 m^2 and the floor shall be covered with a layer of crushed stone to alleviate dusty and muddy conditions. The carport(s) shall be positioned so as to provide easy and convenientaccess to the Engineer's office. Refer to PS AB 3.2.

(iii) Site meeting venue

The Contractor shall provide within his own site establishment facilities, a suitably furnished office or other venues capable of comfortably accommodating a minimum of twelve (12) persons at site meetings. The Engineer shall be allowed free use of such venue for conducting any other meetings concerning the Contractor at all reasonable times.

(iv) Contract Name Boards

The Contractor shall provide, erect and maintain two (2) contract name boards at such positions and locations directed by the Engineer, which name boards shall, unless otherwise specified elsewhere in the Contract, comply with the recommendations for the standard board of the South African Association of Consulting Engineers, with regard to size, painting, Refer to PS AB 5.1.

The Contractor shall keep the contract name boards in good state of repair for the duration of the Contract and shall remove it on completion of the Contract.

(v) Survey equipment assistants

Both are required for the Contract. Refer to PS AB 5.5 and PS AB 5.6

(vi) Computer facilities

Not required

(vii) Fax facilities

Not required

(xiii) Electricity supply for the Engineer

All electricity supply for the Engineer's office(s) and laboratory (if applicable), whether provided by the Contractor by way of reticulated supply from a local authority or other authorized electricity supply, or by way of on-site generators, shall be regulated by the Contractor to within limits such as to prevent damage due to fluctuations in the electrical current supply that may occur to any electrical plant and equipment provided by the Contractor or the Engineer.

The Contractor shall be liable for and pay to the Engineer on demand, all costs that the Engineer may incur in the repair or replacement of any electrical equipment provided by the Engineer on the Site. Reliance by the Contractor on the regulation of the electrical supply by the supplier or on current regulators fitted to generators shall not absolve the Contractor of his liabilities in terms of this Sub-clause and, where appropriate, the Contractor shall provide and install at his own cost, all such electrical current-regulating equipment as is necessary to prevent damage to the said equipment.

(ix) Site instruction book and Site diary

The Contractor shall keep a triplicate book for site instructions on the Site at all times and provide a Site diary completion by the Contractor and the CLO.

C3.4.2.3 Site usage

The Contractor's employees will not be allowed to stay on site except for the duration of a working day. The only person to be allowed on site for the duration of the contract will be the site guards(s).

Access to the site will be in a controlled manner. People visiting the site will have to sign in and out on a daily basis.

C3.4.2.4 Permits and way leaves

The Contractor shall be responsible to engage with the Community Liason Officer and the Social Facilitator to obtain permits and/or way leaves if required to access farm properties required for this Contract. The following items would require specific attention with regard to Provisional Sums catered for various facilitators: - The facilitators should attach the detailed evidence of all the work done with any payment claims presented by the contractor. Copies of all correspondence including any facilitation reports and meetings should be forwarded to KZNDA&RD for information and record keeping.

C3.4.2.5 Features requiring special attention

(a) Site maintenance

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

(b) Testing and quality control

(i) Contractor to engage services of an independent laboratory
Notwithstanding the requirements of the Specifications pertaining to testing and quality control, the Contractor shall engage the services of an approved independent laboratory to undertake all testing of materials, the results of which are specified in, or may reasonably be inferred from, the Contract. These results will be taken into consideration by the Engineer in deciding whether comply quality of materials utilized and workmanship achieved by the Contractor to comply with the requirements of the Specifications. The afore-going 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.

(ii) Additional testing required by the Engineer

In addition to the provisions of sub-clause C3.4.2.5(b)(i): The 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 C3.4.5(b)(i), 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.

(iii) Costs of testing

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

The costs of all testing carried out by the independent laboratory in accordance with requirements of sub-clause C3.4.2.5 (b)(i), above shall be borne by the Contractor and shall be deemed to be included in the tendered rates and prices for the respective items of work as listed in the Schedule of Quantities and which require testing in terms to the Contractor in respect of any testing carried out in terms of sub-clause C3.4.2.5(b)(i).

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

(c) Additional tests required by the Engineer

The costs of any additional tests required by the Engineer in terms of sub-clause C3.4.2.5(b)(ii): 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 utilized and/or the standard of workmanship achieved are/is not in accordance with the specifications, shall not be reimbursable to the Contractor.

(d) Subcontractors

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

The Engineer will not liaise directly with any subcontractors nor will he issue instructions concerning the subcontract works directly to any subcontractor.

All matters arising from the subcontract agreements shall be dealt with directly between the contractor and the subcontractors and the Engineer will not become involved.

(e) Opening up and closing down of designated borrow pits

Measurement and payment for opening up and closing down designated borrow pits including removing and stockpiling overburden and restoring the Site, shall be made under item 8.3.4 of SANS 1200 D. This item applies to all borrow material required under this Contract.

The requirements of sub-clause 5.2.2.2 of SANS 1200D regarding the opening up, maintenance and closing down of borrow pits shall be adhered to.

(f) Access to properties

The Contractor shall co-ordinate and organize the work to cause the least possible inconvenience to the public and to the property owners adjacent to or affected by the work, and except as hereunder provided, shall at all times provide and allow pedestrian and vehicular access to properties within or adjoining or affected by the area in which he is working. In this respect the Contractor's attention is drawn to Clause 17.1 of the Conditions of Contract.

If, as a result of restricted road reserve width 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.

Notwithstanding the afore-going, the Contractor may, with the prior approval of the Engineer (which approval shall not be unreasonably withheld), make arrangements with and obtain the acceptance of the occupiers of erven and properties to close off part of a road, footpath or entrance temporarily, provided that the Contractor duly notifies the occupiers of the intended closure and its probable duration, and reopens the route as punctually as possible. Where possible, such acess roads, footpaths and entrances shall be made safe and reopened 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, drums

and other safety measures appropriate to the circumstances shall be provided by the Contractor to suit the specific conditions.

(g) Employment of local labour

It is the Employer`s intention that this Contract should make maximum use of the local labour that is presently unemployed. To this end the Contractor shall limit the utilization on the Contractor of non-local employees to that of key personnel only and to employ and train local labour to the extent necessary for the execution and completion of this Contract.

The Contractor shall fill in the form entitled Key Personnel in the Forms to be completed by the Tenderer. The data stated on the above-mentioned form will be strictly monitored during the Contract period and any deviations thereof shall be subject to the prior approval of the Engineer, which approval shall not be unreasonably withheld.

(h) Monthly payment certificates

The statement to be submitted by the Contractor in terms of Clause 49 of the General 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 Contract 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 adjustment 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 working days from the date on which the Engineer communicated to the Contractor the adjustments required. The Contractor shall submit to the Engineer three (3) 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.

(i) Construction in restricted areas

Working space is sometimes restricted. The construction method used in these restricted areas largely depends on the Contractor's Plant. Notwithstanding, measurement and payment will be strictly according to the specified cross-sections and dimensions irrespective of the method used, and the rates and prices tendered will be deemed to include full compensation for any facilities encountered by the Contractor while working in restricted areas. No extra payment or any claim for payment due to these difficulties will be considered.

(j) Notices, signs and barricades

All notices, signs and barricades, may be used only if approved by the Engineer. The Contractor shall be responsible for their supply, erection, maintenance and ultimate removal and shall make provision for this in his tendered rates.

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

(k) Workmanship and quality control

The onus to produce work that conforms in quality and accuracy of detail to the requirements of the Specifications and Drawings rests with the Contractor, and the Contractor shall, at his own expense, institute a quality control system and provide suitably qualified and experienced 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 cost of supervision and process control, including testing carried out by the Contractor, will be deemed to be included in the rates tendered for the related items of work.

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

On completion and submission of every part of the work to the Engineer for examination and measurement, the Contractor shall furnish the Engineer with the result of the relevant tests, measurements and levels to demonstrate the achievement of compliance with the Specifications.

