TENDER DOCUMENT

BID No: ALMT 14/2025

THE CONSTRUCTION OF EMPULUZI/METHULA BULK WATER SUPPLY SCHEME IN CHIEF ALBERT LUTHULI LOCAL MUNICIPALITY, PHASE 1, EMPULUZI DAM

VOLUME 2

ISSUED BY	PREPARED BY
MUNICIPAL MANAGER	**CLIENT REPRESENTATIVE**
CHIEF ALBERT LUTHULI MUNICIPALITY PRIVATE BAG X719 CAROLINA 1185	KUFANIKIWA CONSULTING 11 DERBY PLACE, DERBY DOWNS OFFICE PARK, FOREST SQUARE, UNIT 6, WESTVILLE, 3630
Tell: +27 17 843 4000 Fax: +27 17 843 4001	Tell: 031 701 1038 Fax: 031 701 0963

***CIDB GRADING*: 9CE**

REGISTERED NAME OF TENDERER: _____

_____

TENDERED AMOUNT (**INCL. VAT**): _____

CLOSING DATE: **10th JULY 2026** TIME: **12H00**

VOLUME 2:C2 (PRICING)

CONTRACT

PART 1: AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE (Agreement)

OFFER

The TENDERER is to complete and sign the Form of Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works;

The Tenderer, identified in the Offer signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS

AMOUNT	AMOUNT IN WORDS
R……	

(firm)* (adjustable)*
*(delete which does not apply)

This offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

For the Tenderer _____ _____

(Name and address of organisation)

Name and signature of witness _____ **Date** _____

Acceptance

The EMPLOYER will complete and sign the form of Acceptance

By signing this part of the Form of Offer and Acceptance, the Employer identified below accepts the Tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Tenderer's Offer shall form an agreement between the Employer and the Tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract are contained in

Part 1 Agreement and Contract Data, (which includes this Agreement)

Part 2 Pricing Data

Part 3 Scope of Work

Part 4 Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the employer's agent (whose details are given in the Contact Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date of this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now the Contractor) within five (5) days after the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute binding contract between the parties,

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

For the Employer _____ _____

(Name and address of organisation)

Name and signature of witness _____ **Date** _____

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender,
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid become the subject of agreements reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here,
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here,
4. Any change or addition to the tender documents arising from the above arrangements and recorded here shall also be incorporated into the final draft of the Contract,

1 **Subject** _____

Details _____

2 **Subject** _____

Details _____

3 **Subject** _____

Details _____

4 **Subject** _____

Details _____

5 **Subject** _____

Details _____

6 **Subject** _____

Details _____

7 **Subject** _____

Details _____

8 **Subject** _____

Details _____

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and the Employer during the process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed and signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

For the Tenderer:

Signature(s)

_____ _____

Name(s) _____ _____

Capacity _____ _____

_____

(Name and address of organisation)

Name and signature of witness _____ **Date** _____

For the Employer:

Signature(s)

_____ _____

Name(s) _____ _____

Capacity _____ _____

_____

(Name and address of organisation)

Name and signature of witness _____ **Date** _____

C1.2 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

This Contract will be based on the “General Conditions of Contract for Construction Works – 3rd Edition 2015", issued by the South African Institution of Civil Engineering. (Short title: “General Conditions of Contract”) and can be obtained from:

SAICE Waterfall
Park Howick
Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
www.saice.org.za

Gauteng Province
Tel: (011) 805-5947/8
Fax:(011) 805-5971.

It is agreed that the only variations from the General Conditions of Contract 2015 are those set out hereafter under “Special Conditions of Contract”.

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered “SCC” followed in each case by the number of the applicable clause or sub clause in the General Conditions of Contract 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

2. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

The variations to the General Conditions of Contract are:

SCC 4.4.3 For conditions regarding selection of **LOCAL EMERGING SUB-CONTRACTORS** (LES Work), see additional clauses below.

The additional clauses to the General Conditions of Contract are:

LOCAL EMERGING SUBCONTRACTORS (LES)

The Contractor shall promptly, and in any event within a reasonable time after the Commencement Date, sub-contract a portion of the Works to the value of **thirty (30) percent** of the work specified in the Schedule of Works (excluding preliminary and general costs) ("the LES Work") to one or more of the local emerging sub-contractors notified by the Employer to the Contract ("the Local Emerging Sub-Contractors"), in strict accordance with, and subject to, the requirements set out in Paragraphs (i) to (x) of this Clause, as follows:

(i) The Contractor shall select the Local Emerging Sub-Contractor(s) to whom he is to sub-contract the LES Work by means of a competitive bidding process conducted strictly in accordance with the CIDB Standard for Uniformity in Construction Procurement and Best Practice Guidelines January 2009, and in doing so shall exercise all reasonable endeavours to ensure as inclusive and equal a distribution of the LES Work as shall be practicable amongst all the Local Emerging Sub-Contractors, taking into account price, competency and capacity only.

(ii) The Contractor shall, without reference to the Employer, consider only the competencies and capacity of each Local Emerging Sub-Contractor, be free to identify those components of the LES Work that he shall allocate to each Local Emerging Sub-Contractor.

(iii) Subject to paragraphs (iv) and (vii) of this clause, in the event that the Contractor fails to sub-contract and/or allocate the required quantum of LES Work or any portion thereof in accordance with this clause, the Engineer may either a) apply a penalty equal to 10% of the value of the shortfall, or b) make a determination regarding the setting aside of the LES Work so as to prevent the shortfall.

(iv) Subject to paragraph (vii) of this clause, and notwithstanding paragraph (iii) of this clause, in the event that the Contractor fails to sub-contract and/or allocate the required quantum of LES Work or any portion thereof in accordance with this clause by reason of his inability to reach agreement on price with one or more of the Local Emerging Sub-Contractor(s), the Engineer may, in his absolute discretion, advise the Employer to allow an increase in the Contractor's rates to so as to facilitate successful price negotiation. In the event that the Employer refuses to authorise an increase to the Contractor's rates or, in the event that the authorised increase in rates fails to facilitate successful negotiation between the Contractor and the relevant Local Emerging Sub-Contractor(s), the Contractor shall be relieved of his obligation to sub-contract the relevant portion of LES Work, always subject to paragraph (vii) of this clause.

(v) The rates to be applied by the Contractor in the sub-contracts with the Local Emerging Sub-Contractors for the LES Work shall at all times be based strictly on the rates applicable to the Contractor under the Contract, save for any adjustments allowed in terms of paragraph (iv) above.

(vi) The Contractor shall apply the same rates to each Local Emerging Sub-Contractor in respect of each component of the LES Work, such that, in the event that more than one Local Emerging Sub-Contractor is successfully selected for a single component of the LES Work, the same rates shall apply to each of the selected Local Emerging Sub-Contractors in respect of the said single component.

(vii) The Contractor shall not be under any obligation to employ a Local Emerging Sub-Contractor against whom the Contractor raises reasonable objection by written notice to the Engineer as soon as practicable, with supporting particulars in writing. In the event of failure on the part of the Contractor to prove reasonable objection to the satisfaction of the Engineer, the Engineer's determination shall be final and binding.

(viii) The Contractor shall be entitled to include within the Contract Price a maximum management fee of 10% in excess of the rates paid to the Local Emerging Sub-Contractors.

(ix) When tendering the Contractor shall have exercised all reasonable care not to distort any rates in such a way as to hinder or preclude his obligations under this clause, and, in the event that the Engineer determines the setting aside of the LES Work in terms of paragraph (iii) above, the Contractor shall be prevented from arguing that such LES Work is reserved not to be subcontracted.

(x) The Contractor shall submit a priced copy of the final agreed version of each proposed sub-contract with a Local Emerging Sub-Contractor ("the Final Draft LES Sub-Contract") to the Employer prior to the execution of such sub-contract. In the event that the Employer, in consultation with the Engineer, deems the price or any other term of any Final Draft LES Sub-Contract to be unduly onerous or unfair to the Local Emerging Sub-Contractor concerned, the Contractor shall modify the price and/or terms in accordance with the Engineer's reasonable instructions.

In sub-contracting the LES Work, the Contractor shall be responsible for performing the LES Work as if he had not sub-contracted. The Contractor shall be liable for the acts and omissions of the employees, sub-contractors and agents of the Local Emerging Sub-Contractors as if they were his own employees, sub-contractors and agents.

CONDITIONS OF CONTRACT FOR LABOUR-INTENSIVE CONSTRUCTION

Payment for the labour-intensive component of the works

Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work.

Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

Applicable labour laws

The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002 shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers, as reproduced below.

1 Introduction

1.1 This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (SPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a SPWP.
In this document –
"department" means any department of the State, implementing agent or contractor;
"employer" means any department, implementing agency or contractor that hires workers to work in elementary occupations on a SPWP;
"worker" means any person working in an elementary occupation on a SPWP; "elementary occupation" means any occupation involving unskilled or semi-skilled work; "management" means any person employed by a department or implementing agency to administer or execute an SPWP;
"task" means a fixed quantity of work;
"task-based work" means work in which a worker is paid a fixed rate for performing a task;
"task-rated worker" means a worker paid on the basis of the number of tasks completed;
"time -rated worker" means a worker paid on the basis of the length of time worked.

2 Terms of Work

2.1 Workers on a SPWP are employed on a temporary basis.

2.2 A worker may NOT be employed for longer than 24 months in any five-year cycle on a SPWP.

2.3 Employment on a SPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

3 Normal Hours of Work

3.1 An employer may not set tasks or hours of work that require a worker to work–

(a) more than forty hours in any week
(b) on more than five days in any week; and
(c) for more than eight hours on any day.

3.2 An employer and worker may agree that a worker will work four days per week.

The worker may then work up to ten hours per day.

3.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

4 Meal Breaks

4.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

4.2 An employer and worker may agree on longer meal breaks.

4.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

4.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5 Special Conditions for Security Guards

5.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

5.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

6 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

7 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

8 Work on Sundays and Public Holidays

8.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

8.2 Work on Sundays is paid at the ordinary rate of pay.

8.3 A task-rated worker who works on a public holiday must be paid –

(a) the worker's daily task rate, if the worker works for less than four hours;
(b) double the worker's daily task rate, if the worker works for more than four hours.

8.4 A time-rated worker who works on a public holiday must be paid –

(a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
(b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9 Sick Leave

9.1 Only workers who work four or more days per week have the right to claim sickpay in terms of this clause.

9.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

9.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.7 An employer must pay a worker sick pay on the worker's usual payday.

9.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

· absent from work for more than two consecutive days; or
· absent from work on more than two occasions in any eight-week period.

9.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

10 Maternity Leave

10.1 A worker may take up to four consecutive months' unpaid maternity leave.

10.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

10.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

10.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

10.5 A worker may begin maternity leave –

(a) four weeks before the expected date of birth; or
(b) on an earlier date –
(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
(ii) if agreed to between employer and worker; or
(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

10.7 A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months' employment, unless the SPWP on which she was employed has ended.

11 Family responsibility leave

11.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

(a) when the employee's child is born;
(b) when the employee's child is sick;
(c) in the event of a death of –
the employee's spouse or life partner;
the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

12 Statement of Conditions

12.1 An employer must give a worker a statement containing the following details at the start of employment –

(a) the employer's name and address and the name of the SPWP;
(b) the tasks or job that the worker is to perform; and
the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
the worker's rate of pay and how this is to be calculated;
the training that the worker will receive during the SPWP.

12.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

12.3 An employer must supply each worker with a copy of these conditions of employment.

13 Keeping Records

13.1 Every employer must keep a written record of at least the following –

(a) the worker's name and position;
(b) in the case of a task-rated worker, the number of tasks completed by the worker;
(c) in the case of a time-rated worker, the time worked by the worker;
(d) payments made to each worker.

13.2 The employer must keep this record for a period of at least three years after the completion of the SPWP.

14 Payment

14.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

14.2 A task-rated worker will only be paid for tasks that have been completed.

14.3 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

14.4 A time-rated worker will be paid at the end of each month.

14,5 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

14.6 Payment in cash or by cheque must take place –

(a) at the workplace or at a place agreed to by the worker;
(b) during the worker's working hours or within fifteen minutes of the start or finish of work;
(c) in a sealed envelope which becomes the property of the worker.

14.7 An employer must give a worker the following information in writing –

(a) the period for which payment is made;
(b) the numbers of tasks completed or hours worked;
(c) the worker's earnings;
(d) any money deducted from the payment;
(e) the actual amount paid to the worker.

14.8 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

14.9 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

15 Deductions

15.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

15.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

15.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

15.4 An employer may not require or allow a worker to –

(a) repay any payment except an overpayment previously made by the employer by mistake;
(b) state that the worker received a greater amount of money than the employer actually paid to the worker; or pay the employer or any other person for having been employed.

16 Health and Safety

16.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

16.2 A worker must –

(a) work in a way that does not endanger his/her health and safety or that of any other person;
(b) obey any health and safety instruction;
(c) obey all health and safety rules of the SPWP;
(d) use any personal protective equipment or clothing issued by the employer;
(e) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

17 Compensation for Injuries and Diseases

17.1 It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

17.2 A worker must report any work-related injury or occupational disease to their employer or manager.

17.3 The employer must report the accident or disease to the Compensation Commissioner.

17.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months.
The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

18 Termination

18.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

18.2 A worker will not receive severance pay on termination.

18.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

18.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

18.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

19 Certificate of Service

19.1 On termination of employment, a worker is entitled to a certificate stating –

(a) the worker's full name;

(b) the name and address of the employer;

(c) the SPWP on which the worker worked;

(d) the work performed by the worker;

(e) any training received by the worker as part of the SPWP;

(f) the period for which the worker worked on the SPWP;

any other information agreed on by the employer and worker.

CONTRACT SPECIFIC DATA

The following contract specific data are applicable to this contract.

Clause	Description
1.1.1.13	The "Defects Liability Period" is 12 months
1.1.1.14	The "Due Completion Date", or time for achieving Practical Completion is 60 months.
1.1.1.15	The "Employer" is the Chief Albert Luthuli Municipality.
1.1.1.16	The "Employer's Agent" is Mr M Ndlovu, Kufanikiwa Consulting.
1.1.1.26	The "Pricing Strategy" is re-measurement Contract.
1.2.1.2	The Employer's Agent address for receipt of communications and notices is: Telephone: (031) 701 1038 Facsimile: (031) 701 0963 Address (physical): 11 Derby Place, Derby Downs Office Park, Forest Square, Unit 6, Westville, 3630 Address (postal): Post net X817, New Germany,3600
1.2.1.2	The Address of the "Employer" Chief Albert Luthuli Municipality PO Box 24, Carolina, 1185
3.2.3	The Employer's Agent is required to obtain the specific approval of the Employer for the following functions or duties: a) Approve extension of time for practical completion in terms of Clause 5.12.1; b) Approve imposition of penalty for delay in terms of Clause 5.13.1; c) Issue of a Variation Order in terms of Clause 6.3.2; and d) Approve the use of contingency funds.
5.1.1 and 5.8.1	The special non-working days are public holidays, Saturdays, Sundays and the days on which the contractor grants the majority of his permanent workforce leave around the 15th December and the first Monday of the subsequent year.
5.3.1	The Contractor shall submit within 14 days from the Commencement Date the following documentation for approval by the Employer's Agent: a) Health and Safety Plan (Refer to Clause 4.3); b) Initial programme (Refer to Clause 5.6) and estimated cash flow; c) Security (Refer to Clause 6.2); d) Insurance (Refer to Clause 8.6); e) Proof of registration with the Workman's Compensation Commissioner; f) Valid original copy of Tax Clearance Certificate; and g) Written acceptance of appointment.
5.3.2	The time to submit the documentation required before commencement of the Works is 14 days.
5.4.1	The Site is located within inhabited areas, is generally accessible to the public and is not exclusive to the Contractor. The Contractor shall safeguard the public as statutorily required and shall coordinate assistance from the Community Liaison Officer (CLO) as nominated by the Employer.

5.1.1 and 5.8.1	The non-working days are Sundays. The special non-working days are indicated under Clause 5.1 above.
5.12	FORMULA FOR EXTENSION OF TIME IN RESPECT OF ABNORMAL RAINFALL **Extension of time in terms of Clause 5.12 of the general conditions of contract** in respect of abnormal rainfall shall be determined in terms of the method below for each calendar month or part thereof, unless the project specifications determine otherwise: $$V = (N_w - N_n) + (R_w - R_n)/20$$ Where: V: Extension of time in calendar days for the calendar month under consideration. N_w: Actual number of days during the calendar month under consideration on which a rainfall of 10mm and more is recorded. R_w: Actual total rainfall in mm recorded during the calendar month under consideration. N_n: Average number of days, derived from rainfall records, on which a rainfall of 10mm and more was recorded during the relevant calendar month as per the data tabulated hereinafter. R_n: Average total rainfall in mm for the relevant calendar month, derived from rainfall records, as tabulated hereinafter. Where the extension of time due to abnormal rainfall has to be calculated for portion of a calendar month, pro rata values shall be used. Should V be negative for any particular month, and should its absolute value exceed the corresponding value of N_n, then V shall be taken as being equal to minus N_n. The total extension of time to be granted shall be the algebraic sum of all the monthly extensions, provided that if this total is negative then the time for completion shall not be reduced due to subnormal rainfall. The Contractor shall, at its own cost, provide and erect on the Site at a location approved of by the Employer's Agent, an approved rain gauge, which shall be fenced off in a manner which will prevent any undue interference by workmen and others. The Contractor shall, at its own cost, arrange for the reading of the rain gauge on a daily basis for the duration of the Contract. The gauge readings, as well as the date and time at which the reading was taken shall be recorded in a separate record book provided by the Contractor for this purpose. All entries in the rainfall record books shall be signed by the person taking the reading and the gauge shall be properly emptied immediately after each reading has been taken. If required, the Employer's Agent shall be entitled to witness the reading of the gauge. The rainfall records applicable to this Contract are those recorded at Carolina. The following values of N_n and R_n shall apply:

MONTH	N_n (Days)	R_n (mm)
January	14.2	125.6
February	11.0	79.8
March	13.0	77.2
April	7.6	43.7
May	2.8	14.2
June	0.6	1.0
July	1.7	3.3
August	3.8	5.1
September	5.3	32.8
October	14.2	96.2
November	16	106.2
December	16.5	159.8
Total	106.7	744.9

5.13.1	The penalty for failing to complete the Works is 0.08% of the contract amount per day, to a maximum of 5% of the contract amount.
5.14.1	The requirements for achieving Practical Completion are set out in the Scope of Works Part C3.1.2.1.
5.14.7	This contract does not contain multiple “Due Completion Dates”.
5.16.3	The latent defects liability period for civil engineering works is 10 years.
6.2.1	The type of security for the due performance of the Contract shall be a Fixed Performance Guarantee of 10% of the value of the Works (Excl. Contingencies and VAT). The Performance Guarantee shall follow the suggested wording according to the pro-forma included in Section C1.3 – Performance Guarantee.
6.5.1.2.3	The percentage allowance on the net cost of workmen and materials actually used in the completed work is 15%.

6.8.2	The Contract Price Adjustment Factor shall be applied to this Contract.
	• The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values:
	  ○ The value of x = 0.10
	  ○ The values of the coefficients are (and the sum thereof is unity):
	  ▪ a = 0.15 Labour
	  ▪ b = 0.20 Contractor’s equipment
	  ▪ c = 0.55 Material
	  ▪ d = 0.10 Fuel
	  ○ The indices as follows are published by Statistics South Africa and shall be agreed on at commencement:
	  ▪ “L” is the “Labour Index”;
	  ▪ “P” is the “Contractor’s Equipment Index”;

	▪ "M" is the "Materials Index"; and ▪ "F" is the "Fuel Index". o The base month "0" is The base month is: May "the month prior to the closing of the Tender". o The applicable month for the statement is denoted by "t". FORMULA= $(1-x)\left[\frac{aL_t}{L_0}+\frac{bE_t}{E_0}+\frac{cM_t}{M_0}+\frac{dF_t}{F_0}-1\right]$
6.8.3	Price adjustment in the cost of special materials shall be applied to this Contract.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%. The percentage advance on Plant not yet supplied to Site 80% (if plant is fabricated or stored on other places than the Site).
6.10.3	The limit on retention is 10% of the Contract Price
8.6.1	The following insurances shall be effected and maintained in the joint names of the Employer and Contractor:
8.6.1.1	Insurance of the Works, Plant and materials for the period of Care of the Works for a sum insured that is the aggregate of:
8.6.1.1.1	The Contract Price (Excl. Contingencies and VAT);
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance is R 0.00 (Excl. VAT); and
8.6.1.1.3	The amount to cover professional fees payable in respect of the repair or reinstatement of damage to the works or said movables is R 0.00 (Excl. VAT).
8.6.1.2	The Contractor is responsible for Special Risks Insurance.
8.6.1.3	Liability insurance of at least R 5 000 000.00 with the number of events being unlimited.
8.6.5	The insurances shall be effected with an insurance company registered in South Africa.
10.5.2	Dispute resolution shall be by ad-hoc adjudication.
10.5.3	The number of Adjudication Board Members to be appointed is one or three.
10.7.1	In the event of disagreement with the Adjudication Board's decision the determination of disputes shall be by arbitration.
10.8.1	In the event of disagreement with the Arbitrator the determination of disputes shall be by court proceedings.

C1.2.2: PART 2: DATA PROVIDED BY THE CONTRACTOR

GENERAL

Clause	Description
1.1.1.9	**Name of the Contractor:**

……..

1.2.1.2 **Address of the Contractor:**

Physical:	Postal:
.....	.....
.....	.....
.....	.....
.....	.....

E-Mail: .....

Telephone No: ……..... Fax No: ……

6.2.1

Type Of Security	**Contractor's Choice. Indicate "Yes" or "No"**
Cash Deposit of 10% of the Contract Sum.	
Fixed Performance Guarantee of 10% of the Contract Sum.	
Variable Performance Guarantee of ….% of the Contract Sum for the first period and …% of the Contract Sum for the second period.	
Retention of 10% of the value of the Works.	
Cash Deposit of 10% of the Contract Sum plus retention of 10% of the value of the Works.	
Fixed Performance Guarantee of 10% of the Contract Sum plus retention of 10% of the value of the Works.	
Variable Performance Guarantee of ….% of the Contract Sum for the first period and …% of the Contract Sum for the second period plus retention of …% of the value of the Works.	

C1.2 CONTRACT DATA

6.8.3 Variation in cost of special materials

The variation in cost of special materials is:

Type of special material	Unit	Base Rate or price

* Indicate whether the material shall be delivered in bulk or in containers. When called upon to do so, the Contractor shall substantiate the above rates or prices with acceptable documentary evidence.

Signed on behalf of Tenderer:

…….

Clause 4.4.3: **Selection of Sub-Contractors**

The Tenderer shall list on FORM A10 the Subcontractors and Suppliers whom he intends to appoint in respect of the various specialist items of work to be done or goods supplied on this contract. Alternatives may be mentioned.

The Tenderer shall state whether he intends to carry out any specialised work or supply of goods himself.

Acceptance of this tender shall not be construed as approval of all or any of the listed specialist Subcontractors or Suppliers. Should any of or all of the specialist Subcontractors or Suppliers not be approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding, even in the event of a Subcontractor or Supplier not listed below being approved by the Employer.

The sub-contractors listed exclude the identified local emerging contractors who will be identified by the Employer.

Signed on behalf of Tenderer:

……..

PART C2: PRICING DATA

PRICING INSTRUCTIONS

Measurement and payment shall be in accordance with the Standardised Specifications for Civil Engineering Construction referred to in the Scope of Works, subject to the variations and amendments contained in the Section C3.5 Project Specifications.

Descriptions in the Bill of Quantities are abbreviated and comply generally with those in the Standardised Specifications. Standardised Specification, read together with the relevant clauses of Part C3: Scope of Work, set out what ancillary or associated activities are included in the rates for the operations specified.

Should any requirements of the measurement and payment clause of the applicable Standardised Specification, or the Scope of Work, conflict with the terms of the Bill of Quantities, the Employer's Agent shall direct the applicable requirements.

The clauses in a specification in which further information regarding the listed items in the Bill of Quantities can be obtained appear under "Payment Reference" column.

The reference clauses indicated are not necessarily the only sources of information in respect of billed items. Further information and set specifications may be found in Section C3.5 Project Specifications. Standardised Specifications refers the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 Edition) shall apply for the construction of the Works.

Unless otherwise stated, items are measured nett in accordance with the drawing sand no allowance is made for waste. The quantities set out in the Bill of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due only.

The prices and rates to be inserted in the Bill of Quantities are to be the full inclusive prices for the work described under the various items. The prices and rates shall cover all costs and expenses that may be required in and for the execution of the work described, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the documents on which the tender is based, as well as overhead charges and profit. The prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

It will be assumed that prices included in these Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org or www.iso.org for information on standards).

Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items.

A price or rate is to be entered against each item in the Bill of Quantities, whether the quantities

are stated or not. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bill of Quantities and recorded as zero. A single lump sum will apply should a number of items be grouped together for pricing purposes.

Except where rates only are required, the Tenderer shall insert all amounts to be included in his total tendered price in the “Amount” column and show the corresponding total tendered price.

The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

Ha	=	hectare
h	=	hour
kl	=	kilolitre
kg	=	kilogram
km	=	kilometre
kW	=	kilowatt
km-pass	=	kilometre pass
MN	=	Mega Newton
kPa	=	kilopascal
MN.m	=	Mega Newton-metre
l	=	litre
%	=	percentage
m	=	metre
PC Sum	=	Prime Cost Sum
mm	=	millimetre
P Sum	=	Provisional Sum
PS/m	=	Provisional Sum per month
PS/d	=	Provisional Sum per day
Sum/wd	=	Sum per working day
m^2	=	square metre
No.	=	number
m2.pass	=	square metre-pass
R/Only	=	Rate Only
m^3	=	cubic metre
Sum	=	lump sum
m^3.km	=	cubic metre-kilometre
t	=	ton (1 000 kg)
MPa	=	Mega Pascal
W/day	=	Work day
%	=	percentage
mth	=	month

The parts of the contract to be constructed using labour-intensive methods have been marked in the Bill of Quantities with the letters LI in a separate column filled in against every item so designated.

The works, or parts of the works so designated, are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour-intensive specification.

