



# agriculture & rural development

Department:  
agriculture  
& rural development  
**PROVINCE OF KWAZULU-NATAL**

## INVITATION OF QUOTATION ABOVE R30,000.00

THIS FORM SHOULD BE COMPLETED IN DETAIL AND SHOULD BE ACCOMPANIED BY A **VALID TAX COMPLIANCE STATUS PIN AND VALID BBBEE VERIFICATION CERTIFICATE AFDAVIT**

QUOTATION NUMBER: R/N/1819/918	VALIDITY PERIOD OF QUOTATION.....Days (To be completed by the Supplier)
CLOSING DATE : 21/09/2018	CLOSING TIME: 11: 00
DESCRIPTION(SPECIFICATION/S) OF ITEMS/ SERVICE REQUIRED: <b>SITTING AND SCOOPING OF HALADU DAM FOR LIVESTOCK DRINKING WATER</b>  <b>SEE ATTACHED SPEC</b>	COMPANY NAME:  Tel NO:- EMAIL :  CONTACT PERSON:  <b>CSD REGISTRATION NO</b>  <b>MAAA.....</b>
DOES OFFER COMPLY WITH SPECIFICATION?	YES/NO (DELETE WHICH EVER IS NOT APPLICABLE)
DOES ARTICLE COMPLY WITH SABS SPECIFICATION? HAS IT BEEN INSPECTED BY SABS?	YES/NO YES/NO (DELETE WHICH EVER IS NOT APPLICABLE)
DELIVERY PERIOD AFTER INITIAL ORDER?	
IS THE PRICE FIRM	YES/NO
WHERE ARE THE STOCK HELD? (PHYSICAL ADDRESS , PLEASE)	
QUOTATION PRICE INCLUDING VAT (VAT TO BE ADDED BY REGISTERED VAT VENDORS ONLY)	TOTAL: R .....
COMPANY OFFICIAL STAMP (COMPULSORY)	..... SIGNATURE OF BIDDER  ..... DATE
NUMBER OF PAGES FAXED BACK TO THE DEPARTMENT BY THE SUPPLIER	.....( Supplier to complete)

**NB:** QUOTATION FOR THE ATTENTION OF: **L.B NGCOBO**

**035 780 6739**

**QUOTATION MUST BE DEPOSITED IN THE BID BOX SITUATED AT DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT, SUPPLY CHAIN MANAGEMENT IN CEDARA/ RICHARDSBAY AGRUCULTURE OFFICE IN RECEPTION**

**NB:** THE ATTACHED SBD4 & SBD9 FORMS MUST BE COMPLETED IN FULL.

THIS QUOTATION COVER PAGE MUST BE COMPLETED AND RETURNED WITH ALL YOUR QUOTATION DOCUMENTS.

Umzi/FS18/Haladu Dam/NQU

COMPANY NAME :

ADDRESS :

CONTACT PERSON :

CONTACT NUMBER :

FAX NUMBER :

LINE NO.	DESCRIPTION OR SPECIFICATION OF ITEM (Please be very specific and clear)	REQUIRED QUANTITY	UNIT PRICE EXCL. VAT		TOTAL PRICE	
			R	C	R	C
	Procurement of a service provider to undertake sitting and scooping of Haladu dam for livestock water drinking water at Nquthu					
1.						
2.						
3.						
4.						
* LABOUR (IF APPLICABLE)						
*DELIVERY (IF APPLICABLE)						
TOTAL						
*ONLY APPLICABLE TO VAT REGISTERED SUPPLIERS 15% VAT						
TOTAL PRICE						

\*VAT Registration No. (Supplier) -----

When Required (Requester): 30 August 2018

Where Required (Requester): Nquthu Agriculture

Contact details of requester: 034 -2710010/0769416408

TEL :

**(COMPULSORY)**

COMPANY STAMP

PRICES ARE VALID FOR

30

60

90

DAYS

Mark one Box (X)

SIGNATURE.....

DATE .....



agriculture  
& rural development

Department:  
agriculture  
& rural development  
PROVINCE OF KWAZULU-NATAL

## **CONTRACT FOR THE HIRE OF EARTH MOVING EQUIPMENT AND RESOURCES FOR THE REHABILITATION OF DAMS**

### **PROJECT SPECIFICATIONS, CONDITIONS OF CONTRACT AND PRICING & PAYMENT SCHEDULES**

**MAY 2018**

*This document contains:*

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**NOTE: This contract requires a minimum CIDB Grading of 2 CE**

## A - PROJECT PARTICULARS

### 1) DEFINITIONS AND INTERPRETATIONS

- 1.1 The term "Site" shall mean the lands and other places on under in or through which the Works are to be executed or carried out and any other lands or places provided by the Employer for the purposes of the Contract.
- 1.2 "Employer" is used in all instances throughout this document whenever reference is made to Province of KwaZulu-Natal, represented by the Head of Department for Agriculture, Environmental Affairs and Rural Development and includes their duly authorised representative and successors.
- 1.3 "Engineer" shall mean the Engineers appointed by the Employer.
- 1.4 "Engineer's Representative" shall mean any person appointed by the Engineer under whose direction the plant and labour hired under this Contract shall work.
- 1.5 "Labour" shall mean the personnel stipulated in Clause 6.1.2(b) of the Contract Specifications.
- 1.6 "Plant" shall include all items listed in Sub-Clause 6.1.2(a) of the Contract Specifications and shall also include any additional items as required by the Engineer for the execution of the Contract. For purposes of insurance the term "Plant" shall also include mechanically propelled road vehicles such as LDVs, trucks, etc., together with trailers, compressors and other minor equipment.
- 1.7 "Week" shall mean seven calendar days, Monday to Sunday inclusive.
- 1.8 Words imparting the singular only shall also include the plural and vice versa where the context requires.
- 1.9 "The term Rain day "is deemed to be a 24 hour period over which more than 10mm of rain has been recorded.
- 1.10 "Working day" will be deemed all the days from Monday to Friday and on some occasions the Saturday.
- 1.11 "Non-Working day" will be deemed all the days that no work has taken place eg. Pay weekends that may start on a Thursday or Friday. It will also include Sundays, all statutory public holidays and the construction industry break in December/January.

### 2) CONTRACT PERIOD

The Contract is for the hire of Plant and Labour for Agricultural Development projects over the shortest period that it takes to complete the project. The duration of projects for which the contract will be utilised will vary depending on the size of the project. The Contractor must allow in his bid for this variable contract period and no claim of whatever nature arising from this clause will be considered.

### 3) PROJECT DESCRIPTION / BACKGROUND

The works include the excavation of silt in existing small earth dams, repairing breaches and reconstruction of spillways as well as fitting of overflow pipes where needed. The work will not be limited to the described works and can include building of new stock watering dams as well as general earthworks as needed from time to time by the Department e.g road construction and levelling of platforms. From time to time the service provider will need to provide labour and/or purchase material that is associated with the projects.

### 4) LOCATION

The dams or related works to be implemented may be located anywhere in the district for which the contract is tendered for. I.e separate orders will be awarded for each of the districts on an "as and when basis".

A separate Service Level Agreement will be entered into with the winning bidder from each district i.e. 11 in all. No contractor will only be awarded more than 1 district unless proof can be provided that the bidder owns or has access to sufficient plant and resources to be able to operate in more than one district at a time

### 5) SCOPE

The contract covers the supply of all earth moving machinery, small plant, labour and material as requested by the engineer. The following are the detailed scope of works for the hire of a team of construction plant.

Details of these works are specified in Section C: Project Technical Specifications incl:

- Site evaluation: The Engineering section and the contractor will access and evaluate the site as a team and together will agree in writing on the scope of works per site.
- Earthworks: Removal of silt from dam basins, repair breaches in walls and repairs to spillways, building of new earth embankments, building of access roads. Installation of pipes and associated water reticulation as required. Supply and delivery of material associated with the works.
- Concrete work: When concrete work is needed it must be specified by the engineer. Strength must be 30 MPa. Premix or hand mix are allowed but test cubes must be done when hand mix method is used.

## B - GENERAL CONDITIONS OF CONTRACT

### BID DOCUMENTATION

#### 1) COMPETENCY OF THE CONTRACTOR

This bid is open for contractors with a Construction Industry Development Board (CIDB) data base grading of at least 2CE.

***Failure to provide the applicable CIDB registration certificate will invalidate the bid.*** The contractor is to submit evidence of his/her OWN registration. CIDB registration of possible sub-contractors would be recommended, but will not make up for non-registration by the contractor quoting/bidding for the work. The Department reserves itself the right to disqualify any quote/bid in the event of substantial unsatisfactory reports being obtained about the proponent of such a quote/bid. *ANNEXURE F gives the assessments criteria for the evaluation of the bid on functionality.*

#### 2) BIDDERS TO CHECK COMPLETENESS OF DOCUMENT

The Bidder is required to check the number of consecutively numbered pages and should any found to be missing or in duplicate, or the text of figures indistinct, or should there be any doubt or obscurity as to the meaning of any part of these documents, the Bidder must ascertain the true meaning or intent of the same prior to the submission of his/her Bid, as no claims arising from any incorrect interpretation will be admitted.

#### 3) COMPULSORY INFORMATION REQUIRED FROM BIDDERS

All schedules, which accompany the Bid Form, form an integral part of the Bid and must be duly completed in every detail. Failure to do so will render the Bid ineligible for consideration. The Bidder must submit his Bid with **all pages of the Bid document initialled**. Failure to initial each page may result in the Bid being disregarded. The Bidder must retain for his own use a copy of the Specification and all Schedules submitted.

#### 4) ALTERATIONS TO BID DOCUMENTS

No unauthorized alteration or addition shall be made to the Form of Tender, to the Schedule of Quantities or to any other portion of the original text in the Bid Documents. If any alteration or addition is made, or if the Schedule of Quantities is not properly completed, the Bid may be rejected.

Any amendment or correction in the Bid document of the Tendered amount/sum/rate or other entry must be affected only by deleting the incorrect entry and writing the correct amount/sum/rate just above it in INK. Each and every amendment/correction must be initialled by the signatory of the Bidder. The use of "TIPPEX" or any other similar substances to make corrections and/or alterations ANYWHERE in the Bid document is NOT permitted and any Bid altered/amended in such a manner may be declared invalid or disregarded.

#### 5) SCHEDULE OF VARIATIONS

If the Bidder chooses to suggest alternatives in his bid proposal, these should be *at least* of equal standards to the original specifications. All materials used must be SABS approved. In the case of variations being suggested, the Bidder must describe the full details of such qualification or

variation on the appropriate form (See SBD: Section M). Should there be insufficient space to fully describe the nature and details of the qualification or variations on the prescribed form (Section M of the SBD) then the details of the qualification or variation must be set out on separate sheets of paper which must be securely attached to the prescribed form and which must be referred to on the prescribed form (SBD: Section M). If subsequently required, the Bidder shall submit fully detailed plans and calculations of the variations or alternative bids in the form requested by the Department.

## **6) APPLICABLE STANDARDS: SPECIFICATIONS & MATERIALS**

For the purpose of this Contract the relevant SANS specifications shall apply- specifically SABS 1200: *Standardized Specification for Civil Engineering Construction* specifications shall apply. The following sections shall in particular apply here: SABS 1200 AA - 1986 (General - Small Works), SABS 1200 DA -1988 (Earthworks - Small Works) and SABS 1200GA - 1982 (Concrete - Small Works). All materials including concrete blocks, lintels, damp proofing, plumbing and drainage materials, steel structure, windows, doors, paints etc... to be SANS approved and installed to applicable standards specified by SANS, NBR, or the manufacturer. The Bid shall refer to "*the Standard (Abridged) Preamble for all trades*".