C3.4.2.6 Extension of time due to abnormal rainfall

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

V = (Nw – Nn) + (Rw – Rn) / X

in which formula the symbols shall have the following meanings:

V = Potential extension of time in calendar days for the calendar month under consideration: If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn. When the value of V for any month exceeds the number of days in the particular month, V will be the number of days in the month.

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

Nn = Average number of days in the calendar month under consideration on which a rainfall of Y mm or more was recorded for the calendar month

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

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

The factor (Nw-Nn) shall be deemed to be a fair allowance for variations from the average number of days during which the rainfall did not exceed Y mm

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

b) The Contractor shall, at his own cost, provide and erect on the Site at a location approved by the Engineer, an approved rain gauge, which shall be fenced off in a manner which will prevent any undue interference by workman and other. The Contractor shall, at his own cost, arrange for the reading of the rain gauge on a daily basis for the duration of the Contract. The gauge readings, as well as the date and time at which the reading ken shall be recorded in a separate record book provided by the Contractor for this purpose.

All entries in the rainfall record books shall be signed by the person taking the and the gauge shall be properly emptied immediately after each reading has been taken. If required by the Engineer, the Engineer shall be entitled to witness the reading of gauge.

c) The Contractor's claims in terms of Sub-clause 42.2 of the Conditions of Contract for extension of time in respect of delays resulting from wet climatic conditions on the Site during each month, shall be submitted in writing to the Engineer monthly; provided of the gauge.

(i) the period allowed to the Contractor in terms of Clause 48 of the Conditions of Contract in which to submit his claim for each month shall be reduced to seven (7) days, calculated from the last of the month to which the claim applies; and

(ii) the 28-day period allowed to the Engineer in terms of Sub-clause 42.2 of the Conditions of Contract in which to give his rulling on the claim, shall be reduced to fourteen 14 days. The Contractor's monthly claim shall be accompanied by a copy of the signed daily rainfall for the applicable month.

d) The extent of any extension of time which may be granted to the Contractor in respect of wet climatic conditions (whether normal or abnormal) shall be determined as the algebraic sum of the ¨V¨ values;

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

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

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

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

e) The Engineer shall, simultaneous with granting any extension of time in terms of this clause, revise the Due Completion Date of the Contract to reflect an extension of time having been granted in respect of wet climatic conditions. To the extent of the algebraic sum of all the ¨V¨ values for all the preceding months of the Contract, less the aggregate of the ¨Nn¨ values for the remaining (unexpired) months for the Contract (viz less aggregate of the potential maximum negative ¨V¨ values for the remaining Contract Date shall not revised.

f) Any extension of time in respect of wet climatic conditions granted in terms of this clause shall not be deemed to take into account delays experienced by the Contactor in repairing or reinstating damage to or physical loss of the Works arising from the occurrence of abnormal climatic conditions. Extension of time in respect of any such repairs or

reinstatement regarding damage shall be the subject of a separate application for extension of time in accordance with the provisions of Clause 42 and Clause 48 of the Conditions of Contract.

C3.4.3 PLANT AND MATERIALS

C3.4.3.1 Plant and materials supplied by the employer

Not applicable

C3.4.3.2 Materials, samples and shop drawings

(a) Samples

Materials or work which does not conform to the approved samples submitted in terms of Sub-clause 23.4 of the General Conditions of Contract will be rejected. The Engineer reserves the right to submit samples to tests to ensure that the material represented by the sample meets the specification requirements.

The costs of any such tests conducted by or on behalf of the Engineer, the results of which indicate that the samples provided by the Contractor do not conform to the requirements of the Contract, shall, in accordance with the provisions of Sub-clause 23.7 of the General Conditions of Contract, be for the Contractor's account.

C.3.4.4 CONSTRUCTION EQUIPMENT

C3.4.4.1 Requirements for equipment

Equipment must be such that the work can be executed in an efficient manner

C3.4.4.2 Equipment provided by the employer

No equipment will be provided by the Employer.

C3.4.5 EXISTING SERVICES

C3.4.5.1 Known services

All known services are indicated on the drawings. The onus rests on the Contractor to locate the known services before any construction commences.

C3.4.5.2 Treatment of existing services

Provision is made for repair of existing services that requires to be relocated or removed as indicated on the drawings only at the instruction of the Engineer.

C3.4.5.3 Damage to services

Damage that occurs to unknown services during construction will be paid by the Employer.

C3.4.5.4 Reinstatement of services and structures damaged during construction

The Contractor shall inform the Engineer immediately when a services or structure is damaged. The extent of the damage and a proposal how to reinstate the services or structure shall be submitted to the Engineer on a sketch with dimensions and time frames.

The Contractor shall not be allowed to reinstate any service or structure unless indicated so by the Engineer. The Contractor shall render all reasonable assistance to the croplands, services or structures of the owner with the reinstatement of the crops, service or the structure if required.

C3.4.6 VARIATIONS AND ADDITIONS TO SANS 1200 STANDARDIZED SPECIFATIONS AND PARTICULAR SPECIFICATION

The following variations and additions to the SANS 1200 Standardized Specifications referred to in sub-clause C3.4.1.1 and the Particular Specifications referred to in sub-clause C3.4.1.3 apply to this Contract. The prefix PS indicates an amendment to SANS 1200 or the Particular Specification. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200 to which the variation or addition thereto applies.

C3.5 MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

C3.5.1.1 Applicable SANS and SANS Standards

The provisions of these Specifications take precedence over the provisions of any part of SANS 2001 that is applicable to the contract. The variations and additions to these specifications are described in the section “Applicable SANS 1200 Standardized Specifications”.
The SANS 1200 Standardized Specifications listed in C3.4.11 are applicable.

C3.5.1.2 Particular/Generic Specifications

The Particular Specifications listed in C3.4.6 apply to this Contract.

C3.5.1.3 Methods and Procedures

(a) Maintenance of access and infield roads

The operation of construction vehicles on existing roads that have been completed to the level wearing course, shall be limited to the contractor`s vehicles only. Hauling is strictly forbidden on wearing course that has been completed as described above. The Contractor shall make use of all temporary haul road; or where not practically possible, program his work in such a manner that the haulage materials shall be restricted to that required for the particular section. No additional payment; shall be made for the use of temporary haul roads and all relevant costs shall be deemed covered by the appropriate rates.

No additional payment will be made for the construction of temporary accessroads to the construction site, borrow areas or the spoil sites, except for payment under payment item A8.3.2.2 of SANS 1200 A.

Should the Contractor make use of existing roads for haulage, he shall be held responsible to clear the road or infield access roads of any spillage caused by his activities within one (1) day after such spillage occurred. No additional payment will be made for the cleaning of the spillage.

(b) Blasting operation

All blasting shall be carried out by a competent, registered blaster. The blaster shall furnish to the Engineer copies of all the permits required to purchase, transport, use and dispose of unused blasting material. The Contractor shall inform the commander of the local SAPS at least 1 day prior to the date and time blasting is about to take place.

No blasting operations shall take place on weekends or holidays or week days after 17h00.

The Contractor shall ensure that sufficient suitable material, to the satisfaction of the blaster, is available and in place before the blast is initiated. The Contractor shall be responsible to note in writing (photographs) the structural status of structures (where applicable) before blasting for comparison after blasting.

(c) Normal working hours

Normal working hours shall be from 07h00 until on weekdays from Monday to Friday. It shall be from 07h00 until 13h00 on Saturdays. Work on other days will only be allowed after written approval has been granted by the Engineer.

(d) Interference with Farmers Association or Mjindi Farming staff and operations

The Contractor shall ensure that none of his staff interfere in any way with any Mjindi Irrigation Board staff members or their functions or with the operations of the existing irrigation scheme or sugar cane plantations in any way.

Any person ignoring this shall be removed permanently from site at the expense of the contractor.

(e) Access for farmers

The Contractor shall provide reasonable access to farmers in and around the site from time to time, as and when such access is required. The Contractor is entitled to request reasonable notification before such access by other is required.