Payment for items which are designated to be constructed labour-intensively will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

BILL OF QUANTITIES

ALMT14/2025
Schedule 1: Preliminary and General

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1	SANS 1200 A	SECTION : PRELIMINARY AND GENERAL					
1.1	8.3	FIXED-CHARGE ITEMS					
1.1.1	8.3.1	Contractual Requirements	Sum	1.0			
	8.3.2	Establish Facilities on the Site :					
		a) Facilities for Engineer (SANS 1200 AB)					
1.1.2		Offices: 4 Furnished, Air-Conditioned Offices made Covid-19 safe	Sum	1.0			
1.1.3		A3 Colour Printer and Photocopying Facility	Sum	1.0			
1.1.4		Airconditioned Boardroom Made Covid 19 Safe (25 people)	Sum	1.0			
1.1.5		1 Male and 1 Female Ablution Facility	Sum	1.0			
1.1.6		5 Parking Bays Covered with Shadecloth	Sum	1.0			
1.1.7		a) Provision for an independent site/commercial laboratory for the Employer's Agent's acceptance control	Prime Cost	1.0	30000 000.00	30000 000.00	
		Handling cost and profit in respect of item above	%	30000 000.0			
		b) Facilities for Contractor					
1.1.8		Offices and storage sheds	Sum	1.0			
1.1.9		Workshops	Sum	1.0			
1.1.10		Laboratories	Sum	1.0			
1.1.11		Living accommodation	Sum	1.0			
1.1.12		Ablution and latrine facilities	Sum	1.0			
1.1.13		Tools and equipment	Sum	1.0			
1.1.14		Water supplies, electric power and communications	Sum	1.0			
1.1.15		Dealing with water (Subclause 5.5)	Sum	1.0			
1.1.16		Access (Subclause 5.8)	Sum	1.0			
1.1.17		10 t vibrating roller	Sum	1.0			
1.1.18		Plant for concrete mixing and cableway	Sum	1.0			
1.1.19		Dust Suppression with water bowsers for the duration of the contract	Sum	1.0			
1.1.20	8.3.3	Other fixed-charge obligations	Sum	1.0			
1.1.21	8.3.4	Remove Engineer's and Contractor's Site establishment on completion	Sum	1.0			
Total Carried Forward							

ALMT14/2025
Schedule 1: Preliminary and General

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.2	8.4	TIME-RELATED ITEMS					
1.2.1	8.4.1	Contractual Requirements	Months	60,0			
	8.4.2	Operate and maintain facilities on the Site:					
	PS 8.4.2.1	a) Facilities for Engineer for duration of construction (SANS 1200 AB)					
1.2.2		Offices: 4 Furnished, Air-Conditioned Offices made Covid-19 safe	Months	60,0			
1.2.3		A3 Colour Printer and Photocopying Facility as per item .1.3	Months	60,0			
1.2.4		Airconditioned Boardroom as per item .1.4	Months	60,0			
1.2.5		Internet Connectivity minimum bandwidth 100Mbps	Months	60,0			
1.2.6		1 Male and 1 Female Ablution Facilities	Months	60,0			
1.2.7		Accommodation for the Employer's Agent Representatives (3 no off) for the full duration of contract	Months	60,0			
1.2.8		Survey assistants and material	Months	60,0			
1.2.9		Financial contribution for an independent site/commercial laboratory	Months	60,0			
	PS 8.4.2.2	b) Facilities for Contractor for duration of construction, except where otherwise stated					
1.2.9		Offices and storage sheds	Months	60,0			
1.2.10		Workshops	Months	60,0			
1.2.11		Laboratories	Months	60,0			
1.2.12		Living accommodation	Months	60,0			
1.2.13		Ablution and latrine facilities	Months	60,0			
1.2.14		Tools and equipment	Months	60,0			
1.2.15		Water supplies, electric power and communications	Months	60,0			
1.2.16		Dealing with water (Subclause 5.5)	Months	60,0			
1.2.17		Access (Subclause 5.8)	Months	60,0			
Total Carried Forward							

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.2.18		10 t vibrating roller	Months	60,0			
1.2.25	PS 8.4.3	Contractor's Supervision for the Duration of Contact	Months	60,0			
1.2.26	PS 8.4.4	Company and head office overhead costs	Months	60,0			
1.2.27	PS 8.4.5	Other time-related obligations	Months	60,0			
1.2.28	PS 8.4.5 a)	Standing Time due unrest not attributable to the Contractor	Months	5.0			
1.2.29	PS 8.4.5 b)	Implement Heath and Safety Safety Protocols and submit monthly reports based on Health and Safety plan and Specifications as approved by a Health and Safety Agent, registered as a CHSO based on the requirements of the OHS Act, No. 85, Amendment Act No. 181 of 1993 and OHSA Construction Regulations 2014	Months	60.0			
1.2.30	PS 8.4.5 c)	Conduct HIV/AIDS awareness programme workshops on site for not less than 90% of the workers inclusive of all direct and indirect cost	Sum	1.0			
1.2.31	PS 8.4.5 d)	Provide and maintain condom dispenser	Sum	1.0			
1.2.32	PS 8.4.5 e)	Provide and maintain HIV/AIDS awareness posters	Sum	1.0			
1.2.33	PS 8.4.5 f)	Provide Security Services for the Duration of the Contract	Months	60.0			
1.2.34	PS 8.4.5 g)	Protective Clothing for local labour on a three months rotational basis	Sum	1.0			
1.2.35	PS 8.4.5 h)	Extra-over item a) above for EPWP branding	Sum	1.0			
1.2.36	PS 8.4.5 i)	Monthly EMP Obligations	Months	60.0			
1.3	8.5	SUMS STATED PROVISIONALLY BY ENGINEER					
1.3.1		a) Allowance for additional Geotechnical Engineering Investigations, Seismic Action Tests and Full Laboratory Tests and Reports	Prov Sum	1.0	21000 000,00	21000 000,00	
1.3.2		i) Overheard Costs for Item a) above	%	21,000,000.0			
1.3.3		b)Employment of a Community Liaison Officer (CLO) to be identified by the Project Steering Committee (PSC) in consultation with the Ward Councillor and ISD Consultant	Prov Sum	1.0			
1.3.4		i) Overheard Costs for Item b) above	%	1,500,000.0	1500 000,00	1500 000,00	
Total Carried Forward							

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.3.5		c) Allowance for Environmental Control Officer (ECO) to inspect, monitor, assess construction site and prepare monthly site audit reports to the client and to be appointed under the Engineer	Prov Sum	1.0	4500 000,00	4500 000,00	
1.3.6		i) Overheard Costs for Item c) above	%	4,500,000.0			
1.3.7		d) Allowance for SHE Agent to inspect, monitor assess construction site and prepare monhtly site safety audit reports to the Client. SHE Agent shall be appointed by the Employer's Representative	Prov Sum	1.0	4500 000,00	4500 000,00	
1.3.8		i) Overheard Costs for Item d) above	%	4,500,000.0			
1.3.9		e) Allowance for the appointment of an ISD Consultant	Prov Sum	1.0	6500 000,00	6500 000,00	
1.3.10		i) Overheard Costs for Item e) above	%	6,500,000.0			
1.3.11		f) Control Tests by an independent laboratory. Additional tests that may be required by the ENgineer over and above normal quality control tests by the Contractor	Prov Sum	1.0	1200 000,00	1200 000,00	
1.3.12		i) Overheard Costs for Item f) above	%	1,200,000.0			
1.3.13		g) Student Training and Mentorship Programme, including provision of workplace exposure, mentoring, supervision, practical training, progress assessments, and training reports for students assigned to the project, complete	Prov Sum	1.0	3500 000,00	3500 000,00	
1.3.14		i) Overheard Costs for Item g) above	%	3,500,000.0			
1.3.15		h) Allow for the relocation and reconstruction of dwellings of all affected household	Prov Sum	1.0	11000 000,00	11000 000,00	
1.3.16		i) Overheard Costs for Item h) above	%	11,000,000.0			
1.3.17		j) Capacity Building and Skills Transfer for Municipal Personnel, including training workshops, operational and maintenance training, preparation of training material, attendance registers, and training reports, complete	Prov Sum	1.0	1200 000,00	1200 000,00	
1.3.18		i) Overheard Costs for Item j) above	%	1,200,000.0			
1.3.19		k) Generic Skills Training to local artisans and labourers	Prov Sum	1.0	2200 000,00	2200 000,00	
1.3.20		i) Overheard Costs for Item k) above	%	2,200,000.0			
1.3.21		l) Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the site.(Provisional sum)	Prov Sum	1.0	300 000,00	300 000,00	
Total Carried Forward							

SECTION : GENERAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.3.22		i) Overheard Costs for Item l) above	%	300,000.0			
1.3.23		m) Allowance for Procuring and Mentorship of CPG Contractors	Prov Sum	1.0	1800 000,00	1800 000,00	
1.3.24		i) Overheard Costs for Item m) above	%	1,800,000.0			
1.3.25		n) Allowance for Telemery Systems and Software	Prov Sum	1.0			
1.3.26		i) Overheard Costs for Item n) above	%	3,500,000.0	3500 000,00	3500 000,00	
	8.8.5	Land Survey Act					
1.3.27		a) Search for and record tri- gonometrical survey beacons, bench marks and plot boundary pegs, and expose on completion of Works	Sum	1			
1.3.28		b) Protect beacons, etc., located under item 1.3.30 and reposition or re-establish, as ordered, the same by a Registered Land Surveyor on completion of the Works	Sum	1.0			
1.3.29		c) Cost of Survey as per the Land Survey Act	Sum	1.0			
	8.7	Daywork					
1.3.30		Labour	Prov Sum	1.0	1200 000,00	1200 000,00	
1.3.31		Percentage adjustment to item 1.3.35 for labour	%	1,200,000.0			
1.3.32		Materials	Prov Sum	1,0	1300 000,00	1300 000,00	
1.3.33		Percentage adjustment to item 1.3.36 for materials	%	1,300,000.0			
1.3.34		Plant	Prov Sum	1,0	1300 000,00	1300 000,00	
1.3.35		Percentage adjustment to item 1.3.38 for plant	%	1,300,000.0			
Total Carried Forward To Summary							

ALMT14/2025
Schedule 2: SITE CLEARANCE

SECTION : SITE CLEARANCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
2	SANS 1200 C	SECTION : SITE CLEARANCE - WORKING PLATFORMS PREPARATION					
2.1		CLEAR SITE					
2.1.1	8.2.1	Clear and grub Site	ha	72.0			
	8.2.2	Remove and grub large trees and tree stumps of girth Over and up to					
2.1.2	8.2.4	Reclear surfaces (provisional) (where ordered by Engineer)	ha	15.0			
2.1.3	8.2.5	Take down existing fences	km	2.0			
2.1.4	8.2.6	Clear hedge and, where not scheduled separately, fence	m	12,000.0			
2.1.5	8.2.8	Demolish and remove structures/buildings	Sum	1,0			
2.2		OFF CHANNEL STORAGE DAM					
2.2.1	8.3.1.1	a) Solum of Dam, outlet works,and spillway	ha	18.5			
2.2.2	8.3.1.6	b) Reservoir basin	ha	12.5			
2.2.3		c) Borrow areas	ha	10.5			
	8.3.1.2	Remove trees from areas covered by items .2.1 - .2.3 and dispose. Girth of trees:					
2.2.4		Over 1,0 m up to 2,0 m	No.	11.0			
2.2.5		Over 2,0 m up to 3,0 m	No.	5.0			
2.2.6		Over 3,0 m up to 4,0 m	No.	4.0			
2.2.7	8.3.2	Remove topsoil from extra depths to stockpile (Prov.)	m³	65.0			
	8.2.1	Clear and grub areas to:					
2.2.8		Weir North bank buttress (excl. Diversion works)	m²	2,000.0			
	8.2.2	"Remove and grub large trees and tree stumps of girth:"					
2.2.9		Over 1.0 m and up to and including 2.0 m	No	10.0			
2.2.10		Wier site area	ha	5.0			
2.2.11		Wier basin area	ha	25.0			
	8.2.1	Grubbing					
2.2.12		Wier site area	ha	15.0			
2.2.13		Wier basin area	ha	45.0			
2.2.14		Fence lines, 2m wide strip	ha	23.0			
		Removal and stockpiling of topsoil					
2.2.15		From agreed areas within the dam basin and dam site area.	m³	28,300.0			
Total Carried Forward To Summary							

SECTION : SITE CLEARANCE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
3	SANS 1200 C	LI	SECTION : SITE CLEARANCE					
3.1			CLEAR SITE					
3.1.1	8.2.1	LI	Clear and grub Site	m²	67,564.0			
	8.2.2		Remove and grub large trees and tree stumps of girth Over and up to					
3.1.2		LI	1 m 2 m	No.	50.0			
3.1.3			2 m 3 m	No.	50.0			
3.1.4			3 m upwards in 1 m steps	No.	50.0			
3.1.5	8.2.4	LI	Reclear surfaces (provisional) (where ordered by Engineer)	m²	20,270.0			
3.1.6	8.2.9		Transport materials and debris to unspecified sites and dump (provisional)	m³.km	562 500,0			
Total Carried Forward To Summary								

SECTION : EARTHWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
4		LI	SECTION : EARTHWORKS					
4.1	SANS 1200 D 8.3.2		EXCAVATION					
4.1.1	8.3.1.2	LI	Remove topsoil to nominal depth 150mm, stockpile, and maintain	m²	67,564.0			
	8.3.2(a)		Excavate in all materials and place within freehaul distance for :					
4.1.2			Shaping for temporary deviations	m³	3,750.0			
4.1.3		LI	For Open Drains within a depth of 0 to 1.5m	m³	4,400.0			
4.1.4		LI	For Sub-soil drainage within a depth of 0 to 1.5m	m³	800.0			
4.1.5			For Pre-fabricated culverts within a depth of 0 to 1.5m	m³	3,000.0			
4.1.6			For Pre-fabricated Culverts for depths for 1.5m to 3.0m	m³	5,500.0			
	8.3.2(b)		Extra-over items .2.2 & .2.3 for excavation in:					
4.1.7		LI	Intermediate material	m³	10,470.0			
4.1.8			Hard rock material	m³	5,235.0			
4.1.9			Boulder material, Class A	m³	880.0			
4.1.10			Boulder material, Class B	m³	880.0			
	8.3.6		Overhaul (provisional)					
4.1.11			Limited overhaul	m³	10,470.0			
4.1.12			Long overhaul	m³.km	209,400.0			
	8.3.8		Existing services					
4.1.13	8.3.9	LI	Extra-over for backfill or fill material against structures	m³	600.0			
4.2			FINISHINGS					
4.2.1	8.3.10	LI	Topsoiling	m²	33,782.0			
4.2.2	8.3.11	LI	Grassing	m²	33,782.0			
Total Carried Forward								

SECTION : EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
5	SANS 1200 DM		SECTION : EARTHWORKS (ROADS, SUBGRADE)					
5.1			TREATMENT OF ROAD-BED					
	PSDM 1.3.4		Six-pass roller compaction					
5.1.1			Heavy pneumatic-tyred roller	m²	42 000,0			
5.1.2			Vibratory roller	m²	42 000,0			
5.1.3			Impact roller	m²	42 000,0			
5.2			EARTHWORKS					
	8.3.4		Cut to fill					
5.2.1			Compact to 93 % mod. AASHTO maximum density	m³	73,856.0			
5.2.2			Rockfill, process, and compact	m³	5,000.0			
	8.3.4		Borrow to fill					
5.2.3			Compact to 93 % mod. AASHTO maximum density	m³	10,000.0			
5.2.4			Rockfill, process, and compact	m³	10,000.0			
	8.3.6		Extra-over items .5.2.1 to 5.2.4 inclusive for excavating and breaking down material in:					
5.2.5			Intermediate excavation	m³	10,569.0			
5.2.6			Hard excavation	m³	11,200.0			
5.2.7			Boulder excavation Class A	m³	6,352.0			
5.2.8			Boulder excavation Class B	m³	6,352.0			
	8.3.7		Cut to spoil from					
5.2.9			Soft excavation	m³	37 300,0			
5.2.10			Intermediate excavation	m³	3 730,0			
5.2.11			Hard excavation	m³	3 730,0			
5.2.12			Boulder excavation Class A	m³	3 730,0			
5.2.13			Boulder excavation Class B	m³	3 730,0			
5.2.14	8.3.8		Removal of oversize material	m³	6 000,0			
	8.3.9		Overbreak in:					
5.2.15			Intermediate excavation	m²	1,268.0			
5.2.16			Hard excavation	m²	1,268.0			
5.2.17			Boulder excavation Class A	m²	1,268.0			
5.2.18			Boulder excavation Class B	m²	1,268.0			
Total Carried Forward								

SECTION : EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
5.3			COMPACTION					
	PSDM 1.3.4		Variations in compactive effort:					
5.3.1			Vibratory rollers	m²	3,400.0			
5.3.2			Impact rollers	m²	3,300.0			
5.3.3			All other rollers	m²	3,300.0			
5.4	SANS 1200 DM		SUNDRIES					
5.4.1	8.3.11		Extra-over items above for temporary stockpiling of material	m³	20,000.0			
5.5	8.3.12		OVERHAUL					
5.5.1			Extra-over items excavated for hauling material in excess of the freehaul of 0,5km but not more than 1,0km	m³	5,000.0			
5.5.2			Extra-over excavated item for hauling material in excess of the haul of 1,0 km	m³.km	60,000.0			
5.5.3			Provisional Sum for Rock Support of Exposed rock faces	Prov Sum	1,0	8000 000,00	8000 000,00	
5.5.4			Overhead Cost for Item above	%	8,000,000.0			
5.6	8.3.16		GRAVEL SURFACING - TEMPORARY SURFACE FOR CONSTRUCTION PERIOD					
5.6.1			200mm thick G7 Gravel Surface Layer compacted to 95% MOD AASHTO	m³	48 900,0			
Total Carried Forward								

SECTION : SUBBASE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
6	SANS 1200 ME		SECTION : SUBBASE					
	8.3.1		Construct gravel subbase with material from borrow pits in all materials					
6.1			150 mm G9 compacted to 93% MOD AASHTO to main roadway	m³	8 150,0			
	8.3.2		Construct gravel subbase with material from designated excavations					
6.2	1200 DM 8.3.7		a) Excavate in all materials, select, and stockpile or place on the road for subbase course	m³	2,316.0			
	1200 ME 8.3.2		b) Construct shoulders with material from stockpile:					
6.3			150mm G7 compacted to 95% MOD AASHTO	m³	7 840,0			
	8.3.5		Process material by means of:					
6.4			Screening out oversize	m³	560.0			
6.5			Screening out fines	m³	560.0			
6.6			Screening out oversize and fines	m³	560.0			
6.7			Heavy grid rolling	m³	560.0			
6.8			Mechanical modification	m³	560.0			
6.9	PSME 1.2		Crushing	m³	560.0			
	8.3.6		Screening					
6.10			a) Provide, erect, and commission plant	Sum	1,0			
6.11			b) Dismantle and remove plant and clean up Site	Sum	1,0			
6.12			c) Move to new location and clean up Site	No.	2.0			
6.13	8.3.7		Screened out material not used in subbase	m³	150.0			
	1200 ME 8.3.3		Construct subbase with material from commercial sources					
6.14			150mm G7 compacted to 95% MOD AASHTO	m³	560.0			
Total Carried Forward								

SECTION : BASE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
7	SANS 1200 MF		SECTION : BASE					
	8.3.1		Construct base with gravel material from borrow pits					
7.1			Construct G5, 150 mm subbase layer thickness from commercial source mixed with cement and compacted to 95% MoD AASHTO to main roadway	m³	7 530,0			
	8.3.3		Construct base with material from commercial sources					
			a) Gravel material					
7.2			150 mm G5, stabilised with 2% cement to 97% MoD AASHTO to main roadway	m³	3,710.0			
	8.3.5		Process base by means of:					
7.3			a) Screening	m³	530.0			
7.4			b) Heavy grid rolling	m³	530.0			
7.5			c) Mechanical modification	m³	530.0			
7.6			d) Stabilization	m³	5,300.0			
	8.3.8		Stabilizing agent					
7.7			Portland cement, CEM II 42.5	t	470,0			
7.8			Provision of water for curing	kl	1 260,0			
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
8	SANS 1200 G		SECTION : CONCRETE SURFACING (SURFACING)					
8.1	8.1.3		CONCRETE					
			Strength concrete: 30 MPa/19mm					
8.1.1			150mm thick excluding texturing and curing; cast in alternate panels at a ratio of 1:1.25	m³	7 220,0			
8.1.2			100mm thick for V-Drain Construction cast in alternate panels	m³	1,600.0			
8.1A			c) 100mm thick for sidewalk Construction cast in alternate panels	m³	1 030,0			
8.2	8.1.1	LI	FORMWORK					
	8.2.2		Rough vertical plane to:					
8.2.1		LI	Sides of surface slabs	m²	3,500.0			
8.2.2		LI	100mm thick V-Drains	m²	2000			
8.2.3		LI	Chamfer 30 mm x 30 mm	m	12,000.0			
8.3	8.1.2		REINFORCEMENT					
	8.3.2	LI	High-tensile welded mesh reinforcement					
8.3.1			Type reference 395	t	145.0			
8.4	8.4.4		UNFORMED SURFACE FINISHES					
			Burlap-dragged and grooved texture					
8.4.1		LI	To Concrete Pavement	m²	48 125,0			
8.4.2			Curing	m²	48 125,0			
8.5	8.5		JOINTS					
8.5.1			Construction Joints and Joint Selant	m	4,385.0			
8.5.2			Saw-Cut Joint and joint sealant	m	8,700.0			
			Quality Control and Workmanship					
8.5.3			150mm cores drilled from the pavement and tested for compressive strength	No.	50.0			
8.5.4			Concrete Cube Tests	No.	1 000,0			
Total Carried Forward								

SECTION : STORMWATER DRAINAGE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
Brought Forward							R	c
9			SECTION: STORMWATER DRAINAGE AND EXCAVATION					
9.1			EXCAVATION					
9.2	SANS 1200 DB		SECTION : PIPE TRENCHES					
			Over 600 up to 1200 mm diam. for total trench depth:					
9.2.1			Exceeding 1,0 m but not exceeding 2,0 m	m	425,0			
9.2.2			Exceeding 2,0 m but not exceeding 3,0 m	m	300,0			
9.3	SANS 1200 LE		PIPES					
	8.2.1		Supply, handle, lay, bed Class 100D concrete pipe Spigot and Socket, rubber O-ring joint					
9.3.1			a) 600 mm diameter	m	375,0			
9.3.2			b) 900 mm diameter	m	100,0			
9.3.3			c) 1200 mm diameter	m	300,0			
9.3.4	SANS 1200 LE		e) Extra-over for inlet and outlet structures, skewed ends, catchpits, manholes, trust and anchor blocks, blinding layer, open channel including formwork and including class U2 surface finish, class 30/19 concrete	m³	320,0			
9.3.5	8.2.3		f) Extra-over item 30 deg. skew ends on 600 mm pipeline	No.	10,0			
9.3.6			g) Extra-over item 30 deg. skew ends on 900 mm pipeline	No.	10,0			
9.3.7			h) Extra-over item 30 deg. skew ends on 1200 mm pipeline	No.	10,0			
9.4	SANS 1200 LB		PROVIDE BEDDING MATERIAL					
			Available from trench within 0,5 km (Subclause 3.4.1)					
9.4.1	8.2.1		a) Selected granular material	m³	1 400,0			
9.4.2			b) Selected fill material	m³	1 613,0			
9.4.3			3,0 m x 2,0 m	m	20,0			
9.4.3a	8.2.2.3		From commercial sources a) Using imported selected material	m³	500			
9.4.3b	8.2.5		Overhaul of Material for Bedding Cradle and Selected Fill Blanket	m³	3072			
	8.2.8		CATCHPITS Construct complete channel inlet					
9.4.4			a) 1.2m x1.8m with depth ranges 2.5m to 3m deep	No.	6,0			
9.4.5			b) 1.2m x1.2m with depth ranges 2.0 to 2.5m deep	No.	19,0			
Total Carried Forward								

SECTION : STORMWATER DRAINAGE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
9.5			MISCELLANEOUS					
9.5.1	8.2.11		Anchors for pipes	No.	100.0			
9.5.2	8.2.12		Extra-over item for construction of inclined pipe culverts up to 1200 mm diameter	m	100.0			
9.6			BRICKWORK					
9.6.1		LI	230 mm thick	m²	2,500.0			
9.6.2	8.2.9(b)	LI	Plaster 15 mm thick	m²	2,500.0			
9.6.3	8.2.9(c)	LI	Benching in prescribed mix 20 concrete with granolithic rendering	m²	45.0			
9.7	8.2.10		ACCESSORIES					
9.7.1			Heavy-Duty Precast Concrete Manhole Cover and Frame with Left and Right channel inlet (1.8m x 1.2m)	No.	6.0			
9.7.2			Heavy-Duty Precast Concrete Manhole Cover and Frame with Left and Right channel inlet (1.2m x 1.2m)	No.	19.0			
9.7.3			Cast Iron Heavy-Duty Step irons	No.	250.0			
9.8			HEADWALLS					
9.8.1		LI	Construct 230mm brickwall headwalls complete 25MPa with 150mm concrete base and concrete baffle blocks	No.	120,0			
Total Carried Forward								

SECTION : GABIONS AND PITCHING

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
10	SANS 1200 DK		SECTION : GABIONS AND PITCHING					
			EXCAVATION See Section D, DA, DE as applicable					
10.1			GABIONS					
10.1.1	8.2.1	LI	Surface preparation for bedding of gabions	m²	600.0			
	8.2.2		Construct gabions using galvanised gabion boxes					
10.1.2		LI	a) Toe mattresses of depth 0,17 m with diaphragms providing 1mx1mx 2m cells	m³	1,250.0			
10.1.3		LI	b) Foundation mattresses of depth 0,3 m with diaphragms providing 2 m x 1 m cells	m³	1,250.0			
	8.2.4		Geotextile continuous filament, needle-punched non-woven geotextile placed where ground water seepage occurs					
10.1.4		LI	a) below foundation mattresses and gabion boxes	m²	5,000.0			
10.1.5		LI	b) on slope behind wall	m²	5,000.0			
10.2			PITCHING					
10.2.1	8.2.5	LI	Ordinary pitching, of thickness at least 300 mm	m²	600.0			
10.2.2	8.2.7	LI	Weephole	No.	200.0			
Total Carried Forward								

SECTION : ANCILLARY ROADWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
11	SANS 1200 MM		SECTION : ANCILLARY ROADWORKS					
11.1			GUARDRAILS					
11.1.1	8.2.1	LI	Supply and erect galvanized steel guardrails on timber posts, backfilled with material available on Site	m	3,000.0			
11.1.2	8.2.2	LI	Extra-over Item 11.1.1 for horizontally curved guardrails factory-bent to a radius of less than 150 mm	m	250.0			
	8.2.3		End Units					
11.1.3		LI	a) End wings	No.	65.0			
11.1.4	8.2.5	LI	Reflector plates, supply and fix where instructed by Engineer on site	No.	450.0			
11.2			PERMANENT TRAFFIC SIGNS					
	8.3.1		Road sign boards with painted or coloured semi-matt background, Symbols, lettering and borders in semi-matt black or in Class I retro- reflective material, where the sign board is construction from:					
11.2.1		LI	a) Aluminium sheet (2,0 mm thick), of area over 2 m2 and up to 10 m2	m²	64.0			
	8.3.2		Extra-Over Item .2 for using					
11.2.2			a) Engineering grade retroreflective background Class I	m²	64.0			
11.2.3	8.3.2		b) Lettering, symbols, numbers, arrows, emblems and borders of retro-reflective material Class II	m²	64.0			
	8.3.3		Sign Supports					
11.2.4		LI	c) Timber bitumen treated diameter 145 mm - 175 mm pine	m	500.0			
11.2.5	8.1.1 & 8.3.4	LI	Excavation for sign supports and backfilling with in-situ material	m³	64.0			
11.3			ROAD MARKINGS					
	8.4.1		Retro-reflective paint applied at nominal rate of 0,42 l/m2					
11.3.1			a) White lines (broken or unbroken) (width 100 mm)	km	17,0			
11.3.2			b) Yellow lines (broken or unbroken) (width 100mm)	km	14.0			
11.3.3			c) White characters and symbols	m²	25.0			
11.3.4	8.4.4		Setting out and premarking of lines (excluding traffic island markings, characters, and symbols)	km	17,0			
Total Carried Forward								