## **7) VALIDITY PERIOD FOR BID**

Bids shall remain valid for a period of 120 days from date of the closing of the Bid.

## **SITE CONDITIONS AND FACILITIES AVAILABLE:**

### **8) COMPULSORY PRE-BID BRIEFING MEETING**

A compulsory pre-Bid tender briefing and consultation meeting will be held with prospective Bidders. Attendance at the meeting will be compulsory and non-attendance shall invalidate any Bid. (See attached Compulsory site inspection certificate to be completed) The date and time of the meeting will be published in the Bid Advertisement.

### **9) HANDOVER OF SITE TO CONTRACTOR**

Site hand over will only be applicable "as and when" actual works order is issued after agreement has been reached between the Department and designated the Contractor and an SLA has been signed by both parties.

The Contractor will be introduced to the project participants following the award of an order. The site will be handed over to the Contractor who will control the site for the contract duration. Only the Contractor's own employees, Contractor's local labour and Departmental Representatives will be allowed on site. The Contractor is responsible for the administration, control and security on the site at all times during the contract duration.

### **10) WATER AND POWER**

It is assumed that there is no power or piped water available on site. The Contractor shall make the necessary arrangements for the provision of any water and power. No payment will be made for the provision or use of these services and the cost of these shall be included in the tendered amount.

### **11) LOCATION OF CAMP**

The Contractor's camp may be erected on the site of the works but must meet the approval of the Engineer, project beneficiaries and land owners. No persons other than a night watchman may sleep in the camp, without the approval of the local participants and Chairperson.

## **12) HOUSING OF CONTRACTOR'S EMPLOYEES**

No housing is available for the Contractor's employees and the Contractor shall make his own arrangement for housing his employees and transporting them to and from the site. However it may be possible to arrange temporary local accommodation for the Contractor's staff with the participants. The Contractor is in all respects responsible for the housing and transporting of his employees, and for the arrangement thereof, and no extension of time due to any delays resulting from this, will be granted.

## **13) LOCAL LABOUR**

Unskilled labour may be available from the project participants or local community. The Contractor and the Departmental representative (local Extension officer) may negotiate with the participants in this regard to establish all the conditions for the utilization of the local labour, provided that at least official gazetted minimum wages to be paid. Nobody besides those directly involved with the project (i.e.: the Contractors workers and local labour) are allowed on site. The Contractor shall provide his own trained and skilled labour. The Contractor will be responsible for all hiring, payment, housing and transport of any and all labour used for the contract duration.

## **14) SECURITY & RISK**

Except for the necessary security personnel no person shall be allowed on the construction site after normal working hours. The Contractor shall be responsible for all plant, machinery, equipment and materials on site. The Engineer shall not be responsible for any lost, damaged or stolen property or materials. Should any of these situations arise; no allocations will be made in terms of finances or time. The cost of providing security on site should be included in the P's & G's items 1.1 and 1.2 of the Schedule of Quantities.

## **15) MATERIALS: DELIVERY, ON & OFF-LOADING, STORAGE & RESPONSIBILITIES**

The approved contractor shall be responsible for the safe delivery, loading, off-loading, handling and storage of any equipment and materials on site. All equipment, materials and plant stored on site must be suitably protected against deterioration through any cause whatsoever, including damage or loss by theft or otherwise. The Contractor shall remain fully responsible for all material and plant etc. until the completed works are handed over and has been officially accepted by the Department.

## **16) EXISTING ROADS, MUNICIPAL PAVEMENTS, ETC.**

The Contractor is advised that he will be held responsible for any damage to the existing paving, roads, municipal pavements, fences, boundary walls, etc., and will have to make good at his own cost any damage caused by him or his staff to existing infrastructure.

## **17) DAMAGE TO PROPERTY**

If the Contractor or his workmen while engaged in the execution of the contract, shall break, deface, injure, destroy or allow to fall into disrepair any part of the Works or property belonging to the Employer, or any private property including: buildings, paving, roads, fences, walls or grounds contiguous to the premises of the Employer on which he or they may be employed, the Contractor will be required to made good, in a perfect and workmanlike manner, at own expense all damage to the approval of the Employer. The Completion Certificate will not be issued until the Employer is satisfied that all necessary remedial work has been satisfactorily completed.



The Contractor shall take every precaution against damage or nuisance being caused by dust both to the properties of the Employer and all surrounding properties and shall indemnify the Employer against any claim that might arise there from.

#### **18) UNDERGROUND CABLES AND PIPES**

If such services is/are discovered, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until safe to proceed. Should the Contractor damage underground cable or pipes such damage shall be repaired as soon as safe and possible by the Contractor. The cost of making good such damage will be met by the Contractor as this must be covered by the Contractors works insurance.

#### **19) DAILY RAINFALL RECORDS**

The Contractor shall keep **daily rainfall records** and submit them to the Department's representative at every site meeting, or fortnightly by fax in the absence of such visit. No additional payment shall be made for the supply and installation of the rain gauge or for the keeping of the rainfall records and all costs must be included in the scheduled items. Submission of rainfall figures is required for the granting of permission of extending the contract period on the basis of inclement weather.

#### **20) INSPECTION OF WORK**

The Head of Department or his Representative may at all reasonable times have access to the Works and/or the workshops or other place where work is being prepared for this Contract for inspection. The Engineer may request that evidence of the quality or strength of any materials be supplied by the contractor as may think necessary.

Should the Head of Department or his Representative consider any materials objectionable or if it shall appear to him at any time during the construction, or prior to the expiry of the defect liability period, that any part thereof has been executed with unsound or imperfect materials or with unskilled or imperfect workmanship, the Engineer will notify the Contractor who shall cause the objectionable materials to be instantly removed from the premises and to be replaced by good and suitable materials, and shall rectify or reconstruct the Works in whole or part, as the case may be at the Contractors own proper cost or charge.

- The engineer must inspect and approve all excavations prior to fixing any reinforcement;
- The engineer must inspect and approve all reinforcement and shuttering if applicable, prior to pouring any concrete.

#### **21) NOTICE OF COVERING WORK**

The Contractor shall give due notice to the Head of Department or his Representative whenever any work or materials are intended to be covered in with earth or otherwise in order that their correct dimensions and quality may be ascertained before being covered, and in the event of any such work or materials being covered without such notice having been given, the work or materials shall be uncovered at the Contractor's expense on instructions given by the Employer.

## **COMPETENCY OF THE CONTRACTOR**

### **22) CONTRACTOR TO PROVIDE EVERYTHING NECESSARY**

The Contractor shall provide everything necessary for the proper execution of the Works according to the true intent and meaning of the Drawings and Specification taken together. The Contractor shall provide without extra charge all assistance and everything reasonably necessary for proving the quality of work done as may be required by the Engineer.

### **SUB-CONTRACTED WORK**

The Contractor shall **not sub-contract the whole** of the contract. In case the Contractor decides to subcontract part of the work he shall obtain written consent of the Engineer. Any such consent shall not relieve the Contractor from any liability or obligation under the contract and he shall be fully liable for the acts, defaults and neglects of any sub-contractor, his agent or employees. The Contractor remains fully responsible and accountable for all aspects of the work (quality, timorousness and budget).

### **23) VARIATIONS / 'AS BUILT' DETAILS**

No variations or alterations may be made without the prior approval of the Regional Engineer. As the work progresses, the Contractor shall keep full records of all amendments to and deviations from the specifications as issued to the Contractor at the start of the contract. These details will, where appropriate, be noted on the supplied drawing. All alterations will be deemed to have a zero additional cost implication. If any additional works are required that have an additional cost implication then these must first be authorized in writing by the Regional Engineer. Refer to Clause 41: Ancillary Materials, Services And Equipment.

### **24) VERIFICATION OF EXPERIENCE**

The Bidder will be required to produce adequate and sufficient references to enable the Department to inspect previously completed projects and assess the capacity of the Bidder. The Bidder shall provide such information in Annexure C - Additional Information. The Bidder must have extensive experience with plant hire, earth moving, dams, road building and related construction and will provide proof of this work experience which will be subject to verification by the Departmental Engineer or his delegated representative.

### **26) EQUIPMENT & RESOURCES**

The Bid shall in Annexure C - Additional Information and by way of supplementary information satisfy the Department that sufficient equipment is possessed to execute the services or an indication shall be given as to the manner in which such equipment would be sourced. Should the Bidder not be able to prove possession of or ability to access sufficient equipment, the Bid will be wholly disqualified. The Department reserves the right to investigate the existence and/or proposed sourcing of equipment.

### **27) LABOUR CAPACITY**

The Bidder will be required to satisfy the Department that a sufficient and experienced labour force is employed or that sufficient experienced labour can be acquired to complete the services and produce a fair quality of workmanship. The Contractor shall only employ such persons on the Works as are thoroughly efficient and of good character. If in the opinion of the Head of Department or his Representative any person employed by the Contractor misconducts himself or is likely to cause or has caused quarrels, or delay, or is incompetent, the Contractor when so directed by the Head of Department or his Representative shall at once remove such person from the site.

## **PRELIMINARY CONDITIONS**

### **28) LOCAL AND OTHER AUTHORITIES NOTICES AND FEES**

The Contractor shall comply with and give notices required by any Act of Parliament, Act of the KwaZulu-Natal Provincial Legislature, Laws, Regulations and By-Laws of any Local Authority and/or any public service company or authority relating to the Works or with whose systems the same are or will be connected, and he shall pay and indemnify the Employer against any fees or charges demandable by law there under in respect of the Works.

The Contractor, before making any variation from the Drawings and Specification necessitated by such compliance, shall give to the Regional Engineer written notice specifying and giving the reason for such variation and applying for instructions in reference thereto. If the Contractor within twenty-one days does not receive instructions he shall proceed with the work conforming to the provision, regulation or by-law in question, and any variation necessitated as aforesaid shall be deemed a variation and dealt with as such.

### **29) INSURANCES**

All accepted approved contractors would be required to provide the following insurances for the project awarded to them:

- Registration with the Compensation Commissioner and compliance with the Compensation for Occupational Injuries and Diseases Act with regard to insurance.
- Unemployment insurance fund for all workers.
- Insurance against damage, destruction or loss caused by fire.
- Public Liability insurance.
- All risks (works) policy and Political for the value of the respective project plus 10%.

## **GENERAL CONDITIONS**

### **30) PROTECTION OF THE PUBLIC**

The Contractor will be required to pay particular attention to watching and warning lighting and must provide any necessary barriers, etc., required for the protection of the public in terms of the existing Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) as amended.

### **31) SITE SAFETY**

During the construction the regulations of the Occupational Health and Safety Act No. 85 of 1993 and Machinery and Occupational Safety Act (Act 6 of 1983) will apply. By submission of a Bid the Bidder acknowledges and agrees that, should this Bid be accepted, the Bidder, is an employer in his own right with duties as prescribed in the Occupational Health and Safety Act No. 85 of 1993 and amendments thereto and the corresponding Construction Regulations 2003 will ensure that all Works to be performed or machinery and plant to be used in the Works will be in accordance with the provisions of such regulations. The Bidder also agrees that he is aware of the fully understands all the provisions of such regulations.