The Contractual responsibilities of the Contractor shall remain in full force in spite of the farmers having access to the site.

(f) Giving notice of work to be covered up

The Contractor shall give the Engineer at least 24 hours notice prior to a request for examination of materials or work to be covered up. This request must be made in the request book on site.

Should such a request be made and upon inspection the Engineer found that the works or materials are not yet ready for inspection, the Contractor shall be required to make another appointment.

(g) Sequence of the works

The Contractor shall provide the Engineer with a program negotiated with the individual farmers the sequence of the works to ensure that the existing plant remains in operation.

C3.5.1.4 Quality control (Testing)

Refer to Section C3.4.2.5 (b)

C3.5.1.5 Environmental Management Plan (EMP)

(a) Demarcation of the site

For the purpose of the EMP, the site shall be demarcated into two distinct areas, viz.;

(i) The construction camp comprising all buildings, offices, vehicle wash areas, fuel and material storage area, batching areas and other infrastructure that is required for the running of the job.

(ii) The working area in which construction activities are permitted to take place. No infrastructure, permanent lay down or storage areas shall be established in this working are unless specified in the project specification or prior approval is obtained from the Engineer.

(b) Construction camp

The Contractor shall provide the Engineer with a plan showing the positions of all buildings, yards, batching areas and other infrastructure for approval by the Engineer at least two weeks prior to the commencement date.

(c) Fencing of site

The Contractor shall erect and maintain such a fence (demarcating the boundary of the working area, construction camp and access roads) to the satisfaction of the Engineer.

This fence shall be erected before the commencement of any other work on site. The fence shall be removed after completion of the project and site reinstated to its original state.

(d) Workshops

All workshops shall be located inside the demarcated construction camp area as approved by the Engineer prior to establishment. The workshop shall have a smooth impermeable concrete floor sloped to one side where oil I trapped in an oil trap or sump to contain any spillages of substances such as oil.

Waste material shall be disposed of in accordance with the national, regional and local by-laws regulations and by-laws. The waste be regularly removed and disposed of at an approved site.

(e) Eating areas

The Contractor's employees shall eat in a designated eating area approved by the Engineer. The Contractor shall provide adequate shade and provide scavenger proof and waterproof refuse bins. Cooking will only take place in this area on well maintained gas cookers with fire extinguishers present. Open fires other than the gas cookers shall not be allowed.

(f) Watchmen

The Contractor shall have a watchman present on site all times during non-working hours and on holidays to ensure the safety of plant and materials on site.

(g) Ablution facilities

The exact location of toilets shall be approved by the Engineer. The Contractor shall provide the toilets and maintain and service it on a daily basis. The toilets shall be kept clean. Regular inspections shall be conducted by the Engineer. Burial of waste on site is strictly forbidden. Leaking or broken toilets shall be removed and replaced immediately by the Contractor.

(h) Solid waste

"Solid waste" refers to construction debris, chemical waste, tins, cans, paper, wrappers, excess concrete, waste timber, etc.

The Contractor shall establish a waste control and removal system. He shall submit a method statement to the Engineer for approval prior to commencement. Appropriate solid waste containers shall be provided for the storage of waste. The containers shall be water proof. The waste shall be removed on a regular basis to prevent the accumulation of waste on site and disposed of at an approved waste site.

(i) Wastewater

Water shall be used sparingly on site. Where possible, wastewater shall be recycled. A wastewater management plan shall be submitted to the Engineer for approval two weeks prior to the commencement date.

The management plan shall detail the expected extent of the contamination of each wastewater stream and how the Contractor plans to deal with it.

Wastewater shall be prevented from flowing into the existing canal and streams.

(j) Fuel storage area

Fuel shall be stored on site in a depot at a location as agreed with the Engineer. The Contractor shall ensure that liquid fuels are stored in tanks with lids. The tanks shall be placed on a sloped smooth concrete surface with an oil trap on the lower end to collect any spillage.

Fuel shall be kept under lock at all times

(k) Equipment maintenance and storage

All equipment and vehicles shall be kept in good working order and serviced regularly. Leaking equipment shall be repaired immediately or removed from site. Where possible, maintenance and service shall take place only in the workshop. Permission must be obtained from the Engineer if the aforementioned cannot be adhered to.

The Contractor shall demarcate an area in which the equipment and vehicles may be stored. The location shall be approved by the Engineer.

(l) Materials handling, use and storage

The Contractor is responsible to ensure that all material suppliers are aware of the EMP's restrictions and conditions. The Contractor shall be held responsible should deliveries not comply with EMP requirements.

The Contractor shall comply with all relevant national, regional and local legislation with regard to the transport, use and disposal of hazardous material.

The Contractor shall furnish to the Engineer a list of all hazardous materials to the used on site, together with the handling, storage and disposal procedures of the materials. This information shall be available to all personnel on site.

The location of the hazardous material store shall be within the demarcated construction camp area.
The location shall be approved by the Engineer.

Where possible, the Contractor shall ensure that the refueling of vehicles take places only at the fuel storage area in the construction camp. If this is not possible, the Contractor shall obtain permission from the Engineer to refuel at any other place. Contaminated material and wastewater at the refueling area shall be contained and disposed of correctly.

(m) Emergency procedures

The Contractor shall ensure that emergency procedures for the following situations are submitted for approval to the Engineer.

Fire: The Contractor shall inform the relevant authority immediately as soon as a fire starts. The Contractor shall ensure that his staff and subcontractors are fully aware of the procedures to be followed in the event of a fire.

Spillages: The Contractor shall ensure that his staff and subcontractors are fully aware of the procedures to be followed in the event of a spillage. The Engineer must be informed immediately about a spill. The Contractor shall ensure that the necessary materials and equipment is on site to deal with spills and leaks. The cleanup of spills and leaks shall be for the account of the Contractor.

(n) Care of surrounding areas

The Contractor shall ensure that no contamination or damage to the surrounding areas or watercourse shall occur as a result of any of his activities during construction.

C3.5.1.6 Planning and programming

The existing drainage canal must remain fully operational.

Immediately after handing over the site, the Engineer and the Contractor will discuss the order of procedure and methods in which the Contractor shall carry out the works. The order of the work shall be such that there are no unnecessarily delays of the works.

The programme to be furnished by the Contractor to the Engineer for approval shall be in the form of a Gantt chart. The critical path shall be indicated in red.

C3.5.1.7 Recording of weather

The Contractor shall record the weather conditions on daily basis in the site diary. Rainfall figures which could delay the Works shall be noted and recorded.

C3.5.1.8 Format of communications

All communication regarding the Contract shall be channeled through the Engineer or his representative. Formal contractual communication shall be in writing.

Instructions will only be given by the Engineer or his representative. The Contractor shall not take any instructions from the Employer, the Municipality or the Mjindi Irrigation Board representatives.

C3.5.1.9 Planning and programming

A project progress meeting shall be held monthly on site for the duration of the project on dates to be agreed upon. The Contractor shall be responsible for the venue for the meeting. He will ensure that the CLO attend all such meetings.

C3.5.1.10 Site Diary

Daily records of plant, personnel, materials, etc., shall be recorded daily by the Contractor and noted in the site diary which will be supplied by the Contractor before the commencement date of the project.

C3.5.1.11 Site Instructions

Only the Engineer has the mandate to issue site instructions to the Contractor. This will be done in writing in the site instruction book or per facsimile, or per letter or per minutes of the site meeting.

The Contractor shall furnish an A4 site instruction book in triplicate before the commencement date of the Contract.

C3.6 HEALTH AND SAFETY

C3.6.1 HEALTH AND SAFETY REQUIREMENTS AND PROCEDURES

Before commencement of work, the Contractor shall present to the Engineer his Health and Safety Plan for approval. He shall also appoint a qualified health and Safety Officer in writing and give a copy of the letter of appointment to the Engineer.

The Health and Safety Specification is attached and must be referred to when compiling the Health and Safety Plan.