SECTION : ANCILLARY ROADWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
Brought Forward							R	c
3A13	SANS 1200 D 8.3.2		EXCAVATION					
3A13.1	8.3.3		a) Excavate pipe trenches for subsoil drainage systems and use for backfill.	m³	500			
3A13.1.1	8.3.4		Importing of Materials					
3A13.1.2			a) Import selected material from commercial source					
			(i) Crushed-stone, course graded 19mm	m³	800			
3A13.1.3			(ii) Sand bedding, course-grade	m³	170,0			
3A13.1.4	PS/8.2.10D		Synthetic-fibre filter fabric:					
			(a) Grade A2 or similar approved	m²	200			
3A13.2			EARTHWORKS					
3A13.2.1	8.3.3		Treatment of road-bed					
			a) Road-bed preparation and compaction of material to					
3A13.2.2			1) Minimum of 90 % of modified AASHTO maximum density	m³	8 150,0			
3A13.2.3			b) In-place treatment of road-bed in intermediate or hard rock material by					
			2) blasting	m³	112 500,0			
3A13.3	SANS 1200 MM 1200 MK		SECTION : KERBING AND CHANNELLING					
3A13.3.1			KERBIND AND CHANNELLING					
3A13.4	8.2.2		Concrete kerbing and channelling combination					
			(a) Figure 6 Kerb and 300mm concrete channel combination	m	1 500,0			
3A13.4.1	8.2.7		Trimming of excavations for concrete-lined open drains					
3A13.4.2			(a) In soft material	m²	2 800,0			
3A13.4.3	8.2.10		Sealed joints in concrete linings of open drains					
3A13.4.4			(a) Closed cell expanded polyethylene sealants	m	400			
Total Carried Forward To Summary								

SECTION : SITE CLEARANCE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
11	SANS 1200 C		SECTION : SITE CLEARANCE					
11.1			CLEAR SITE					
11.1.1	8.2.1		Clear and grub Site	m²	7,600.0			
	8.2.2		Remove and grub large trees and tree stumps of girth Over and up to					
11.1.2			1 m 2 m	No.	62.0			
11.1.3			2 m 3 m	No.	112.0			
11.1.4			3 m upwards in 1 m steps	No.	16.0			
11.1.5	8.2.4		Reclear surfaces (provisional) (where ordered by Engineer)	m²	1,300.0			
11.1.6	8.2.9		Cart materials and debris to unspecified sites and dump (provisional)	t.km	70.0			
Total Carried Forward To Summary								

SECTION : EARTHWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
12			SECTION : EARTHWORKS					
12.1	SANS 1200 D 8.3.2		EXCAVATION					
12.1.1	8.3.1.2		Remove topsoil to nominal depth 150mm, stockpile, and maintain	m²	7,600.0			
	8.3.2(a)		Excavate in all materials and place within freehaul distance for :					
12.1.2			Temporary Culvert Placement	m³	400.0			
	8.3.2(b)		Extra-over items above item for excavation in:					
12.1.3			Intermediate material	m³	100.0			
12.1.4			Hard rock material	m³	250.0			
12.1.5			Boulder material, Class A	m³	150.0			
12.1.6			Boulder material, Class B	m³	150.0			
	8.3.6		Overhaul (provisional)					
12.1.7			Limited overhaul	m³	350.0			
12.1.8			Long overhaul	m³.km	6,000.0			
Total Carried Forward To Summary								

SECTION : EARTHWORKS (ROADS, SUBGRADE)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
13	SANS 1200 DM		SECTION : EARTHWORKS (ROADS, SUBGRADE)					
13.1			SURFACE TREATMENT ON PREPARATION FOR PLACEMENT OF CULVERT ON SMALL STREAM CROSSING					
13.2			EARTHWORKS					
	8.3.4		Cut to fill					
13.2.1			Rockfill, process, and compact	m³	300.0			
	8.3.4		Borrow to fill					
13.2.2			Rockfill, process, and compact	m³	300.0			
	8.3.6		Extra-over above items breaking down material in:					
13.2.3			Intermediate excavation	m³	150.0			
13.2.4			Hard excavation	m³	250.0			
13.2.5			Boulder excavation Class A	m³	150.0			
13.2.6			Boulder excavation Class B	m³	150.0			
	8.3.9		Overbreak in:					
13.3			COMPACTION					
	PSDM 1.3.4		Variations in compactive effort:					
13.3.1			Vibratory rollers	m²	7,200.0			
13.3.2			Impact rollers	m²	7,200.0			
Total Carried Forward To Summary								

SECTION : STORMWATER DRAINAGE

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
14			SECTION: STORMWATER DRAINAGE SITE CLEARANCE AND EXCAVATION					
	SANS 1200 LE		BOX CULVERTS (PRECAST CONCRETE) Supply, bed and install					
			a) without invert slabs					
14.1			2.4 m x 2.4 m	No.	48.0			
			CAST-IN-SITU CULVERTS Schedule formwork, reinforcement, and concrete (as in Section G or GA, as applicable)					
14.2	8.2.5		a) 30 MPa slab including formwork , joints and Class U2 surface finish (installed at a standard depth 1.0m)	m³	40.0			
14.3			b) In walls, excluding formwork but including Class U2 surface finish	m³	60.0			
14.4			c) In deck slabs for rectangular culverts, but including Class U2 surfacing finish and joints	m³	60.0			
14.5			d) Concrete backfill or encasement for culvert 30MPa	m³	80.0			
14.6			e) Welded Fabric Reinforcement	kg	500.0			
	SANS 1200 DK		SECTION : GABIONS AND PITCHING					
14A.6			GABIONS					
14A.6.1	8.2.1		Surface preparation for bedding of gabions and mattresses	m²	3.5			
	8.2.2		Gabions and mattresses					
14A.6.2			(a) Galvanised gabion boxes (2mx1mx1m)	m³	670.0			
14A.6.3			(b) Galvanised gabion mattresses (2mx1mx0.5m)	m³	1087.5			
14A.6.4			(c) PVC - coated gabion mattresses (2mx1mx1m)	m³	187.5			
	8.2.4		Geotextile	m²	625.0			
Total Carried Forward To Summary								

SECTION : EARTHWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
15			SECTION : EARTHWORKS					
15.1	SANS 1200 D 8.3.2		EXCAVATION					
	8.3.2(a)		Excavate in hard materials by blasting :					
15.1.1			Excavation in hard rock using controlled blasting techniques	m³	1,000.0			
15.1.2			Pre-splitting - base rate for holes @ 750 mm c/c	m²	600.0			
15.1.3			Pre-splitting - compensation for additional holes	m	600.0			
15.1.4			Smooth blasting - base rate for holes @ 1500 mm c/c	m²	500.0			
15.1.5			Smooth Blasting - compensation for additional holes	m	300.0			
15.1.6			Line Drilling - base rate for holes @ 300 mm c/c	m²	500.0			
15.1.7			Line Drilling – compensation for additional holes	m	300.0			
	8.3.3(a)		Excavating soft material situated within the following successive depth ranges					
15.1.8		LI	0m to 1.5m	m³	1,662.5			
15.1.9		LI	1.5 to 3m	m³	1,662.5			
15.1.10		LI	3m to 4.5m	m³	538.0			
	8.3.3(b)		Extra-over for excavation in:					
15.1.11			Hard rock material irrespective of depth	m³	376.0			
15.1.12		LI	For additional excavation required by the Engineer after excavation is complete	m³	376.0			
15.1.13			For excavation by hand	m³	163.0			
15.1.14			For excavation in restricted areas	m³	125.0			
15.1.15			Dewatering	m³	80,000.0			
15.2	8.3.4		IMPORT MATERIAL					
15.2.1			To complete terraces : from borrow pits	m³	800.0			
15.2.2			To complete terraces : from commercial sources (Prov)	m³	1,050.0			
15.2.3			Soil Cement	m³	200.0			
			Foundation fill consisting of:					
15.2.4			Rock fill	m³	250.0			
15.2.5			Mass concrete (class 15/19)	m³	375.0			
Total Carried Forward								

SECTION : EARTHWORKS

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
15.2.6			Concrete blinding (75 mm thickness and class 12/15 of blinding)	m³	225.0			
	8.3.6		Overhaul (provisional)					
15.2.7			Limited overhaul	m³	1,287.7			
15.2.8			Long overhaul	m³.km	6,438.3			
Total Carried Forward To Summary								

SECTION : CONCRETE PILING

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
16	SANS 1200 F		SECTION : CONCRETE PILING					
16.1			PRELIMINARY OPERATIONS					
	8.2.1		Establishment on Site for piling					
16.1.1	8.2.2		Move equipment to and set up at each pile position	No.	12.0			
16.2			PILING					
16.2.1			Provisional Sum for all activities associated with Piling as and when ordered by the Engineer on site. This item is inclusive compression and loading tests	Prov Sum	1.0	27000 000,00	27000 000,00	
16.2.2			i) Overheard Costs for Item) above	%	27,000,000.0			
Total Carried Forward To Summary								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
17	SANS 1200 G		SECTION : CONCRETE SURFACING (STRUCTURAL)					
17.1	8.1.3		CONCRETE BRIDGE 1 AT KM 1085					
			Indicates part of structure, class code and 28 day characteristic cylinder strength/characteristic compressive cube strength and nominal aggregate size					
			Class 25/30					
17.1.1			(i) Cast in-situ deck slab	m³	400.0			
17.1.2			(ii) Pier bases	m³	200.0			
17.1.3			(iii) Abutment bases	m³	313.0			
17.1.4			(iv) Pier Walls	m³	125.0			
17.1.5			(v) Abutment walls	m³	250.0			
17.1.6			(vi) Wing walls	m³	75.0			
17.1.7			(vii) Earwings	m³	4.0			
17.1.8			(viii) Pier caps	m³	63.0			
17.1.9			(ix) Approach Slab	m³	38.0			
17.1.10			(xii) Diaphragm	m³	56.0			
17.1.11			Provide all materials to include reinforcement, concrete and all other necessary accessories for manufacturing 40Mpa precast beams refer to drawing No EMP1-B01-S402, EMP1-B01-S502, EMP1-B02-S402 and EMP1-B02-S502	No.	60.0			
17.2	SANS 1200 GE		SECTION : STRUCTURAL PRECAST CONCRETE					
17.3			STRUCTURAL UNITS					
17.3.1			Transporting and erecting of precast concrete member	No.	60.0			
			Indicates part of structure, class code and 28 day characteristic cylinder strength/characteristic compressive cube strength and nominal aggregate size					
17.4	8.1.3		CONCRETE BRIDGE 2 AT KM 1825					
			Class 25/30					
17.4.1			(i) Cast in-situ deck slab	m³	400.0			
17.4.2			(ii) Pier bases	m³	200.0			
17.4.3			(iii) Abutment bases	m³	313.0			
17.4.4			(iv) Pier Walls	m³	188.0			
17.4.5			(v) Abutment walls	m³	313.0			
17.4.6			(vi) Wing walls	m³	75.0			
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
17.4.7			(vii) Earwings	m³	4.0			
17.4.8			(viii) Pier caps	m³	63.0			
17.4.9			(ix) Approach Slab	m³	38.0			
17.4.10			(xii) Diaphragm	m³	56.0			
17.4.11			Provide all materials to include reinforcement, concrete and all other necessary accessories for manufacturing 40Mpa precast beams	No.	60.0			
17.5	SANS 1200 GE		SECTION : STRUCTURAL PRECAST CONCRETE					
17.6			STRUCTURAL UNITS					
17.6.1			Transporting and erecting of precast concrete member	No.	60.0			
17.7	8.1.1		FORMWORK TO BRIDGE 1 AT KM 1085					
			Formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)					
	8.2.2		(a) Vertical formwork to provide Class F1 surface finish to :					
17.7.1		LI	(i) Pier bases	m²	150.0			
17.7.2		LI	(ii) Pier caps sides	m²	5.0			
17.7.3		LI	(iii) Abutment bases	m²	200.0			
17.7.4		LI	(v) Abutment walls	m²	81.0			
17.7.5		LI	(vi) Apron Slab	m²	8.0			
17.7.6		LI	(vii) Ear Wing	m²	38.0			
			(b) Vertical formwork to provide Class F2 surface finish to :					
17.7.7		LI	(i) Pier Walls	m²	306.0			
17.7.8		LI	(ii) Abutment walls	m²	175.0			
17.7.9		LI	(iii) Pier caps sides and vertical ends	m²	13.0			
17.7.10		LI	(iv) Exposed external surfaces of deck sides	m²	13.0			
17.7.11		LI	(iv) Sides and ends of diaphragms	m²	136.0			
17.7.12		LI	(v) Wingwalls	m²	119.0			
17.7.13		LI	(viii) Deck Sides	m²	119.0			
			(c) Horizontal formwork to provide Class F1 surface finish to:					
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
17.7.14		LI	(i) Deck diaphragms	m²	34.0			
			(d) Inclined formwork to provide Class F1 surface finish to:					
17.7.15		LI	(i)Abutment walls	m²	175.0			
17.7.16		LI	(ii)Wing walls	m²	150.0			
			(e) Formwork to form open joints					
17.7.17		LI	(i) Between vertical and horizontal surfaces at the deck ends and the abutments.	m²	25.0			
			(e) Class F2 surface finish to:					
17.7.18		LI	(i) Pier cap soffit	m²	13.0			
17.8	8.1.1		FORMWORK TO BRIDGE 2 AT KM 1825					
			Formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)					
	8.2.2		(a) Vertical formwork to provide Class F1 surface finish to :					
17.8.1		LI	(i) Pier bases	m²	150.0			
17.8.2		LI	(ii) Pier caps sides	m²	5.0			
17.8.3		LI	(iii) Abutment bases	m²	200.0			
17.8.4		LI	(v) Abutment walls	m²	120.0			
17.8.5		LI	(vi) Apron Slab	m²	8.0			
17.8.6		LI	(vii) Ear Wing	m²	38.0			
			(b) Vertical formwork to provide Class F2 surface finish to :					
17.8.7		LI	(i) Pier Walls	m²	344.0			
17.8.8		LI	(ii) Abutment walls	m²	200.0			
17.8.9		LI	(iii) Pier caps sides and vertical ends	m²	13.0			
17.8.10		LI	(iv) Exposed external surfaces of deck sides	m²	13.0			
17.8.11		LI	(iv) Sides and ends of diaphragms	m²	136.0			
17.8.12		LI	(v) Wingwalls	m²	150.0			
17.8.13		LI	(viii) Deck Sides	m²	119.0			
			(c) Horizontal formwork to provide Class F1 surface finish to:					
17.8.14		LI	(i) Deck diaphragms	m²	34.0			
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
			(d) Inclined formwork to provide Class F1 surface finish to:					
17.8.15		LI	(i)Abutment walls	m²	200.0			
17.8.16		LI	(ii)Wing walls	m²	188.0			
			(e) Formwork to form open joints					
17.8.17		LI	(i) Between vertical and horizontal surfaces at the deck ends and the abutments.	m²	25.0			
			(e) Class F2 surface finish to:					
17.8.18		LI	(i) Pier cap soffit	m²	13.0			
17.9	8.1.2		REINFORCEMENT BRIDGE 1 AT KM 1085					
			(a) Pier bases					
17.9.1	8.3.2		(i) Mild steel bars	t	0.2			
17.9.2			(ii) High yield stress steel bars	t	20.0			
			(b) Pier walls and pier caps					
17.9.3			(i) Mild steel bars	t	0.3			
17.9.4			(ii) High yield stress steel bars	t	25.0			
			(c) Abutment bases					
17.9.5			(i) Mild steel bars	t	0.1			
17.9.6			(ii) High yield stress steel bars	t	35.0			
			(d) Abutment walls and wingwalls					
17.9.7			(i) Mild steel bars	t	1.0			
17.9.8			(ii) High yield stress steel bars	t	25.0			
			(e) Deck slab and diaphragms					
17.9.9			(i) Mild steel bars	t	0.5			
17.9.10			(ii) High yield stress steel bars	t	35.0			
			(f) Parapets and End blocks					
17.9.11			(i) Mild Steel	t	1.0			
17.9.12			(ii) High yield stress steel bars	t	10.0			
			(g) Approach Slab					
17.9.13			(i) Mild steel bars	t	1.0			
17.9.14			(ii) High yield stress steel bars	t	2.0			
17.10	8.1.2		REINFORCEMENT BRIDGE 2 AT KM 1825					
			(a) Pier bases					
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
17.10.1	8.3.2		(i) Mild steel bars	t	0.2			
17.10.2			(ii) High yield stress steel bars	t	20.0			
			(b) Pier walls and pier caps					
17.10.3			(i) Mild steel bars	t	0.3			
17.10.4			(ii) High yield stress steel bars	t	25.0			
			(c) Abutment bases					
17.10.5			(i) Mild steel bars	t	0.1			
17.10.6			(ii) High yield stress steel bars	t	35.0			
			(d) Abutment walls and wingwalls					
17.10.7			(i) Mild steel bars	t	1.0			
17.10.8			(ii) High yield stress steel bars	t	25.0			
			(e) Deck slab and diaphragms					
17.10.9			(i) Mild steel bars	t	0.5			
17.10.10			(ii) High yield stress steel bars	t	35.0			
			(f) Parapets and End blocks					
17.10.11			(i) Mild Steel	t	1.0			
17.10.12			(ii) High yield stress steel bars	t	10.0			
			(g) Approach Slab					
17.10.13			(i) Mild steel bars	t	1.0			
17.10.14			(ii) High yield stress steel bars	t	2.0			
17.11	8.5		JOINTS - BRIDGE 1 AND 2					
			Expansion joints:					
17.11.1			Filled on the deck with 20mm Jointex (drawing ref EMP1-B01-S401, EMP-B01-S501, EMP1-B02-S401, EMP-B02-S501)	m	412.0			
			Unfilled on parapet (drawing ref EMP1-B01-SD001, EMP1-B01-SD002, EMP1-B02-SD001, EMP1-B02-SD002)					
17.11.2			(i) Parapet	m	50.0			
			Supply and installation of Agreement South Africa certified proprietary expansion joints					
17.11.3			Asphaltic plug type joints (a) 400 x 75	m	60.0			
17.11.4			Additional water tests for joints ordered by the Engineer	No.	4.0			
17.12			BEARINGS					
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
17.12.1			Bearings (Elastomeric Bearing ref drawing EMP1-B01-S301, EMP1-B02-S301)	No.	90.0			
			Provision of Engineering drawings of proprietary bearings and certification after installation, by an ECSA Registered Professional Engineer or Technologist.					
17.12.2			Concrete Hinges	Sum	1.0			
17.12.3			Bearing strips (25mm Foamed Polyethylene)	m²	2.0			
17.12.4			(a) Dowels or guides	No.	50.0			
17.12.5			(ii) (ii) Multidirectional (EMP1-B01-S301, EMP1-B02-S301)	No.	70.0			
17.12.6			Installing the proprietary bearings (laminated Elastomeric Bearings ref drawing EMP1-B01-S301, EMP1-B02-S301)	No.	90.0			
17.13			ANCILLARY STRUCTURAL ELEMENTS					
			Concrete barriers and parapets					
17.13.1			Parapets: Supply of formwork, reinforcement and concrete	m	200.0			
17.13.2			End blocks (3000mm)	No.	10.0			
			Service ducts in structures					
17.13.3			110 dia PVC	m	300.0			
17.13.4			Joint in ducts at bridge deck expansion joints	No.	10.0			
			Numbers for structures:					
17.13.5			Numbers formed in concrete	No.	5.0			
17.13.6			Cast in situ no-fines concrete (C12/15, 15MPa)	m³	5.0			
			Drainage pipes and weep holes:					
			Drainage pipes:					
17.13.7			330 wide DN1 drainage strips	m	300.0			
17.13.8			110 dia scuppers	No.	30.0			
			Weep holes:					
17.13.9			(50mm Dia weephole at 1800mmc/c (drawing 3801-30)	No.	160.0			
17.13.10			Synthetic-fibre filter fabric (Grade 2 Geofrabric covering Strips and Wrapped Around Netlon Pipe)	m²	300.0			
Total Carried Forward								

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
17.13.11			Drainage strips ((330mm wide DN3 Netlon Drainage strips at 1800mm C/C attached to earth face of abutment at 45% to horizontal))	m	150.0			
17.13.12			Perforated Drainage Pipe (M65 Netlon Drainage pipe wrapped in synthetic -filter fabric as specified in drawing)	m	250.0			
17.13.13			Galvanising of reinforcement	t	10,0			
17A.13.14			TESTING MATERAILS AND JUDGEMENT OF WORKMANSHIP					
17A.13.14.1			Special tests on elastomeric bearings (150 % vertical load and 150 % shear distortion)	No	100			
			Special tests requested by the Engineer					
17A.13.14.2			Tests for water sorptivity	Prov Sum	1,0	200 000,00	200 000,00	
17A.13.14.3			Handling costs and profit in respect of item 17A.13.14.2	%	200 000,0			
Total Carried Forward To Summary								

SECTION : EARTHWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
18		SECTION : EARTHWORKS					
18.1	SANS 1200 D 8.3.2	EXCAVATION					
18.1.1	8.3.1.2	Remove topsoil to nominal depth 150mm, stockpile, and maintain	m²	85,000.0			
	8.3.2(a)	Excavate in all materials and place within freehaul distance for :					
18.1.2		Levelling site	m³	12,000.0			
18.1.3		Substation basement	m³	35,600.0			
	8.3.2(b)	Extra-over items .18.1.2&18.1.3 for excavation in:					
18.1.4		Intermediate material	m³	24,600.0			
18.1.5		Hard rock material	m³	12,000.0			
18.1.6		Boulder material, Class A	m³	3 400,0			
18.1.7		Boulder material, Class B	m³	4 500,0			
18.2	8.3.4	IMPORT MATERIAL					
18.2.1		To complete terraces: from borrow pits	m³	195,800.0			
18.2.2		To complete terraces: from commercial sources (Prov)	m³	32,560.0			
18.2.3		Opening up and closing down of designated borrow pit	Sum	1,0			
18.2.4		Deal with overburden	m³	22,300.0			
18.2.5	8.3.5	Extra excavation in all materials to provide working space for outside formwork	m²	2,100.0			
	8.3.6	Overhaul (provisional)					
18.2.6		Limited overhaul	m³	3500.0			
18.2.7		Long overhaul	m³.km	25000.0			
18.2.8	8.3.7	Additional lateral support at bridge ..... (Subclause 5.1.1.2(b))	Sum	1,0			
	8.3.8	Existing services (See .4 of Section DB)					
18.2.9	8.3.9	Extra-over for backfill or fill material against structures	m³	21,345.0			
18.3		FINISHINGS					
18.3.1	8.3.10	Topsoiling	m²	657.0			
18.3.2	8.3.11	Grassing	m²	745.0			
Total Carried Forward							

SECTION : OFF CHANNEL STORAGE DAM

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
19	SANS 1200 DE	SECTION : SMALL EARTH DAM					
19.1		EXCAVATION					
	8.3.3(a)	Material unsuitable for embankment. Excavate from essential excavations, and place in spoil dumps					
19.1.1		Soft material from solum, cut-off, outlet trenches, and spillway areas	m³	9,845.0			
	8.3.3(b) and (c)	Suitable material from essential excavations. Excavate to line and level in all materials (see Dwg DE-1 of SANS 1200 DE) as if in soft or intermediate material and move to appropriate zones in embankment from					
19.1.2		a) cut-off trench	m³	2,235.0			
19.1.3		b) outlet trench	m³	45.0			
19.1.4		c) spillway channels	m³	127.0			
19.1.5	8.3.3(c)	Extra-over otems .19.1.2 - .19.1.4, for hard rock material (Prov. quantity)	m³	2,145.0			
	8.3.5	EMBANKMENT Take delivery of material excavated under items . 19.1.2 - .19.1.4 or excavate and select from borrow pits, place, spread, and consolidate material in appropriate zones in embankment					
19.1.6		a) Selected impervious material	m³	7,245.0			
19.1.7		b) Transition	m³	2,345.0			
19.1.8		c) Unselected pervious material	m³	1,345.0			
19.1.9		e) Topsoil from stockpile to downstream slope of embankment	m³	11,250.0			
19.1.10		f) Coarse filter material	m³	623.0			
19.1.11		g) Fine filter material	m³	245.0			
19.1.12		h) Gravel capping	m³	378.0			
	8.3.8	Overhaul on items .19.1.2 - .19.1.4 and .19.1.6 to 19.1.12 inclusive					
19.1.13		a) Short haul	m³	3,456.0			
19.1.14		b) Long haul	m³.km	2,345.0			
19.1.15	8.3.6	Toe drain Complete construction	m	3,210.0			
19.1.16	8.3.7	Trial embankment Form trial embankment (Prov.)	Sum	1,0			
		FINISHINGS Trim rock surfaces in spillway channels					
19.1.17	PSDE	a) Within 3 m from control wall	m²	73.0			
19.1.18	PSDE	b) 3 m and more from control wall	m²	150.0			
Total Carried Forward							

SECTION : OFF CHANNEL STORAGE DAM

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
	SANS 1200 DE	Stone pitching including supply and placing of stone and gravel backing					
19.1.19		a) Grouted, minimum thickness 300 mm	m²	234.0			
19.1.20		b) Other types or thicknesses	m²	451.0			
19.1.21	8.3.9	Grassing Downstream face of embankment	m²	234.0			
19.2	SANS 1200 DE	ALTERNATIVELY, SECTION : SMALL EARTH DAM					
19.3	8.3.1.1	STRIP SITE					
19.3.1		a) Foundation area of embankment, spillway, and other structures	ha	25.0			
19.3.2		b) Borrow areas	ha	35.0			
19.3.3		c) Stockpile topsoil	m³	75.0			
19.4		EXCAVATION					
19.4.1	8.3.3	Material unsuitable for embankment. Excavate soft material from essential excavations and place in spoil dumps	m³	3,245.0			
	8.3.3	Suitable material from essential excavations. Excavate to line and level in all materials (see Dwg DE-1 of SANS 1200 DE) as if in soft or intermediate material for					
19.4.2		a) Spillway	m³	15.0			
19.4.3		b) Foundation area (solum)	m³	25.0			
19.4.4		c) Cut-off trench	m³	23.0			
19.4.5		d) Outlet trench	m³	12.0			
	8.3.3(c)	Extra-over items. 19.4.2, and. 19.4.5for excavation in hard rock material for					
19.4.6		a) Spillway	m³	135,0			
19.4.7		b) Cut-off trench	m³	123,0			
19.4.8		c) Outlet trench	m³	122.0			
19.5	8.3.4	PREPARE EXPOSED SURFACES					
19.5.1		a) Area of foundation (solum)	ha	10.0			
19.5.2		b) Invert and side slopes of cut-off trench	m²	150			
19.5.3		c) Concrete of specified strength 15 MPa in open cracks and fissures in cut-off trench	m³	3600.0			
19.5.4		d) Cement slush grouting	50kg sacks	2890.0			
	SANS 1200 DE	FORM EMBANKMENT Using material excavated under Items 19.5.1- . 19.5.3, form embankment in					
Total Carried Forward							