All equipment, machinery, tools and safety equipment used on site are to be in a safe operating condition and are to be used in a safe and considerate manner by suitably trained and experienced workers. The Contractor is responsible for all such monitoring and control of site operations and equipment throughout the works for the entire contract duration. All necessary safety equipment required to construct the facility must be used by the workers where appropriate and are for the

contractor's responsibility and provisioning. A first aid box is to be provided and available at all times on site during working hours and is to comply with the requirements of the Occupational Health and Safety Act. The Contractor shall ensure the safety of all work left standing in an incomplete state during the construction and shall be responsible for all damage or loss caused by his failure to ensure the safety of such incomplete work.

Site operations requiring special attention include but are not limited to: Any excavations; plant, machinery and equipment operations; any chemical storage and usage whatsoever; any works requiring elevated personnel such as for roofing, elevated building works requiring ladders or scaffolding etc.; any works with overhead elevated operations or construction. Please also refer to item "Safety" in *Section C: Project Technical Specifications*.

### 32) INJURY TO PERSONS

The Contractor shall be liable for and shall indemnify the Employer/Engineer in respect of any liability, loss, claim or proceedings whatsoever, whether arising in Common Law or by Statute in respect of personal injuries to or death of any person whomsoever arising out of or in the course of or caused by the execution of the Works.

### 33) DISAGREEMENTS

#### Notice of disagreement:

The Contractor has the right by written notice to the Engineer to require him to consider any disagreement which he raises with the Engineer provided the said written notice shall be given within 14 days after the cause of disagreement has arisen.

#### Ruling on disagreements:

The Engineer shall give a ruling on the disagreement in writing to the Contractor no later than 14 days after his receipt of a written request from the Contractor requiring him to do so, failing which he shall be deemed to have given a ruling dismissing all the Contractor's contentions.

## **PRICING AND PAYMENT STRUCTURES**

### 34) PRICING

The Bidders will be required to Bid for all services, products and commissioning as specified in this document and associated plans. Partial bids will not be accepted. **If a Bidder does not Bid on all items, his/her Bid may be rejected.**

All prices tendered are to be in South African currency. All prices must exclude Vat. Vat must be added in at the end of the bill of quantities.

- All items as described in the project specification are to be priced in full.
- Unit Rates to exclude VAT.
- The costs for labour must be included in the rates/amounts tendered for the work. Wages will be at least the minimum gazetted wages for that area during the period the work is done and include Workman's Compensation, UIF, Health and Safety obligations etc.
- VAT must be filled in as the sub total followed by the complete price for the entire project.
- The tendered price must have your company stamp, date and be signed by an authorised person.

### 35) QUANTITIES OF WORK

The Contractor shall receive payment only for the items and quantities of works actually executed and approved by the Engineer. No claim for an extra or for any addition, or for any variation shall be entertained unless such extra, addition or variation was ordered in writing by the Head of Department. Such a variation will be dealt with under items 27 and 28: Ancillary Materials, Services

and Equipment only if the variation has an additional cost implication. No objection to the description or terms of the Order in writing will be entertained unless lodged in writing with the Head of Department within twenty-one (21) calendar days of the date of the order.

### 36) PROGRESS PAYMENTS

- 36.1 The contractor may submit claims for progress payments only on completion of the hereunder listed levels. Payment shall only be paid for claims, which are commensurate with the works actually executed and complete. NOTE: Payment will only be made against the construction progress as pertaining to build items. Movable items and materials on site are excluded from progress payments until they have been fully installed, fitted or built up.
- 36.2 If any item or part of an item in an invoice is disputed by the Engineer, the Engineer shall give notice of such with reasons.
- 36.3 The contractor shall be paid in ***accordance with the payment schedule which may provide for several part payments***. Refer to ***ANNEXURE B: Work Phase Schedule*** for the values of each phase. ***Please note these values are primarily estimates of what part the work phase constitutes of the entire project, and do NOT reflect the exact amounts paid per payment. Usually payment certificates reflect work done in several work phases, which have not necessarily all been completed.*** Verification of the % complete will be at the sole discretion of the Engineer.
- 36.4 ANNEXURE G presents a **pro forma payment certificate**. This will be used in conjunction with ANNEXURE B (Work phase schedule). The latter provides an approximate maximum to prevent over-payment of items that have been clearly over-priced.
- 36.5 Part payments will be made after the Department has approved the completion of each construction phase, in accordance with the retention clause (see Clause 39 below). The penultimate payment occurs after practical works completion. The final payment will be made after the 90 day retention period when the contractor has dealt with all defects.
- 36.6 If this contract involves the construction of more than one project/work, additional payments can be agreed upon and will be reflected in the Service Level Agreement.

### 37) RETENTION

A 10% retention will be withheld on the first part payment. The Department will pay out this retention as the final payment at final completion after expiry of the defect liability period (90 days after practical completion), the bidder having eliminated all defects, if any. *See also ANNEXURE A: Work Phases Schedule.*

### 38) DEFECT LIABILITY PERIOD

The contractor shall unconditionally guarantee all materials, workmanship related to the works for a minimum period of three (3) months. The guarantee shall cover any defects due to inferior materials and/or workmanship of the Contractor, or any of his sub-contractors, fair wear and tear excepted. The Contractor shall repair, remedy or replace any such defects, part or complete works without delay and at his own cost.

If any defects are not remedied within the period specified by the Head of Department, then the Head of Department shall have such defect repaired at the risk and cost of the Contractor by another Contractor whom the Head of Department deems to be proficient in the work without prejudice to any rights the Head of Department has against the defaulting contractor. The Head of Department will give written notice to the Contractor of such instances where he appoints another Contractor to remedy defects in the works.

### 39) ANCILLARY MATERIALS, SERVICES AND EQUIPMENT

Two fixed amounts of R30 000 (Item #15) and R50 000 (Item #17) have been set aside in *ANNEXURE E: Pricing Schedule* to cover any unforeseen expenditure not provided for in the Schedule of Quantities and which could occur due to project specific circumstances. If such a situation were to occur according to the contractor, he will notify the Engineer and seek his approval for expenditure against this item. Provided that approval was given, the contractor will be paid proven expenditure, plus the tendered mark up.

While the Schedule of quantities makes provision for an estimated 80 hrs of work per project it is possible that some of the projects will be completed using less resources than estimated. This may result in a time and cost saving which at the discretion of the Engineer, can be used to do additional work at other projects within the total order amount. In the event of accumulated savings arising from several projects within the same order it may be considered to complete an additional project using the tendered rates provided that the order value is not exceeded.

Conversely, the estimated 80 hrs may in certain cases not be sufficient to complete a project. This may result in the order amount being insufficient to complete all the projects. At the discretion of the Engineer one or more of the projects may be cancelled to prevent the order from being exceeded.

An approved method of obtaining quotations before purchasing of material (Item #24) must be followed. The quotations must be presented to the Engineer for approval before an order is issued for the purchase of material. A percentage mark-up must be included in the Schedule of Quantities which will be added to the tender price.

The same applies to Item #17 for the supply of Specialist Subcontractors, Emerging Subcontractors, Employment of Local Labour (not Own Labour) and the hire of Plant not listed.

#### **40) SERVICE LEVEL AGREEMENT**

The successful Bidder and the Department will sign a Service Level Agreement prior to commencement of works. A proposed schedule of work must be provided by the contractor for the approval of the Engineer within 2 (two) weeks of receiving notification of a successful bid.

#### **41) COMMENCEMENT OF THE WORKS**

The Department will organize a site hand-over to the contractor who will then be introduced to the project stakeholders and participants. The site shall only be accessible to contractor staff and Departmental representatives while work is in progress. The site(s) will be handed back after practical completion. Site establishment must start **within one week**, and the actual works **within one week** after hand-over of the site, provided that an official order has been issued and that no exceptional circumstances such as inclement weather or other outside the control of either party to the contract prevail. In the case the work has not commenced within three weeks of the hand-over and no attenuating circumstances for the delay can be provided, the Department reserves itself the right to cancel the contract and appoint one of the other contractors that have been appointed for similar work in another district.

#### **42) COMPLETION OF THE WORKS**

Practical completion of the work must be within the time stipulated under “**Special Conditions**”.

#### **43) RATE OF PROGRESS**

The Works shall be completed within the time period indicated on the official order form. If the Works are delayed by cessation of work by any workmen, inclement weather, or by any omissions, additions, substitutions or variations of the Works, or of any items of work, labour or material, or by another causes beyond the Contractor’s control then the Contractor shall have the

right within twenty-one days of any such cause of delay arising, to apply in writing to the Department to extend the date of completion, stating the cause of delay and period of extension applied for. The Department upon receipt of such written application may by order in writing extend such date of completion by a period to be determined, or may refuse to extend such date of completion, or may postpone giving a decision upon such application until completion of the Contract period set out in sub-clause (a) of this clause. The date of completion will be extended only to the extent approved by the Department.

Should the Contractor fail to apply in writing for an extension within the time set out above, or should the Department refuse to grant any extension in writing, then the Contract period provided by sub-clause (a) of this clause shall not be exceeded.

When the Works are completed the Department will give a completion certificate and the date of such certificate shall be the date of commencement of the guarantee period.

#### **44) TIME TO BE OF THE ESSENCE**

Time shall be considered as the essence of the Contract. If, therefore, the Contractor fails to commence work or the Works or to proceed with and complete the Works in compliance with the projected timeframes, then the Head of Department shall have the right in his/her absolute discretion to adopt and exercise all or any of the following courses wholly or partly, viz: -

- To direct the Contractor, in writing, on any day named therein to suspend and discontinue the execution of the Works, and to withdraw himself and his workmen from the said Site or Sites, and thereupon: -
- To make any Contract or Contracts by calling for Bids or otherwise with any other Contractor or Contractors for the completion of the Works, or any part thereof, at such times and upon such terms as to the Department shall deem best.
- To provide such number of men, or purchase such materials, or both provide the men and purchase the materials as to him shall seem fit and proceed with and complete the said Works.

In relation to the foregoing provisions the Department shall charge any sums of money which may be paid by the Department for completing the said Contract against the Contractor and if such amount shall exceed this Contract, then the Department shall have the right to recover such excess or any balance thereof from the Contractor by legal proceedings.

#### **45) WORK SCHEDULE & PROGRESS PAYMENTS**

The contractor is to supply a Gantt chart with the proposed times of completion of each phase. The progress payments suggested in **ANNEXURE B** serve as a guideline for part payments. However, the contractor, in consultation with the Engineer, may deviate from this as long as the claim does not exceed the actual progress made.

### **SPECIAL CONDITIONS**

#### **46) PERIOD OF COMPLETION**

Each project is to be completed within the stipulated timeframe agreed to in the **Service Level Agreement**. In case of the rehabilitation of more than one project/work, an extended period could be agreed upon, which will be part of the Implementation plan/Work schedule as drawn up by the contractor before commencement of the works and included in the Service Level Agreement.

#### **47) PENALTY CLAUSE / FINES FOR LATE OR NON-COMPLETION**

If the contractor does not complete the work within the time stipulated and no extenuating circumstances can be given for the delay, the Department may take action against the service

provider as detailed in the "General Conditions of Contract" Annexure A of the STANDARD BID DOCUMENT.

The total will be subtracted from the retention allowance. If the contractor fails to complete the works and the Department is forced to employ another contractor to complete the works, the defaulting contractor will be held liable for the costs as far they exceed the original total Bid value. In addition: Penalties for late completion may be deducted up to a maximum of 0.05% of the contract value of the number of project/works delayed per/working day delay.