(a) Construction Regulations, 2003

The Contractor shall be required to comply with the Occupational Health andSafety Act, 1993: Construction Regulations, 2003 (the regulations) as promulgated in Government Gazette No 25207 and Regulations 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 Employer's Health and Safety Specifications (regulation 4(1) of the Construction Regulations 2003.

The Contractor shall in terms of regulation 5(1) provide a comprehensive health and safety plan detailing his proposed compliance with the abovementioned plan or regulations.

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

C3.6.2 MEDICAL FACILITIES AND SAFETY EQUIPMENT

The Contractor shall provide a First Aid cabinet fully equipped and maintained with the minimum contents as listed in the Annexure (Regulation 3) to the General Safety Regulations of the Occupational Health and Safety Act (Act 85 of 1993), to deal with accidents and ailments which are likely to occur during the construction period.

The Contractor shall provide personal safety equipment and facilities as required by Regulation 2 of the General Safety Regulations of the Occupational Health and Safety Act (Act 85 of 1993).
The Contractor shall designate his Safety Officer and Qualified First Aider. The Contractor shall give copies of the minutes of the site safety meetings to the Engineer.

C3.6.3 PROTECTION OF THE PUBLIC

The site is not accessible to the general public. However, the existing canal must remain in operation for the duration of the Contract. The Contractor shall ensure that all personnel entering the construction site is fully informed about the danger on the site. The Contractor shall ensure that non-construction personnel are protected within the guidelines of the OH&S Regulations.

C3.6.4 BARRICADES AND LIGHTING

All excavations and openings in the proposed canal into which or through which a person may fall, shall be securely barricaded in accordance with the requirements of the applicable OH&S Regulations.

C3.6.5 TRAFFIC AND PEOPLE CONTROL

The Safety Officer shall take full responsibility for the traffic and people control in and around the site. The personnel of the existing canal shall be fully informed and trained by the Safety Officer required.

C3.6.6 MEASURES AGAINST DISEASE AND EPIDEMICS

No particular measures have to be taken against disease and epidemics on site.

C3.6.7 AIDS AWARENESS

All construction personnel shall be given an Aids awareness briefing by the Safety Officer.

SANS 1200 A : GENERAL

A3 MATERIALS

PS A 3.1 QUALITY

Substitute the second sentence of the first paragraph of A 3.1 with the following:

Materials shall bear the official mark of the appropriate standard.

Refer to sub-clause C3.4.2.5 (b) on page C3.4-7, retesting and quality control.

A5 CONSTRUCTION

A 5.1 SURVEY

PS A 5.1.1 Setting Out of the Works

Substitute the first sentence in A 5.1.1 with the following:

Setting out of the works is the sole responsibility of the Contractor and shall be done from existing structures as indicated on the drawings. The Contractor shall, within two (2) weeks after the site has been handed over to him, ascertain himself of 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 that had not been reported to the Engineer within the aforementioned period shall be sole responsibility of the Contractor.

Add the following:

The Engineer may alter any part of the Works to suit local conditions. The Contractor must therefore contact the Engineer immediately after the preliminary setting out of any part of the Works before starting with detail setting out, or construction. Only after the Engineer has approved a specific site or part of the Works may the detail setting out and construction commence.

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

The Contractor will not be allowed to continue with any work until the Engineer has been given the opportunity to inspect the setting out of the Works.

PS A 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES

Before underground or excavation work is carried out, the contractor shall ascertain the presence and position of all services likely to be damaged or interfered with by his activities. He shall obtain up-to-date plans from the engineer for this purpose, showing the position of services in the area where he intends to work. As services can often not be reliably located from such plans, the contractor shall determine the exact position of such services by means of suitable detecting equipment and afterwards by careful hand excavation where necessary in order to expose the services at the positions of possible interference by his activities. The contractor shall report any services to the engineer that cannot be found. This procedure shall also be followed in respect of services not shown on the plans but believed to be present.

All such services, the positions of which have been located at the critical points, shall be designated as 'known' services and their positions shall be indicated on a separate set of drawings, a copy of which shall be furnished to the engineer.

While he is occupying the site, the contractor shall be liable for all damage caused by him to known services as well as for consequential damage, whether caused directly by his operations or by the lack of proper protection.

PS A 5.4.3 ALTERATIONS AND REPAIRS TO EXISTING SERVICES

Unless the contrary is clearly specified or ordered, the contractor shall not carry out alterations to existing services. When this is necessary, the contractor shall inform the engineer, who will either arrange for such work to be executed by the owner of the service, or instruct the contractor to make such arrangements himself.

When the contractor damages existing services, he 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 the necessary steps to minimize damage to and interruption of the service. No repairs of electric power lines and cables shall be attempted.

The employer will accept no liability for damages due to a 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."

Add the following to A 5.4:

Detected existing services shall also be indicated on the ¨As Built¨ drawings.

Where the Contractor is responsible for the cost of repairs carried out by the Employer or others, the costs will be recovered by means of a deduction from the Contractor’s monthly payment certificate.

PS A 5.9 SITE MEETINGS

The contractor will be required to attend regular site meetings, normally held once a month to discuss general progress, quality of work, problems, claims, payments, etc, but not matters concerning the day-to-day running of the contract. The engineer shall determine the date, time and venue for such site meetings."

PS A 5.10 COMMUNITY LIAISON OFFICER (CLO)

A Community Liaison Officer shall be appointed for the Contract in consultation with the PSC and Municipality. His/her role will be to liaise between the Contractor, labourers, community and PSC.
The Contractor will pay his remuneration and a provisional sum has been provided for this expenditure. The CLO will assist with the appointment of labour, based on recommendation by the PSC. The CLO must submit a written report about the status of the project at every site meeting.

A6 TOLERANCES

Add the following subclause:

"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 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 for measurement and payment shall be determined from the 'authorized' dimensions. These are specified dimensions or those shown on the drawings or, if changed, as finally prescribed by the engineer, without any allowance for the specified tolerances. Except if otherwise specified, all measurements for determining quantities for payment will be based on the 'authorized' dimensions.

If the work is therefore constructed in accordance with the 'authorized' dimensions plus or minus the 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 'authorized' 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 'authorized' dimensions, and where the actual dimensions are less than the 'authorized' dimensions minus the tolerance allowed, quantities for payment shall be based on the actual dimensions as constructed."

A7 TESTING

PS A 7.4 STATISTICAL ANALYSIS OF CONTROL TESTS

Substitute A7.4 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.

A8 MEASUREMENT AND PAYMENT

PS A 8.1.2 Preliminary and general items or section

PS A 8.1.2.2 Tendered sums

Replace the contents of this subclause with the following:

"The contractor's tendered sums under items 8.3 and 8.4 in BOQ shall collectively cover all charges for

- risks, costs and obligations in terms of the general conditions of contract and of this standardized specification, except where provision is made in these project specifications to cover compensation for any of these items
- 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
- 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 and the cleaning-up of the camp site on completion of the works
- providing facilities for the engineer and his staff as specified in SABS 1200 AB and in these project specifications."

PS A 8.1.2.3 Contractor to price all items

Add the following:

"The scheduled time-related items will be adjusted pro rata to any authorised extension to the tendered time for completion of the Contract, in full settlement of any claims for time-related establishment costs."

A 8.2 PAYMENT

PS A 8.2.5 Adjusted Payment for Time-related Items

The payment to the Contractor for time-related items shall be adjusted in accordance with the following formula in the event of the contract being extended by means of a variation order:
Extended contract period as

Sum of Tendered amounts for time X authorized by variation order

Related items Tendered contract period

The above-mentioned adjustment of the payment for time-related items shall be made in the Completion Payment Certificate and shall be the only payment for additional time-related costs.

PS A 8.4.6 Standing Time Costs

a) Plant …… Unit : Sum per working day

b) Labour …….. Unit : Sum per working day

c) Other (to be specified by Contractor….Unit : Sum per working day

The tendered sum for each item shall include full compensation for all standing time costs of the specified resource of whatever nature and approved by the Engineer, which are not recoverable by way of the provision made in PS A 8.2.5 for the adjusted payment of time-related items.