SECTION : OFF CHANNEL STORAGE DAM

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
19.5.5		a) Zone II	m³	34000.0			
19.5.6		b) Zone III	m³	24000.0			
19.5.7		c) Zone IV	m³	45000.0			
	8.3.5(b)	Using material from designated borrow areas, form embankment in					
19.5.8		a) Zone I (Core) from borrow area No. 1	m³	4500.0			
19.5.9		b) Zone II (Transition) from dam basin	m³	3570.0			
19.5.10		c) Zone III (Shell) from dam basin	m³	2400.0			
19.5.11		d) Zone V (Rock toe) from dam basin	m³	4500.0			
19.6	8.3.5(e)	TOPSOIL					
19.6.1		Load, haul, and spread topsoil stockpiled (under Item .2.3) on downstream slopes of embankment and where directed	m²	240.0			
Total Carried Forward							

WEIR

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
20		WEIR					
20.1	8.2.10	Laydown Platform area	m²	10,575.0			
	SABS 1200 D	BULK EXCAVATION FOR LAYDOWN PLATFORM					
20.1.1	8.3.2 a)	Excavate in all materials and dispose of to stockpile area, contractors temporary works (eg coffer dams) or as directed by the Engineer	m³	153,000.0			
20.1.2	8.3.2 b)	Extra-over item 20.1.1 for excavation in hard rock by blasting where approved by the Engineer	m³	102,450.0			
20.2		GRIDDING OF NATURAL GRAVEL					
20.2.1	10.2.9	Processing of Natural Gravel from stockpile or insitu materials by Heavy Gridding and stockpiling for later use as pipeline bedding and or backfill of pipelines, and under new structures (excluding abstraction structure which is measured elsewhere)	m³	2,694.0			
20.2.2		Hard	m³	43,820.0			
		Extra Over Items above for additional excavation required by the Employer's Agent after excavation has been completed					
20.2.3		Soft	m³	400.0			
20.2.4		Hard	m³	1,500.0			
		Treatment of joints and irregularities using:					
20.2.5		Cement Mortar - Sand:Cement:Water (2:1:1)	m³	500.0			
20.2.6		Cement Grout	m³	1,000.0			
20.2.7		Dental Concrete (15 MPa/38 mm)	m³	1,000.0			
20.2.8		Sprayed Concrete	m³	1,000.0			
20.2.9		Compaction of in situ material by 6, 10t roller passes	m²	200.0			
20.2.10		Excavation by hand	m³	20.0			
20.3	SABS 1200 D	BULK EXCAVATION FOR LAYDOWN PLATFORM					
20.3.1	8.3.2 a)	Excavate in all materials and dispose of to stockpile area, contractors temporary works (eg coffer dams) or as directed by the Engineer	m³	22,050.0			
20.3.2	8.3.2 b)	Extra-over item 15.1.4 for excavation in hard rock by blasting where approved by the Engineer	m³	5,510.0			
20.4		GRIDDING OF NATURAL GRAVEL					
Total Carried Forward							

WEIR

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
20.4.1	10.2.9	Processing of Natural Gravel from stockpile or insitu materials by Heavy Gridding and stockpiling for later use as pipeline bedding and or backfill of pipelines, and under new structures (excluding abstraction structure which is measured elsewhere)	m³	2,694.0			
Total Carried Forward To Summary							

DRILLING AND GROUTING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
21	SABS1200 F 8.2.23	DRILLING AND GROUTING					
		Set up equipment for drilling consolidation, curtain grout and drainage holes.					
21.1		Percussion drilling rigs	No	300.0			
21.2		Rotary core drilling rigs	No	15.0			
21.3		Rotary drilling rigs	No	1.0			
		Drilling of grout and drainage holes					
21.4		Percussion drilling	m	7,200.0			
21.5		Rotary core drilling (76 mm)	m	400.0			
21.6		Rotary drilling (50 mm)	m	1.0			
		Re-drilling of grouted holes					
21.7		Percussion drilling	m	20.0			
21.8		Rotary core drilling	m	1.0			
21.9		Rotary drilling	m	1.0			
		Water pressure tests					
21.10		Abbreviated water pressure tests	No	150.0			
21.11		Comprehensive water pressure tests	No	150.0			
21.12		Cavity grouting	m²	1.0			
21.13		Contact grouting behind stainless steel lining	m²	30			
21.14		Curtain and consolidation grouting	ℓ	160,000.0			
		Grouting Materials :					
21.1		RHPC	t	100.0			
21.1.1		Fly-Ash	t	1.0			
21.1.2		Bentonite	t	1.0			
21.1.3		Sand	t	1.0			
		Casings					
21.1.4		Casing for rotary core drill holes	m	80.0			
21.1.5		Extra over (a) for permanent casing	m	1.0			
21.1.6		Casing for rotary drill holes	m	1.0			
21.1.7		Extra over (c) for permanent casing	m	1.0			
21.1.8		Casing for percussion drill holes	m	1.0			
21.1.9		Extra over (e) for permanent casing	m	1.0			
		Recovery of cores					
Total Carried Forward							

DRILLING AND GROUTING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
21.1.10		Core recovery	m	250.0			
21.1.11		Core boxes	No	50.0			
		Sleeve Pipes					
21.1.12		80 mm dia steel grout sleeve pipes	m	1.0			
21.1.13		75mm dia PVC grout sleeve pipes	m	700.0			
21.1.14		Backfilling of exploratory boreholes	No	1.0			
21.1.15	SABS 1200 LE 8.4.3	River Diversion and Associated Temporary Works inclusion diversion pipelines, diversion culverts, operation and maintenance of diversion works and removal of diversion works including rehabilitation	Sum	1.0			
21.1.16		Design, maintain and flood protection and removal of cofferdams	Sum	1.0			
21.1.17	SABS 1200 LE 8.3.4	River Diversion and Associated Temporary Works inclusion diversion pipelines, diversion culverts, operation and maintenance of diversion works and removal of diversion works including rehabilitation	Sum	1.0			
21.1.18		Design, maintain and flood protection and removal of cofferdams	Sum	1.0			
Total Carried Forward							

ROCK SUPPORT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
22		ROCK SUPPORT					
	SABS 1200 G 8.7	Rockbolts (Galvanised) :					
22.1		2 m long, 25 mm dia. in excavation cuttings	No	400.0			
22.2		4 m long, 25 mm dia.	No	700.0			
22.3		6 m long, 32 mm dia.	No	1,500.0			
		Dowels (Galvanised) :					
22.4		6m long into rock, 32 mm dia.	No	50.0			
22.5		10m long into rock, 32 mm dia.	No	50.0			
	SABS 1200 GA 8.3.2	Welded mesh reinforcement					
22.6		Ref. 395 Reinforcing mesh on excavation cutting	m²	1,500.0			
22.7		Ref. 193 Reinforcing mesh on excavation cutting	m²	700.0			
22.8		Ref. 156 Reinforcing mesh on excavation cutting	m²	400.0			
	8.4.1	Sprayed Concrete :					
22.9		On temporarily exposed cutting (50 mm)	m²	2,000.0			
22.10		On permanently exposed cutting (100 mm)	m²	800.0			
22.11		E.O. 7.005 for the addition of pigment	m²	1.0			
	SABS 1200 GB 8.2.4	Reinforcement Anchors					
22.12		6 m long Y32 grouted 5 m into rock beneath plinth, Intake Tower and Conduit.	No	2,300.0			
22.13		6 m long Y32 grouted 5 m into rock beneath Intake Tower	No	74.0			
22.14		6 m long Y32 "hot dipped galvanised" 5 m into rock beneath Outlet Structure	No	450.0			
22.15		6 m long Y32 "hot dipped galvanised" 5 m into rock beneath Spillway Chute	No	50			
22.16		E.O. 7.007 for additional length through foundation fill concrete	m	600.0			
22.17		Pressure relief holes through sprayed concrete (38mm diameter hole 450mm into rock)	No	500.0			
		Rock Anchors					
22.18		Dywidag	No	300.0			
22.19		6m long GEWI Micropile Anchors (B500B & S555/700, 28 mm diameter) OR Similar for Intake Tower Bridge piers	No	32.0			
Total Carried Forward							

REINFORCEMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
23		REINFORCEMENT					
	SABS 1200 GB 8.2.4	Mild steel bars					
23.1		< 16 mm diameter	t	21.0			
23.2		> 16 mm diameter	t	40.0			
	8.2.5	High tensile steel					
23.3		< 16 mm diameter	t	2,100.0			
23.4		>16 mm diameter	t	4,000.0			
	SABS 1200 G 8.3.2	Welded mesh reinforcement					
23.5		Ref. 193	m²	100.0			
23.6		Ref. 311	m²	100.0			
23.7		Ref. 395	m²	2,000.0			
23.8		Extra Over for hot dip galvanising	m	2,000.0			
23.9		Extra Over for wrapping with 3mm of Denso	m	1,000.0			
Total Carried Forward							

FORMWORK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
24		FORMWORK					
24.1	SABS1200G 8.1.1	ROUGH FORMWORK (DEGREE OF ACCURACY III)					
		Rough formwork to sides					
24.1.1		Bases	m²	1,450.0			
24.2	8.2.1	SMOOTH FORMWORK (DEGREE OF ACCURACY I)					
		Smooth formwork to sides					
24.2.1		Left and right retaining walls	m²	5,435.0			
24.2.2		Stilling basin	m²	5,850.0			
24.2.3		Training walls	m²	720.0			
24.2.4		Sluice chambers	m²	7,000.0			
24.2.5		Abstraction works	m²	2,500.0			
24.2.6		Ogee Spillway	m²	5,600.0			
24.2.7		Pianokey weir	m²	1,800.0			
24.2.8		Belmouth	m²	405.0			
24.3	8.2.1	SMOOTH CURVED FORMWORK (DEGREE ACCURACY I)					
24.3.1		Spillway	m²	1,200.0			
24.3.2		Sluice discharge spillway	m²	600.0			
24.3.3		Belmouth walls	m²	1,015.0			
24.3.4		Stilling basin	m²	1,000.0			
Total Carried Forward							

CONCRETE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
25							
		In-situ structural and mass concrete					
25.1	8.4.2	CONCRETE					
25.1.1		c) Blinding layer in 20 MPa/40 mm concrete 100 mm thick	m²	8,500.0			
		Reinforced concrete for Left and Right retaining walls					
		Strength concrete: 35 MPa/19mm					
25.1.2		Left wall	m³	20 000,0			
25.1.3		Right wall	m³	9 000,0			
		Reinforced concrete for stilling basin					
		Strength concrete: 35 MPa/19mm					
25.1.4		Base	m³	4,500.0			
25.1.5		Walls	m³	5,200.0			
		Reinforced concrete for training walls					
		Strength concrete: 35 MPa/19mm					
25.1.6		Straight Wall	m³	1,520.0			
25.1.7		curved walls	m³	1,660.0			
		Reinforced concrete for Sluice gate					
		Strength concrete: 35 MPa/19mm					
25.1.8		Sluice chamber	m³	6,700.0			
25.1.9		partition walls	m³	2,520.0			
		Abstraction works					
		Strength concrete: 35 MPa/19mm					
25.1.10		Reinforced concrete for Abstraction works	m³	5,382.0			
25.1.11		Abstraction walls	m³	74.5			
		Main Spillway					
		Strength concrete: 35 MPa/19mm					
25.1.12		Main Discharge Spillway	m³	22,367.0			
25.1.13		Spillway bucket support	m³	740.0			
		Piano Key Weir					
		Strength concrete: 35 MPa/19mm					
25.1.14		Base	m³	1,620.0			
25.1.15		Piano key discharge channel	m³	720.0			
Total Carried Forward							

CONCRETE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		River training walls					
		Strength concrete: 35 MPa/19mm					
25.1.16		Belmouth walls	m³	405.0			
25.1.17		River redirection wall	m³	380.0			
25A.1.17		Construct Stairwell Access	m³	1 420,0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
26		STRUCTURAL STEELWORK					
		Grade 350WA Structural Steelwork, complete, installed and corrosion protected					
		Structural steel frame to support centre lift hoists on top of the Intake Tower					
26.1		Structural Steelwork for frame to support hoists.	t	15.0			
26.2		Structural Steelwork for spillway access frame.	t	32.0			
		Outlet House and Sleeve Valve House					
26.3		Structural Steelwork for Outlet House and Sleeve Valve House.	t	30.0			
		Sundry steelwork items complete, installed and corrosion protected					
		Access Ladders					
26.4		Access ladders with safety cage in SS Gr 316 with SS anchor bolts and landings	m	30.0			
26.5		Access ladders without safety cage, in SS Gr 316 with SS anchor bolts	m	10.0			
		Handrails					
26.6		Fixed handrails to stairs, platforms, top of tower, etc. in SS Gr 316, with SS anchor bolts	m	275.0			
26.7		Removable handrails to stairs, platforms, top of tower, etc. in SS Gr 316	m	40.0			
		Covers					
26.8	(c)	Removable "Mentis B100 Gripweld 100x5" covers over openings in the Intake Tower, on a steel frame including built in parts and lifting points all in 3CR12	m²	250.0			
26.9	(c)	2 No off, sets of open covers for flood release gate chamber in the Outlet House (each made in 3 parts) of "B60 Mentis Gripweld 50x4.5 " painted, including built in parts and lifting points all in 3CR12	m²	40.0			
26.10	(c)	2 No off, sets of closed covers for isolation valve chamber (one made in 2 parts and the other in 4 parts) of "B60 Mentis Gripweld 100x5.5 " painted, including built in parts and lifting points all in 3CR12	m²	1.0			
		Other Small Steelwork Items					
26.11	(d)	Access platform to valve actuator, complete with angle frame and brackets and grid flooring, all in 3CR12 with SS anchor bolts	t	2.0			
26.12	(d)	5t lifting points complete in 3CR12 with SS bolts	No	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
26.13	(d)	2 No. off, Structural steel frames to support bulkhead gate in storage bays a top of Intake tower, all in 3CR12 with SS anchor bolts	t	2.0			
26.1		MISCELLANEOUS					
		Provision for forced ventilation					
		All to be designed by the Contractor for 3 air changes per hour including :					
26.1.1	(d)	"Vented cover for water level recorder on plinth top deck, with door and robust hinges and locking device. Dimensions 1200 x 800 x 80 mm high, from 2 mm thick 3CR12 painted"	Sum	1.0			
26.1.2	(d)	"Vented cover for water level recorder on intake tower top deck, with door and robust hinges and locking device. Dimensions 1200 x 800 x 80 mm high, from 2 mm thick 3CR12 painted"	Sum	1.0			
Total Carried Forward							

SECURITY FENCE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
27							
		Supply and erect new fencing material for new fences					
27.1	(a)	Stock proof fence (1.8.2.1a)	km	0.5			
27.2	(b)	Security fence (1.8.2.1b)	km	0.5			
		New gates					
27.3		Security gate (pedestrian) 2.40 m high	No	2.0			
		Moving existing fences and gates					
27.4	(a)	All types of fencing	km	20000			
27.5	(b)	All types of gates	No	2			
	15.004	Supply and installation of new fencing material					
27.6	(a)	Zinc-coated barbed wire	km	0.5			
27.7	(b)	Zinc-coated smooth wire	km	0.5			
27.8	(c)	Diamond mesh	m²	1,250.0			
27.9	(d)	Standards	No	180.0			
27.10	(e)	Droppers	No	180.0			
Total Carried Forward							

DECK BRIDGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
28	SABS1200G 8.2.1	FALSEWORK, FORMWORK AND CONCRETE FINISH					
		Formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)					
		Vertical formwork to provide :					
		(a) Class F1 surface finish to:					
28.1		(vi) Apron Slab	m²	78.0			
		(b) Class F2 surface finish to:					
28.2		(viii) Deck Sides	m²	1,235.0			
		Horizontal formwork to provide:					
		(a) Class F1 surface finish to:					
28.3		(i) Deck diaphragms	m²	351.0			
28.1		STEEL REINFORCEMENT					
		(b) Reinforcement, High-yield-stress-steel bars for:					
		(a) Pier bases					
		(e) Deck slab and diaphragms					
28.1.1		(i) Mild steel bars	t	0.7			
28.1.2		(ii) High yield stress steel bars	t	325.0			
		(f) Parapets and End blocks					
28.1.3		(i) Mild Steel	t	6.5			
28.1.4		(ii) High yield stress steel bars	t	78.0			
28.2		CONCRETE					
	(a)	Indicate part of structure, class code and 28 day characteristic cylinder strength/characteristic compressive cube strength and nominal aggregate size					
		Class 25/30					
28.2.1		(i) Cast in-situ deck slab	m³	4,160.0			
28.2.2		(ix) Approach Slab	m³	390.0			
28.2.3		(xii) Diaphragm	m³	585.0			
28.2.4	13.4.9	Provide all materials to include reinforcement, concrete and all other necessary accessories for manufacturing 40Mpa precast beams	No	400.0			
28.2.5	13.4.11	Transporting and erecting of precast concrete member	No	400.0			
Total Carried Forward							

HYDROMECHANICAL WORK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
29		HYDROMECHANICAL WORK					
	8.5	For work to be done by a nominated sub-contractor (or the Employer)					
29.1		a) Allow for all the costs and expenses in connection with the design, manufacture, coating, factory testing, supplying and installation of all hydromechanical equipment (Tops Gates, Bottoms Gates and Diaphragm Valve) outlet works (by nominated sub-contractor)	Prov Sum	1,0	130000 000,00	130000 000,00	
29.2		i) Overheard Costs for Item 29.1) above	%	130000 000,0			
29.3		b) Provide hardstanding for cranes for installation of item 29.1	Prov Sum	1,0	950 000,00	950 000,00	
29.4		i) Overheard Costs for Item 29.3) above	%	950 000,0			
Total Carried Forward							

INSTRUMENTATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
30		INSTRUMENTATION					
	8.5	For work to be done by a nominated sub-contractor (or the Employer)					
30.1		a) Allow for all the costs and expenses in connection with the design, manufacture, coating, factory testing, supplying and installation of all instrumentation equipment (by nominated sub-contractor)	Prov Sum	1,0	5000 000,00	5000 000,00	
30.2		i) Overheard Costs for Item 30.1) above	%	5,000,000.0			
Total Carried Forward To Summary							

FALSEWORK , FORMWORK AND CONCRETE FINISH

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
31.1	SABS1200G 8.2	FALSEWORK, FORMWORK AND CONCRETE FINISH					
	8.2.1	Formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)					
		Vertical formwork to provide :					
		(a) Class F1 surface finish to:					
31.1.1		(vi) Apron Slab	m²	78.0			
		(b) Class F2 surface finish to:					
31.1.2		(viii) Deck Sides	m²	1,235.0			
		Horizontal formwork to provide:					
		(a) Class F1 surface finish to:					
31.1.3		(i) Deck diaphragms	m²	351.0			
Total Carried Forward							

REINFORCEMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
32		REINFORCEMENT					
32.1	8.3	STEEL REINFORCEMENT					
	8.3.1	(b) Reinforcement, High and mild yield-stress-steel bars:					
32.1.1		(i) Mild steel bars	t	0.7			
32.1.2		(ii) High yield stress steel bars	t	325.0			
		(f) Parapets and End blocks					
32.1.3		(i) Mild Steel	t	6.5			
32.1.4		(ii) High yield stress steel bars	t	78.0			
		(g) Approach Slab					
32.1.5		(i) Mild steel bars	t	10.4			
32.1.6		(ii) High yield stress steel bars	t	19.5			
32.1.7		Extra-over for item all above etc. for galvanising of reinforcement	t	13.0			
Total Carried Forward							

CONCRETE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
33	SABS1200G 8.4.3						
33.1	8.4.3	CONCRETE					
		Cast in situ concrete					
		Strength concrete (Class 30/20):					
	(a)	Indicate part of structure, class code and 28 day characteristic cylinder strength/characteristic compressive cube strength and nominal aggregate size					
		Class 25/30					
33.1.1		(i) Cast in-situ deck slab	m³	4,160.0			
33.1.2		(ix) Approach Slab	m³	390.0			
33.1.3		(xii) Diaphragm	m³	585.0			
33.1.4	8.6	Provide all materials to include reinforcement, concrete and all other necessary accessories for manufacturing 40Mpa precast beams	No	400.0			
33.1.5		Transporting and erecting of precast concrete member	No	400.0			
Total Carried Forward							

BEARING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
34	8.7	BEARINGS					
34.1		Bearings (Elastometric Bearing)	No	1,125.0			
34.2		Provision of Engineering drawings of proprietary bearings and certification after installation, by an ECSA Registered Professional Engineer or Technologist.	Lump Sum	1.0			
34.3		Bearing strips (25mm Foamed Polyethylene)	m²	1.0			
34.4		(a) Dowels or guides	No	562.5			
34.5		(ii) Multidirectional	No	875.0			
34.6		Installing the proprietary bearings (Laminated Elastometric Bearing,	No	1,125.0			
Total Carried Forward							

JOINTS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
35	SABS 1200 G 8.5	JOINTS					
	8.5	Expansion joints:					
35.1		Filled on the deck with 20mm Jointex	m	5,156.0			
		Unfilled on parapet					
35.2		(i) Parapet	No.	625.0			
		Supply and installation of Agrément South Africa certified proprietary expansion joints					
		Asphaltic plug joints including joint termination					
35.3		(a) 500 x 150	m	696.9			
35.4		Additional water tests for joints ordered by the Engineer	No	2.0			
Total Carried Forward							

ANCILLARY STRUCTURAL ELEMENTS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
36		ANCILLARY STRUCTURAL ELEMENTS					
		Concrete barriers and parapets					
36.1	8.6	Parapets: Supply of formwork, reinforcement and concrete	m	1,040.0			
36.2		End blocks (3000mm)	No	4.0			
		Service ducts in structures					
36.3		110 dia PVC	m	1,300.0			
36.4		Joint in ducts at bridge deck expansion joints	No	52.0			
		Numbers for structures:					
36.5		Numbers formed in concrete	No	2.0			
36.6		Cast in situ no-fines concrete (C12/15, 15MPa)	m³	2.0			
		Drainage pipes and weep holes:					
36.7		330 wide DN1 drainage strips	m	1,560.0			
36.8		110 dia scuppers	No	156.0			
		Weep holes:					
36.9		50mm Dia weephole at 1800mmc/c	No	806.0			
36.10		Synthetic-fibre filter fabric (Grade 2 Geofrabric covering Strips and Wrapped Around Netlon Pipe)	m²	1,430.0			
36.11		Drainage strips ((330mm wide DN3 Netlon Drainage strips at 1800mm C/C attached to earth face of abutment at 45% to horizontal))	m	780.0			
36.12		Perforated Drainage Pipe (M65 Netlon Drainage pipe wrapped in synthetic -filter fabric as specified in drawing)	m	1,235.0			
Total Carried Forward							

TESTING MATERAILS AND JUDGEMENT OF WORKMANSHIP

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
37		TESTING MATERAILS AND JUDGEMENT OF WORKMANSHIP					
37.1		Special tests on elastomeric bearings (150 % vertical load and 150 % shear distortion)	No	1,093.8			
		Special tests requested by the Engineer					
37.2		Tests for water sorptivity	Prov Sum	1.0	100 000,00	100 000,00	
37.3		Handling costs and profit in respect of item 37.2	%	100,000.00			
Total Carried Forward To Summary							

SURFACE EXCAVATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
39		Section 2					
		Treatment of joints and irregularities using:					
39.1		Cement Mortar - Sand:Cement:Water (2:1:1)	m³	200.0			
39.2		Cement Grout	m³	200.0			
39.3		Dental Concrete (15 MPa/38 mm)	m³	100.0			
39.4		Sprayed Concrete	m²	300.0			
39.5		Compaction of in situ material by 6, 10t roller passes	m²	7,000.0			
39.6		Excavation by hand	m³	10.0			
Total Carried Forward							

SUPPORT OF OPEN EXCAVATIONS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
40		SUPPORT OF OPEN EXCAVATIONS					
	PSDA 7.1	Rockbolts (Galvanised) :					
40.1	PDS 8.3.5	25mm diameter, 5m long into rock	No	3,549.0			
40.2		32mm diameter, 5m long into rock	No	337.0			
40.3		32mm diameter, 6m long into rock	No	673.0			
	PDS 8.3.5	Dowels (Galvanised) :					
40.4		32 mm diameter, 6m long into rock,	No	50.0			
40.5		32 mm diameter, 10m long into rock	No	50.0			
		Welded mesh reinforcement					
40.6		Ref. 395 Reinforcing mesh on excavation cutting	m²	3,650.0			
40.7		Ref. 193 Reinforcing mesh on excavation cutting	m²	17,000.0			
40.8		Ref. 156 Reinforcing mesh on excavation cutting	m²	3,650.0			
		Sprayed Concrete :					
40.9		On temporarily exposed cutting (50 mm)	m²	200.0			
40.10		On permanently exposed cutting (100 mm)	m²	24,300.0			
	8.6	Reinforcement Anchors					
40.11		Y32 6 m into rock beneath Conduit between Intake Tower and Plinth, 7.6m long	No	30.0			
40.12		Y32 3 m into rock beneath Spillway Chute, 4.6m long	No	220.0			
40.13		Y32 4 m into rock beneath Spillway Chute, 5.6m long	No	91.0			
40.14		Y32 5 m into rock beneath Spillway Chute, 6.6m long	No	162.0			
40.15		Y32 4 m into rock beneath Plinth, 5 m long	No	1,306.0			
40.16		E.O. 7.11 to 7.16 for additional length through foundation backfill concrete	m	400.0			
40.17		Pressure relief holes through sprayed concrete (51mm diameter hole 10m into rock)	No	920.0			
	SANS 1200 H	Rock Anchors					
40.18	8.3.6	6m long GEWI Micropile Anchors (B500B & S555/700, 28 mm diameter) OR Similar for Intake Tower Bridge piers	No	32.0			
Total Carried Forward							