## C) PROJECT TECHNICAL SPECIFICATIONS

### 1) SCOPE OF CONTRACT

This Contract will be one of several utilized for the construction and maintenance of infrastructure including roadwork's, project/works, associated water reticulation, storm water drainage, waterways and contours.

### 2) PRELIMINARIES AND GENERAL

The contractor is to note that all insurances (administration of UIF, workman's compensation, works, public liability etc.); site and equipment safety; site establishment and security; services (water and electricity); testing of materials and any specialist services are for the contractors responsibility and attention throughout the contract duration until handover of the project.

Please also refer to general conditions of contract. The Department reserves the right to stop progress of the works until these conditions are complied with.

(NOTES) Refer to Annexure E: Preliminary and General - Items 1.1 and 1.2 excludes the labour and the transport of plant and equipment. The cost of providing security on site should be included in the P's & G's items 1.1 and 1.2 of the Schedule of Quantities.

The Contractor, at least, is required to be able to make available any one or more items of plant, labour and equipment as listed under Table 1. It is a condition of the contract that, should the contractor be unable to provide additional construction units over and above the minimum specified, the Employer shall have the right to make use of units from the nearest approved contractor either from the same district or nearest district in which plant is available.

It is also a condition of the contract that should an item of plant not listed in the schedule be required, then it will be sourced set out in clause 40 of the General Conditions of Contract.

#### a) Plant and Equipment

TABLE 1		
NO.	DESCRIPTION	POWER RANGE, CAPACITY OR MASS
1	MEDIUM BULLDOZERS (Cat D6H Range)	110 to 130kW
2	TRACTOR LOADER BACKHOE	60 to 70 kW
3	TRACKED EXCAVATORS	80 to 100kW
4	SELF-PROPELLED VIBRATING ROLLERS (PAD-FOOT +10t STATIC LOAD)	80 to 90kW
5	SELF-PROPELLED WATER BOWSERS	10 000 cu. metre
6	TIPPER TRUCKS	5 to 10 cu. metre
7	ARTICULATED DUMP TRUCKS	10 to 13 cu. metre
8	SMALL CONCRETE MIXERS	200/150

i. Bulldozers

All bulldozers are to be fitted with rippers and the medium dozers fitted with hydraulically operated blade tilt and angle mechanisms.

ii. Excavators and Tractor Loader Backhoe

The excavators and TLB are to be provided with pipe slings or chains to allow for the laying of pipes of between 600 mm and 1 200 mm diameter.

iii. Self-Propelled Water Bowsers

The water bowsers (standard capacity of 10m<sup>3</sup>) are to be fitted with pumps which allow for both the self-loading and distribution of water. The self-loading pump must be capable of filling the bower at a minimum rate of 1 000 litres per minute. Should this not be possible the Contractor must supply a suitable static loading pump at his own expense. The pump used for discharging the water must also be capable of discharging the load at a rate of not less than 1 000 litres per minute.

iv. Concrete Mixers

Concrete mixers are to be fitted with rubber tyred wheels so they can be towed around site. The rate bid for each concrete mixer shall include for the supply of three concrete wheelbarrows per 150 litres of output.

b) Labour

Description
Labourers
Semi-skilled labourers
Skilled labourers
Senior Plant Agent

i) Labourers

Labourers supplied by the contractor shall be provided with a pick, a shovel, protective clothing and boots. The labourers shall be required to undertake general manual work.

ii) Semi Skilled Labourers

Semi-skilled labourers supplied by the contractor shall be provided with all tools and protective clothing in accordance with the *Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)*.

iii) Skilled

Skilled labourers supplied by the contractor shall be provided with all tools and protective clothing in accordance with the *Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)*.

iv) Senior Plant Agent

One Senior Plant Agent will be required to assist with the supervision of the work. The Senior Plant Agent will be supplied with a LDV and must be included in the bill of quantities.

c) Special Notes

- i) The plant and labour as listed above is provisional only and is an estimate of the requirements for this project and is not to be taken as an undertaking that all the above will be hired, and if hired, required for the full contract period.
- ii) No plant or labour is to be brought onto site until specifically ordered in writing by the Engineer.
- iii) The initial plant and labour requirements are to be on site and ready to commence work within 14 days of receipt of the Letter of Acceptance. Subsequent labour and plant requirements are to be on site within 14 days of a written order.
- iv) In the event that any plant, (excluding plant supplied on a add hock basis), trucks, or labour which has been hired is to be released prior to the end of the contract period, the Contractor will be advised in writing and given a minimum of 14 days' notice. Time lost due to a breakdown during this period may, at the Engineer's discretion, be added to the 14 day period before the item will be released. There shall be no notice period for trucks.
- v) The rate bid for all personnel listed under Item 1.2(b) of this section is to include for the clothing, tools and items as listed together with transportation to and from the site each day and the provision of accommodation. No payment will be made for any personnel listed under Item 1.2(b) of this section on rain days.
- vi) It is a requirement that only suitably experienced and competent personnel be brought onto site. The Contractor is therefore advised not to bring any personnel onto site without the prior consent of the Engineer. The Engineer reserves the right to determine the suitability of all personnel for the position for which they are to be employed.
- vii) The Contractor is required to give preference to local labour when appointing unskilled labour. The Contractor is also required to ascertain whether any semi-skilled labour such as gangers, artisan builders, etc. can be employed locally before importing such personnel from other areas.

### 3) CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

#### 3.1 Camps and Ablution Facilities

3.1.1 The Contractor will be required to establish camp in the area or areas in which work is to be carried out. The works to be carried out will vary as will the size of the establishment required to service the work.

Provision has been made in the schedule of rates for site establishment to suit work requirements.

3.1.2 The Contractor shall place the camp for himself and his employees only on the site indicated by the Engineer's Representative. No trees or bushes shall be cut by the Contractor or by any of his employees without the written consent of the Engineer's Representative and then only where he may direct. No shooting, trapping or hunting of game of any description either by the Contractor or any of his representatives shall be permitted in the vicinity of the camps. The Contractor will not be required to make any payment for the use of these sites.

3.1.3 The Contractor is to provide suitable temporary accommodation for his employees with adequate ablution facilities and a supply of potable water. The standard of accommodation and the location of all facilities shall comply with the requirements of any authorities concerned, as well as those of the Engineer's Representative.

During construction, the Contractor's camp staff living quarters and other facilities shall be maintained in a neat, hygienic and tidy condition.

3.1.4 The Contractor shall provide, at his own expense, suitable latrines for the use by his staff on the works in such a manner and at such points as shall be approved by the Engineer's Representative and the Contractor shall strictly enforce their use.

3.1.5 On vacating a camp site the Contractor shall ensure that the sites are left in a clean and tidy condition and that all unused materials, broken down plant, etc., are removed from the site.

## **3.2 Guarding of Camp and Plant**

3.2.1 The Contractor shall be responsible for the guarding and watching of the camp/s and plant at night. Allowance must be made to guard the main camp/s as well as for additional plant camps at different locations.

3.2.2 There shall be no separate payment for the provision of night watchmen or guards.

## **3.3 Fuel Trailer**

3.3.1 The Bidders attention is drawn to Clause 5.4 (e) of this section regarding refueling.

3.3.2 Bidders are to allow in their rates for the provision of a mobile fuel trailer for the refueling of the plant on site.

## **3.4 Payment for Transportation and Establishment on Site**

3.4.1 The establishment requirements of the Contractor and Engineer on site will vary from site to site depending on the type and quantity of work to be undertaken.

The establishment of a camp for the Contractor on site will be paid for as a lump sum to provide for all fixed expenditure including the transportation of the labour and staff to site at the commencement of the works.

3.4.2 Payment against the lump sum item shall be made in two installments consisting of 50 % at the commencement of the Works and 50% on the satisfactory completion of the contract. Payment of the first installment will only be considered when all the plant and labour, as tendered, are on site and have commenced work and when the equipment and materials as specified have been supplied and/or erected and are ready for use. Payment of the final instalment will only be considered when the requirements of Clause 3.1.5 of this section have been complied with in full.

3.4.3 Payment for the transportation of plant to site at the commencement of the Works, or when required, will be as quoted in the Schedule of ANNEXURE E. The tendered amount shall include for the removal of the item off site when no longer required. For the purposes of estimating

the travel costs between the Contractor's base and the site, the site shall be deemed to be the location as indicated by the co-ordinates provided in the document or as indicated by the Engineer at the site inspection.

3.4.4 There shall be no payment for the transportation of plant replacing broken down plant or plant which has been rejected for any reason whatsoever.

### **3.5 Transportation of Items of Plant and Equipment to the Site**

3.5.1 Payment will be made for the transportation to the site from the Contractor's base, at the commencement of the Works or when required, (e.g. bulldozers, graders, grid rollers, tracked excavators, vibratory rollers, tractors, front end loaders, tractor loader backhoes, water bowsers, tip trucks and articulated dump trucks water pumps, concrete mixers, etc. based on the Department of Transport's travel rates (R/km) published monthly.

### **3.6 Transportation of Plant between Sites**

3.6.1 The plant will normally move between sites or areas of the site under their own power during the contract period and this journey will be paid for in terms of on the Department of Transport's travel rates (R/km) published monthly for the remaining project/works as progressive project/works are completed.

### **3.7 Repairs and Maintenance of Plant**

3.7.1 The cost of any personnel necessary for the maintenance, servicing or repair of the plant shall be borne by the Contractor.

3.7.2 The cost of any spare parts required for the operation, maintenance, servicing or repair of the plant shall be borne by the Contractor.

3.7.3 The maintenance and servicing of the plant shall not be undertaken during normal working hours without the authority of the Engineer's Representative.

3.7.4 In order to maximize output and efficiency it is essential that the time lost to plant breakdowns is kept to an absolute minimum.

## **4) SITE ESTABLISHMENT**

4.1 Apart from the Contractor's own establishment which should allow for the housing of a maximum of 5 operators and where the Contractor does not make provision for an Engineer on site. The Engineer will operate from his own motor vehicle.

4.2 Portable toilet will be supplied for the operators and site visitors.

4.3 The ownership of all items supplied for site establishment shall remain with the Contractor on completion of the Contract.

4.4 Payment for the supply, erection and subsequent dismantling and removal of the establishment shall be included in the Contractor's rate for establishing on site.

## 5) PLANT

### 5.1 CONDITION OF PLANT

- 5.1.1 It is a requirement that all items of plant offered be in a good condition.
- 5.1.2 The condition and year of manufacture of the plant, especially of the heavy plant will be taken into account and may invalidate the Bid if considered to be unsuitable.
- 5.1.3 The Employer reserves the right to call for the history sheets and repair records of any item which is more than 5 years old.
- 5.1.4 The Employer reserves the right to inspect any item of plant offered.
- 5.1.5 Plant which is in a poor state of repair and could be subject to frequent breakdowns will not be considered and may invalidate the Bid.
- 5.1.6 The light delivery vehicle is to be no more than 3 years old and shall not have completed more than 60 000 kilometers.