For the purposes of calculating the total standing time cost, a working week shall be held to consist of five working days and a working day of 9 hours.

Payment for the partial standing of any of the scheduled resources for a day or part thereof, or the standing of a complete resource for a part day, will be made pro rata in proportion to an appropriate factor assessed by the Engineer.

The amount by which the standing time costs is adjusted shall be subject to the contract price adjustment formula as defined in the conditions of contract.

The Contractor shall take note that this payment item shall only apply to delays, which in the opinion of the Engineer are incurred as a result of riot, commotion, politically motivated sabotage and acts of terrorism or disorder outside the Contractor's control. This item shall also apply to standing time incurred as a result of labour boycotts, except that only sub-items (a) and (c), as applicable, will be paid where the Contractor did not pay his labour for the time boycotted. Costs for delays incurred for all other circumstances shall be treated as provided for in the conditions of contract.

The provision of this clause shall in no way prejudice the right of either the Employer of the Contractor to determine the contract in terms of the provisions of Clause 56 of the general conditions of contract.

The Contractor shall take note that no payment will be considered for additional cost or time lost for any daily removal of plant and equipment from the site, any additional costs incurred in protecting his plant and site establishment, or loss incurred in respect of damage to construction plant, equipment and materials supplied and the works.

In the event that GCC 43(1) becomes applicable, the time on which such penalties are calculated shall be reduced by the total standing time approved by the Engineer.

PS A 8.5 Sum stated provisionally by Engineer

1) Community Liaison Officer ……... Unit : Prov. Sum
2) Rented accommodation for RE for duration ……... Unit : Prov. Sum
3) Overheads, charges and profit ……. Unit : %

The Contractor will pay the remuneration of the CLO, the rented accommodation and cellular phone of the RE. A provisional sum has been provided for these expenditures

PS A 8.6 PC SUMS STATED BY THE ENGINEER

REPLACE THE CONTENTS WITH THE FOLLOWING:

“PSA 8.6.1 Prime Cost Sums……..... Unit: PC Sum

SANS 1200 AB : ENGINEER`S OFFICE

AB 3 MATERIALS

PS AB 3.1 NAME BOARDS

Substitute ¨South African Institution of Civil Engineers¨ in the first paragraph of AB 3.1 with ¨KZN Department of Agriculture & Rural Development¨.

PS AB 3.2 OFFICE BUILDINGS

Add the following to AB 3.2:

The office must have an adjacent carport with minimum dimension of 6,0 m x 3.0 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 used for the sides to comply with above-mentioned requirement.

Substitute sub-paragraph (j) in AB 3.2 with the following:

j) Provision of an approved 16 000 BTU air-conditioner.

k) Provision of one copy of the applicable SANS 1200 specifications

AB 4 PLANT

PS AB 4.1 TELEPHONE

No telephone is needed for the Engineer. However will make use of a mobile phone for which provision is made in the Bill of Quantities.

AB 5 CONSTRUCTION

PS AB 5.1 NAME BOARDS

Add the following to AB 5.1:

The name boards shall be erected within a month of the commencement date of the contract and shall be placed at the position indicated by the Engineer. Any damage to these boards shall be repaired within fourteen days of a written instruction issued by the Engineer. 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 repair.

PS AB 5.5 SURVEY ASSISTANTS

Substitute ¨two or more suitably educate survey labourers¨ in the first sentence of AB 5.5 with two semi-skilled labourers.¨

PS AB 5.6 SURVEY EQUIPMENT

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:

a) One automatic level plus tripod;

b) One tachometer plus tripod;

c) One tacheometer staff and one level staff, both graduated metrically; and

d) 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.

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

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

AB MEASUREMENT AND PAYMENT

AB 8.2 PAYMENT

PS AB8.2.2 Survey Assistants and Survey Equipment

No payment shall be made for the survey assistants or survey equipment and shall costs shall be deemed to be covered by the rates tendered for the Contractor's facilities.

SANS 1200 C : SITE CLEARANCE

C3 MATERIAL

PS C 3.1 SCOPE

Substitute the contents of clause 1 with the following:

"This specification covers the removal of vegetation and surface obstructions, and the demolition and removal of structures (including their basements, ifany) and the removal of boulders up to the sizes stated in the following Table:

CASE	MAXIMUM BOULDER SIZE
Where the utilisation of Labour-intensive Construction Methods is specified	50 kg
Where the use of Labour-intensive Construction Methods is not required	0,15 m^3

PS C 3.1 DISPOSAL OF MATERIAL

Substitute the first sentence of C 3.1 with the following:

Material obtained from clearing and grubbing shall be disposed off at the site indicated during the site inspection.

C5 CONSTRUCTION

PS C 5.1 AREAS TO BE CLEARED AND GRUBBED

Substitute the first sentence of C 5.1 with the following:

The Engineer will indicate to the Contractor which areas need to be cleared and grubbed. The Contractor may proceed with clearing and grubbing after the Engineer had the opportunity to inspect the setting out of the Works. Measurement and payment for clearing and grubbing shall only occur for areas as instructed in writing by the Engineer.

Add the following:

"Pipeline routes shall be cleared to a distance of 1,0 m on both sides of the pipeline centre line. Route pegs or markers shall not be destroyed or damaged during clearing operations."

C 5.2 CUTTING OF TREES

C 5.2.3 Preservation of Trees

PS C 5.2.3.2 Individual trees

Add the following to C 5.2.3.2:

Only trees indicated by the Engineer will be allowed removed.

A penalty of R 3000-00 per tree for other trees damaged and/or removed will be charge

SANS 1200 D : EARTHWORKS

D3 MATERIALS

PSD 3.1.2 CLASSES OF EXCAVATION

Add the following to D3.1.2

Under this contract soft and intermediate excavation shall be classified together as soft excavation, and hard rock and boulder excavation shall be classified together as hard rock excavation.

Methods, be classified for purposes of measurement and payment in accordance with following TABLE :

MATERIAL CLASSIFICATION	NUMBER OF BLOWS REQUIRED FOR A DCP PENETRATION OF 100 mm	
	GRANULAR SOIL	COHESIVE SOIL
SOFT - Class 1	< 2	< 1
SOFT - Class 2	>2 - <6	>1 - <5
SOFT - Class 3	>6 - <15	>5 - <8
INTERMEDIATE	>15 - <50	>8
HARD	>50	

(NOTE : "Hard" excavation generally includes material such as formations of unweathered rock that can be removed only after blasting.)"
Notwithstanding anything to the contrary as may be stated in or reasonably inferred from anything contained elsewhere in the Contract, the following shall apply with specific reference to the above only:
"Granular soil" shall mean material with a Plasticity Index (PI) equal to or less than six (6); and "Cohesive soil" shall mean material with a Plasticity Index (PI) in excess of six (6).

D 3.3 SELECTION

PS D 3.3.1 General

Substitute the second paragraph of D 3.3.1 with the following:

The Contractor shall deal in such a way with materials from all excavations for structures and pipe trenches to ensure that usable material is not contaminated with unsuitable material. If usable material is contaminated, such contaminated material shall be removed and replaced with material of standard at least equal to the in situ usable material, all at the Contractor's expense. No additional payment shall be made in respect of this and all relevant costs shall be deemed to be included in the tendered rates.

D4 PLANT

PS D 4.5 AVOIDING QUAGMIRE CONDITIONS

In order to prevent quagmire conditions occurring in the excavations, relatively static plant such as back-actors shall be used combined with hand trimming to complete the excavation to final level. Should the Contractor allow quagmire conditions to develop, he shall, at his own expense, take such steps to rectify conditions as the Engineer may order.

D5 PRECAUTIONS

PS D 5.1.2 Existing Services

PS D 5.1.2.2 Detection, location and exposure add the following to D5.1.2.2The requirements of PSA 5.shall apply mutatis mutandis.