BORROW AND QUARRY MATERIALS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
41		Section 5					
	SABS1200 DE 8.3.5	Remove quarry and borrow area overburden					
41.1		Hard	m³	25,500.0			
41.2		Soft	m³	95,500.0			
41.3		Removal of unsuitable material	m³	12,500.0			
Total Carried Forward							

DAM EMBANKMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
42		DAM EMBANKMENT					
42.1	SANS 1200 DE	Final preparation of foundation surface in contact with plinth	m²	1,200.0			
42.2		Preparation and compaction of foundation surface of the embankment footprint, excluding the plinth	m²	36,000.0			
		Supply and compaction of rockfill material					
		Main Dam					
42.3		Zone 3A material in Main Dam	m³	45,000.0			
42.4		Zone 3A material at Intake tower bridge abutment	m³	1,000.0			
42.5		Zone 3B material in Main Dam	m³	148,000.0			
42.6		Zone 3B material in Right Embankment	m³	2,100.0			
42.7		Zone 3B material in Spillway	m³	15,000.0			
42.8		Zone 3C material in Main Dam	m³	145,000.0			
42.9		Reduction in roller passes (per Pass) for 10t vibratory roller (enter a negative rate)	m²	90,000.0			
42.10		Additional roller passes (Per Pass) for 10t vibratory roller	m²	100,000.0			
42.11		Addition of sluicing water to rockfill	m³	72,000.0			
		Supply and compaction of earthfIll Cl Dam Clay Core material					
42.12		Zone 1B in Main Dam	m³	32,000.0			
		Supply and compaction of Filters					
42.13		Zone 2A material in Main Dam	m³	500.0			
42.14		Zone 2B material in Main Dam	m³	31,000.0			
42.15		Zone 2B material in Right Embankment	m³	110.0			
42.16		Zone 2B material in Spillway	m³	200.0			
42.17		Sand in Right Embankment	m³	110.0			
42.18		Sand in Spillway	m³	200.0			
42.19		E.O. items 42.13 to 42.18 for construction of test fill	m³	5,000.0			
42.20		Fly-ash over perimetric joint (1A)	m³	1,000.0			
		Materials for sealing of concrete facing joints					
42.21		(a) Perimetric joint complete (excluding EPDM plate)	m	310.0			
42.22		(b) Tension joint complete	m	200.0			
Total Carried Forward							

DAM EMBANKMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
42.23		(c) Compression joint complete (excluding EPDM plate)	m	810.0			
42.24		(d) Abutment/spillway joint complete	m	30.0			
42.25		(e) Parapet wall joint complete	m	280.0			
	9.017	EPDM plate					
42.26		20mm	m²	520.0			
Total Carried Forward							

DRILLING AND GROUTING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
43	SANS 1200 F	DRILLING AND GROUTING FOR GROUTING CURTAIN					
	8.3.2.23	Set up equipment for drilling consolidation, curtain grout and drainage holes.					
43.1		Percussion drilling rigs	No	1,100.0			
43.2		Rotary core drilling rigs	No	100.0			
43.3		Rotary drilling rigs	No	200.0			
	8.3.2.23	Drilling of grout and drainage holes					
43.4		Percussion drilling	m	15,000.0			
43.5		Rotary core drilling (76 mm)	m	3,000.0			
43.6		Rotary drilling (50 mm)	m	6,000.0			
	8.3.2.23	Re-drilling of grouted holes					
43.7		Percussion drilling	m	100.0			
43.8		Rotary core drilling	m	100.0			
43.9		Rotary drilling	m	100.0			
		Water pressure tests					
43.10		Abbreviated water pressure tests	No	150.0			
43.11		Comprehensive water pressure tests	No	15.0			
43.12		Cavity grouting	m²	50.0			
43.13		Contact grouting behind stainless steel lining	m²	10.0			
43.14		Curtain and consolidation grouting	ℓ	300,000.0			
	8.3.2.23	Grouting Materials :					
43.1		RHPC	t	140.0			
43.1.1		Fly-Ash	t	140.0			
43.1.2		Bentonite	t	20.0			
43.1.3		Sand	t	100.0			
	8.2.15	Casings					
43.1.4		Casing for rotary core drill holes	m	150.0			
43.1.5		Extra over (a) for permanent casing	m	50.0			
43.1.6		Casing for rotary drill holes	m	100.0			
43.1.7		Extra over (c) for permanent casing	m	50.0			
43.1.8		Casing for percussion drill holes	m	100.0			
43.1.9		Extra over (e) for permanent casing	m	50.0			
		Recovery of cores					
Total Carried Forward							

DRILLING AND GROUTING

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
43.1.10		Core recovery	m	1,500.0			
43.1.11		Core boxes	No	300.0			
		Sleeve Pipes					
43.1.12		80 mm dia steel grout sleeve pipes	m	100.0			
43.1.13		75mm dia PVC grout sleeve pipes	m	400.0			
43.1.14		Backfilling of exploratory boreholes	No	20.0			
43.1.15		Grouting of River Diversion Pipe in conduit floor and intake tower base	ℓ	120,000.0			
Total Carried Forward							

FORMWORK, BRIDGE BEARINGS AND WATERSTOPS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
44	SABS1200G 8.2	CONCRETE (STUCTURAL)					
44.1		SCHEDULED FORMWORK ITEMS					
	8.2.1	Rough (Measured to 150mm below FGL where applicable)					
		Plane Vertical to:					
44.1.1		Sides of Intake Tower base	m²	300.0			
44.1.2		Sides of Bridge footing	m²	10.0			
44.1.3		Sides of Bridge abutment beam	m²	10.0			
	8.2.2	Smooth (Measured to 150mm below FGL where applicable)					
		Plane Vertical to:					
44.1.4		Concrete core - OCSD	m²	60.0			
44.1.5		Sides of Intake tower walls	m²	750.0			
44.1.6		Sides of Intake tower columns	m²	35.0			
44.1.7		Sides of roof slab	m²	30.0			
44.1.8		Sides of floor slab	m²	10.0			
44.1.9		Sides of bridge deck	m²	8.0			
44.1.10		Sides of bridge pier	m²	80.0			
44.1.11		Retaining wall	m²	1,800.0			
		Special Smooth, Repaired and Rubbed					
44.1.12		Angled bearing section of Concrete core	m²	400			
44.1.13		Angled bearing section of intake tower	m²	185.0			
44.1.14		Spillway	m²	500			
	8.2.6	Boxed Out Holes					
		Small, other than circular of area up to and including 0.1m²					
44.1.15		Up to and including 0.5m deep	No	12.0			
44.1.16		Over 0.5 and including 1m deep	No	12.0			
		Large, other than circular, of area over 0.1m² and up to 1.0m²					
44.1.17		30mm Sondor SPX 33 or equal	m²	150.0			
44.1.18		10 mm closed cell polyethelene foam	m²	780.0			
		Joint Filler/Sealer					
44.1.19		10x15 Polysulphide sealant	m	250.0			
Total Carried Forward							

FORMWORK, BRIDGE BEARINGS AND WATERSTOPS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
44.1.20		Polyurethane joint filler	m	100.0			
44.1.21		75mm wide by 3mm thick uPVC sealing strip	m	400.0			
		Bridge Bearings					
44.1.22		i) Fixed Pot Bearings	No	2.0			
44.1.23		ii) Unidirectional Pot Bearings	No	12.0			
44.1.24		iii) Multi directional Elastomeric Bearings	No	19.0			
		Waterstops					
44.1.25		230 mm centre bulb rubber waterstop	m	10.0			
44.1.26		230 mm plain web rubber waterstop	m	10.0			
44.1.27		355 mm centre bulb rubber waterstop	m	100.0			
44.1.28		250 mm centrebulb PVC waterstop	m	1,000.0			
44.1.29		250 mm plain web PVC waterstop	m	126.0			
44.1.30		Copper waterstop Type A	m	500.0			
44.1.31		Copper waterstop Type B	m	500.0			
44.1.32		Copper waterstop Type C	m	1,500.0			
44.1.33		Mastic filled 350 mm polypropylene membrane	m	500.0			
Total Carried Forward							

CONCRETE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
45	SABS1200G 8.4.2	In-situ Structural and Mass Concrete					
		Concrete class 15/38 FA30 to :					
45.1		Conduit: Mass concrete pipe encasement and filling below outlet pipe	m³	80.0			
45.2		Spillway: Dental concrete (under Chute floor)	m³	350.0			
		Concrete class 20/38 FA30 to :					
45.3		Spillway: Mass Concrete	m³	5,300.0			
45.4		Embankment: Plinth and apron slab	m³	1,000.0			
45.5		Intake Tower: Conduit Plug	m³	130.0			
		Concrete class 25/20 FA30 to :					
45.6		Intake Tower: Structure	m³	520.0			
45.7		Intake Tower Bridge: Sub-structure	m³	1,260.0			
45.8		Embankment: Miscellaneous	m³	200.0			
45.9		Embankment: Road curbing and pathway	m³	100.0			
		Concrete class 25/38 FA30 to :					
45.10		Intake Tower: Structure	m³	4,600.0			
45.11		Spillway	m³	3,650.0			
45.12		Embankment: Parapet walls and intake bridge abutment	m³	1,210.0			
		Concrete class 30/38 FA30 to :					
45.13		Spillway	m³	4,000.0			
		Concrete class 35/20 FA30 to :					
45.14		Intake Tower: Floor slabs, beams, stairs, columns and deck	m³	210.0			
45.15		Intake Tower Bridge: Approach slab	m³	10.0			
45.16		Intake Tower Bridge: Super-structure	m³	230.0			
45.17		Spillway Bridge: Approach slab	m³	7.0			
45.18		Spillway Bridge: Super-structure	m³	60.0			
	13.002	Blinding Concrete					
		Concrete class 15/38 FA30, 100mm minimum thickness to :					
45.19		Intake Tower	m²	1,300.0			
45.20		Intake Tower Bridge	m²	1,220.0			
45.21		Embankment: Parapet walls and intake bridge abutment	m³	1,210.0			
Total Carried Forward							

CONCRETE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		Concrete class 30/38 FA30 to :					
45.22		Spillway	m³	4,000.0			
		Concrete class 35/20 FA30 to :					
45.23		Intake Tower: Floor slabs, beams, stairs, columns and deck	m³	210.0			
45.24		Intake Tower Bridge: Approach slab	m³	10.0			
45.25		Intake Tower Bridge: Super-structure	m³	230.0			
45.26		Spillway Bridge: Approach slab	m³	7.0			
45.27		Spillway Bridge: Super-structure	m³	60.0			
		Blinding Concrete					
		Concrete class 15/38 FA30, 100mm minimum thickness to :					
45.28		Intake Tower	m²	1,300.0			
45.29		Intake Tower Bridge	m²	1,220.0			
Total Carried Forward							

STRUCTURAL STEEL AND OTHER METAL WORK

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
46	SABS1200HA	Grade 350WA Structural Steelwork, complete, installed and corrosion protected					
46.1		Structural Steelwork for Intake Tower Structure	t	6.0			
		Sundry steelwork items complete, installed and corrosion protected					
		Access Ladders					
46.2	(a)	Access ladders with safety cage in SS Gr 316 with SS anchor bolts	m	5600			
		Handrails					
46.3	(b)	Fixed handrails to stairs, platforms, top of tower, etc. in SS Gr 316, with SS anchor bolts	m	480.0			
46.4	(c)	Removable handrails to stairs, platforms, top of tower, etc. in SS Gr 316	m	60.0			
		Covers					
46.5	(d)	Removable "Mentis B100 Gripweld 100x5" covers over openings in the Intake Tower, on a steel frame including built in parts and lifting points all in 3CR12	m²	55.0			
		Other Small Steelwork Items					
46.6	(e)	Access platform to valve actuator, complete with angle frame and brackets and grid flooring, all in 3CR12 with SS anchor bolts	t	2.0			
46.7	(f)	5t lifting points complete in 3CR12 with SS bolts	No	10.0			
Total Carried Forward							

DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
47	SANS 1200 LE	DRAINAGE					
47.1	SANS 1200 DB 8.3.1	Catch water drain excavation	m³	800.0			
	8.3.1	Drain Pipes					
47.2		30mm uPVC pipe weep holes	m	60.0			
47.3		50mm uPVC pipe weep holes	m	80			
		Cable Ducts cast into concrete					
47.4		110 OD Class 6 uPVC Pipe	m	1,500.0			
47.5		110 OD Class 6 up from Pump Station to Access Bridge.	m	1,000.0			
47.6		110 OD Class 6 up Pipe to meter chamber	m	200.0			
47.7		250 OD Class 6 for HV cable	m	200.0			
		Cable Ducts					
47.8		110 OD Class 6 along Access Bridge	m	200.0			
		Drainage pipes fixed to walls					
47.9		80 dia uPVC drain pipe for drainage between Intake Tower floors	m	200.0			
		Bedding for prefabricated culverts					
47.10		Class B bedding	m³	30.0			
	8.2.2	Prefabricated concrete culverts					
47.11		450 mm dia pipe	m	1.0			
47.12		600 mm dia pipe	m	30.0			
47.13		750 mm dia pipe	m	7.0			
47.14		1200(S) x 600(H) box culvert	m	1.0			
47.15		2100 (S) x 1200 (H) box culvert	m	1.0			
47.16		Cast in-situ concrete for culvert inlet/outlet structures	m³	100.0			
		Steel reinforcement for culvert inlet/outlet structures					
47.17		Welded steel fabric (Ref. 245)	m²	100.0			
47.18		Welded steel fabric (Ref. 311)	m²	100.0			
47.19	SANS 1200G 8.3.1	Mild steel reinforcement bars	t	2.0			
47.20	8.3.2	High tensile steel reinforcement bars	t	1.0			
		E.O. 16.004 for construction of inclined culverts					
Total Carried Forward							

DRAINAGE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
47.21		750 mm dia pipe	m	7.0			
47.22		Stone pitching	m³	5.0			
47.23		Rip-Rap	m³	100.0			
	SANS 1200 DK	Gabions and Pitching					
47.24	8.2.2	Mattress 6.0 W x 2.0 L x 0.3 D	m³	100.0			
47.25		Mattress 1.0 W x 2.0 L x 0.3 D	m³	100.0			
47.26		Box 2.0 W x 0.5 L x 0.5 D	m³	100.0			
47.27		Box 2.0 W x 1.0 L x 1.0 D	m³	100.0			
47.28		Box 2.0 W x 1.5 L x 1.0 D	m³	100.0			
47.29		Box 2.0 W x 2.0 L x 1.0 D	m³	100.0			
	8.2.4	Synthetic-fibre filter fabric					
47.30		Grade 2 non-woven	m²	4,000.0			
47.31		Grade 3 non-woven	m²	500.0			
	SANS 1200 LE	Concrete structures for drainage systems and cable ducts					
47.32	8.2.7	Outlet structure	No	5.0			
47.33		Culvert drop inlets complete (including grid)	No	5.0			
47.34	8.2.8	Standard service manholes complete (including covers)	No	5.0			
		Concrete open drains					
47.35		Concrete for drains	m³	100.0			
47.36		Welded steel fabric in concrete drains	kg	500.0			
47.37		Cable route markers	No	25.0			
47.38		Concrete for drains	m³	100.0			
47.39		Cable route markers	No	25.0			
Total Carried Forward							

REINFORCEMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
48	SANS1200 G	REINFORCEMENT					
	8.3.1	Mild steel bars					
48.1		< 16 mm diameter	t	28.0			
48.2		≥ 16 mm diameter	t	2.0			
	8.3.2	High tensile steel					
48.3		< 16 mm diameter	t	89.0			
48.4		≥ 16 mm diameter	t	11.0			
48.5		≥ 32 mm diameter	t	100.0			
Total Carried Forward							

HYDRO-MECHANICAL EQUIPMENT

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
49		HYDRO-MECHANICAL EQUIPMENT - INTAKE TOWER					
		Supply and install Hydro-Mechanical Equipment at the Water Intake Tower to Supply Abstraction Pump Station as Specified in the drawings and standard specification and detailed specification: Refer to Drawing No: EMP1-IT-PD-017					
		Design					
49.1		Emergency gate and grappling beam	Sum	1.0			
49.2		River diversion stoplog and grappling beam	Sum	1.0			
49.3		Fine screens and grappling beam	Sum	1.0			
49.4		Trash Rack and Skip	Sum	1.0			
		Supply & Deliver to Site					
49.5		Emergency gates and grappling beam complete	No	2.0			
49.6		River diversion stoplog and grappling beam complete	No	2.0			
49.7		Fine screens and grappling beam	sets	2.0			
49.8		Trash Rack and Skip	Sum	1.0			
		Install					
49.9		Emergency gates	No	2.0			
49.10		River diversion stoplogs	No	2.0			
49.11		Fine screens	sets	2.0			
		Test on Completion					
49.12		2 No of Emergency gate and grappling beam complete	Sum	1.0			
49.13		2 No of River diversion stoplog and grappling beam complete	Sum	1.0			
49.14		Fine screens	Sum	1.0			
		Spare Parts/Special tools (to be filled in by Tenderer)					
Total Carried Forward							

GENERAL MECHANICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
50		GENERAL MECHANICAL					
		Supply and install Pipe Work and Specials at the Water Intake Tower to Supply Abstraction Pump Station as Specified in the drawings and standard specification and detailed specification: Refer to Drawing No: EMP1-IT-PD-017					
		Design and other documentation					
50.1		Complete Intake Tower pipe work for 2 x outlet ND600 pipe stacks including bellmouths, bends and air ducts. Constructed from 316L Stainless Steel	Sum	1.0			
50.2		Outlet pipe work for 2 x ND600 pipe stacks from Intake Tower to FCSVs, including ND 200 off take..	Sum	1.0			
50.3		Air Vent ND 600 Stainless Steel duct	Sum	1.0			
50.4		Reservoir level recorder S/S pipe work 1 x ND 350	Sum	1.0			
50.5		Wall mounted axial ventilation fan with waterproof vent hood in stainless steel with rated capacity of 12000 m3/h @ 198.3 Pa	Sum	1.0			
		Procurement / Manufacture of pipes and specials and delivery to Site					
50.6		Complete Intake Tower pipe work for 2 x outlet ND600 pipe stacks including bellmouths, bends and air ducts. Constructed from 316L Stainless Steel	No	1.0			
50.7		Outlet pipe work for 2 x ND600 pipe stacks from Intake Tower to FCSVs, including ND 200 off take..	No	1.0			
50.8		Air Vent ND 600 Stainless Steel duct	No	1.0			
50.9		Reservoir level recorder S/S pipe work 1 x ND 350	No	1.0			
50.10		Wall mounted axial ventilation fan with waterproof vent hood in stainless steel with rated capacity of 12000 m3/h @ 198.3 Pa	No	1.0			
		Installation and testing of pipes and specials					
50.11		Complete Intake Tower pipe work for 2 x outlet ND600 pipe stacks including bellmouths, bends and air ducts. Constructed from 316L Stainless Steel	No	2.0			
50.12		Outlet pipe work for 2 x ND600 pipe stacks from Intake Tower to FCSVs, including ND 200 off take..	No	2.0			
50.13		Air Vent ND 600 Stainless Steel duct	No	1.0			
50.14		Reservoir level recorder S/S pipe work 1 x ND 350	No	1.0			
Total Carried Forward							

GENERAL MECHANICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
50.15		Wall mounted axial ventilation fan with waterproof vent hood in stainless steel with rated capacity of 12000 m3/h @ 198.3 Pa	No	1.0			
50.16		Design, Manufacture and Install a 15Ton Motorized lifting crane for the Intake Tower provided complete with Test certificates	No	1.0			
50.17		Design, Manufacture and Install a 5Ton a gantry Beam with Motorized Crawler for the Intake Tower provided complete with Test certificates	No	1.0			
		Supply and install Valves and Electrical Actuators at the Water Intake Tower to Supply Abstraction Pump Station as Specified in the drawings and standard specification and detailed specification: Refer to Drawing No: EMP1-IT-PD-017					
		Design and other documentation					
50.18		DN600 Isolation butterfly valve (Intake Tower)	Sum	1.0			
50.19		DN600 FCSV with hood	Sum	1.0			
50.20		DN600 AUMA (or similar approved) Electrical Actuator	Sum	1.0			
		Procurement/Manufacture of valves and delivery to Contractor's site store					
50.21		DN600 Isolation butterfly valve (Intake Tower) electrically actuated	No	5.0			
50.22		DN600 Isolation butterfly valve (Intake Tower Tunnel) - electrically actuated	No	2.0			
50.23		DN600 VJ Flange Coupling	No	2.0			
50.24		DN600 FCSV with hood	No	2.0			
50.25		DN600 AUMA (or similar approved) Electrical Actuator	No	7.0			
		Installation and testing of valves					
50.26		DN600 Isolation butterfly valve (Intake Tower) electrically actuated	No	7.0			
50.27		DN600 VJ Flange Coupling	No	2.0			
50.28		DN600 FCSV with hood	No	2.0			
50.29		DN600 AUMA (or similar approved) Electrical Actuator	No	7.0			
		Installation and testing of operation/control gear for electrically operated valves					
50.30		DN600 Isolation butterfly valve (Intake Tower) electrically actuated	No	7.0			
50.31		DN600 FCSV with hood	Sum	1.0			
Total Carried Forward							