### 5.2 Hire Charges

- 5.2.1 As required by the Schedule of Rates applicable to each bid the hire charges shall be based on either:
- (a) the working time:  
or
  - (b) a weekly charge  
or
  - (c) the distance travelled (kilometres).
- 5.2.2 The rate for plant working time shall include provision for the use of the specified plant, a competent operator for each item of plant and any incidental labour required to operate plant ancillaries (where required) whose wages shall be payable by and whose accommodation shall be provided by the Contractor, whose further obligations shall include the provision free of charge of all fuel, lubricants, spare-parts, wearing parts, servicing, repairs, depreciation and insurance necessary for the satisfactory operation of, or ancillary to, the hire contract.
- 5.2.3 The weekly charge, where applicable, shall include the use of the specified plant irrespective of the hours worked by it. It shall also include the provision, free of charge, of all items specified in Clause 6.2.2 hereof, except where otherwise stated in the Contract document.
- 5.2.4 If required the plant shall operate matching ancillary plant, owned by the Employer, such as a towed roller, at no additional cost to the Employer.
- 5.2.5 In addition to the operator of the plant all costs of other personnel required for the operation of the plant is to be included in the rates bid.

### 5.3 Working Time

- 5.3.1 Working time shall be expressed in clock hours, as recorded by the vibrograph clock or approved GPS monitoring system, to the nearest 0,25 hour unless otherwise specified, and shall include time when an item of plant is travelling on site or between sites for the purposes of work under its own power.

### 5.3.2 Recording of work

- (a) Prior to the commencement of the work the Contractor shall attach approved new vibrograph clocks / GPS monitoring devices to all hourly paid items of plant. These vibrograph clocks / GPS monitoring devices will be used by the Engineer's Representative to assess the hours worked each day by the said plant.
- (b) The vibrograph clocks / GPS monitoring devices are to be of a type and make approved by the Engineer which will indicate clearly working time, standing time and any time during which the engine is idling but the item of plant is not performing useful work. Any long periods of idling (i.e. in excess of 10 minutes) at any one time which in the opinion of the Engineer's Representative is beyond that which is required for normal operating conditions will not be paid for as working time.
- (c) The Contractor will not be reimbursed separately for the purchase of the vibrograph clocks / GPS monitoring systems and the Contractor is to make allowance for the supply of these devices in his hourly rates.  
The rate bid shall include for maintenance of the vibrograph clocks / GPS monitoring devices together with all other incidentals including cards recording devices etc.
- (d) Only in cases of emergency or when expressly authorized in writing by the Engineer's Representative may an hourly rated item of plant operate without a working vibrograph clock or GPS monitoring device.  
**Under no other circumstances is an hourly rated item of plant to be allowed to operate without a working vibrograph clock or GPS monitoring device.**
- (e) A minimum of three spare working vibrograph clocks are to be kept on site at all times.
- (f) All hourly paid items of plant shall also be fitted with an hour meter which operates off either the alternator or oil pressure. Hour meters operating off the ignition system are not acceptable. A continuous record of hour meter readings shall be kept and no gaps between readings will be permitted.

**Payment for hourly rated items will be made based on the readings recorded on the vibrograph clocks or GPS monitoring devices. Under no circumstances will the hour meter reading be used for this purpose.**

### 5.3.3 Front-end Loaders, Excavators, TLBs

The working time for which payment will be made shall be based on the information provided by the vibrograph or GPS monitoring system and in respect of these particular items of plant only shall, at the discretion of the Engineer's Representative, include periods of up to 15 minutes between operating periods when the engine is idling or switched off. All other time in excess of 15 minutes when the engine is idling or switched off between operating periods shall qualify as standing time and be paid for where applicable in terms of the conditions governing payment.

### 5.4 Standing Time

Standing time shall be the time expressed in clock hours or parts of clock hours to the nearest 0.25 hour unless otherwise specified when the plant is idle on site, and shall include time when the plant is not being operated due to:

- (a) servicing of the plant,
- (b) mechanical breakdown,
- (c) inclement weather or unworkable ground conditions as a result of inclement weather which in the opinion of the Engineer's Representative precludes the use of the machine(s) with or without ancillary equipment,
- (d) no operator or driver,
- (e) awaiting fuel or lubricants,
- (f) inability of the plant to be worked due in the opinion of the Engineer's Representative to the unavailability for any reason of an interdependent item of a composite team of plant hired under this contract;
- (g) the absence from site of the Senior Plant Foreman or any other member of the Contractor's staff at any time when, in the opinion of the Engineer's Representative and also in terms of the Contract, their presence is required.
- (h) Public holidays
- (i) Saturdays and Sundays
- (j) Shutdown for pay
- (k) Compulsory Christmas Break

No standing time will be paid for any plant and for any of above reasons.

## **5.5 Payment**

### **5.5.1 Hourly Rated Items**

- (a) Payment for approved working time shall be made at the rate bid for working time for all hours worked during the week.

### **5.5.2 Weekly Rated Items**

- (a) Payment shall be made at the bid rate or adjusted with a proportional adjustment based on the maximum allowable working hours for the week to allow for a reduction in payment when the item cannot be worked for any of the reasons laid down in Clause 5.4 of this section.
- (b) In the event of an item not being on site or unable to work for any reason whatsoever for the full week, payment shall be reduced proportionally on the basis of the total number of days the item was on site and working, divided by the number of normal working days in the week.

## **6) TIP TRUCKS AND ARTICULATED DUMP TRUCKS**

### **6.1 Hire Charges**

- 6.1.1 The tip and articulated dump trucks will be hired on a fixed rate per cubic metre of vehicle capacity (loaded loose) on site for haul distances less than one kilometre. Prior to the commencement of work the Engineer will check the stated capacities of the trucks to be



hired. Contractors will not be permitted to increase the capacity of a truck by adding side pieces, unless such side pieces are constructed in metal and become a permanent part of the truck body.

- 6.1.2 Under Material Haul (Travel), Bidder's shall quote a rate per cubic metre kilometre for moving vehicles from load site to off-load site and back. The distance between sites shall be determined and payment for the number of vehicles ordered to move from one site to another shall be this distance in kilometers times the rate quoted under this Haul Classification. Material Haul Rates will be used for the payment of the mass haulage of large quantities of materials (gravels and fill material).

## 6.2 Payment

- 6.2.1 Payment against Material Haul Classification in the Schedule of Quantities shall only be made for specified loads and authorized journeys and no payment shall be made to the Contractor for any distance performed in movement to and from his camp each day or for any extra distance traveled for the purpose of maintaining or repairing of a truck.

- 6.2.2 There shall be no payment whatsoever for any standing time occasioned for any reason.

## 6.3 Recording of Loads

- 6.3.1 As soon as possible after the commencement of work each day, the haul distance for the day shall be agreed between the Contractor and the Engineer's Representative. The Contractor shall station a checker at the off-loading point to measure and record the total number of loads delivered per day by the Contractor's vehicles. This checker will count and record loads as well as verify full loads.

- 6.3.2 The Senior Plant Foreman will be personally responsible for ensuring that all trucks when hauling gravel are fully loaded to the stated or agreed capacity. Loads which are found to be below the agreed capacity will be rejected, Dumps are not to be spread until ordered by the Engineer's Representative.

## 6.4 Size of Trucks

In order to dump the correct quantity of gravel as instructed, it is desirable that all the tippers be of equal capacity. Other considerations being equal, preference will be given to Bidder's having trucks of equal capacity.

## 7) WATER BOWSERS

### 7.1 Hire Charges

The hire charge for water bowsers shall be as follows :

- (a) a rate per week ,
- (b) a rate per cubic metre kilometre. (extra over (a) for distances exceeding 1 km).

### 7.2 Weekly Rate

- 7.2.1 The rate per week per water bowser shall include for the use of a water bowser irrespective the hours worked or the distance traveled by it during the week.

- 7.2.2 The rate for water bowser working time shall include provision for the use of the specified water bowser, a competent operator for each water bowser and any incidental labour

required to operate the water bowsers ancillaries (where required) whose wages shall be payable by and whose accommodation shall be provided by the Contractor, whose further obligations shall include the provision free of charge of all fuel, lubricants, spare-parts, wearing parts, servicing, repairs, depreciation and insurance necessary for the satisfactory operation of, or ancillary to, the hire contract.

- 7.2.3 The payment per week for each water bowser under this item shall be based on the rate bid per week and the number of days the items are available and able to work during that week.
- 7.2.4 In the event of a water bowser not being on site or unable to work for any reason whatsoever for the full week, besides the application of the penalty as detailed under Clause 48 of the General Conditions of Contract, payment will be reduced proportionally on the basis of the total number of normal working days during the week when the item is available and able to work, divided by the total number of working days in the week. A reduction in payment will also be made, on a proportional basis, when a water bowser cannot be worked for any of the reasons laid down in Clause 5.4 of this section of the Project Specifications.
- 7.2.5 The rate bid per week, irrespective of capacity, shall include for any unladen travel resulting from the movement of the source point from which the water is to be obtained on the same site.
- 7.2.6 The rate bid per week shall be in respect of the stipulated capacity of the water bowser. Should a water bowser be provided by the Contractor the capacity of which differs from that specified in this document by more than 10%, The rate bid shall be adjusted in direct proportion with the capacity differential, i.e.

**Adjusted rate = bid rate x (actual bowser capacity/stipulated capacity)**

### 7.3 Working Rate

- 7.3.1 An additional payment, over and above the weekly rate, shall be made for the amount of water hauled and the distance the water is hauled.
- 7.3.2 Payment shall be based on the rate bid per cubic metre kilometre, the quantity of water hauled and the average distance between the loading point and the off loading point. This rate will apply only if the travel distance is greater than 1 km.
- 7.3.3 The distance used for the calculation of payment shall be the loaded distance only. There shall be no payment whatsoever for the return journey.
- 7.3.4 Loads shall be recorded in the same manner as tip trucks as detailed in Sub-Clause 6.3.1 of this specification.
- 7.3.5 Except where specifically authorized in writing by the Engineer's Representative the water bowsers shall, on all laden journeys, travel at full capacity. In the event of it being found that any water bowser is traveling at below full capacity the entire load and all previous loads for that day will be totally rejected for payment.

### 7.4 Travel between Sites

- 7.4.1 Payment for the movement of water bowsers from one site to another shall be as bid on the Schedule of Quantities.

## 8) SAFETY PRECAUTIONS ON SITE DURING CONSTRUCTION

- 8.1 All machines are to be fitted with a 5kg ozone friendly fire extinguisher and 1 fully fitted 1<sup>st</sup> aid box is to be available at all times.
- 8.2 All safety equipment required to construct the facility are for the contractor's responsibility and provisioning. Examples include: safety and protective clothing; sound scaffolding; false work and bracing; ladders etc... all equipment, tools and safety equipment are to be in a safe operating condition and must be used by the workers where appropriate.
- 8.3 Refer to general conditions for site safety as included in the regulations of the ***Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)***. Site operations and conditions requiring special attention include but are not limited to:
- Equipment, machinery, tools: (stationary or mobile) such as vehicles, generators, pumps, drills, augers, picks, spades, hand tools, ladders, scaffolding to be in a safe operating condition and are to be used in a safe and responsible manner. The contractor is responsible for all such monitoring and control of site operations and equipment throughout the works for the entire contract duration.
  - Lifting and lowering of materials or personnel in any way whatsoever.
  - Personnel access and operations at raised levels or on raised platforms or scaffolding.
  - Excavation works and holes are to be clearly indicated to prevent injury to personnel.
  - Potential ingress of water on/through the site.
  - Potentially hazardous services may be present on site such as water and sewerage mains, electricity cables etc...
  - Chemical transport, storage and usage whatsoever - this includes chemical contact through equipment use such as fuels and oils; materials such as creosote, paints, solvents, cement, concrete...
  - Barriers and safety cordons, safety and warning signage, sirens, lighting etc. as required
  - Safety equipment: Safety and protective clothing, gloves, goggles, masks, hard hats, boots, harnesses etc.
  - A first aid box is to be provided and available at all times on site during working hours and is to comply with the requirements of the Occupational Health and Safety Act.
  - Additional risks associated with specific methods of construction selected by the contractor which are not necessarily covered in the above.

## 9) Contact details

For technical enquiries please contact the following persons:

The CIT - District Support: Dam rehabilitation coordinator.  
Mr. JJ Jacobs: 033 - 355 9307 / 082 959 0415

The Acting Chief Engineer  
Mr. A. Seymour: 033 - 355 9457 / 074 125 1622.

## **ANNEXURE A : General scope of Works for the Rehabilitation of Project/works**

**Please note these values are primarily estimates of what part the work phase constitutes of the entire project, and do NOT reflect the exact scope of works. The exact scope of works will be issued with the site handover and after a site visit after the official tender briefing. This site visit is compulsory and absence may disqualify your tender. Only actual work will be paid for and the contractor has to proof hours, volumes and all measurable items on the bill of quantities.**

<b>Work phase No.</b>	<b>POSSIBLE SCENARIO DESCRIPTION OF PROJECT</b>	<b>Tick whichever is applicable</b>
<b>1</b>	<b>Preliminary and general/Site establishment</b> 1) Insurances, project risk, workman's compensation, UIF etc... 2) Project administration, services, external services, testing, safety, provision of all required equipment for works at required times etc... 3) Site preparation and establishment.	
<b>2</b>	<b>Reconstruction of spillways.</b> 1) Remove all obstacles from spillway eg. Trees, rocks stumps etc. 2) Repair erosion damage. 3) Re-level spillway and repair return to stream levels	
<b>3</b>	<b>Reconstruction of a breached earth embankment.</b> 1) Cut new levels, rebuild and repair breach. 2) Widen crest. 3) Reshape water side and downstream sides slopes to specification. 4) Re-core if dam is leaking.	
<b>4</b>	<b>Desilting of a dam basin.</b> 1) Removing of silt to restore capacity to original volume. 2) Work within the full supply level. 3) Dumping the spill in a predetermined area.	
<b>5</b>	<b>Rehabilitation of the spill area.</b> 1) Reshaping of the spill area to blend in to surroundings. 2) Contain the spill in the smallest are as possible to prevent environmental issues.	
<b>6</b>	<b>Road construction.</b> 1) Construction of infield roads and associated works according to the engineer's specifications.	
<b>7</b>	<b>Platforms.</b> 1) Cut, fill and compaction of all earth works	
<b>8</b>	<b>Any other earth moving works ordered by the engineer.</b>	

**ANNEXURE B :**

**Additional Information**

- Failure to provide the information required below will make it impossible to score enough points to pass the functionality assessment the bid in terms of ANNEXURE E.
- Use additional pages if the space offered below does not suffice.

**TABLE B1: DETAILS OF PLANT OFFERED**

ITEM NO.	ITEM	MAKE AND MODEL	REG.NO	POWER RATING OR CAPACITY	YEAR OF MANUF.	CONDITION	PRESENT LOCATION	REGISTERED OWNER
1	MEDIUM DOZERS (110 – 130 kW)			110 – 130 kW				
2	TRACKED EXCAVATORS (80 - 100 kW)			80 – 100 kW				
3	T.L.B. (60 - 70 kW)			60 – 70 kW				
4	VIB ROLLERS (PAD) (80 - 90 kW)			80 – 90 kW				
5	SELF PROPELLED WATER BOWSERS			10 000 m <sup>3</sup>				
6	TIPPER TRUCKS			5 – 10 m <sup>3</sup>				
7	ARTICULATED DUMP TRUCK			10 – 13 m <sup>3</sup>				
8	SMALL CONCRETE MIXER 200/150			200/150				

**TABLE B2: SCHEDULE OF ADDITIONAL PLANT OWNED BY BIDDER**

<b>ITEM NO.</b>	<b>ITEM</b>	<b>MAKE AND MODEL</b>	<b>REG.NO</b>	<b>POWER RATING OR CAPACITY</b>	<b>YEAR OF MANUF.</b>	<b>CONDITION</b>	<b>PRESENT LOCATION</b>	<b>REGISTERED OWNER</b>

**TABLE B3: SCHEDULE OF WORK CARRIED OUT BY BIDDER**

The Bidder must insert in the space provided below, a list of contracts completed by him during the past five (5) years, or contracts at present under construction by his firm.

**Note: ALL present contracts must be entered.**

Employer (Name, Telephone No, and Fax No.)	Engineer or Architect (Name, Telephone No., and Fax No.)	Nature of Work	Value of Work	Year Completed

**ANNEXURE C: CURRICULA VITAE of the SENIOR PLANT AGENT**

*The Bidder is to complete or attach the C.V of his proposed Senior Plant Agent to this page*



## **ANNEXURE D: SCHEDULE OF QUANTITIES PER PROJECT**

### **CONTENTS**

- 1 Preamble to Schedules of Quantities**
- 2 Schedules of Quantities**

## **1 PREAMBLE TO SCHEDULES OF QUANTITIES**

- 1.1 The Schedules of Quantities, which are to be completed by the Bidders, are to be read in conjunction with the balance of the Contract Document contained herein.
- 1.2 The intent of the Schedules of Quantities are to provide a basis for the evaluation of the bid rates.
- 1.3 The quantities as set out in the Schedules of Quantities are reasonable estimates of the probable times or quantities that may be required to complete the work and are not therefore to be considered as binding or to be taken as the actual or correct times or quantities.
- 1.4 The actual quantities required may be more or less than the billed quantities depending on the circumstances encountered during construction, the rates bid and the instructions and directions of the Engineer.
- 1.5 The final times and quantities measured and accepted and certified for payment, and not the times and quantities in the Schedule of Quantities shall be used for determining the payments to the Contractor.
- 1.6 The validity of the Contract or the rates bid shall in no way be affected by differences between quantities in the Schedule of Quantities and the quantities finally certified for payment or by any difference between the Bid Sum and the final value of the Contract.
- 1.7 The value of the Contract or the final amount to be paid by the Employer to the Contractor for the due and faithful performance of the Contract, which value or amount will be determined by the Employer, shall be the sum to be ascertained from the actual hours, days and weeks during which the plant and labour were utilized, accepted and certified for payment at the accepted rates and prices entered in the priced Schedule of Quantities together with other payments due in terms of the Contract.
- 1.8 **Arithmetical Errors**  
The Employer shall adjust arithmetical in the extension of rates and totals in the bid, and the Bidder will be informed on the effect of any effect of any corrections on his Bid Sum prior to the award of the Contract. In no case will bid rates be adjusted when correcting such errors.
- 1.9 **Imbalance in Bid Rates**  
In the event of there being bid rates or prices which are declared by the Employer to be unacceptable to him, because they are either excessively low or high or not in proper balance with other rates, the Bidder may be required to produce evidence and advance arguments in support of the bid rates or prices objected to. If after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the rates bid or prices objected to, he may request the Bidder to amend these rates and prices along the lines indicated by him.

The Bidder may or may not thereupon alter and amend the rates and prices objected to and such other related prices as are agreed to by the Employer, but this shall be done without altering the Bid Sum. Should the Bidder fail to amend his bid in a manner acceptable to the Employer, or not at all, it may prejudice his bid.

**ANNEXURE E: SCHEDULE OF QUANTITIES**

Check the units carefully before inserting the rates.

Haladu Dam – Nquthu

ITEM NO.	ITEM	UNIT	QUANTITY	RATE	AMOUNT (excl VAT)
1	<b>PRELIMINARY AND GENERAL (exclude labour and transport of plant and equipment)</b>				
	1.1) Insurances, project risk, SHE obligations Project administration services, community liaison, testing, safety, provision of all required equipment for works at required times etc..., Site Prep and de-establishment	L.S	1		
	<b>PLANT</b>				
2	MEDIUM DOZER (110 – 130 kW)	hour	50		
3	TLB	hour			
4	TRACKED EXCAVATOR (80 – 100 kW)	hour	50		
5	VIB ROLLER (PAD) (80 - 90 kW)	hour	25		
6	CONCRETE MIXER ( 200/150)	day			
	<b>WATER HAUL</b>				
7	SELF PROPELLED WATER BOWSER 10 m <sup>3</sup>	week	1		
8	WORKING RATE (extra over 1km)	m <sup>3</sup> km	2500		
	<b>MATERIAL HAUL (with Tipper or ADT)</b>				
9	HAUL on Site (per cubic metre)	m <sup>3</sup>	300		
10	HAUL more than 1 km (cubic metre km)	m <sup>3</sup> km	10		
	<b>LABOUR AND PERSONNEL:</b> (inclusive of wages, workman's compensation, UIF etc...				
11	LABOURER	day	5		
12	SEMI SKILLED LABOURER	day	5		
13	SKILLED LABOURER	day	1		
14	SENIOR PLANT AGENT (INCL. L.D.V.)	day	5		
	<b>MATERIALS</b>				
15	PURCHASE OF MATERIALS	P.S.	-		R30 000.00
16	Plus MARKUP on Item # 15		Markup	%	
	<b>OTHER</b>				
17	Specialist subcontractors, emerging subcontractors, employment of local labour and the hire of plant/equipment not listed above.	P.S.	-		R50 000.00
18	Plus MARKUP on Item # 17		Markup	%	
	<b>INITIAL ESTABLISHMENT OF PLANT ON SITE</b>				
19	Establishment of heavy items of plant from contractor's base to site. (eg. transport of dozer, TLB, ADT, excavator, roller to any location within the district)	No.	1		

Prices to exclude VAT (VAT to be included when actual orders are issued)

**ANNEXURE F: EVALUATION OF BIDS (FUNCTIONALITY)**

**TABLE F1: GUIDELINES FOR EVALUATION**

CRITERIA	GUIDELINES FOR EVALUATION
<b>ABILITY</b> Capacity	➤ Proven access to equipment and resources to carry out the works to the standard as directed in the technical specifications.
<b>CAPABILITY</b> Competency Experience	➤ Demonstration of competency to render the required service & providing proof of appropriate registration with the CIDB. ➤ Bidders to provide evidence of similar projects completed recently i.e. not less than 2 projects and not more than 5 projects in the past 5 years.
<b>NOTE:</b> In order to ensure meaningful evaluation, bidders must submit detailed information in substantiation of the evaluation criteria mentioned.	

Submissions will be scored using the below scoring table. This bid will be evaluated on functionality which will determine the capability, ability and capacity of the prospective bidders to provide the required goods or services for the department. A minimum score of 70% must be obtained by the bidder in order to qualify to be evaluated further for price.