D 5.2.2 Excavation

PS D 5.2.2.1 Excavations for general earthworks and for structures

Add the following to D 5.2.2.1:

Excavations for the clarifiers and the filters shall be extended to 3 m (provisional, to be finalized on site by the Engineer) least of the structures, to remove rock and / or boulders, in order to prevent damage to these structures during future extensions.

Materials under foundations and floors of structures that are regarded by the Engineer as unsuitable for the bearing of such structures shall be removed to the depths and widths ordered. The excavated voids shall then be filled with sand compacted to 100% of mod AASHTO density, to the underside of such foundation or floors, unless a soil cement mixture in terms of PS D 5.2.3.2 is ordered by the Engineer.

PS D 5.2.2.3 Disposal

Substitute the second sentence of D 5.2.2.3 with the following:

All surplus and unsuitable material shall be dumped and neatly finished off, as indicated by the Engineer, in the vicinity of the site.

PS D 5.2.3.2 Backfilling of trenches and backfilling against structures

Add the following to D 5.2.3.2:

Backfilling around structures shall be compacted to 95% (100 % for sand) of mod AASHTO density. When specifically ordered by the Engineer the backfilling against structures shall

be done using a mixture of soil cement. The mixture shall contain 5% cement and just sufficient water for it to be placed and compacted like ordinary backfilling material.

PS DA 5.2.6.2 Methods and procedures

Finishing

Final grading. On completion of earthworks to the finished level and of backfilling of all holes, trenches and the like, the whole surface shall be graded, shaped and compacted to final grades and levels. The surface shall be lightly watered as the Engineer may direct.
Top soiling. Where scheduled, topsoil shall be placed on level and slightly graded areas and shall be lightly compacted by wheeled vehicles or by tamping, and trimmed nearly to the required lines, grades and levels. The final thickness of topsoil after compaction shall be at least 100 mm

D8 MEASUREMENT AND PAYMENT

PS D 8.1 BASIC PRINCIPLES

Add the following to D 8.1:

The rates for excavation shall also cover the cost of dealing with any storm water or subsurface drainage water that may appear in the excavations. It is anticipated that extreme wet conditions would provail.

D 8.3 SCHEDULED ITEMS

PS D 8.3.2 Bulk Excavation

Add the following sub item to D 8.3.2:

d) Extra-over 8.3.2(a) for soil cement backfilling where specifically ordered by the Engineer (percentage of cement indicated).. .Unit : m^3

The tendered rate for sub item PS D 8.3.2© shall be additional to the rates tendered for D 8.3.2(a) and shall cover the cost of all incidentals required for the complete backfilling with soil cement as specified.

PS D 8.3.3 Restricted Excavation

Substitute D 8.3.3 with the following:

No separate payment shall be made for restricted excavations and all relevant costs shall

be deemed to be covered by other tendered rates.

PS D 8.3.8.1 c) Excavate by hand to expose existing service …….. Unit : m^3

Add the following to D8.3.8.1 (c):

Excavation by hand to expose existing services shall only be measured and paid for if so ordered
in writing by the Engineer. After the excavation of trial holes to determine the exact position and depth of existing services, at intervals as required by the Engineer, the excavation to a level of 300 mm above such services shall be measured and paid for as normal excavation, independent of the depth of such excavation. Only excavation within 300 mm of the existing services will be measured and paid for as excavation by hand and then only if ordered in writing by the Engineer.

SANS 1200 DB : EARTHWORKS (PIPE TRENCHES)

DB 1 SCOPE

Add the following to DB 1.1:

This specification also covers the excavation for agricultural subsurface drainage, irrigation pipes & cable trenches.

PS DB 2.2 APPLICATION

Substitute ¨pipe and cable trenches in DB 2.2.

D3 MATERIALS

PS DB 3.5 BACKFILL MATERIAL

Add the following to DB 3.5(b):

a) Substitute pipe trenches¨ in DB 3.5(a) with ¨from trenches, or excavations for structures¨.

DB 4 PLANT

PS DB 4.1 EXCAVATION EQUIPMENT

Add the following to DB 4.1:

All excavations exceeding the specified widths shall be backfilled with approved selected material. No payment shall be made for this and all relevant costs shall be deemed to be included in the tendered rates.

DB 5 CONSTRUCTION

PS DB 5.1.2 Storm Water, Seepage and Dewatering of Excavation

Add the following to DB 5.1.2:

The cost of dealing with all types of water shall be deemed to be included in the tendered rates for excavation and no additional payment shall be made in this respect.

PS DB 5.2 MINIMUM BASED WIDTH SPECIFIED

Substitute paragraph (b) of DB 5.2 with the following:

The minimum base width for all pipes with a diameter less than 160 mm shall be 600 mm plus the nominal diameter of the pipes, irrespective of the depth at which they are laid.

The minimum base width for electric cable trenches shall be 500 mm. Where more than one cable is installed in the same trench, the base width shall become 300 mm plus the distance specified between cables. The minimum distance between cables shall be 50 mm.

PS DB 5.5 TRENCH BOTTOM

Substitute ¨90 % ¨ in the second paragraph of DB 5.5.with ¨93 % (100 % for sand)¨

DB 5.6 BACKFILLING

PS DB 5.6.2 Material for backfilling

In the first paragraph substitute ¨from trench excavations¨ with ¨from excavations for trenches and structures.¨

PS DB 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 the spoil site

DB 8 MEASUREMENT AND PAYMENT

PS DB 8.1 BASIC PRINCIPLES

Delete ¨along the route of the pipeline¨ in DB 8.1.1.

DB 8.2 COMPUTATION OF QUANTITIES

PS DB 8.2.4 Shoring

Add the following to DB 8.2.4:

Shoring will only be measured and paid for if the Engineer gives written approval before it is installed.

DB 8.3 SCHEDULED ITEMS

PS DB 8.3.2 Excavation in all materials for trenches, backfill, compact and dispose of surplus material …….. Unit : m

Add the following to DB 8.3.2

The rate shall also cover the cost of dealing with any storm water or subsurface water that may appear in the trenches, as well as for excavation against and protecting existing structures.

SANS 1200 DM : EARTHWORKS (ROADS, SUB-GRADE)

DM 5 CONSTRUCTION

PS DM 5.1.2 Accommodation of Traffic

Add the following to DM 5.1.2

During construction of the works, the Contractor must still provide the farmers and Mjindi with access to their farms, as well as access to irrigation valves.

No separate payment will be made for these accesses as the cost thereof will be deemed to be covered by the tendered rates for the Contractor's facilities.

DM 5.2 METHODS AND PROCEDURES

DM 5.2.2 Cut and Borrow

PS DM 5.2.2.3 b) Cut to spoil

Substitute DM 5.2.2.3(b) with the following:

The provisions for PS D 5.2.2.3 shall apply mutatis mutandis.

PS DM 5.2.2.4 Temporary stockpiling of materials

Add the following to DM 5.2.2.4:

The Contractor shall program the works in such a manner that suitable excavated material shall, if practically possible be placed directly in the appropriate position to ensure that temporary stockpiling is limited to an absolute minimum. No payment shall be made for the temporary stockpiling of material where such material is to be used for backfilling of pipe trenches, except when so ordered in writing by the Engineer.

DM 5.2.3.3 Treatment of Road Bed

PS DM 5.2.3.3 Treatment of road bed

a) Preparation and compaction of damaged road bed

Substitute the first paragraph of DM 5.2.3.3(a) with the following

The road-bed shall be scarified to a depth of 150 mm, watered, shaped and compacted to 90 %

of MAASHTO density (100 % for sand), except where otherwise ordered by the Engineer.

PS DM 5.2.8 Transport

Add the following to D 5.2.8

The free haul distance for material from commercial sources shall be unlimited.

DM 8 MEASUREMENT AND PAYMENT

DM 8.3 SCHEDULED ITEMS

PS DM 8.3.4 Cut to fill, Borrow to fill …….. Unit : m^3

Substitute “90% in DB 8.3.4 with (100% for sand)” and “road prism” with “road prism and borrow pits”

PS DM 8.3.12 Overhaul ……. Unit : m^3 or m^3.km

Substitute DM 8.3.12 with the following:

The provision of D 8.3.6 shall apply mutatis mutandis.