GENERAL MECHANICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
50.32		DN600 AUMA (or similar approved) Electrical Actuator	Sum	7.0			
		Supply and install Electromagnetic Flow Meters at the Water Intake Tower to Supply Abstraction Pump Station as Specifiifed in the drawings and standard specification and detailed specification: Refer to Drawing No: EMP1-IT-PD-017					
		Design and other documentation					
50.33		DN600 electro-magnetic flow meter (meimag 5100W or similar approved)	Sum	1.0			
		Procurement/Manufacture of flow meters and delivery to Contractor's site store					
50.34		DN600 electro-magnetic flow meter (meimag 5100W or similar approved)	No	2.0			
		Installation and testing of flow meters					
50.35		DN600 electro-magnetic flow meter (meimag 5100W or similar approved)	No	2.0			
		Installation and testing of operation/control gear for electrically operated flow meters					
50.36		For all flow meters	Sum	1.0			
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
51		ELECTRICAL					
51.1		BULK BACKUP POWER					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, supply, delivery, offloading, storage and installation of the following materials:					
51.1.1		1000kVA Diesel generator equipped with sound attenuation and ATS. Factory testing included	No	1.0			
51.2		LV SWITCHGEAR AND CONTROL GEAR ASSEMBLIES					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, supply, delivery, offloading, storage and installation of the following materials:					
51.2.1		Pump Station MCC complete (including free standing VSDs). As per drawings and specifications. Factory testing included	Sum	1.0			
51.2.2		Intake Tower MCC as per General Arrangement Drawing	Sum	1.0			
51.2.3		Passive harmonic filtering for all free-standing VSDs	Sum	1.0			
51.2.4		Design, supply and installation of VSD outlet ducting complete, including outlet grilles and duct supports	Sum	1.0			
51.3		LV CABLES					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, supply, delivery, offloading, storage and installation of the following materials:					
51.4		ALL CABLE LENGTHS ARE ESTIMATED. THE ONUS IS ON THE CONTRACTOR TO MEASURE ACTUAL CABLE LENGTHS DURING CONSTRUCTION AND SUBMIT TO THE ENGINEER FOR APPROVAL BEFORE ORDRING OF ANY CABLES					
		Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed 600/1000V single/multicore cable with stranded conductors. Cable fixed to cable tray, drawn into sleeves or laid into trenches, including terminations.					
51.4.1		1.5mm² x 3 core	m	2,000.0			
51.4.2		2.5mm² x 3 core	m	100.0			
51.4.3		2.5mm² x 4 core	m	600.0			
51.4.4		4mm² x 3 core	m	550.0			
51.4.5		4mm² x 4 core	m	50.0			
51.4.6		35mm² x 4 core	m	150.0			
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
51.4. 6a		70mm² x 3 core (Cu PP EMC cable, double screened)	m	150,0			
51.4.7		95mm² 3 core (Cu PP EMC cable, double screened)	m	150,0			
51.4.7a		240mm² 4 core (Cu/PVC Insulated/PVC Bedded/SWA/PVC Sheathed) + 120mm² ECC	m	160,0			
51.4.8		Cable marker with engraved steel plate	No	10,0			
51.4.8a		Marking and labelling of cables and equipment	Sum	1,0			
51.4.9		Cable trench excavation and backfilling	m	180,0			
51.4.9a		Excavation in soil 550 mm deep	m	180,0			
51.4.10		Intermediate excavation	m³	10,0			
51.4.10a		Hard rock/ Concrete excavation	m³	20,0			
51.4.11		Import sand or stone- free soil including all handling	m³	80,0			
51.4.11a		Removal and Dumping of access material including all handling	m³	80,0			
51.4.12		Exposing by hand to exposed civil pipework on the trench route	m³	10,0			
51.4.13		LV cable tests and commissioning	Sum	1,0			
51.5		CABLE SUPPORTS					
51.5.1		100 x 100mm (W x H)	m	50,0			
51.5.2		200 x 100mm (W x H)	m	50,0			
51.5.3		300 x 100mm (W x H)	m	50,0			
51.5.3a		600 x 100mm (W x H)	m	50,0			
51.5.4		800 x 100mm (W x H)	m	20,0			
		Hot dipped galvanised Mild Steel Wire Mesh Cable Tray, complete with T-sections, bends, splices, couplers, clamps, threaded rods, hangers, brackets etc to fix to trusses, walls etc					
51.5.4a		100 x 50mm (W x H), Ø 4mm Wire	m	50,0			
51.5.5		200 x 50mm (W x H), Ø 4mm Wire	m	50,0			
51.5.5a		300 x 50mm (W x H), Ø 4mm Wire	m	50,0			
51.5.6		400 x 50mm (W x H), Ø 4mm Wire	m	30,0			
		Hot Dipped Galvanised Steel Conduit: Complete with outlet boxes, bends, couplings, glue, flexible conduit connections/terminations, etc. connecting from sub-distribution boards/containment/galvanised conduits to relevant outlets, as indicated on the drawings and detailed in the specifications					
51.5.7		25mm Diameter	m	75,0			
51.5.7a		20mm Diameter	m	75,0			
51.5.7b		6 meter of 110 diameter flexible cable sleeves	No	12,0			
51.6		CONTROL CABLES					
51.6.1		1.5mm² x 2 Core	m	400			
51.6.1a		1.5mm² x 4 Core	m	300			
51.6.2		1.5mm² x 7 Core	m	150			
51.6.2a		Supply and installation of cable accessories i.e Enviro gland, lugs, fasteners, cable marking etc.	Sum	1			
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, supply, delivery, offloading, storage and installation of the following materials:					
		Lighting Installation, in accordance with Building Electrical Layout: High Lift Pump Station and Intake Tower					
51.7.1		Luminaire L1: 42.8 W LED Vapour Proof Fitting	No	32.0			
51.7.2		Luminaire L1: 42.8 W LED Vapour Proof Fitting Including Back-up Supply	No	12.0			
51.7.3		Luminaire L3: 42.8 W LED Industrial Bulkhead light fitting.	No	22.0			
		Distribution Boards and Kiosks, in accordance with Building Electrical Layout					
51.7.4		HLPS MCC Room DB, Guardhouse DB and Intake Tower DB	Sum	1.0			
		Power outlets, switches and isolators, in accordance with Building Electrical Layout					
51.7.5		16 Amp 3-pin 250V single industrial switched socket outlet	No	8.0			
51.7.6		16 Amp 3-pin 250V double industrial switched socket outlet	No	4.0			
51.7.7		32 Amp 5-pin 400V industrial switched socket outlet	No	3.0			
51.7.8		Motor local control stations equipped with local isolator, E-stop and start/stop push buttons including stainless steel mounting and supports	No	6.0			
51.7.9		Actuators local control E-stop including mounting and supports	No	12.0			
51.7.10		Photocell Daylight On/Off sensors (PS).	No	4.0			
		Industrial Flush Mounted 16A Light Switches complete with boxes, cover plates switches etc; Similar or equivalent to Crabtree Classic Range					
51.7.11		1-Lever, 2-Way	No	6.0			
		Single core PVC insulated house wire					
51.7.12		1.5 mm²	m	1,000.0			
51.7.13		2.5mm²	m	570.0			
51.7.14		4mm²	m	150.0			
		Single core PVC insulated earth wire					
51.7.15		1.5 mm²	m	1,000.0			
51.7.16		2.5mm²	m	250.0			
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
51.7.17		4mm²	m	75.0			
		Electronic Building Services					
51.7.18		Passive Infrared Occupancy Sensors, complete with mounting materials.	No	8.0			
51.7.19		Door Proximity Switch, complete with mounting materials.	No	8.0			
51.7.20		Electromagnetic Door Lock, complete with mounting materials and management system (including back up power)	No	6.0			
51.7.21		Solenoid Door Lock, complete with mounting materials	No	6.0			
51.7.22		Optical smoke detection sensors	No	5.0			
51.7.23		Fire Detection Panel	No	1.0			
		Electronic Building Services Wiring					
51.7.24		Access Control wiring	Sum	1.0			
51.7.25		Intruder Detection Wiring	Sum	1.0			
51.7.26		Fire detection wiring	Sum	1.0			
		Conduit surface mounted or installed to brickwork, concrete, steel or ceiling voids or cast into concrete or built/chased into brickwork or concrete. Complete with bends, couplings, glue etc.					
51.7.27		20mm Diameter, PVC	m	400.0			
51.7.28		25mm Diameter, PVC	m	300.0			
51.7.29		32mm Diameter, PVC	m	50.0			
51.7.30		20mm Diameter, Hot-dipped Galvanised Steel	m	100.0			
51.7.31		25mm Diameter, Hot-dipped Galvanised Steel	m	100.0			
		Round conduit boxes placed in position for casting into concrete or chased into brickwork or concrete					
51.7.32		20mm Diameter conduit, PVC	No	50.0			
51.7.33		25mm Diameter conduit, PVC	No	50.0			
51.7.34		25mm Diameter conduit, Hot-dipped Galvanised Steel	No	30.0			
		UPVC sleeve piping including short lengths and joining, laid in trench or through walls					
51.7.35		50mm Diameter pipe	m	80.0			
51.7.36		110mm Diameter pipe	m	50.0			
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
51.7.37		50mm Long radius bend	No	50.0			
51.7.38		110mm Long radius bend	No	50.0			
51.8		SECTION I: INSTRUMENTATION					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading, storage and installation of the following materials and equipment. In accordance with relevant specifications and drawings.					
51.8.1		Electronic continuous level transmitter LW212	No	1.0			
51.8.2		"Hydrostatic Level Meter (0-10 meters) including sensor, transmitter and mounting materials"	No	2.0			
51.8.3		"Wetted Ultrasonic Flow meter (0-10 m/s) including sensor, transmitter and mounting materials to DN 600 pipework. 16bar pressure rating."	No	1.0			
51.8.4		Pressure Switch complete with Transmitter including mounting materials	No	12.0			
51.8.5		Motor winding temperature transmitter (PT-100) and mounting materials	No	36.0			
51.8.6		Motor bearing temperature transmitter (PT-100) and mounting materials	No	12.0			
51.8.7		Pump bearing temperature transmitter(PT-100) and mounting materials	No	12.0			
51.8.8		Motor bearing Vibration Sensors and Transmitter and mounting materials	No	6.0			
51.8.9		Pump bearing Vibration Sensors and Transmitter and mounting materials	No	6.0			
51.8.10		Instrumentation and Control junction box complete with terminations, accessories etc.	No	3.0			
51.8.11		Instrumentation Transmitter housing complete with terminations, accessories etc.	No	6.0			
		Quarter/part-turn electric actuators rated at 400V					
51.8.12		Oz-kan long butterfly valve, DN600, PN16 butter electric actuator	No	8.0			
51.9		SECTION J: STREET LIGHTING					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading, storage and installation of the following materials and equipment. In accordance with relevant specifications and drawings.					
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
51.9.1		MV line tap-off from 11kV overhead lines supplying high lift pump station	Sum	1.0			
51.9.2		MV protection structure, including pole fused links, surge arresters, earthing, etc	Sum	1.0			
51.9.3		6.6/11kV 35mm2 3-Core XLPE Al SWA cable, including terminations	m	30.0			
51.9.4		100 kVA 11kV/400V mini-substation equipped RM6, dry type transformer	No	1.0			
51.9.5		Concrete plinth to mount the mini substation on	No	1.0			
51.9.6		Earthing system complete in accordance with SANS standards	Sum	1.0			
51.9.7		Outdoor feeder pillar complete	No	1.0			
51.9.8		Trenching 550mm depth, 500mm width	m	5,000.0			
51.9.9		Backfilling & compaction including disposing of excess material	m	5,000.0			
51.9.10		4C 25mm2 Al PVC/SWA/PVC cable	m	5,000.0			
51.9.11		Cable laying, jointing & terminations	m	5,000.0			
51.9.12		110mm HDPE sleeves	m	200.0			
51.9.13		Warning tape	m	5,000.0			
51.9.14		10m hot dipped galvanized octagonal poles	No	168.0			
51.9.15		1.2m outreach arms, hot dipped galvanised	No	168.0			
51.9.16		120-150W LED luminaires	No	168.0			
51.9.17		Pole foundations (800x800x1500) including reinforced concrete	No	168.0			
51.9.18		Anchor bolts (M24 set)	set	168.0			
51.9.19		Pole earthing complete	No	168.0			
51.9.20		Pole internal wiring & cut-out	No	168.0			
51.9.21		As-built drawings & O&M manuals	Sum	1.0			
51.9.22		Testing & commissioning	Sum	1.0			
51.10		SECTION K: EARTHING AND LIGHTNING PROTECTION					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading, storage and installation of the following materials and equipment:					
Total Carried Forward							

ELECTRICAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
51.10.1		Earthing and lightning protection for the pump station, MCC room, generator room and intake tower	Sum	1.0			
51.10.2		Earthing arrangement and equipotential bonding for MCC building and pump station, generator room and intake tower.	Sum	1.0			
51.10.3		Soil Resistivity Survey	Sum	1.0			
51.11		NEW POWER SUPPLY AND INSTALLATION					
		By Sub-Contractor nominated by Client					
51.11.1		Design, Supply, Submit Shop Drawings for Approval, Installation and testing and commissioning 2MVA,22kV/400V transformer and backup generator and temporal suplly of 100kVA	Prov Sum	1,0	70000 000,00	70000 000,00	
51.11.2		Handling Cost of above Item	%	70000 000,0			
51.11.3		Allow for Eskom 22KVA Connection Cost	Prov Sum	1,0	15000 000,00	15000 000,00	
51.11.4		Handling Cost of above Item	%	15000 000,0			
Total Carried Forward							

DAM MONITORING INSTRUMENTATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
52		DAM MONITORING INSTRUMENTATION					
52.1		Supply and Installation of Instrument Cabling	m	8,000.0			
52.2		Supply and Installation of Protective Surrounds to Instrument Cabling	m	210.0			
52.3		Supply and install perimetric joint meters	No	5.0			
52.4		Supply and install inclinometer on face slabs including sensor, indicator and cables	No	1.0			
52.5		Furnish and install face slab joint meters	No	9.0			
52.6		Supply and install settlement and pressure cells	No	12.0			
52.7		Supply and install contact stress cells in conduit concrete	No	12.0			
52.8		Supply and install strain gauges	No	25.0			
52.9		Instrumentation houses complete	No	4.0			
52.10		Drill holes for open standpipe piezometers.	m	90.0			
52.11		Furnish and install open standpipe piezometers	No	3.0			
52.12		Drill holes for vibrating wire piezometers.	m	120.0			
52.13		Furnish and install vibrating wire piezometers	No	4.0			
52.14		Furnish and install surface settlement points	No	4.0			
52.15		Supply and install a seismic recording system, including seismographs/accelerometers with a centralised digital recording and evaluation system	No	2.0			
52.16		Supply of computer system and software and delivery to the Employer's Agent	Sum	1.0			
52.17		Construct and Install Seepage Measuring Weirs	No	2.0			
52.18		Supervision of Installation of Instrumentation and Equipment and Testing	Sum	1.0			
Total Carried Forward							

BUILDING WORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
53		BUILDING WORKS					
		Faced brickwork					
53.1		Brickwork, 2 leaves 115mm internal and 115mm external. External brickwork to be of face bricks. Internal brickwork to be of clay stock. Including columns, finishes around windows and plinth.	m²	129.0			
		Masonry Cladding					
53.2		Sandstone cladding to columns and plinth.	m²	104.0			
		Lintels					
53.3		Lintels above windows and doors	m	30.0			
		Waterproofing					
53.4		Waterproofing membrane to Intake Tower roof, (Derbigum 4mm) and two coats bituminised aluminium paint.	m²	112.0			
		Windows and Louvres					
		Glazed windows in anodised aluminium frames including 3CR12 burglar bars 16 mm diameter at 125 x 125 mm c/c and bird proof HDPE mesh					
53.5		Opening window 1.6 x 0.9 m (W1)	No	8.0			
		Louver panels in 3CR12 with colomet finish, and birdproof HDPE mesh					
53.6		0.9 x 0.9 m louver panel	No	8.0			
		Doors					
53.7		3.0 x 3.5 m Heavy duty industrial type roller door with crank operation. Complete with all fittings to supervisor's approval. (D1)	No	1.0			
		Pressed steel door frames					
53.8		3.0 x 3.5 m roller door frame. (D1)	No	1.0			
53.9		Wall plaster	m²	129.0			
53.10		Roof insulation	m²	112.0			
53.11		Fire extinguishers (type and capacity specified)	No	15.0			
		Glazing					
53.12		6 mm clear float glass	m²	12.0			
53.13		Painting of the internal walls of the Intake Tower Building.	m²	129.0			
Total Carried Forward							

MISCELLANEOUS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
54		MISCELLANEOUS					
		Provision for forced ventilation					
		All to be designed by the Contractor for 3 air changes per hour including:					
54.1		"Vented cover for water level recorder on intake tower top deck, with door and robust hinges and locking device. Dimensions 1200 x 800 x 80 mm high, from 2 mm thick 3CR12 painted"	Sum	1.0			
Total Carried Forward							

MEDIUM PRESSURE PIPELINE

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
55		MEDIUM PRESSURE PIPELINE					
	SABS 1200 LB	Bedding (Pipes)					
	PSLB8.2.1	Provision of bedding from Trench Excavation requiring screening and /or treatment:					
55.1	8.2.1.a)	Selected granular material.	m³	50.0			
55.2	8.2.1.b)	Selected fill material.	m³	50.0			
	PSLB8.2.2	Supply only of Bedding by Importation:					
	8.2.2.2	Borrow Pits Source:					
55.3	8.2.2.3.a)	Selected granular material.	m³	50.0			
55.4	8.2.2.3.b)	Selected fill material.	m³	50.0			
	PSL8.2.1	Supply, handle, lay, bed on bedding for flexible pipes, join, test and disinfect, as detailed on the drawings. Steel potable water pipeline, according to SABS 966-1.					
55.5		DN600 Galvanised steel flange pipe	m	300.0			
Total Carried Forward							

MATERAIL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
56		MATERIAL					
56.1		Cement	t	1.0			
56.2		Fly ash	t	1.0			
56.3		Fine aggregates for concrete	m³	1.0			
56.4		19mm crushed aggregate	m³	1.0			
56.5		38 mm crushed aggregate	m³	1.0			
56.6		53mm crushed aggregate	m³	1.0			
56.7		Reinforcing steel 20mm and below	t	1.0			
56.8		Reinforcing steel above 20mm	t	1.0			
56.9		Reinforcing mesh	m³	1.0			
56.10		Explosives - gelatine	t	1.0			
56.11		Explosives - ammonium nitrate	t	1.0			
56.12		Timber - hardwood	m³	1.0			
Total Carried Forward							

MATERIAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
Brought Forward						R	c
		SECTION G: PROGRAMMABLE LOGIC CONTROLLER & TELEMETRY					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading, storage and installation of the following materials and equipment. In accordance with relevant specifications and drawings.					
		PROGRAMMABLE PLC					
51.7.38a		Programmable PLC panel complete in accordance to specification and drawings	Sum	1,0			
51.7.38b		Programmable PLC hardware complete	Sum	1,0			
51.7.38c		Supply PLC Software and Programming Complete (Simulation Testing included)	Sum	1,0			
		HMI					
51.7.38d		MCC HMI (MCC Room)	No	1,0			
		TELEMETRY					
		Allow for all the costs and expenses in connection with the design and integration with the pump station control system of the following materials and equipment. In accordance with relevant specifications and drawings.					
51.7.38e		HLPS Telemetry	Sum	1,0			
		SECTION H: INDUSTRIAL NETWORK INSTALLATION					
		Allow for all the costs and expenses in connection with the design, manufacture, routine testing, factory acceptance testing (if indicated), supply, delivery, offloading, storage and installation of the following materials and equipment. In accordance with relevant specifications and drawings.					
51.7.38f		Steel Tape 8 core multimode fibre optic cable, directly buried.	m	200			
51.7.38g		CAT6 Cables	m	150			
51.7.38h		Fibre Optic to Ethernet Transceivers. Inclusive of patch panels, terminations, patch leads and fibre-to-copper converter modules.	No	6			
51.7.38i		Supply miscellaneous hardware items (lugs, plugs, terminals and installation consumables)	Sum	1			
Total Carried Forward To Summary							

SECTION: EARTHWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
10A56		SECTION : EARTHWORKS					
10A56.1	SANS 1200 D 8.3.2	EXCAVATION					
10A56.1.1	8.3.1.2	Remove topsoil to nominal depth 150mm, stockpile, and maintain	m²	4 000,0			
	8.3.2(a)	Excavate in all materials and place within free haul distance for:					
	8.3.2(b)	Extra-over items above item for excavation in:					
10A56.1.2		Intermediate rock	m³	150,0			
10A56.1.3		Hard rock material	m³	250,0			
10A56.1.4		Boulder material, Class A	m³	150,0			
10A56.1.5		Boulder material, Class B	m³	150,0			
	8.3.6	Overhaul (provisional)					
10A56.1.6		Limited overhaul	m³	450,0			
10A56.1.7		Long overhaul	m³.km	3 000,0			
Total Carried Forward							

SECTION : CONCRETE (STRUCTURAL)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
10A57	SANS 1200 G	SECTION: CONCRETE SURFACING (STRUCTURAL)					
10A57.1	8.1.3	CONCRETE INTAKE TOWER BRIDGE					
		Indicates part of structure, class code and 28 day characteristic cylinder strength/characteristic compressive cube strength and nominal aggregate size					
		Class 40/30					
10A57.1.1		(i) Cast in-site deck slab	m³	1 300,0			
10A57.1.2		(ii) Pier Bases	m³	1 120,0			
10A57.1.3		(iii) Abutment Bases	m³	1 000,0			
10A57.1.4		(iv) Pier Walls	m³	960,0			
10A57.1.5		(v) Abutment Walls	m³	1 000,0			
10A57.1.6		(vi) Wing walls	m³	240,0			
10A57.1.7		(vii) Earwings	m³	20,0			
10A57.1.8		(viii) Pier Caps	m³	200,0			
10A57.1.9		(ix) Approach Slab	m³	120,0			
10A57.1.10		(x) Diaphragm	m³	250,0			
10A57.1.11		Provide all materials to include reinforcement, concrete and all other necessary accessories for manufacturing 40 MPa precast beams	No.	128,0			
10A57.2		SECTION: STRUCTURAL PRECAST CONCRETE					
10A57.3		STRUCTURAL UNITS					
10A57.3.1		Transporting and erecting of precast concrete members	No.	128,0			
Total Carried Forward							

SECTION: CONCRETE (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R	AMOUNT c
Brought Forward							
10A58	SANS 1200 GA	SECTION: CONCRETE STRUCTURE					
10A58.1	8.1	FORMWORK					
		Formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish (description of member to which applicable)					
	8.1.1	(a) Vertical formwork to provide Class F1 surface finish to:					
10A58.1.1		(i) Pier Bases	m²	576,0			
10A58.1.2		(ii) Pier caps sides	m²	144,0			
10A58.1.3		(iii) Abutment bases	m²	700,0			
10A58.1.4		(iv) Abutment Walls	m²	700,0			
10A58.1.5		(v) Apron Slab	m²	50,0			
10A58.1.6		(vi) Earwing	m²	200,0			
		(b) Vertical formwork to provide Class F2 surface finish to:					
10A58.1.7		(i) Pier Walls	m²	1 120,0			
10A58.1.8		(ii) Abutment Walls	m²	500,0			
10A58.1.9		(iii) Pier caps sides and vertical ends	m²	80,0			
10A58.1.10		(iv) Exposed external surfaces of deck sides	m²	40,0			
10A58.1.11		(v) Sides and ends of diaphragms	m²	300,0			
10A58.1.12		(vi) Wingwalls	m²	360,0			
10A58.1.13		(vii) Deck sides	m²	300,0			
		(c) Horizontal formwork to provide Class F1 surface finish to:					
10A58.1.14		(i) Deck diaphragms	m²	90,0			
		(d) Inclined formwork to provide Class F1 surface finish to:					
10A58.1.15		(i) Abutment Walls	m²	500,0			
10A58.1.16		(ii) Wing walls	m²	500,0			
		(e) Class F2 surface finish to:					
10A58.1.17		(i) Pier cap soffit	m²	80,0			
		(f) Formwork to form open joints					
Total Carried Forward							

SECTION: CONCRETE (SMALL WORKS)

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
10A58.1.18		(i) Between vertical and horizontal surfaces at the deck ends and the abutments	m²	40,0			
10A58.2	8.1.2	REINFORCEMENT					
		(a) Pier Bases					
10A58.2.1		(i) Mild steel bars	t	0,4			
10A58.2.2		(ii) High yield stress steel bars	t	48,0			
		(b) Pier Walls and pier caps					
10A58.2.3		(i) Mild steel bars	t	0,7			
10A58.2.4		(ii) High yield stress steel bars	t	57,6			
		(c) Abutment Bases					
10A58.2.5		(i) Mild steel bars	t	0,1			
10A58.2.6		(ii) High yield stress steel bars	t	50,0			
		(d) Abutment walls and wingwalls					
10A58.2.7		(i) Mild steel bars	t	1,2			
10A58.2.8		(ii) High yield stress steel bars	t	40,0			
		(e) Deck slab and diaphragms					
10A58.2.9		(i) Mild steel bars	t	0,1			
10A58.2.10		(ii) High yield stress steel bars	t	50,0			
		(f) Parapets and End blocks					
10A58.2.11		(i) Mild steel bars	t	1,0			
10A58.2.12		(ii) High yield stress steel bars	t	12,0			
		(g) Approach slab					
10A58.2.13		(i) Mild steel bars	t	1,6			
10A58.2.14		(ii) High yield stress steel bars	t	3,0			
10A58.3	8.5	JOINTS					
		Expansion Joints					
10A58.3.1		Filled on the deck with 20mm Jointex	m	400,0			
		Unfilled on parapet					
10A58.3.2		(i) Parapet	m	60,0			
		Supply and installation of Agrément South Africa certified proprietary expansion joints					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R	AMOUNT c
Brought Forward							
		Asphaltic plug joints					
10A58.3.3		(a) 400 x75	m	70,0			
10A58.3.4		Additional tests for joints ordered by the Engineer	No.	1,0			
10A58.4		BEARINGS					
10A58.4.1		Bearings	No.	96,0			
		Provision of Engineering drawings of proprietary bearings and certification after installation, by an ECSA Registered Professional Engineer or Technologist.					
10A58.4.2		Bearing strips (25mm foamed polyethylene)	m²	2,0			
10A58.4.3		(a) Dowels or guides	No.	60,0			
10A58.4.4		(ii) Multidirectional	No.	60,0			
10A58.4.5		Installing the proprietary bearings (Laminated Elastomeric Bearings)	No.	96,0			
Total Carried Forward							

SECTION: ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
10A59	SANS 1200 MM	SECTION: ANCILLARY STRUCTURAL ELEMENTS					
		Concrete barriers and parapets					
10A59.1		Parapets: Supply of formwork, reinforcement and concrete	m	70,0			
10A59.2		End Blocks	No.	4,0			
		Service ducts in structures					
10A59.3		110 dia PVC	m	175,0			
10A59.4		Joint ducts at bridge deck expansion joints	No.	7,0			
		Numbers for structures					
10A59.5		Numbers formed in concrete	No.	2,0			
10A59.6		Cast in-site no-fines concrete (Class 20 MPa)	m³	2,0			
10A60.1		DRAINAGE PIPES AND WEEP HOLES					
		Drainage Pipes					
10A60.1.1		330 wide DN1 drainage strips	m	210,0			
10A60.1.2		110 dia scuppers	No.	21,0			
		Weep holes					
10A60.1.3		50mm dia weephole at 1800 c/c	No.	108,5			
10A60.1.4		Synthetic-fibre filter fabric (Grade 2 Geofrabric covering Strips and Wrapped Around Netlon Pipe)	m²	192,5			
10A60.1.5		Drainage strips ((330mm wide DN3 Netlon Drainage strips at 1800mm C/C attached to earth face of abutment at 45% to horizontal))	m	105,0			
10A60.1.6		Perforated Drainage Pipe (M65 Netlon Drainage pipe wrapped in synthetic -filter fabric)	m	166,3			
10A60.2		TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP					
10A60.2.1		Special tests on elastomeric bearings (150% vertical load and 150% shear distortion)	No.	60,0			
		Special Tests requested by the Engineer					
10A60.2.2		Tests for water sorptivity	Prov Sum	1,0	100 000,00	100 000,00	
10A60.2.3		Handling costs and profit in respect of item for test for water soprtivity	%	100 000,			
Total Carried Forward							

SECTION : ANCILLARY ROADWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
Brought Forward							
10A59	SANS 1200 MM	SECTION: ANCILLARY STRUCTURAL ELEMENTS					
		Concrete barriers and parapets					
10A59.1		Parapets: Supply of formwork, reinforcement and concrete	m	70,0			
10A59.2		End Blocks	No.	4,0			
		Service ducts in structures					
10A59.3		110 dia PVC	m	175,0			
10A59.4		Joint ducts at bridge deck expansion joints	No.	7,0			
		Numbers for structures					
10A59.5		Numbers formed in concrete	No.	2,0			
10A59.6		Cast in-site no-fines concrete (Class 20 MPa)	m³	2,0			
10A60.1		DRAINAGE PIPES AND WEEP HOLES Drainage Pipes					
10A60.1.1		330 wide DN1 drainage strips	m	210,0			
10A60.1.2		110 dia scuppers	No.	21,0			
		Weep holes					
10A60.1.3		50mm dia weephole at 1800 c/c	No.	108,5			
10A60.1.4		Synthetic-fibre filter fabric (Grade 2 Geofrabric covering Strips and Wrapped Around Netlon Pipe)	m²	192,5			
10A60.1.5		Drainage strips ((330mm wide DN3 Netlon Drainage strips at 1800mm C/C attached to earth face of abutment at 45% to horizontal))	m	105,0			
10A60.1.6		Perforated Drainage Pipe (M65 Netlon Drainage pipe wrapped in synthetic - filter fabric)	m	166,3			
10A60.2		TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP					
10A60.2.1		Special tests on elastomeric bearings (150% vertical load and 150% shear distortion)	No.	60,0			
		Special Tests requested by the Engineer					
10A60.2.2		Tests for water sorptivity	Prov Sum	1,0	100 000,00	100 000,00	
10A60.2.3		Handling costs and profit in respect of item for test for water soprtivity	%	100 000,0			
Total Carried Forward To Summary							

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
57	SANS 1200 DB		SECTION : PIPE TRENCHES					
57.1		LI	SITE CLEARANCE					
57.1.1	8.3.1(a)	LI	Clear and grub all shrubs and vegetation for areas as required and instructed by Employer's Agent for construction:	m²	5,060.0			
57.1.2	8.3.1(b)	LI	Clear trees up to 1m	No.	3.0			
57.1.3	8.3.1(b)	LI	Clear trees of girth over 1 m and up to 2 m	No.	2.0			
57.1.4	8.3.1(b)	LI	Clear trees of girth over 2m	No.	1.0			
57.1.5	8.3.1(c)	LI	Remove topsoil to depth of 150mm and stockpile	m²	5,060.0			
57.1.6	PSDB 3.1	LI	Removal of Boulders Class A and B and dispose	m³	152.0			
57.2			EXCAVATION					
	8.3.2(a)		Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for pipes: Over 300 up to 600 mm diam. for total trench depth:					
57.2.1			Exceeding 1,0 m but not exceeding 2,0 m	m	1,012.0			
57.2.2			Exceeding 2,0 m but not exceeding 3,0 m	m	354.0			
57.2.3			Exceeding 3,0 m but not exceeding 4,0 m	m	160.0			
	8.3.2(b)		Extra-over items .2.1 to .2.12 incl. for (prov):					
57.2.4			Intermediate excavation	m³	750.0			
57.2.5			Hard rock excavation	m³	1,315.6			
57.2.6	8.3.2(c)		Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	750.0			
			EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
57.2.7	8.3.3.1(a		from other necessary excavations on site	m³	350.0			
57.2.8	8.3.3.1(b		by importation from designated borrow pits	m³	850.0			
57.2.9	8.3.3.1(c		by importation from commercial or off-site sources selected by the Contractor	m³	850.0			
57.2.10	8.3.3.3		Compaction in road reserves	m³	135.0			
	8.3.3.4		Overhaul					
57.2.11			Limited overhaul (provisional)	m³	200.0			
57.2.12			Long overhaul (provisional)	m³.km	7,500.0			
57.2.13	8.3.4(a)		Shore trench in collapsible material	m²	6,000.0			
Total Carried Forward								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
57.2.14	8.3.4(b)		Temporary works : Control water inflow from high groundwater table	m³	10,000.0			
57.2.15			Provide pumping equipment	Sum	1,0			
57.2.16			Operate and maintain	Days	183,0			
57.2.17			Remove equipment	Sum	1,0			
57.3		LI	EXISTING SERVICES					
	8.3.5		Services across and in trenches					
	8.3.5(a)		Services that intersect a trench					
57.3.1			Cables	No.	3.0			
57.3.2			House water connections	No.	3.0			
57.3.3			Water mains up to 300 mm diam.	No.	3.0			
57.3.4			Stormwater pipes up to 600 mm	No.	3.0			
	8.3.5(b)	LI	Services that adjoin a trench					
57.3.5			Cables	m	50.0			
57.3.6			Water mains up to 300 mm diam.	m	50.0			
57.4		LI	FINISHINGS					
	8.3.6		Reinstate road surfaces					
57.4.1			a) Gravel surfaced	m²	150.0			
57.4.2			b) Gravel shoulders	m²	75.0			
Total Carried Forward								