**TABLE F2: ASSESSMENT CRITERIA FOR THE EVALUATION OF THE FUNCTIONALITY**

EVALUATION MATRIX (CTD ON NEXT PAGE)	Points %	Score
>> DEMONSTRATION OF COMPETENCY TO RENDER THE REQUIRED SERVICE		[20]
A) <u>Submission of CIDB Registration Certificates</u>		20
1. Contractor has submitted a CIDB registration certificate with a grading that <b>exceeds the minimum required grading</b> as per table in Section B, Clause 1.		20
2. Contractor's registration has submitted a CIDB registration certificate with the <b>minimum required grading</b> as per table in Section B, Clause 1, <b>plus</b> has a registration pending for a grading that <b>exceeds the minimum required one</b> .		18
3. Contractor has submitted a CIDB registration certificate with the <b>minimum required grading</b> as per table in Section B, Clause 1.		16
4. Contractor has submitted a CIDB registration certificate with the <b>minimum required grading</b> as per table in Section B, Clause 1, but the registration has expired <b>less than 3 months ago</b> .		12
5. Contractor has submitted a CIDB registration certificate with the <b>minimum required grading</b> as per table in Section B, Clause 1, but the registration has expired <b>more than 3 months ago</b> .		8
<i>To be continued on next page &gt;&gt;&gt;&gt;</i>		
<b>EVALUATION MATRIX (CTD)</b>	<b>Points %</b>	<b>Score</b>

	<p><b>&gt;&gt; DEMONSTRABLE EXPERIENCE OF THE PROSPECTIVE SERVICE PROVIDER'S ENGAGEMENT IN SIMILAR WORK:</b></p> <p><i>B) Verifiable experience (e.g. CIDB assessments/reference letters) with dam construction and/or reinforced concrete work as listed under ANNEXURE C2, AND/OR completion to the full satisfaction of the Dept of 1 or more projects/works</i></p> <ol style="list-style-type: none"> <li>1. 2 projects/works or more, plus other reinforced concrete works &gt; 10 m<sup>3</sup></li> <li>2. 2 projects/works or more, no projects with reinforced concrete works &gt; 10m<sup>3</sup></li> <li>3. 1 project/work, plus 2 or more projects with reinforced concrete works &gt; 10m<sup>3</sup></li> <li>4. 1 project/work only, no other projects with reinforced concrete works &gt; 10m<sup>3</sup></li> <li>5. 2 or more projects with reinforced concrete works &gt; 10 m<sup>3</sup></li> <li>6. 1 project with reinforced concrete works &gt; 10 m<sup>3</sup></li> <li>7. Two or more projects with reinforced concrete works ≤ 10 m<sup>3</sup></li> <li>8. One project with reinforced concrete works ≤ 10 m<sup>3</sup></li> </ol> <p><i>C) Ownership &amp; Use of Equipment and resources (ANNEXURE C1)</i></p> <ol style="list-style-type: none"> <li>1. Contractor lists all crucial equipment &amp; resources and owns all</li> <li>2. Contractor lists all crucial equipment &amp; resources, owns some &amp; hires some</li> <li>3. Contractor lists all crucial equipment &amp; resources and hires all</li> <li>4. Contractor lists some crucial equipment &amp; resources and owns all</li> <li>5. Contractor lists some crucial equipment &amp; resources, owns some &amp; hires some</li> <li>6. Contractor lists some crucial equipment &amp; resources and hires all</li> <li>7. Contractor lists no crucial equipment and resources.</li> </ol>	<p><b>[70]</b></p> <p><b>50</b></p> <p>50</p> <p>45</p> <p>40</p> <p>35</p> <p>30</p> <p>25</p> <p>20</p> <p>15</p> <p><b>20</b></p> <p>20</p> <p>16</p> <p>12</p> <p>12</p> <p>8</p> <p>4</p> <p>n/a</p>
<p>3</p>	<p><b>&gt;&gt; SUBMISSION OF A SHORT DESCRIPTION OF THE INTENDED IMPLEMENTATION METHODOLOGY INDICATING TIME FRAMES TO COMPLETE THE WORKS.</b></p> <ol style="list-style-type: none"> <li>1. Implementation methodology has been submitted with original bid and methods and time frame are realistic.</li> <li>2. Implementation methodology plan has been submitted with original bid, but methods and time frame are unrealistic or show lack of capability.</li> <li>3. Implementation methodology was only submitted after a follow up request.</li> <li>4. Implementation methodology plan was not submitted.</li> </ol>	<p><b>[10]</b></p> <p>10</p> <p>6</p> <p>4</p> <p>n/a</p>
<p><b>TOTAL (Sections 1,2&amp;3)</b></p>		<p><b>100%</b></p>

**ANNEXURE G: PROFORMA PAYMENT SCHEDULE BASED ON ACTUAL QUANTITIES FOR ONE PROJECT/WORK (MEASUREMENTS TO BE VERIFIED BY THE ENGINEER)**

Name of PROJECT/WORK:		Location:			
Claimant:		Date:		Claim No.	
ITEM NO.	ITEM	UNIT	QUANTITY	RATE	AMOUNT (excl VAT)
1	<b>PRELIMINARY AND GENERAL (exclude labour and transport of plant and equipment)</b>				
	1.1) Insurances, project risk, SHE obligations Project administration services, community liaison, testing, safety, provision of all required equipment for works at required times etc..., Site Prep and de-establishment	L.S			
	<b>PLANT</b>				
2	MEDIUM DOZER (110 – 130 kW)	hour			
3	TLB	hour			
4	TRACKED EXCAVATOR (80 – 100 kW)	hour			
5	VIB ROLLER (PAD) (80 - 90 kW)	hour			
6	CONCRETE MIXER ( 200/150)	day			
	<b>WATER HAUL</b>				
7	SELF PROPELLED WATER BOWSER 10 m³	week			
8	WORKING RATE (extra over 1km)	m³ km			
	<b>MATERIAL HAUL (with Tipper or ADT)</b>				
9	HAUL on Site (per cubic metre)	m³			
10	HAUL more than 1 km (cubic metre km)	m³ km			
	<b>LABOUR AND PERSONNEL:</b> (inclusive of wages, workman's compensation, UIF etc...				
11	LABOURER	day			
12	SEMI SKILLED LABOURER	day			
13	SKILLED LABOURER	day			
14	SENIOR PLANT AGENT (INCL. L.D.V.)	day			
	<b>MATERIALS</b>				
15	PURCHASE OF MATERIALS (SCOC CL 31.1)	P.S.	-		R30 000.00
16	Plus MARKUP on Item # 15		Markup	%	
	<b>OTHER</b>				
17	Specialist subcontractors, emerging subcontractors, employment of local labour and the hire of plant/equipment not listed above.	P.S.	-		R50 000.00
18	Plus MARKUP on Item # 17		Markup	%	
	<b>INITIAL ESTABLISHMENT OF PLANT ON SITE</b>				
19	Establishment of heavy items of plant from contractor's base to site. (eg. transport of dozer, TLB, ADT, excavator, roller to any location within the district)	No.			
	<b>ADDITIONAL TRANSPORT</b>				
21	GENERAL TRANSPORT AT DOT RATES	km			
	<b>TOTAL PRICE :</b>				

CONSTRUCTION  
GUIDELINES FOR  
REHABILITATION  
OF STOCK  
WATERING DAMS  
IN KWAZULU  
NATAL



## Contents

1. Preface.
2. The Embankment (Dam Wall).
3. The Spillway and Wing wall.
4. Taking care of permanent water flow in a spillway.
5. The Basin.
6. Spoil Area.
7. Sheet 1 of 4.
8. Sheet 4 of 4



## **1. Preface**

This short guideline does not replace any of the other manuals on earth dam construction available in the Department of Agriculture and Rural development . This should be seen as a supplement to the design manuals and a tool that will help contractors perform the required rehabilitation of small stock watering dams in Kwazulu Natal.

Each and every dam that has been identified and assessed will have its own and unique scope of works that will be discussed with the contractor before they move on site to do the rehabilitation. Most of these dams are in rural areas and some are in a bad state of disrepair. The biggest reason for this is non-maintenance over a long period. Add to this the degradation of the catchments and you have a recipe for dam failure.

Only basic principles will be discussed and where more details are necessary the local engineering section must be involved.

The District Engineering Section must perform regular site inspections and site reports and site instructions must be in writing and copies kept by both parties for reference.

## 2. The Embankment (Dam Wall)

The embankment is the earth bank that is constructed in a suitable site to trap or retain runoff water from a specific catchment.

A general cross section is shown in SHEET 1 of 4, indicating the following elements; the crest, upstream slope, downstream slope, core and the base of a wall. The wall has to be reconstructed to resemble this cross section.

Damage to this embankment can occur in several ways.

### a. **Slip circles on downstream face.**

Normally this occurs when the side slopes are being eroded and becomes too steep. The line of saturation through the bank emerges above the natural ground level. The downstream side becomes wet and unstable and eventually collapses. Both sides of the bank should be reconstructed to correct the slopes. The method of construction will be discussed later in the manual.

### b. **Breach through overtopping the embankment.**

This occurs when the dam was designed with a too small spillway or too small freeboard in the spillway. Corrective construction will be discussed later on in the guideline.

Construction methods will be discussed referring to inserted drawings and figures. Therefore we will start with reconstruction of the embankment along the entire length of the bank.

## Building up the banks

### Setting out the base

Start by staking out the base distances of both the waterside and backside of the bank. This will help correcting the slopes.

The base of the banks must be pegged out at regular intervals and the distance of that can be calculated with the following formula:

Base distance (BD) = height of wall(H) x slope(S) +  $\frac{1}{2}$  x crest width(C).

Example: The height of the bank at any given point at the centre of the crest is 1.85m. Crest width = 3m, Slope waterside = 1:3, Slope backside = 1:2 THUS:  $BD = H \times S + \frac{1}{2}C$

For waterside:  $BD = H \times S + \frac{1}{2}C$

$$BD = 1.85 \times 3 + \frac{1}{2} \times 3 \quad \therefore BD = 7.05m$$

For backside:  $BD = H \times S + \frac{1}{2}C$

$$BD = 1.85 \times 2 + \frac{1}{2} \times 3 \quad \therefore BD = 5.20$$

Also see **Table 1** below.

Height of wall in metres	Side slopes: Ratio vertical to horizontal	
	Downstream	Upstream
0 – 2.5	1 : 2	1 : 2
2.5 – 3.5	1 : 2	1 : 2.5
3.5 – 5.0	1 : 2	1 : 3

**Table 1**

The banks have to be stripped clean of all vegetation and loose material. Cut steps into the existing bank at regular intervals. This can be done on the waterside too if there is no water captured in the basin. Find suitable clay soils within the full water level and start building up the bank in layers of 250mm thick and compact the layers from the bottom upwards to required compaction. Make sure that the keying of the new earthworks into the old one is done correctly. Check moisture content of both the old and new earthworks. If and when the moisture content is too low, water must be added per layer to ensure good binding of the earthworks.

**Repairing a breach.**

A breach will occur when the spillway is too small and there is not a proper freeboard available. A flood will cause overtopping of the bank where there is a low point on the bank.

The vertical slopes of the breached area must be shaped to get a 1 : 1 slope. All loose material must be removed. Cut steps into the old existing banks. Construction must be done in the same way as with the rebuilding of the banks. Build up in layers of 250mm and compact the soil making sure that a good bond between old new earthworks is established. Add water if the soil moisture is not acceptable. Enough soil moisture will ensure good bonding.

### **3. The Spillway and Wing wall**

The spillway is the most important part of the dam. This is the safety valve of any dam. Great care must be taken when construction takes place. Taking the centreline of the main embankment as the starting point, the width must be pegged from there. See **SHEET 4 of 4** as a self-explanatory guide for the construction of the spillway.

When an embankment (wall) has been built where erodable soils are present it is highly recommended that concrete sills and gabionbaskets be used to minimise erosion. The district engineering staff will specify these additions where necessary.

There is no fixed length for the wing wall. The length must be such that it prevents the return to stream water flow away from the backside of the main bank.

### **4. Taking care of permanent water flow through the spillway – SHEET 1 of 4**

No permanent water flow must be allowed in a spillway. When a breach is present, use that area to place an appropriately specified pipe in the breach area to divert the permanent flow. When no breach is present the pipe must be placed where the shortest distance to return to stream will be achieved.

When water is present in the dam the following method of construction is proposed.

Build a small coffer dam with sandbags on the waterside of the dam where the inlet is going to be. Pump the water out of the coffer dam. As the sandbags are not a watertight barrier, pumping should be done regularly. Do the slab excavations swiftly when dry enough and place the concrete as soon as possible. Construct the walls of the drop inlet as soon as the slab is cured. At the same time dig the trench through the wall towards the drop inlet position. Do not break through until the inlet structure is complete and ready to accept the pipe. Keep pumping water out the coffer dam.

Construct the drop inlet box 150 – 200mm below the spillway level. All excess water must flow through the drop inlet and not through the spillway. Use a 600mm storm water drain pipe cut to the correct height or alternatively build the box using standard bricks.

Remember to start the excavation from the lowest release point backwards towards the wall. At every change of direction, a small drop inlet must be constructed. This will help to create inspection pits.

Place the pipe in the trench, construct the collars around the pipe as per engineer's design and compact the backfill in layers until the complete trench is backfilled.

Alternatively, if a pipe cannot be fitted in the wall, a concrete canal section has to be constructed in the spillway. See **SHEET 1 of 4(section x-x)**.

Divert water away from the construction side.

Again, start the excavation downstream of the embankment. Place the concrete section in compacted soil. Construct cut off collars every 4-6 meters. Do not open the inlet to the canal until the last section has been placed and secured. Use sandbags if necessary.

The return to stream outlet must be safe. Stone pitch if needed.

### **5. The Basin**

The basin must be assessed to determine how much silt has accumulated over the years. The bottom of the basin can be assessed even when there is water present. The bucket of the excavator can be used to "feel" the bottom for solidness. This will tell the operator if it is safe to enter the water and to how deep to wade into the water.

If the water is too deep, piers must be constructed and the work can be done from these piers. The piers can be removed when the work has been completed.

When the basin is dry, silt can be scooped directly from the basin and loaded on the ADT's to be dumped in a safe predetermined location near the dam site. The silt must be levelled out in such a way as not to cause further problems in future.

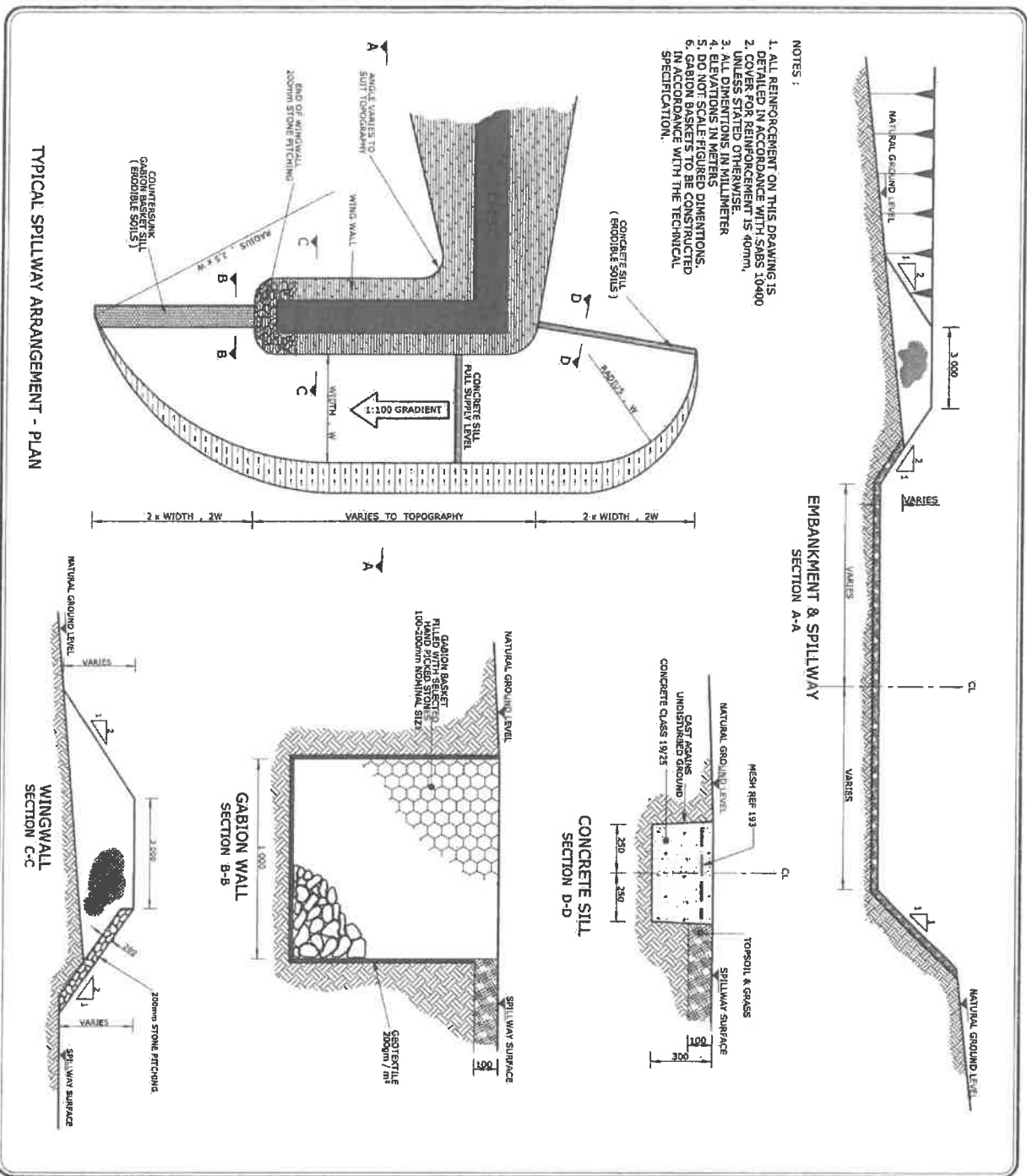
### **6. Spoil Area**

Special care must be taken in the area where the excess material is going to be spilled. Begin by placing the material on the back of the wall if no work is going to be done on the wall itself.

If there is a breach in the wall, find suitable material within the dam basin below the full level mark. Care must be taken not to increase the footprint of the existing dam area.

Find a suitable area for spoiling the soil and rehabilitate the area so that grass can grow and cover the area.





- NOTES:
1. ALL REINFORCEMENT ON THIS DRAWING IS DETAILED IN ACCORDANCE WITH SABS 10400
  2. COVER FOR REINFORCEMENT IS 40mm, UNLESS STATED OTHERWISE.
  3. ALL DIMENSIONS IN MILLIMETER
  4. ELEVATIONS IN METERS
  5. DO NOT SCALE FIGURED DIMENSIONS.
  6. GABION BASKETS TO BE CONSTRUCTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.

TYPICAL SPILLWAY ARRANGEMENT - PLAN

EMBANKMENT & SPILLWAY SECTION A-A

CONCRETE SILL SECTION D-D

GABION WALL SECTION B-B

WINGWALL SECTION C-C

OTHER RELEVANT NOTES -

Reference drawings

Page 1	Typical Wall Detail		
Page 2	Laying out, Design & Specification		
Page 3	Laying out / Specification		
No.	Date	Checked By	Description

\*Do not scale this drawing. Use figures indicated only. ALL DIMENSIONS TO BE ON CENTER UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ON THE DRAWING MUST BE REFERENT TO THE BENCHMARK AND RECORDED IN THE SITE INDICES HEREON.



ENGINEERING SUPPORT SERVICES  
4 PINOON AVENUE / BENTLEY BANGS  
HILTON / 2245 / PHONE: 055-2450300  
FAX: 0532452443

Designed By: _____	Date: _____	
Engineers Approval: _____	Date: _____	
Surveyed	Drawn	Checked

Project	
LIVESTOCK INFRASTRUCTURE MAINTENANCE PROGRAM	
Drawing description	
TYPICAL DAM WALL DETAIL FOR WALLS LESS THAN 5m HIGH	
Scale	Date
NTS	13/10/2015
Drawing number	SHEET
KZN AGRIC JVDM 20151002AM	4 of 4

## DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state\*, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest, where-
  - the bidder is employed by the state; and/or
  - the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.
  
2. **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**
  - 2.1 Full Name of bidder or his or her representative: .....
  - 2.2 Identity Number: .....
  - 2.3 Position occupied in the Company (director, shareholder etc): .....
  - 2.4 Company Registration Number: .....
  - 2.5 Tax Reference Number: .....
  - 2.6 VAT Registration Number: .....

\* "State" means –

- (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) any municipality or municipal entity;
- (c) provincial legislature;
- (d) national Assembly or the national Council of provinces; or
- (e) Parliament.



2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

Name of person / director / shareholder/ member: .....

Name of state institution to which the person is connected: .....

Position occupied in the state institution: .....

Any other particulars:

.....  
.....  
.....

2.8 Did you or your spouse, or any of the company's directors / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:

.....  
.....  
.....

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1 If so, furnish particulars.

.....  
.....  
.....

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between the bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.10.1 If so, furnish particulars.

.....  
.....  
.....

2.11 Do you or any of the directors /shareholders/ members of the company have any interest in any other related companies whether or not they are bidding for this contract? **YES / NO**

2.11.1 If so, furnish particulars:

.....  
.....  
.....

**DECLARATION**

I, THE UNDERSIGNED (NAME).....

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2.1 TO 2.11.1 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of bidder

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- 1 This Standard Bidding Document (SBD) must form part of all bids<sup>1</sup> invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).<sup>2</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
  - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- 4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

<sup>1</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.

<sup>2</sup> Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

\_\_\_\_\_

(Bid Number and Description)

in response to the invitation for the bid made by:

\_\_\_\_\_

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: \_\_\_\_\_ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - (a) has been requested to submit a bid in response to this bid invitation;
  - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - (a) prices;
  - (b) geographical area where product or service will be rendered (market allocation)
  - (c) methods, factors or formulas used to calculate prices;
  - (d) the intention or decision to submit or not to submit, a bid;
  - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
  - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

<sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

.....  
Signature

.....  
Date

.....  
Position

.....  
Name of Bidder

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**SECTION J**

**OFFICIAL BRIEFING SESSION/SITE INSPECTION CERTIFICATE**

N. B.: THIS FORM IS ONLY TO BE INCLUDED AND COMPLETED WHEN APPLICABLE TO THE BID.

Site/building/institution involved: .....

Quotation No: .....

Service: .....

\*\*\*\*\*

THIS IS TO CERTIFY THAT (NAME): .....

ON BEHALF OF: .....

VISITED AND INSPECTED THE SITE ON..... (DATE)

AND IS THEREFORE FAMILIAR WITH THE CIRCUMSTANCES AND THE SCOPE OF THE SERVICE TO BE RENDERED.

.....  
**SIGNATURE OF BIDDER OR AUTHORISED REPRESENTATIVE**  
(PRINT NAME)

**DATE:** .....

.....  
**SIGNATURE OF DEPARTMENTAL REPRESENTATIVE**  
(PRINT NAME)

.....  
**DEPARTMENTAL STAMP:**  
(OPTIONAL)

**DATE:** .....