PSDM 8.3.18 Final finishing and cleaning up of the site of the works ..... Unit : sum

The tendered sum shall include full compensation for clearing, disposal of material, finishing, tidying and for all other work to be performed in finishing and cleaning up the site of the works and affected areas by the removal of all excess earth, stones, boulders, debris and other waste material.

All material resulting from the finishing operations shall be disposed of to a spoil site furnished by the contractor.

SANS 1200 LB: BEDDING (PIPES)

LB 1 SCOPE

PS LB 1.1 SCOPE

Add the following to LB1.1:

This specification also covers the bedding required for subsurface drainage pipes and irrigation pipe repairs.

LB 3 MATERIALS

PS LB 3.1 SELECTED GRANULAR MATERIAL

Substitute LB 3.1 with the following:

Selected granular material shall be an aggregate, sand or granular material, all of a non-cohesive nature and free from any organic material, of which the grading analysis shows 100% passing a 13.2mm sieve and not more than 5% passing a 0.075mm sieve. See the graphic grading limits to be applied on drawing KZNDARD/MAK/BL6/006.

PS LB 3.2 SELECTED FILL MATERIAL

Substitute LB 3.2 with the following:

The requirements of PS LB 3.1 shall apply mutatis mutandis.

PS LB 3.3 Bedding

Add the following to LB 3.3:

All pipes shall be classified as rigid pipes and shall be laid on Class C bedding.

The bedding material for subsurface draiange pipes shall comply with the requirements of PS LB 3.1 and shall be as detailed on KZNDARD/MAK/BL6/007.

PS LB 3.4.1 Suitable Material Available From Trench Excavations

Substitute LB 3.4.1 with the following:

The provision of PS 3.3.1 shall apply mutatis mutandis.

LB 5 CONSTRUCTION

LB 5.1 GENERAL

PS LB 5.1.4 Compacting

Substitute “90% MOD AASHTO” in LB 5.1.4 with “93 % of MOD AASHTO (85% for sand)”

PS LB 5.5 PLACING AND BEDDING OF SUBSURFACE DRAINAGE PIPES

Bedding and backfilling for drainage pipe shall be executed under this contract. The mechanical contractor shall install the pipe and bedding material. Machine compaction shall not be carried out directly over drainage pipes, unless the pipe is covered by at least 300mm of fill material.

LB 8 MEASURENT AND PAYMENT

LB 8.1 PRINCIPLES

PS LB 8.1.5 Disposal of Displaced Material

Add the following to LB 8.1.5:
The provisions of PS D 5.2.2.3 shall apply mutatis mutandis.

LB 8.2 SCHEDULED ITEMS ADD THE FOLLOWING ITEMS:

PS LB 8.2.6 Supply and Place bedding for subsurface drainage pipe, from

a) Trench excavations……. Unit:m^3
b) Other excavations…… Unit:m^3
c) Borrow pits…… Unit:m^3
d) Commercial sources…… Unit:m^3

Bedding and selected fill for subsurface drainage pipes shall be measured separately.

No differentiation shall be made between trenches, bedding and backfilling for cables to be installed by the Contractor or the mechanical contractor.

The rate shall cover the cost of acquiring, regardless of the distance, bedding and selected fill material that complies with the requirement of PS LB3.3,of delivering it to points alongside the trench spaced to suite the Contractors methods of working, placing in layers and compacting, as specified, and of disposing of displaced material within a free-haul distance of 0.5km.No additional payment will be made for co-operating with the mechanical contractor during the laying of cables and the cost related thereto shall be deemed to be included in the rate for supplying and placing the bedding material.

PS LE 8.2.14 Pipes in subsurface drains :

(a) Normal duty PE pipes completed with couplings:
    (i) (Diameter and whether perforated or not, indicated) …… Unit: m
    (ii) Etc for other diameters
(b) Heavy-duty fittings:
    (i) Type and diameter indicated) …… Unit: number
    (ii) Etc for other types and diameters

The tendered rates per metre of pipe measured in place along its centre line including the length of fittings shall include full compensation for procuring furnishing, laying and jointing the pipes as specified.

The tendered rates for fittings shall include full compensation for procuring, furnishing, laying and jointing the fittings as specified, irrespective of the type of fitting.

PS LE 8.2.16 Crushed stone in subsurface drains…… Unit: m^3

The tendered rate shall include full compensation for procuring, supplying, transporting and placing the material as specified. The quantity shall be calculated from the authorized dimensions.

Impermeable material will be paid under SABS 1200 DB

PS LE 8.2.17 Grade 20 Mpa / 19 mm concrete outlet structure for subsurface drains (including framework) ……..……. Unit: m^3

The tendered rate shall include full compensation for procuring and supplying of all materials, providing and erecting formwork, reinforcing and mixing, transporting and placing concrete.

PS LE 8.2.18 uPVCbends and caps for subsurface drain pipes …….. Unit: number

The tendered rate shall include full compensation for supplying and installing the Upvc bends and caps related to the pipe junctions.

The following specification is a particular specification for Building Work and shall form part of the contract.

PS LE 8.2.19 Free drainage granular material (gravel, stone, selected material or graded river sand) fill at back of earth retaining wall ……. Unit: m^3

The tendered rate shall include full compensation for procuring, supplying, transporting and placing the materials as specified. The quantity shall be calculated from the authorized dimensions. The tendered rate shall include full compensation for the additional cost of providing imported material (see item PA 01)."

SANS 1200 LE : STORMWATER DRAINAGE

PS LE MATERIALS

ADD THE FOLLOWING SUBCLAUSE

PS LE 3.6 MATERIALS FOR SUBSURFACE DRAINS

(a) Pipes and fittings

Pipes for subsurface drains shall be normal duty, perforated or slotted PE pipes complying with SABS 791. Fittings shall be heavy duty and shall also comply with SABS 791.

The size of the perforations in perforated pipes in all cases be 6 mm in diameter ± 1, 5 mm, and the number of perforations per metre shall not be less than for 100 mm pipes and 52 for 150 mm pipes. Perforations shall be spaced in two rows for 100 mm pipes and in four rows for 150 mm pipes, as shown on the Drawings.

Slotted pipes shall have a slot width of 2 mm with a tolerance of 0, 5 mm in width. The arrangement of the slots is subject to the Engineer's approval, but the total slot area shall not be smaller than that specified for perforations.

(b) Crushed stone / Envelope Material

Crushed stone shall be 13 mm and 19 mm single-sized and shall comply with the requirements of SABS 1083. Other suitable filtermaterial withing acceptable drainage curves will be allowed if accepted by the Engineer.

PS LE 5 CONSTRUCTION

ADD THE FOLLOWING SUBCLAUSE:

PS LE 5.8 CONSTRUCTION OF SUBSURFACE DRAINS

After the completion of the excavations, the bottom portion of the trench shall be lined a layer of crushed stone and / or envelope / filter material of the thickness as shown on the Drawings finished to the required gradient.

Pipes of the required size shall be firmly bedded on the permeable material, true to level and grade, and coupled where required. The trench shall then be backfilled with crushed stone / filter material to the height above the pipes shown on the Drawings or as directed by the Engineer.

Crushed stone shall be placed in layers of not more than 300 mm at a time and shall be lightly

compacted. Care shall be taken to prevent the contamination of envelope material during construction of the subsurface drains and all material contaminated by soil or silt shall be removed and replaced by the Contractor at his own expense.

Perforated and or slotted pipes shall be joined by couplers. Perforated pipes shall be laid with the perforations at the top or at the bottom, as directed by the Engineer. The higher end of subsurface drain pipes shall stop a manhole as shown on the Drawing :- KZNDARD/MAK/BL6/007

Care should be taken to ensure sediment traps within manholes to ensure positive outlet capacity. Elbow couplings at discharge and inlet pipes as per Drawing.

The remainder of the trench shall be immediately backfilled with approved permeable material preferably obtained from the excavations, in layers not exceeding 150 mm and compacted to 80% of modified AASHTO density, unless otherwise ordered by the Engineer. The trench shall be specially protected against the ingress of excess water, soil and silt until the backfilling with permeable material has been completed.

Permeable material in subsurface drains shall not be taken to the surface but shall be discontinued at such heights as will be determined by the Engineer.

Any section of a subsurface drain constructed with pipes without perforations or slots shall be backfilled with impermeable backfill material as described above. Suitable excavated material may be used for backfilling. Payment for excavations as well as for backfilling with impermeable material will be made under SABS 1200 DB."

SPECIFICATION PB - GENERAL BUILDING WORK

1.0 SCOPE

This section specifies the general requirements for the construction of buildings.

2.0 INTERPRETATIONS

2.1 SUPPORTING SPECIFICATIONS

a) SANS 0400 - National Building Regulations;
b) SANS 1200 A or SANS 1200 AA as applicable;
c) SANS 1200 C;
d) SANS 1200 D or SANS DA as applicable;
e) SANS 1200 G or SANS 1200 GA or SANS 1200 GB as applicable.

2.2 GENERAL

Building work shall be carried out in accordance with the National Building regulations and Building standards Act, 1977; and these specifications.

References to specifications and codes of practice of the South African Bureau Standards shall be taken to be references to the latest edition of such specifications and codes of practice amended, where possible the SANS mark shall appear on all articles, materials or items where it is required to comply with such SANS specification.

3.0 MATERIALS

3.1 CEMENT

Cement for masonry work shall comply with the requirements of SANS 50412-1 and cement for concrete work shall comply with the requirements of SANS 1200G and its project specifications. Separate storage facilities shall be provided for various types of cement.

3.2 WATER

Water shall be clean free clay, silt, oil, acid, alkali, organic or other matter which would impair the required strength and durability of mortar, plaster or floor screed.

3.3 LIME

Lime shall be hydrated bedding mortar lime complying with requirements of SANS 523.

3.4 AGGREGATE

Sand for plaster and mortar shall comply with the requirements of SANS 1090, whereas the aggregates for normal and granolithic floor creeds shall comply with the requirements of BS1199 and BS1201 respectively.

4.0 PLANT

4.1 GENERAL

The Contractor shall have at his disposal the normal plant necessary for the proper and neat completion and rounding off of all faces of the works.

5.0 TOLERANCES

5.1 BASIS OF MEASUREMENT

5.1.1 General

Permissible deviation will apply in the case of linear dimensions, position, and level. The Contractor shall construct each of the various parts of the works within the limits of the applicable permissible deviations set out in clause 6.2 unless some other degree of accuracy is required in terms of the project specification or is shown on the drawings.

5.1.2 Methods of Measurement of Deviations

Certain deviations will be measured as set out below:

a) Any pipe invert levels 0,1 m
b) Any pipe slope 0,05%
c) Any deviation from flatness of a plane surface will be measured as the maximum deviation of the surface from any straight line of length 3 m joining two points on the surface, determined by means of a straight edge the ends of which are supported on identical blocks of suitable thickness placed one over each of the points.
d) Any abrupt change in a continuous surface, including a local depression or peak in a floor or wall, will be measured as specified in (a) above.
e) Out-of-squareness of a corner or an opening or an element such as a column will be measured by taking the longer of two adjacent sides as the base line, and determining any departure from the perpendicular of the side at either end of this base line.

5.2 PERMISSIBLE DEVIATION

The permissible deviation for elements or components shall be as follows:

a) Position of plan of any edge or surface measured from the nearest grid liner agreed centre line..... ± 25 mm

b) Linear (other than cross-section) dimension..... ± 30 mm

c) Cross-section dimensions..... 10 + 20 mm

d) Level (deviation from designed level with reference to the nearest transferred datum (TD) of the upper or lower surface,as may be specified, ofany slab other element or component)..... ±10 mm

6.0 TESTS

6.1 GENERAL

The Engineer shall have free access to the works for taking samples and carrying out tests. The Contractor shall render any assistance necessary. if so required, the Contractor shall provide storage and protection of such samples on site.

7.0 MEASUREMENT AND PAYMENT

7.1 GENERAL

7.1.1 All items in this section will be measured by number, square metre or linear meter completed and the tendered rates shall include full compensation for the supply, delivery, handling and installation of all materials, the provision of all necessary labour and supervision, transport, plant, equipment and incidentals necessary to complete, protect and maintain the works as specified or as shown on the drawings.

7.1.2 Where a lump sum is required for a complete structure the tendered rate shall include all items and contingencies, as specified in this section or as shown on the drawings.

PORTION 3: SPECIFICATION IN TERMS OF THE CONSTRUCTION REGULATIONS 4 (1) (a) OF THE OCCUPATIONAL HEAL TH AND SAFETY ACT, NO 85 OF 1993

1. BACKGROUND

In terms of the Construction Regulation 4 (1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, the Client is required to compile a Health & Safety Specification for the intended project and provide such specification to any prospective tenderer. The Client's further duties are as 4(1) to 4(6) in The Construction Regulations, July 2003.

2. SCOPE

Development of a Health & Safety Specification that addresses all aspects of occupational health and safety as affected by the Construction of civil engineering / agricultural services for the installation of agricultural subsurface drainage scheme in Block 6 Makathini.

3. OH&S MANAGEMENT

3.1 Structure and Organization of OH&S Responsibilities

3.1.1. Overall Supervision and Responsibility for OH&S

- The Client is to ensure that the Principal Contractor, appointed in terms of Construction Regulation 4(1)(c), implements and maintains the agreed and approved OH&S Plan. The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act is to ensure that the Employer (as defined in the Act) complies with the Act. Annexure 2 - "Legal Compliance Audit" may be used for this purpose. Any OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her respective appointment forms.
- The Construction Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 6.

3.1.2. Further (Specific) Supervision Responsibilities for OH&S

- Appointments required by the Act and Regulations:
- OH&S Representatives (Sections 17/18 of the Act)
- OH&S Committees (Sections 19/20 of the Act)
- Risk Assessor (Construction Regulation. 7(1))
- Accident/Incident Investigations Co-ordinator (General Administrative Regulation 9 (2))
- Form/Support work Supervisor (Construction Regulation 10(a))
- Batch Plant Supervisor (Construction Regulation 18(1))
- Stacking & Storage Supervisor (Construction Regulation 26(a))
- Fire Equipment Inspector (Construction Regulation 27(/J))
- Electrical Installations, Machinery & Appliances Inspector (Construction Regulation 22)
- Excavation Supervisor (Construction Regulation 11(1))
- Demolition Supervisor (Construction Regulation 12(1))

- OH&S Officer (where necessary) (Construction Regulation 6(6))
- Person Responsible for Machinery (General Machinery Regulation 2)
- Emergency, Security and Fire Co-ordinator (Construction Regulation 27(h) & Environmental
- Regulation 9)
- Fire Equipment Inspector (Construction Regulation 27(h) Environmental Regulation 9)
- First Aider (General Safety Regulation 3(2))
- Hazardous Chemical Substances Supervisor (HCS Regulations)
- Ladders Inspector (General Safety Regulation 13A)
- Lifting Equipment Inspector (Construction Regulation 20)
- Operators & Drivers of Construction Plant & Vehicles (Construction Regulation 21 (i))
- Structures Supervisor (construction Regulation 9)
- Users Operators of Construction Equipment (Construction Regulation 21 (i))
- Welding Supervisor (General Safety Regulation 9)

3.2. Communication and Liaison

OH&S liaison between the Client, the Principal Contractor, the other Contractors, the Consulting Engineer and other concerned parties will be through the OH&S Committee.

3.2.1. In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises. Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S Committee and their elected Trade Union Representatives, if any. The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Consulting Engineer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous / dangerous conditions / situations etc