SECTION : BEDDING (PIPES)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
58	SANS 1200 LB		SECTION : BEDDING					
58.1			PROVISION OF BEDDING					
			Available from trench within 0,5 km (Subclause 3.4.1)					
58.1.1	8.2.1		a) Selected granular material	m³	38.0			
58.1.2			b) Selected fill material	m³	350.0			
			Imported from					
	8.2.2.1		a) Other necessary excavations within 0.5 km (Provisional)					
58.1.3			1) Selected granular material	m³	25.0			
58.1.4			2) Selected fill blanket	m³	800.0			
	8.2.2.2		b) Borrow pits (Provisional)					
58.1.5			1) Selected granular material	m³	25.0			
58.1.6			2) Selected fill material	m³	800.0			
	8.2.2.3		c) Commercial sources (Provisional)					
58.1.7			1) Selected granular material	m³	152.0			
58.1.8			2) Selected fill material	m³	756.0			
58.1.9	8.2.3		Concrete bedding (Provisional)	m³	10.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
59			SECTION : MEDIUM PRESSURE PIPELINES					
59.1	SANS 1200 L		PIPELINE					
	8.2.1		Supply, lay uPVC and oPVC on Class C bedding, joint, test and disinfect pipes and fittings. Rates to include for all bolts nuts, gaskets, couplings and jointing material including Z-lok joints : -					
59.1.1			600 mm diam. Class 16 Pipe, Inclusive of pipe bends, flange adaptors etc.	m	980.0			
	8.2.1		Steel pipes lined with Fusion Bonded Epoxy (FBE): Supply, handle, erect with couplings, test, and disinfect (potable water pipelines) at boulder section and pipe bridge crossing					
59.1.2			600 mm diam. PN16	m	130.0			
	8.2.15		3LPE wrapping in corrosive soil inclusive of outer wrapping layer					
59.1.3			600 mm diam.	m	130.0			
59.2	SANS 1200 L		SPECIALS AND FITTINGS					
			Steel DN 600 Flanged to SANS 1123 incl bolts and packing					
59.2.1			11.25 deg.	No.	13.0			
59.2.2			22.5 deg.	No.	13.0			
59.2.3			45 deg.	No.	2.0			
59.2.4			90 deg.	No.	1.0			
	8.2.3		Supply and Lay of pipes, valves and specials for DN600 PN16 including chamber concrete works, sundry items, ventilation, cover frame to specification:-					
			Flanged Isolation valves					
59.2.5			600 mm diam. PN16	No.	2.0			
			Flanged Scour Valve					
59.2.6			DN 200 diam. PN16	No.	1.0			
			Air Valve					
59.2.7			DN 150 PN 16 double-acting	No.	1.0			
59.3			ANCILLARIES					
	8.2.11	LI	Anchor/Thrust blocks and pedestals					
59.3.1			30Mpa Concrete	m^3	30.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
59.3.2			Formwork	m²	150.0			
59.3.3			Reinforcement Y12 diam.	t	9.0			
59.3.4	8.2.12		30 MPa Concrete Encasement	m³	60.0			
59.3.5			Reinforcement Y12 diam.	t	18.0			
59.4	8.2.13	LI	VALVE CHAMBERS AND MANHOLES:					
59.4.1	8.2.14		Supply all labour, plant and materials to construct/install precast air valve chamber complete including manhole cover slabs, GMS access cover etc as detailed on the drawings but excluding locks measured elsewhere	No.	4.0			
59.4.2			Supply and install precast concrete pipe route markers every 100m along pipe route and at every intersection and change of direction. Pipe markers are to be painted with two coats yellow road marking paint and should include the letter 'W'.	No.	4.0			
Total Carried Forward To Summary								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
60	SANS 1200 DB		SECTION : PIPE TRENCHES					
60.1		LI	SITE CLEARANCE					
60.1.1	8.3.1(a)	LI	Clear and grub all shrubs and vegetation for areas as required and instructed by Employer's Agent for construction:	m²	100,000.0			
60.1.2	8.3.1(b)	LI	Clear trees up to 1m	No.	10.0			
60.1.3	8.3.1(b)	LI	Clear trees of girth over 1 m and up to 2 m	No.	4.0			
60.1.4	8.3.1(b)	LI	Clear trees of girth over 2m	No.	2.0			
60.1.5	8.3.1(c)	LI	Remove topsoil to depth of 150mm and stockpile	m²	100,000.0			
60.1.6	PSDB 3.1		Removal of Boulders Class A and B and dispose	m³	152.0			
60.1.7		LI	Excavate by hand for proving of existing services	m³	171.0			
			Demolish and remove structures / buildings:					
60.1.8		LI	Take down, dispose of or re-erect existing fences.	m	1,800.0			
60.1.9		LI	New fencing as removed/demolished in Item above.	m	2,100.0			
60.2			EXCAVATION					
			Over 100 up to 300 mm diam. for total trench depth:					
60.2.1			Exceeding 1,0 m but not exceeding 2,0 m	m	5,000.0			
60.2.2			Exceeding 2,0 m but not exceeding 3,0 m	m	3,750.0			
60.2.3			Exceeding 3,0 m but not exceeding 4,0 m	m	3,750.0			
	8.3.2(b)		Extra-over items .2.1 to .2.12 incl. for (prov):					
60.2.4			Intermediate excavation	m³	3,777.2			
60.2.5			Hard rock excavation	m³	5,444.6			
60.2.6	8.3.2(c)		Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	4,200.0			
			EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
60.2.7	8.3.3.1(a		from other necessary excavations on site	m³	48,195.0			
60.2.8	8.3.3.1(b		by importation from designated borrow pits	m³	14,458.5			
60.2.9	8.3.3.1(c		by importation from commercial or off-site sources selected by the Contractor	m³	4,819.5			
60.2.10	8.3.3.3		Compaction in road reserves	m³	8,400.0			
	8.3.3.4		Overhaul					
Total Carried Forward								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
60.2.11			Limited overhaul (provisional)	m³	49,085.4			
60.2.12			Long overhaul (provisional)	m³.km	49,085.4			
60.2.13	8.3.4(a)		Shore trench in collapsible material	m²	7,000.0			
60.2.14	8.3.4(b)		Temporary works : Control water inflow from high groundwater table	m³	14,000.0			
60.2.15			Provide pumping equipment	Sum	1,0			
60.2.16			Operate and maintain	Days	183.0			
60.2.17			Remove equipment	Sum	1,0			
60.3		LI	EXISTING SERVICES					
	8.3.5		Services across and in trenches					
	8.3.5(a)		Services that intersect a trench					
60.3.1		LI	Water Pipes	No.	15.0			
60.3.2		LI	Sewers	No.	9.0			
60.3.3		LI	Stormwater Pipes	No.	8.0			
60.3.4		LI	Concrete Channels or Drains	No.	8.0			
60.3.5		LI	Box Culverts	No.	4.0			
60.3.6		LI	Electric Cables (Underground)	No.	7.0			
60.3.7		LI	Ducts	No.	5.0			
60.3.8		LI	Kerbs	No.	15.0			
60.3.9		LI	Erf Connections	No.	24.0			
60.3.10			Electric Cables (Overhead)	No.	5.0			
60.3.11		LI	Fibre Optic	No.	1.0			
60.3.12		LI	Oil and Gas Pipelines	No.	1.0			
	8.3.5(b)	LI	Services that adjoin a trench					
60.3.13		LI	Water Pipes	m	2,000.0			
60.3.14		LI	Sewers	m	850.0			
60.3.15		LI	Stormwater Pipes	m	500.0			
60.3.16		LI	Concrete Channels or Drains	m	50.0			
60.3.17		LI	Box Culverts	m	35.0			
60.3.18		LI	Electric Cables	m	35.0			
60.3.19		LI	Ducts	m	45.0			
60.3.20		LI	Kerbs	m	750.0			
Total Carried Forward								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
60.3.21		LI	Erf Connections	m	65.0			
60.3.22		LI	Electric Cables (Overhead)	m	850.0			
60.3.23		LI	Fibre Optic	m	75.0			
60.3.24			Oil and Gas Pipelines	m	25.0			
		LI	Excavation across gravel roads					
			Selective excavation in all materials for trenches, backfill with stabilized 5% cement, compact and dispose of surplus material for trenches under gravelroads for pipes up to 600mm diameter (only one half of the road is to be opened at any one time)					
60.3.25		LI	0.0m - 3.0m	m	440.0			
60.4		LI	FINISHINGS					
	8.3.6		Reinstate road surfaces					
60.4.1			a) Gravel surfaced	m²	240.0			
60.4.2			b) Gravel shoulders	m²	240.0			
Total Carried Forward								

SECTION : BEDDING (PIPES)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
61	SANS 1200 LB		SECTION : BEDDING					
61.1			PROVISION OF BEDDING					
			Available from trench within 0,5 km (Subclause 3.4.1)					
61.1.1	8.2.1	LI	a) Selected granular material	m³	833.0			
61.1.2			b) Selected fill material	m³	1,164.8			
			Imported from					
	8.2.2.2		b) Borrow pits (Provisional)					
61.1.3		LI	1) Selected granular material	m³	210.0			
61.1.4		LI	2) Selected fill material	m³	259.0			
	8.2.2.3		c) Commercial sources (Provisional)					
61.1.5		LI	1) Selected granular material	m³	210.0			
61.1.6		LI	2) Selected fill material	m³	259.0			
61.1.7	8.2.3	LI	Concrete bedding (Provisional)	m³	42.0			
	8.2.5		Overhaul of material for bedding (Provisional) where ordered Extra-over items .61.1.1 to 16.1.6					
61.1.8		LI	a) Selected granular material	m³.km	420.0			
61.1.9		LI	b) Selected fill material	m³.km	5,040.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
62			SECTION : WATER MAINS					
			Supply, lay, joint (weld), bed Class B for Flexible pipes and test pipes.					
62.1	SANS 1200 L		PIPELINE					
	8.2.1		Steel pipes API 5L Grade B or ASTM A106 Grade B, 6mm wall thickness with Steel pipes lined with Fusion Bonded Epoxy (FBE): Supply, handle, erect with couplings, test, and disinfect (potable water pipelines) at boulder section and pipe bridge crossing Supply, handle, lay in Class B bedding, joint with steel flange adaptors , test, and disinfect (potable water pipelines)					
62.1.1			400NB mm diam.	m	150.0			
			PVC-O Class 25					
62.1.2		LI	400mm Diameter	m	8,300.0			
	8.2.15		3LPE wrapping steel pipe in corrosive soil					
62.2			400NB	m	150.0			
62.3			DISINFECT PIPELINES					
62.3.1			Steel pipeline	Sum	1,0			
62.3.2		LI	PVC-O pipeline	Sum	1,0			
62.4	SANS 1200 L		SPECIALS AND FITTINGS					
			Extra-over for supply, deliver, lay, bed and install steel specials and fittings suitable for:					
			11,25 deg. Bends:					
62.4.1		LI	315mm	No.	93.0			
			22.5 deg. Bends:					
62.4.2		LI	315mm	No.	52.0			
			45 deg. Bends:					
62.4.3		LI	315mm	No.	26.0			
			90 deg. Bends:					
62.4.4			315mm	No.	9.0			
62.5	SABS1200L G		PIPE JACKING AND STREAM CROSSING					
			Jacking/Drilling Establishment					
62.5.1			a) Fixed Charged	Sum	1.0			
62.5.2			b) Time Related	Day	11.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
62.5.3			Supply of pipes to be Jacked and sleeve	m	40.0			
62.5.4			Jacking/Drilling of Pipes	m	40.0			
62.5.5			Excavation for Jacking in soft material, backfilling by hand and compacting.	m³	192.0			
62.5.6			Extra-Over 6.1.5 for Jacking/Drilling in hard material	m	80.0			
62.5.7			Extra-Over 6.1.5 for Excavation in Rock	m³	10.0			
62.5.8			Provisional Sum for the Cost of Horizontal Directional Drilling where highly expansive soils are encountered	Prov Sum	1,0	3850 000,00	3850 000,00	
62.5.9			Overheads, charges and proffit on items 3.100	%	3,850,000.0			
62.5.10			Stream Crossing to Detail	Sum	1.0			
62.6	8.2.3		VALVES					
			Valves, Meters, Specials and Fittings					
			Supply, lay, joint, bed for flexible pipes and test, including cutting pipes supplying flexible couplings and corrosion protection where applicable.					
62.7			AIR VALVES					
			Extra-over for supply, deliver, lay, bed and install specials and fittings suitable for:					
62.7.1		LI	80mm air valve "Vent-O-Mat" RBX type	No.	20.0			
62.7.2		LI	80mm GMS straight, threaded one end, flanged one end	No.	20.0			
62.7.3		LI	150mm NB RSV Gate Valve.	No.	20.0			
62.7.4		LI	150mm GMS straight, flanged both ends	No.	20.0			
62.7.5		LI	400mm Equal tee flanged	No.	20.0			
62.7.6		LI	400mm Flange adaptor	No.	40.0			
			Isolation Valve Chamber					
			Extra-over for supply, deliver, lay, bed and install specials and fittings:					
62.7.7		LI	400mm Flange adaptor	No.	4.0			
62.7.8		LI	400mm RSV Gate Valve PN16	No.	2.0			
62.7.9		LI	Stainless steel key to suit valve	No.	1.0			
62.8			SCOUR VALVES					
			Extra-over for supply, deliver, lay, bed and install specials and fittings:					
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
62.8.1		LI	100mm Equal T-Piece, branch Flanged	No.	15.0			
62.8.2		LI	100mm GMS straight, flanged both ends	No.	15.0			
62.8.3		LI	100mm NB 45˚ Elbow	No.	15.0			
62.8.4		LI	100mm GMS straight, flanged both ends	No.	15.0			
62.8.5		LI	100mm RSV Gate Valve	No.	15.0			
62.8.6		LI	100mm NB Straight Pipe Piece, flanged both ends	No.	15.0			
62.8.7		LI	400mm T-piece with 100mm branch	No.	15.0			
62.8.8		LI	400mm Flange adaptor	No.	30.0			
			Connection					
62.8.9		LI	400mm Ø 2470mm Pipe Piece, flanged one end	No.	3.0			
62.8.10		LI	400mm Flange adaptor for steel	No.	3.0			
62.8.11		LI	400mm RSV Gate Valve	No.	3.0			
62.8.12		LI	400mm Flange adaptor for uPVC	No.	3.0			
62.9	8.2.13		VALVE AND HYDRANT CHAMBERS					
			Construction of complete Chamber as per drawings. Rate shall include compaction of backfill, floor slab, reinforced concrete walls, sealants, pipe supports and roof slab. (excluding valves and fittings)					
62.9.1		LI	Connection Chamber	No.	1.0			
62.9.2		LI	Air Valve Chamber	No.	20.0			
62.9.3		LI	Isolation Valve Chamber	No.	2.0			
62.9.4		LI	Scour Valve Chamber	No.	30.0			
62.10			ANCILARIES					
	8.2.11		Anchor/Thrust blocks and pedestals					
			Supply and construct Anchor/Thrust blocks as detailed on drawings with class 20MPa/22mm Concrete for:					
62.10.1		LI	Concrete blocks up to and including 0.5m³.	No.	210.0			
62.10.2		LI	Over 0.5m³ up to and including 1.0m³.	No.	21.0			
62.10.3		LI	Over 1.0m³ up to and including 1.5m³.	No.	14.0			
62.10.4		LI	Encasing of pipe in 20/19 Mpa Concrete	m³	84.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
62.10.5		LI	Supply and install concrete marker block as detailed on drawing, including lettering and painting as specified, at positions indicated by the Engineer.	No.	35.0			
62.11			TESTING					
			Testing of pipes and fittings installed					
62.11.1			Hydraulic Pressure Testing -install temporary blank flanges and /or spade pieces as required, provide temporary anchorages, and pressure test the complete pipeline and all fittings, valves and appurtenances, to approval of Engineer	m	12,500.0			
62.11.2			Disinfection - Disinfect the complete pipeline and all appurtenances after satisfactory completion of pressure testing, to the approval of the Engineer	Sum	1.0			
62.11.3			Testing of all cast in situ concrete chambers (excluding air valve chambers that are precast concrete) for watertightness and making good if required	No.	1.0			
62.11.4			Testing of Welds by means of X-Ray etc.	Sum	1.0			
62.11.5			Testing of Coatings and Linings	Sum	1.0			
62.11.6			Field testing of Coatings and Linings (Joints)	Sum	1.0			
62.12	SANS 1200DK		GABIONS AND PITCHING					
62.13			CORROSION CONTROL AND AC MITIGATION					
62.13.1			Allowance for the design, quality control, monitoring and commissioning woks specific to corrosion control and AC mitigation for the newly installed pipework by a nominated corrosion specialist.	Prov Sum	1.0	6000 000,00	6000 000,00	
62.13.2			Contractors' charges on item 62.13.1 above.	%	6,000,000.0			
62.14			CATHODIC PROTECTION					
62.14.1			Allowance for the design and implementation according to SANS ISO 15589-1, including quality control, monitoring and commissioning of works specific to Cathodic Protection for the newly installed pipework by a nominated cathodic protection specialist.	Prov Sum	1.0	600 000,00	600 000,00	
62.14.2			Extra-over for item 62.14.1Contractors' charges	%	600,000.0			
			GABION MATRESSES (including material and delivery)					
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
62.14.3		LI	Surface preparation for bedding of gabions	m²	200.0			
			Gabions					
			Galvanized and PVC coated gabion boxes using 150mm stone and 80mm x 100mm x 2,5mm mesh:					
62.14.4		LI	1 m x 1 m x 1 m	m³	120.0			
			Reno Mattresses					
			Galvanized and PVC coated gabions boxes using 150mm stone and 80mm x 100mm x 2,5mm mesh:					
62.14.5		LI	3 m x 1 m x 0,3 m	m³	30.0			
62.14.6		LI	3 m x 1 m x 0,15 m	m³	20.0			
			Bidim					
62.14.7		LI	Geotextile (Kaytech Bidim A4 or similar approved type) placed where ground water seepage occurs or where directed by Engineer	m²	120.0			
			Pitching					
			Stone pitching:					
62.14.8		LI	Grouted stone pitching	m²	30.0			
Total Carried Forward To Summary								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
63	SANS 1200 DB		SECTION : PIPE TRENCHES					
63.1		LI	SITE CLEARANCE					
63.1.1	8.3.1(a)	LI	Clear and grub all shrubs and vegetation for areas as required and instructed by Employer's Agent for construction:	m²	68,000.0			
63.1.2	8.3.1(b)	LI	Clear trees up to 1m	No.	5.0			
63.1.3	8.3.1(b)	LI	Clear trees of girth over 1 m and up to 2 m	No.	2.0			
63.1.4	8.3.1(b)	LI	Clear trees of girth over 2m	No.	1.0			
63.1.5	8.3.1(c)	LI	Remove topsoil to depth of 150mm and stockpile	m²	68,000.0			
63.1.6	PSDB 3.1		Removal of Boulders Class A and B and dispose	m³	152.0			
63.1.7		LI	Excavate by hand for proving of existing services	m³	117.0			
			Demolish and remove structures / buildings:					
63.1.8		LI	Take down, dispose of or re-erect existing fences.	m	1,500.0			
63.1.9		LI	New fencing as removed/demolished in Item above.	m	1,500.0			
63.2			EXCAVATION					
			Over 100 up to 300 mm diam. for total trench depth:					
63.2.1			Exceeding 1,0 m but not exceeding 2,0 m	m	4,250.0			
63.2.2			Exceeding 2,0 m but not exceeding 3,0 m	m	2,550.0			
63.2.3			Exceeding 3,0 m but not exceeding 4,0 m	m	1,700.0			
	8.3.2(b)		Extra-over items .2.1 to .2.12 incl. for (prov):					
63.2.4			Intermediate excavation	m³	2,698.0			
63.2.5			Hard rock excavation	m³	3,889.0			
63.2.6	8.3.2(c)		Excavate and dispose of unsuitable material from trench bottom (Provisional)	m³	3,000.0			
			EXCAVATION. ANCILLARIES Make up deficiency in backfill material (Provisional)					
63.2.7	8.3.3.1(a		from other necessary excavations on site	m³	34,425.0			
63.2.8	8.3.3.1(b		by importation from designated borrow pits	m³	10,327.5			
63.2.9	8.3.3.1(c		by importation from commercial or off-site sources selected by the Contractor	m³	3,442.5			
63.2.10	8.3.3.3		Compaction in road reserves	m³	6,000.0			
	8.3.3.4		Overhaul					
Total Carried Forward								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
63.2.11			Limited overhaul (provisional)	m^3	35,061.0			
63.2.12			Long overhaul (provisional)	$m^3.km$	35,061.0			
63.2.13	8.3.4(a)	LI	Shore trench in collapsible material	m^2	5,000.0			
63.2.14	8.3.4(b)	LI	Temporary works : Control water inflow from high groundwater table	m^3	10,000.0			
63.2.15			Provide pumping equipment	Sum	1,0			
63.2.16			Operate and maintain	Days	183.0			
63.2.17			Remove equipment	Sum	1,0			
63.3		LI	EXISTING SERVICES					
	8.3.5		Services across and in trenches					
	8.3.5(a)		Services that intersect a trench					
63.3.1			Water Pipes	No.	12.0			
63.3.2			Sewers	No.	6.0			
63.3.3			Stormwater Pipes	No.	5.0			
63.3.4			Concrete Channels or Drains	No.	5.0			
63.3.5			Box Culverts	No.	2.0			
63.3.6			Electric Cables (Underground)	No.	5.0			
63.3.7			Ducts	No.	3.0			
63.3.8			Kerbs	No.	10.0			
63.3.9			Erf Connections	No.	15.0			
63.3.10			Electric Cables (Overhead)	No.	3.0			
63.3.11			Fibre Optic	No.	1.0			
63.3.12			Oil and Gas Pipelines	No.	1.0			
	8.3.5(b)	LI	Services that adjoin a trench					
63.3.13			Water Pipes	m	200			
63.3.14			Sewers	m	600.0			
63.3.15			Stormwater Pipes	m	300.0			
63.3.16			Concrete Channels or Drains	m	50.0			
63.3.17			Box Culverts	m	25.0			
63.3.18			Electric Cables	m	25.0			
63.3.19			Ducts	m	35.0			
63.3.20			Kerbs	m	600.0			
Total Carried Forward								

SECTION : PIPE TRENCHES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
63.3.21			Erf Connections	m	45.0			
63.3.22			Electric Cables (Overhead)	m	650.0			
63.3.23			Fibre Optic	m	50.0			
63.3.24			Oil and Gas Pipelines	m	10.0			
		LI	Excavation across gravel roads					
			Selective excavation in all materials for trenches, backfill with stabilized 5% cement, compact and dispose of surplus material for trenches under gravel roads for pipes up to 600mm diameter (only one half of the road is to be opened at any one time)					
63.3.25			0.0m - 3.0m	m	200.0			
63.4		LI	FINISHINGS					
	8.3.6		Reinstate road surfaces					
63.4.1			a) Gravel surfaced	m²	185.0			
63.4.2			b) Gravel shoulders	m²	185.0			
Total Carried Forward								

SECTION : BEDDING (PIPES)

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
64	SANS 1200 LB		SECTION : BEDDING					
64.1			PROVISION OF BEDDING					
			Available from trench within 0,5 km (Subclause 3.4.1)					
64.1.1	8.2.1	LI	a) Selected granular material	m³	595.0			
64.1.2		LI	b) Selected fill material	m³	832.0			
			Imported from					
	8.2.2.2		b) Borrow pits (Provisional)					
64.1.3		LI	1) Selected granular material	m³	150.0			
64.1.4		LI	2) Selected fill material	m³	185.0			
	8.2.2.3		c) Commercial sources (Provisional)					
64.1.5		LI	1) Selected granular material	m³	150.0			
64.1.6		LI	2) Selected fill material	m³	185.0			
64.1.7	8.2.3	LI	Concrete bedding (Provisional)	m³	30.0			
	8.2.5		Overhaul of material for bedding (Provisional) where ordered Extra-over items .1.1 to .1.6					
64.1.8		LI	a) Selected granular material	m³.km	300.0			
64.1.9		LI	b) Selected fill material	m³.km	3,600.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
65			SECTION : WATER MAINS					
			Supply, lay, joint (weld), bed Class B for Flexible pipes and test pipes.					
65.1	SANS 1200 L		PIPELINE					
	8.2.1		Steel pipes API 5L Grade B or ASTM A106 Grade B, 6mm wall thickness with Steel pipes lined with Fusion Bonded Epoxy (FBE): Supply, handle, erect with couplings, test, and disinfect (potable water pipelines) at boulder section and pipe bridge crossing Supply, handle, lay in Class B bedding, joint with steel flange adaptors , test, and disinfect (potable water pipelines)					
65.1.1			300NB mm diam.	m	60.0			
			PVC-O Class 25					
65.1.2		LI	315mm Diameter	m	8,300.0			
	8.2.15		3LPE wrapping steel pipe in corrosive soil					
65.2			300NB	m	60.0			
65.3			DISINFECT PIPELINES					
65.3.1			Steel pipeline	Sum	1.0			
65.3.2		LI	PVC-O pipeline	Sum	1.0			
65.4	SANS 1200 L		SPECIALS AND FITTINGS					
			Extra-over for supply, deliver, lay, bed and install specials and fittings suitable for:					
			11,25 deg. Bends:					
65.4.1		LI	315mm	No.	59.0			
			22.5 deg. Bends:					
65.4.2		LI	315mm	No.	65.0			
			45 deg. Bends:					
65.4.3		LI	315mm	No.	40.0			
			90 deg. Bends:					
65.4.4		LI	315mm	No.	11.0			
65.5	SABS1200L G		PIPE JACKING AND STREAM CROSSING					
			Jacking/Drilling Establishment					
65.5.1			a) Fixed Charged	Sum	1.0			
65.5.2			b) Time Related	Day	11.0			
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
65.5.3			Supply of pipes to be Jacked and sleeve	m	40.0			
65.5.4			Jacking/Drilling of Pipes	m	40.0			
65.5.5			Excavation for Jacking in soft material, backfilling by hand and compacting.	m³	192.0			
65.5.6			Extra-Over 65.5.5 for Jacking/Drilling in hard material	m	80.0			
65.5.7			Extra-Over 65.5.5 for Excavation in Rock	m³	10.0			
65.5.8			Provisional Sum for the Cost of Horizontal Directional Drilling where highly expansive soils are encountered	Prov Sum	1.0	3850 000,00	3850 000,00	
65.5.9			Overheads, charges and profit on items 65.5.8	%	3,850,000.0			
65.5.10			Stream Crossing to Detail	Sum	1.0			
65.6	8.2.3		VALVES					
			Valves, Meters, Specials and Fittings					
			Supply, lay, joint, bed for flexible pipes and test, including cutting pipes supplying flexible couplings and corrosion protection where applicable.					
65.7			AIR VALVES					
			Extra-over for supply, deliver, lay, bed and install specials and fittings suitable for:					
65.7.1		LI	80mm air valve "Vent-O-Mat" RBX type	No.	15.0			
65.7.2		LI	80mm GMS straight, threaded one end, flanged one end	No.	15.0			
65.7.3		LI	150mm NB RSV Gate Valve.	No.	15.0			
65.7.4		LI	150mm GMS straight, flanged both ends	No.	15.0			
65.7.5		LI	315mm Equal tee flanged	No.	15.0			
65.7.6		LI	315mm Flange adaptor	No.	30.0			
			Isolation Valve Chamber					
			Extra-over for supply, deliver, lay, bed and install specials and fittings:					
65.7.7		LI	315mm Flange adaptor	No.	4.0			
65.7.8		LI	315mm RSV Gate Valve PN16	No.	2.0			
65.7.9		LI	Stainless steel key to suit valve	No.	1.0			
65.8			SCOUR VALVES					
			Extra-over for supply, deliver, lay, bed and install specials and fittings:					
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
65.8.1		LI	100mm Equal T-Piece, branch Flanged	No.	13.0			
65.8.2		LI	100mm GMS straight, flanged both ends	No.	13.0			
65.8.3		LI	100mm NB 45˚ Elbow	No.	13.0			
65.8.4		LI	100mm GMS straight, flanged both ends	No.	13.0			
65.8.5		LI	100mm RSV Gate Valve	No.	13.0			
65.8.6		LI	100mm NB Straight Pipe Piece, flanged both ends	No.	13.0			
65.8.7		LI	315mm T-piece with 100mm branch	No.	13.0			
65.8.8		LI	315mm Flange adaptor	No.	26.0			
			Connection					
65.8.9		LI	315mm Ø 2470mm Pipe Piece, flanged one end	No.	1.0			
65.8.10		LI	315mm Flange adaptor for steel	No.	1.0			
65.8.11		LI	315mm RSV Gate Valve	No.	1.0			
65.8.12			315mm Flange adaptor for uPVC	No.	1.0			
65.9	8.2.13		VALVE AND HYDRANT CHAMBERS					
			Construction of complete Chamber as per drawings. Rate shall include compaction of backfill, floor slab, reinforced concrete walls, sealants, pipe supports and roof slab. (excluding valves and fittings)					
65.9.1		LI	Connection Chamber	No.	1.0			
65.9.2		LI	Air Valve Chamber	No.	15.0			
65.9.3		LI	Isolation Valve Chamber	No.	20.0			
65.9.4		LI	Scour Valve Chamber	No.	15.0			
65.10			ANCILARIES					
	8.2.11		Anchor/Thrust blocks and pedestals					
			Supply and construct Anchor/Thrust blocks as detailed on drawings with class 20MPa/22mm Concrete for:					
65.10.1		LI	Concrete blocks up to and including 0.5m³.	No.	150.0			
65.10.2		LI	Over 0.5m³ up to and including 1.0m³.	No.	15.0			
65.10.3		LI	Over 1.0m³ up to and including 1.5m³.	No.	10.0			
65.10.4		LI	Encasing of pipe in 20/19 Mpa Concrete	m³	60.0			
	8.2.13							
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
65.10.5			Supply and install concrete marker block as detailed on drawing, including lettering and painting as specified, at positions indicated by the Engineer.	No.	35.0			
65.11			TESTING Testing of pipes and fittings installed					
65.11.1			Hydraulic Pressure Testing -install temporary blank flanges and /or spade pieces as required, provide temporary anchorages, and pressure test the complete pipeline and all fittings, valves and appurtenances, to approval of Engineer	m	8,500.0			
65.11.2			Disinfection - Disinfect the complete pipeline and all appurtenances after satisfactory completion of pressure testing, to the approval of the Engineer	Sum	1.0			
65.11.3			Testing of all cast in situ concrete chambers (excluding air valve chambers that are precast concrete) for watertightness and making good if required	No.	1.0			
65.11.4			Testing of Welds by means of X-Ray etc.	Sum	1.0			
65.11.5			Testing of Coatings and Linings	Sum	1.0			
65.11.6			Field testing of Coatings and Linings (Joints)	Sum	1.0			
65.12			CORROSION CONTROL AND AC MITIGATION					
65.12.1			Allowance for the design, quality control, monitoring and commissioning woks specific to corrosion control and AC mitigation for the newly installed pipework by a nominated corrosion specialist.	Prov Sum	1.0	6000 000,00	6000 000,00	
65.12.2			Contractors' charges on item 65.12.1 above.	%	6,000,000.0			
65.13			CATHODIC PROTECTION					
65.13.1			Allowance for the design and implementation according to SANS ISO 15589-1, including quality control, monitoring and commissioning of works specific to Cathodic Protection for the newly installed pipework by a nominated cathodic protection specialist.	Prov Sum	1.0			
65.13.2			Extra-over for item 65.13.1Contractors' charges	%	600,000.0	600 000,00	600 000,00	
65.14	SANS 1200DK		GABIONS AND PITCHING					
			GABION MATRESSES (including material and delivery)					
Total Carried Forward								

SECTION : MEDIUM-PRESSURE PIPELINES

ITEM NO	PAYMENT	LIC	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
							R	c
Brought Forward								
65.14.1		LI	Surface preparation for bedding of gabions	m²	108.0			
			Gabions					
			Galvanized and PVC coated gabion boxes using 150mm stone and 80mm x 100mm x 2,5mm mesh:					
65.14.2		LI	1 m x 1 m x 1 m	m³	48.0			
			Reno Mattresses					
			Galvanized and PVC coated gabions boxes using 150mm stone and 80mm x 100mm x 2,5mm mesh:					
65.14.3		LI	3 m x 1 m x 0,3 m	m³	10.0			
65.14.4		LI	3 m x 1 m x 0,15 m	m³	5.0			
			Bidim					
65.14.5		LI	Geotextile (Kaytech Bidim A4 or similar approved type) placed where ground water seepage occurs or where directed by Engineer	m²	65.0			
			Pitching					
			Stone pitching:					
65.14.6		LI	Grouted stone pitching	m²	10.0			
Total Carried Forward To Summary								

HIGH-LIFT PUMP STATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
66		HIGHLIFT PUMPSTATION					
	SANS 1200C	Site Clearance					
66.1	8.2.1	Clear and Grub Pump station site	m²	2,000.0			
	8.2.2	Remove and grub large trees and tree stumps of girth:					
66.2		a) over 1m and up to and including 2m	No.	3.0			
66.3		b) over 2m and up to and including 3m	No.	4.0			
66.4	8.2.5	Take down existing fences	km	2.0			
66.5	8.2.10	Remove topsoil to a nominal depth of 150mm and stockpile	m³	1,875.0			
66.6	PSDB 3.1	Removal of Boulders Class A and B and dispose.	m³	30.0			
66.7		Excavate by hand for proving of existing services	m³	250.0			
	SANS1200D	Earthworks					
	8.3.2	Bulk Excavation					
		a) Excavate in all materials and use for embankment or backfill or dispose of as ordered for:					
66.8		i) For pump station platform	m³	2,000.0			
		b) Extra- over for					
66.9		i) Intermediate excavation	m³	1,500.0			
66.10		ii) Hard rock excavation	m³	500.0			
	8.3.3	Restricted Excavation					
		a) Excavate for restricted foundations, footings, and pipe trenches in all materials and use for backfill or embankment or dispose for:					
66.11		i) Pump station	m³	400.0			
	8.3.8	Existing Services					
66.12		c) Excavate by hand in soft material to expose underground services	m³	95.0			
66.13	8.3.4	Importation, placing and compaction of G7 gravel to grade level to 98% MOD AASHTO (at OMC) in layers not exceeding 200mm to replace pockets or layers of unsuitable material where directed by Engineer (Prov)	m³	130.0			
	8.3.3	Overhaul					
66.14		a) Limited Overhaul (Provisional)	m³	2,000.0			
66.15		b) Long Overhaul (Provisional)	m³.km	10,000.0			
Total Carried Forward							

HIGH-LIFT PUMP STATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
66.1	SANS 1200DM	EARTHWORKS (ROADS, SUB-GRADE) - UNDER STRUCTURE					
	8.3.3	Treatment of Roadbed (Under Structure)					
		a) Road-bed preparation and compaction of material to:					
66.1.1		i) minimum of 90% modified AASHTO maximum density	m³	2,000.0			
66.2	SANS 1200ME	SUBBASE (STABILIZATION UNDER STRUCTURE) -PROVISIONAL					
	8.3.5	Process material by the following process, as relevant and use under structure on instruction by Engineer					
66.2.1		a) Screening	m³	125.0			
66.2.2		b) Heavy grid rolling	m³	125.0			
66.2.3		c) Stabilization (6% Cement)	m³	125.0			
	8.3.8	Stabilising Agent					
66.2.4		a) Portland Cement	t	2.0			
66.3	SANS1200 G	CONCRETE STRUCTURAL					
	8.2	Formwork					
	8.2.4	Special off form to:					
66.3.1		a) soffit to roof slab	m²	150.0			
66.3.2		b) pump station plinths	m²	60.0			
66.3.3		c) 20 x10 drip to roof pump station	m	100.0			
	8.2.5	Narrow widths up to 300mm wide					
66.3.4		a Pump station foundation	m	150.0			
	8.2.6	Box out Holes/ Form Voids					
		a) Small circular, of diameter up to and including 0,35m					
66.3.5		i) 600mm diameter	No.	4.0			
	8.3.1	Reinforcement					
66.3.6		a) mild steel	t	1.0			
	8.4	Concrete					
66.3.7		15MPa concrete to platforms, aprons, steps, pipe supports etc.	m³	60.0			
	8.4.3	Concrete, Grade 35MPa/ 19mm for:					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
66.3.8		i) Pump station footings	m³	150.0			
66.3.9		ii) Pump station floor	m³	75.0			
66.3.10		iii) Pump station roof	m³	85.0			
		Unformed surface finishes					
66.3.11		a) Wood floated	m²	200.0			
66.3.12		b) Steel floated	m²	150.0			
		Joints					
		Construct construction joints for:					
66.3.13		Isolations joint at floor/wall junction	m	300.0			
66.3.14		Horizontal roof sliding joint on top of wall. Rate to include for two layers of tempered masonite and two layers or 3 ply malthoid	m	150.0			
66.3.15		Roof water proofing	m	150.0			
		Construct Road access to Pump Station					
66.3.16		150mm G5 compacted to 95% Mod AASHTO	m²	400.0			
66.3.17		150mm G7 compacted to 95% Mod AASHTO	m²	600.0			
66.3.18		150mm insitu material compacted to 95% Mod AASHTO	m²	600.0			
		Sundry Items					
66.3.19		110mm dia. uPVC sleeves long radius 90 degree	No.	5.0			
		Building Work					
66.3.20		230mm thick external Facebrick Wall - Corobrick " Firelight Satin" or similar Approved for internal / external wall of Pumpstation	m²	170.0			
66.3.21		Pump stations double doors	Sum	1.0			
66.3.22		Pump station single doors	Sum	1.0			
66.3.23		Screed to pump station roof slab	m³	2.0			
66.3.24		Windows to pump station as per drawing	No	10.0			
66.3.25		Airbricks to pump station building and chambers	No.	10.0			
	SANS 1200HA	Structural steel work (Sundry Items)					
66.3.26		Supply and install expanded metal grid including angled frames with fishtails to cast in to concrete to all floor channels on pump station	Prov Sum	1.0	250 000,00	250 000,00	
66.3.27		Handling Costs in the Light of the above	%	250,000.0			
		Site Drainage					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		Fencing					
		Supply and erect new fencing material for pump station site					
66.3.28		i) Supply and Install 2.4m high, 40MPa Concrete Palisade Fence. Rate to include supply, delivery from source and installation	m	400.0			
66.3.29		ii) Gates	No.	2.0			
66.3.30		iii) Barbed tape concertina	m	400.0			
	SANS 1200L	Medium Pressure Pipelines					
	8.2.5	Supply and install pipe fittings complete with all jointing materials such as gaskets, nuts and bolts etc					
		Pumpstation As Shown. All internal pipework to be epoxy coated and lined					
66.3.31		Supply and install a DN250 Discharge piping system for Methula WTW Rising Main including discharge manifold and including gaskets, nuts, bolts, support brackets and sundry materials, but excluding materials measured below: Refer to drawing No:EMP1-PS-PD-001	Sum	1.0			
66.3.32		Supply and install DN315 Discharge piping system for Mayflower WTW Rising Main including discharge manifold and including gaskets, nuts, bolts, support brackets and sundry materials, but excluding materials measured below: Refer to drawing No:EMP1-PS-PD-001	Sum	1.0			
66.3.33		Supply and Install DN200mm Flanged Butterfly Valve with Flange Adaptor for both Methula and Mayflower WTW's Rising Main	No.	6.0			
66.3.34		Supply and install DN200mm Non-Return Valve, Wafer Type, for both Methula and Mayflower rising Main	No.	6.0			
66.3.35		Supply and Install a Bermad Control Valve, 700 Series	No.	6.0			
66.3.36		Supply and Install Pressure Transducer/ transmitter/ Digital pressure Gauge	No.	6.0			
66.3.37		Supply and install a No-Flow Switch	No.	6.0			
66.3.38		Supply and Install Pressure Relief Valve (PRV)	No.	2.0			
66.3.39		Supply and Install DN400 Electromagnetic Flow Meter for Methula WTW Rising Main with a Digital Display connected by cable installed inside the pump station	No.	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
66.3.40		Supply and Install DN450 Electromagnetic Flow Meter for Mayflower WTW Rising Main with a Digital Display connected by cable installed inside the pump station	No.	1.0			
66.3.41		Supply and install a Suction piping system for Methula WTW Rising Main from DN400 Manifold and including gaskets, nuts, bolts, support brackets and sundry materials, but excluding materials measured below: Refer to drawing NoEMP1-PS-PD-001	Sum	1.0			
66.3.42		Supply and install Suction piping system for Mayflower WTW Rising Main from DN600 Manifold and including gaskets, nuts, bolts, support brackets and sundry materials, but excluding materials measured below: Refer to drawing No:EMP1-PS-PD-001	Sum	1.0			
66.3.43		Supply and Install DN600 Electromagnetic Flow Meter for measuring Incoming Flow with a Digital Display connected by cable installed inside the pump station	No.	1.0			
66.3.44		Supply and install 365x171 I-Beam complete with a 4Ton electric hoist and crawler	No.	1.0			
66.3.45		Supply and Install 3800x1900 Double Door Steel Transformer Door	No.	2.0			
66.3.46		Supply and Install DN200mm Flanged Butterfly Valve with Flange Adaptor for both Methula and Mayflower WTW's Suction Manifold	No.	6.0			
66.3.47		Supply and Install ultrasonic level Sensor at the Intake tower (Suction tank) and linked to the SCADA display system	No.	1.0			
66.3.48		Supply and install an DN600mm Isolation Gate Valve	No.	1.0			
66.3.49		Supply and Install Pressure Transducer/ transmitter/ Digital pressure Gauge	No.	6.0			
66.3.50		Air Release Valve	No.	1.0			
66.3.51		Link and Connect the Level sensor to the Pump Controller	Sum	1.0			
66.4		PUMP STATION VENTILATION SYSTEM					
66.4.1		Below Ground Pump Station - Air Supply Axial Flow Fan through a filtered intake duct to Low level of PS with minimum flow of 12000m3/h	No.	1.0			
66.4.2		Extraction Axial flow Fan, minimum air flow rate of 12000m3/h with collecting duct from below ground pump station through a discharge louvre	No.	1.0			
66.4.3		Roof ventilators Turbo Vents twister Ø510mm or similar	No.	8.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
		Supply and install a Sump Pump as Specified in the drawings and standard specification and detailed specification					
66.4.4		Sump Pump, complete with stainless steel guide rails and supports, for Flood Protection with a flow rate of 30m3/h and a head of 25m	No.	1.0			
66.4.5		HDG Steel pipe work to discharge water into the storm water drain	No.	1.0			
		Pumpsets					
66.4.6		Supply and install 288 cubic metre/hr (m3/h) Multistage vertical centrifugal pumps with a drive power of 120kW, and a head of 81,630m to discharge water to the Mayflower Water Treatment Works. Pump operation philosophy should be two standby/ one duty. Pumps to be supplied complete with Steel base plate and couplings	No.	3.0			
66.4.7		Supply and install 180 cubic metre/hr (m3/h) Multistage vertical centrifugal pumps with a drive power of 180kW, and a head of 213,411m to discharge water to the Methula Water Treatment Works. Pump operation philosophy should be two standby/ one duty. Pumps to be supplied complete with Steel base plate and couplings	No.	3.0			
66.4.8		Allow for the Laser Alignment of the pumps and vibrational analysis	No.	6.0			
66.4.9		c) Pump tests (Factory Acceptance Testing)	set	6.0			
66.4.10		d) Pump tests (Site Acceptance Testing)	set	6.0			
		Supply and install 356 x 171 x 46 UB crawl beam complete as detailed:					
66.4.11		11,9m long (rate to include complete with u-bolt plate and welding in accordance	No.	2.0			
66.4.12		Supply and install fixed aluminium louvre ventilation panel 660mm high x 2200mm wide. Allow for all sealing and fixing	No.	12.0			
66.4.13		Supply and lay 50mmø HDPE drain pipe complete with 45° bend	m	8.0			
66.4.14		Supply and lay 110mmø uPVC drainage pipe complete with 110mmø equal tee and 90° bend.	m	20.0			
66.5		ELECTRICAL INSTALLATION					
66.5.1		Provide and install transformer/minisub 500kVA	Prov Sum	1.0	2500 120,00	2500 120,00	
66.5.2		Handling Costs for item 66.5.1	%	2500 120,00			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
66.5.3		Motor Control Centre	Sum	1.0			
66.5.4		Incomer:800A	Sum	1.0			
66.5.5		160kW Soft starters	Sum	1.0			
66.5.6		250kW Soft starters	Sum	1.0			
66.5.7		Common Control	Sum	1.0			
66.5.8		DB section	Sum	1,0			
66.5.9		LV Cables	Sum	1.0			
66.5.10		Cable Terminations	Sum	1.0			
66.5.11		Cable support: Galvanised	Sum	1.0			
66.5.12		OL76 x 400 Cable Ladder	Sum	1.0			
66.5.13		OL76 x 200 Cable Ladder	Sum	1.0			
66.5.14		OL76 x 100 Cable Ladder	Sum	1.0			
66.5.15		P2000 Unistrut	Sum	1.0			
66.5.16		Support Fixtures	Sum	1.0			
66.5.17		25mm Galvanised Conduit	Sum	1.0			
66.5.18		25mm Galvanised Saddles	Sum	1.0			
66.5.19		Motor Cables Stands	Sum	1.0			
		Field Equipment & Instrumentation					
66.5.20		Emergency Stop & pedestal	Sum	1.0			
66.5.21		Pressure Transmitter: Suction … Bar	Sum	1.0			
66.5.22		Pressure Transmitter: Delivery … Bar	Sum	1.0			
66.5.23		Calorific Flow Switch	Sum	1.0			
66.5.24		Utility Box & 4 Terminals	Sum	1.0			
66.5.25		Earthing (trench Earth Around Pump Station)	Sum	1.0			
66.5.26		70mm² BCEW	Sum	1.0			
66.5.27		1.2m Copper Coated Earth Rods	Sum	1.0			
66.5.28		Exothermic Welds (Cadwelds)	Sum	1.0			
66.5.29		Lightning Protection	Sum	1.0			
66.5.30		Pump Station Roof	Sum	1.0			
66.5.31		Safety Signs (5-in-1 & no entry)	set	1.0			
66.5.32		Trenching (Pickable Soil)	m³	13.0			
66.5.33		Extra over for rock	m³	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
66.5.34		Small Power & Lighting	Sum	1.0			
66.5.35		Certificate of Compliance (COC)	No.	1.0			
66.5.36		Commissioning	Sum	1.0			
66.5.37		"Additional miscellaneous equipment, as specified, but not specifically listed above …….…… ……..…… ……."	Prov Sum	1.0	37 600,00	37 600,00	
66.5.37a		Handing Cost for the above item	%	37600			
66.6		STANDBY GENERATOR					
66.6.1		Provision for the Design, Supply, Delivery to suit power supply for full pumps as specified, Three phase water-cooled emergency standby power generator complete with Engine in a weatherproof enclosure-powder coated 3CR12.	Prov Sum	1.0	2750 000,00	2750 000,00	
		Handling Costs for the above items	%	2,750,000.0			
66.6.2		Provide for concrete Plinth and cable sleeves	No	1.0			
66.6.3		Installation, Testing and Commissioning of Emergency Generator Set	No	1.0			
66.6.4		Supply and install an Automatic Mains Failure Panel, complete with cabling between generator and Panel	No	1.0			
66.6.5		Provide for 200 litres Diesel	ℓ	1,000.0			
Total Carried Forward To Summary							

DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
67		DAYWORKS					
67.1		Site Agent	Prov Sum	1.0	243 000,00	243 000,00	
67.2		Gang Supervisor	Prov Sum	1.0	162 000,00	162 000,00	
67.3		Unskilled Labourers	Prov Sum	1.0	162 000,00	162 000,00	
67.4		Bricklayer	Prov Sum	1.0	162 000,00	162 000,00	
67.5		Pipe Fitter	Prov Sum	1.0	162 000,00	162 000,00	
67.6		Semi Skilled Labourers	Prov Sum	1.0	108 000,00	108 000,00	
67.7		Construction Hand and Operator	Prov Sum	1.0	162 000,00	162 000,00	
67.8		Carpenter	Prov Sum	1.0	121 500,00	121 500,00	
67.9		Clerk	Prov Sum	1.0	162 000,00	162 000,00	
67.10		Artisans	Prov Sum	1.0	162 000,00	162 000,00	
67.11		Foreman	Prov Sum	1.0	121 500,00	121 500,00	
67.12		Welder	Prov Sum	1.0	250 000,00	250 000,00	
67.13		Painter	Prov Sum	1.0	50 000,00	50 000,00	
67.14		Electrician	Prov Sum	1.0	337 500,00	337 500,00	
67.1		PLANT					
67.2		TLB	Prov Sum	1.0	500 000,00	500 000,00	
Total Carried Forward							

DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
67.2.1		Light delivery vehicles (1t or equivalent)	Prov Sum	1.0	500 000,00	500 000,00	
67.2.2		10 Ton Truck with Crane	Prov Sum	1.0	500 000,00	500 000,00	
67.2.3		Generator Set	Prov Sum	1.0	500 000,00	500 000,00	
67.2.4		Concrete Core Drilling Machine including operators	Prov Sum	1.0	500 000,00	500 000,00	
67.2.5		Pipe Cutting Machine	Prov Sum	1.0	500 000,00	500 000,00	
67.2.6		Welding Machine	Prov Sum	1.0	500 000,00	500 000,00	
67.2.7		Compressor and Jack Hammer	Prov Sum	1.0	500 000,00	500 000,00	
67.2.8		Tipper Truck	Prov Sum	1.0	500 000,00	500 000,00	
67.2.9		Water Tanker	Prov Sum	1.0	500 000,00	500 000,00	
67.2.10		Plate Compactor	Prov Sum	1.0	500 000,00	500 000,00	
67.2.11	PS 8.4.2.2	Plant for concrete mixing and cableway for the duration of the contract	Prov Sum	1.0	20 000,00	20 000,00	
67.2.12		Face Shovel Excavator	Prov Sum	1.0	3000 000,00	3000 000,00	
67.2.13		Crawler Rock Drilling Machines	Prov Sum	1.0	3000 000,00	3000 000,00	
67.2.14		Scraper Loaders	Prov Sum	1.0	1500 000,00	1500 000,00	
67.2.15		Articulated Dump Trucks	Prov Sum	1.0	5000 000,00	5000 000,00	
67.2.16		Off-highway Trucks	Prov Sum	1.0	2000 000,00	2000 000,00	
Total Carried Forward							

DAYWORKS

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
67.2.17		Handling Costs of all the items above (67.1 to 67.2.16)	%	22385 500,0			
Total Carried Forward To Summary							

C2.2 Bill of Quantities

SUMMARY OF SECTION TOTALS

	SUMMARY OF SCHEDULES	
SCHEDULE	DESCRIPTION	AMOUNT (RAND)
1	SCHEDULE 1: PRELIMINARIES AND GENERAL	
2	SCHEDULE 2: SITE CLEARANCE	
3	SCHEDULE 3: ACCESS ROAD	
4	SCHEDULE 4: ACCESS ROAD BRIDGES	
5	SCHEDULE 5: BRIDGES	
6	SCHEDULE 6: BULK EARTHWORKS	
7	SCHEDULE 7: WEIR	
9	SCHEDULE 9: WEIR DECK BRIDGE	
10	SCHEDULE 10: INTAKE TOWER AND OFF CHANNEL STORAGE DAM	
10A	SCHEDULE 10A: INTAKE TOWER ACCESS BRIDGE	
11	SCHEDULE 11: TRANSFER PIPELINE	
12	SCHEDULE 12: BULK PIPELINE FROM OCSD TO MAYFLOWER	
13	SCHEDULE 13: BULK PIPELINE FROM OCSD TO METHULA	
14	SCHEDULE 14: PUMPSTATION	
15	SCHEDULE 15: DAYWORKS	
Total		

C2.2 Bill of Quantities

SUMMARY OF SCHEDULE OF QUANTITIES

CALCULATION OF TENDER SUM	AMOUNT	
	Rands	**Cents**
SUBTOTAL A SCHEDULE OF QUANTITIES (Total brought forward from BOQ)		
SUBTOTAL B ALLOWANCE FOR CONTINGENCIES (10% OF TOTAL A)		
SUB TOTAL C ALLOWANCE FOR ESCALATION (12% OF TOTAL A)		
TOTAL A + B + C		
VALUE ADDED TAX (15% OF TOTAL A+B+C)		
TOTAL AMOUNT OF FORM OF TENDER		

.....
SIGNED ON BEHALF OF TENDERER:

.....
DATE: