CONTRACT NO: BW316/UPSHRMP/22

VOLUME 2: FINANCIAL PROPOSAL

VAAL CENTRAL WATER

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

PROCUREMENT DOCUMENT

JANUARY 2024

TENDER SUBMITTED BY:

Registered Name of Company:……..

Address:……

Telephone Number:……..

Fax Number:……

E-mail:……

Issued by:

VAAL CENTRAL WATER
PO Box 30121
Pellissier
9322

ISSUE DATE: 30 JANUARY 2024

BRIEFING SESSION: 13 FEBRUARY 2024 (COMPULSORY)

CLOSING DATE: 29 FEBRUARY 2023

VAAL CENTRAL WATER

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UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

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VOLUME 2: FINANCIAL PROPOSAL

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PART C1:

AGREEMENTS AND CONTRACT DATA

VAAL CENTRAL WATER

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AGREEMENTS AND CONTRACT DATA

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VAAL CENTRAL WATER

CONTRACT NO.

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UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C1.1

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

OFFER

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

PANEL OF CONTRACTORS

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

Contract: BW316/UPSHRMP/22

……

……..……(in words) R……(in figures)
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.

Signatures …….. ……..……..

Name(s) …….. ……..……..

Capacity …….. ……..……..

for the Tenderer ……..……...
(Name and address of organisation)

Name & signature of witness :……. **Date:** ……..…….....

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ACCEPTANCE

By signing this part of this 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 T1	Tendering Procedures
Part T2	Returnable Documents
Part C1	Agreements and Contract Data, (which includes this Agreement)
Part C2	Pricing Data
Part C3	Scope of Work
Part C4	Drawings

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 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 Contract 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 Contractor) within five days of 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 a binding contract between the parties.

Signatures …….. ……..

Name(s) …….. ……..

Capacity …….. ……..

for the Tenderer …… ……
(Name and address of organisation)

Name & signature of witness :……. **Date:** ……..

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

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 agreements 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……..

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 the 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 this 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 signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

FOR THE TENDERER:

Signatures …….. ……..

Name(s) …….. ……..

Capacity …….. ……..

for the Tenderer……..……
(Name and address of organisation)

Name & signature of witness :……. Date:…….....

FOR THE EMPLOYER:

Signatures …….. ……..

Name(s) …….. ……..

Capacity …….. ……..

for the Employer ……...
(Name and address of organisation)

Name & signature of witness :……. Date: …….....

VAAL CENTRAL WATER

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UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C1.2

CONTRACT DATA

VAAL CENTRAL WATER

CONTRACT NO.

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UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

CONTRACT DATA

GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, 2nd Edition (2010), published by the South African Institution of Civil Engineering, are applicable to this Contract.

The General Conditions of Contract are not bound into this document, but are available at the Contractor's expense from the Secretary of the South African Institution of Civil Engineering, Private Bag X200, Halfway House, Midrand, 1685.

CONTRACT DATA

In terms of clause 1.1.7 of the General Conditions of Contract for Construction Works, 2nd Edition (2010), the following Contact Data apply to this Contract.

The Contract Data consists of two parts. Part 1 contains information provided by the Employer, while Part 2 contains information to be provided by the Contractor.

Part 1: Data Provided by the Employer

Clause	Contract Data
1.1.13	Add the following to the end of this definition: This clause shall apply mutatis mutandis to any portion or phase of the Works that may be described in the Scope of Works or in the Contract Data, or agreed subsequently between the Contractor and the Employer, and committed to writing. The time for completion of the Works is indicated in Clause 42.1.
1.1.14	The Employer is Vaal Central Water
1.2	Add the following to the clause: 1.2.3 Sent by facsimile, electronic or any like communication irrespective of it being during

Clause	Contract Data
	office hours or otherwise. 1.2.4 Posted to the Contractor's address, and delivered by the postal authorities. 1.2.5 Delivered by a courier service, and signed for by the recipient or his representative.
1.2.2	The address of the Employer is: Vaal Central Water Office 2 Mzuzu Street Pellisier BLOEMFONTEIN
	Technical Queries can be directed to: Mr. T Ngubeni Executive Engineering and Projects Tel: 051-403 0800 Fax: 051-422 5333 E-mail: themban@VCwater.co.za
1.6	The special non-working days are all South African statutory holidays. The year end break shall be the normal built environment about 3 week break in December and January and shall be confirmed during the September site meeting.
2.3	The Engineer is, in terms of his appointment by the Employer for the design and administration of the Works included in the Contract, required to obtain the specific approval of the Employer for the execution of the following duties: 2.3.1 The issuing of an order to suspend the progress of the Works, the extra cost resulting from which order is to be borne by the Employer in terms of Clause 39 or the effect of which is liable to give rise to a claim by the Contractor for an extension of time under Clause 45 of these conditions. 2.3.2 The issuing of an instruction or order to vary the nature or quantity of the Works in Terms of Clause 36, the estimated effect of which will be to increase the Contract Price by an amount exceeding R50 000, the valuation of all variation orders in terms of Clause 37 and the adjustment of the sum(s) tendered for General Items. 2.3.3 The approval of any claim submitted by the Contractor in terms of Clause 48.
4.2	Add the following to the clause: The Contractor shall provide the following to the Engineer for retention by the Employer or his assignee in respect of all works designed by the Contractor: 4.2.1 a Certificate of Stability of the Works signed by a registered Professional Engineer confirming that all such works have been designed in accordance with the appropriate

Clause	Contract Data
	codes of practice. 4.2.2 proof of registration and of adequate and current professional indemnity insurance cover held by the designer(s). 4.2.3 design calculations should the Engineer request a copy thereof. 4.2.4 engineering drawings and workshop details (both signed by the relevant professional engineer), in order to allow the Engineer to compare the design with the specified requirements and to record any comments he may have with respect thereto. 4.2.5 "As-Built" drawings in DWG electronic format after completion of the Works. The Contractor shall be responsible for the design of the Temporary Works.
4.5.1	Add the following to the clause: The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1977 by the Minister of Labour in Government Notice No R63 of 25 January 2002, as appended to these Contract Data as Annexure B, shall apply to works described in the Scope of Work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.
4.5.2	Add the following to the clause: The Contractor shall comply with the Occupational Health and Safety Specification prepared by the Employer in terms of the Construction Regulations, 2003 promulgated in terms of Section 43 of the Occupational Health and Safety Act (Act No. 85 of 1993). Without limiting the Contractor's obligations in terms of the Contract, the Contractor shall before commencement of the Works or any part thereof, be in the possession of an approved Health and Safety Plan. The Contractor shall submit an approved Health and Safety Plan to the Engineer within 14 days of the Commencement Date.
4.6	Add the following new clause: **Contractor's liability as mandatory** Notwithstanding any actions which the Employer may take, the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and all its regulations, including the Construction Regulations, 2003, for which he is liable as mandatory. By entering into this Contract it shall be deemed that the parties have agreed in writing to the above provisions in terms of Section 37 (2) of the Act.
4.7	Add the following new clause: **Contractor to notify Employer** The Employer retains an interest in all inquiries conducted under this Contract in terms of Section 31 and/or 32 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and its Regulations following any incident involving the Contractor and/or Sub-Contractor and/or their employees. The Contractor shall notify the Employer in writing of all investigations, complaints or criminal charges which may arise pursuant to work performed under this Contract in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and Regulations.

Clause	Contract Data
4.8	Add the following new clause: **Contractor's Designer** The Contractor and his designer shall accept full responsibility and liability to comply with the Occupational Health and Safety Act, 1993 (Act 85 of 1993) and the Construction Regulations, 2003 for the design of the Temporary Works and those part of the Permanent Works which the Contractor is responsible to design in terms of the Contract.
4.9	Add the following new clause: The Contract shall be construed to be interpreted in English.
6.4	Delete the contents of the clause and insert the following: Any consent granted in accordance with Clause 6.2 or appointment of a sub-contractor in accordance with Clause 6.3 shall not imply a contract between the Employer and the subcontractor, or a responsibility or liability on the part of the Employer to the subcontractor and shall not relieve the Contractor from any liability or obligation under the Contract and he shall be liable for the acts, defaults and neglects of any subcontractor, his agents or employees as fully as if they were the acts, defaults or neglects of the Contractor, his agents or employees. The Engineer's consent in respect of any particular subcontractor may be withdrawn at any time should reasonable grounds be given therefore in writing to the Contractor by the Engineer, in which event the Contractor shall forthwith terminate the engagement or that subcontractor on the Works. The withdrawal by the Engineer of his consent in respect of any particular sub-contractor that is engaged in the execution of any portion of the works, including any portions of the Works which are sub-let by the Contractor in accordance with Clause 6.3 shall not relieve the Contractor of any of his obligations under the Contract, nor of any of his obligations to sub-let the particular portions of the Works concerned.
6.5	Delete the contents of the clause and insert the following: Unless otherwise stipulated in the Contract: 6.5.1 the provision of labour, whether locally employed or not; or 6.5.2 the purchase of materials which are in accordance with the Contract; or 6.5.3 the purchase or hire of Constructional Plant; shall not be regarded as sub-letting, as contemplated in this Clause, for which the Contractor is required to obtain the Engineer's consent in terms of Clause 6.2.
7.1	The Contractor shall deliver his guarantee within 14 days of the Commencement Date. The amount of the guarantee will be 10% of the Contract Price (including Value Added Tax) at the time that the Guarantee comes into effect. The guarantee shall remain valid until the issue of the Certificate or Certificates of Completion in respect of the whole of the Permanent Works. The Form of Guarantee (Deed of Suretyship) is appended to the Contract Data as Annexure A. Add the following to the first paragraph of this clause: This approval or otherwise shall be based upon legal opinion to be provided by the Engineer.

Clause	Contract Data
	Replace the last paragraph of the clause with the following: The Guarantee shall be returned to the Contractor within 14 days after the issue of the Certificates or Certificates of Completion in respect of the whole of the Permanent Works.
8.1	Add the following to the clause: 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.
9.2	Add the following new Clause: The copyright in all documents, drawings and records (prepared by the Engineer) related in any manner to the Works shall vest in the Employer or the Engineer or both (according to the dictates of the Contract that has been entered into by the Engineer and the Employer for the Works), and the Contractor shall not furnish any information in connection with the Works to any person or organisation without the prior approval of the Employer to this effect.
10.1	The Contractor shall (subject to the provisions of Clause 4.5.2) commence executing the works within a period of 10 working days from the date of the written instruction by the Engineer.
11.1	Replace Clause 11.1 and the first two lines of Clause 11.1.1 with the following: The Employer, or the Engineer acting on his behalf, shall, subject to any requirements in the Contract as to the order in which the Works shall be executed: 11.1.1 On the Commencement Date that is applicable to any phase or portion of the Works, give the Contractor right of access to that part of the Site on which such phase or portion is to be constructed, the location of which access shall be stated in Part C3.1.2.
12.1	Add the following to the clause: In this regard the Contractor shall have regard for the phases and sub-phases (if applicable) for the Development, which shall also be the order in which the Permanent Works shall be constructed, unless otherwise agreed between the parties and committed to writing. If phased construction is applicable, the phases and sub-phases will be described in the Specifications and/or will be indicated on the Phasing Plan which forms part of the Drawings.
12.2	The Contractor shall deliver his programme within 14 days of the Commencement Date or as requested by the Engineer.
12.3.4	Add the following to the clause: The Contractor shall deliver his detailed cash flow forecast within 14 days of the Commencement Date or as requested by the Engineer.
20.3	Add the following new clause: The Contractor shall use local labour in accordance with the requirements contained within the Scope of Work.
35.1.3	Limit of indemnity: R2 million per event, the number of events being unlimited.

Clause	Contract Data
35.1.4	Add the following to this clause : In addition to the insurance required in terms of General Conditions of Contract Clause 35.1.1 to 35.1.3 the following insurance is also required : Insurance cover against any damages or loss against production due to political unrest. The client shall not be held responsible for such damages or losses.
35.6	Add the following to the clause: Proof of insurance shall be submitted to the Employer prior to Commencement of the Works (Clause 10.1), and copies of the policies and proof of due payment of all premiums shall be presented to the Employer within fourteen (14) days of the Date of Commencement.
38.1	Special non-working days shall be all South African statutory holidays and the official building holidays.
40.1	Add the following to the clause: No such instruction by the Engineer to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation, and cites the amount of such compensation or the basis upon which it is to be determined.
42.1	Add the following to this Clause: The Completion Period of Contract for the Service Provider complete all Deliverables in accordance with the Scope of Work is **18 months** from Commencement Date, including year-end break/s.
42.4	Delete the contents of the clause and insert the following: No extension of time shall be granted, and the Contractor shall not be paid any additional time-related General Items.

43	Delete the contents of the clause and insert the following: 43.1 If the Contractor fails to start with the work as ordered by the Engineer the Contractor shall be penalised as follows: The penalty for delay shall be depend on the type of works and value, 43.2 All penalties for which the Contractor becomes liable in terms of Clause 43.1 shall be accumulative. The Employer may, without prejudice to any other method of recovery, deduct the amounts of all such penalties from any monies in his possession that are or may become due to the Contractor. 43.4 The imposition of penalties in terms of Clause 43.1 shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract. 43.5 The imposition of any penalties in terms of Clause 43.1 shall not limit the right of the Engineer of the Employer to act in terms of Clause 55.1.5. 43.6 If the Contractor shall, without the prior written permission of the Engineer, in respect of any portions of the Works which are prescribed in the Scope of Work to be executed using labour intensive construction methods, or for which the maximum size and capacity of mechanical plant and equipment is restricted in terms of the Contract: 43.6.1 fail to execute such portions of the Works, or any parts thereof, utilising labour intensive construction methods strictly in accordance with the provisions of the Contract; or

Clause	Contract Data
	43.6.2 utilise in the execution of such portions of the Works, or any parts thereof, mechanical plant or equipment which is in conflict with the terms of the Contract; or 43.6.3 utilise in the execution of such portions of the Work, workers drawn from sources other than those allowed in terms of the Contract; then the Contractor shall be liable to the Employer for the percentage stated below of the value of the Works so executed in conflict with the provisions of the relevant Scope of Work, as a penalty for non-compliance. The penalty for non-compliance is: 15% of the value of Works specified. The imposition of penalties in terms of this clause shall not relieve the Contractor from his obligation to complete the Works, nor from any of his obligations and liabilities under the Contract.
46.2	The application of a Contract Price Adjustment factor will **NOT** apply for the period of this Contract.
46.3	Price Adjustments for variations in the cost of special materials is allowed. Add the following to the clause: Contractor to allow for CPA in tender rates. CPA will only be applicable if the contractor's contract is extended, but only for the remaining scope of works applicable to the extension granted.
46.4	In line 6 delete the words "between the Employer and the Contractor".
49.1.5	The percentage limit for materials not yet built into the Permanent Works is 80%.
49.3	The percentage retention is 10%. The limit of retention money is 5% of the Contract Price at the time of the Guarantee made in terms of the Form of Offer and Acceptance coming into effect.
49.4	In line 3 delete the word "said" and insert the word "correct".
49.6	A Retention Money Guarantee is not permitted.
50.1.3	In line 2 of the second paragraph delete "15 %" and replace it with "25 %".
53.1	Defects liability period is 12 months.
55.1.9	Delete the first paragraph of the clause and insert the following: The Contractor furnished inaccurate information in the Returnable Documents or Returnable Schedules forming part of the Contract.
58.4	Determination of disputes shall be by arbitration.

Part 2: Data provided by the Contractor

Clause	Contract Data
1.1.8	The name of the Contractor is: ……
1.2.2	The Contractor's address for receipt of communications is : Telephone: …….. Facsimile: …… E-mail: …… Address: …….
1.1.13	See clause 4.2.1

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

GUARANTEE FOR EXECUTION OF THE CONTRACT

Employer:	Vaal Central Water Office 2 Mzuzu Street Pellisier Bloemfontein	Contractor:	…….. …….. …….. …….. ……..

Amount of Guarantee: To be equal to 10 percent of the Tender Sum

---

I/WE the undersigned, duly acting on behalf of the Company that is described below, do hereby bind the said Company to the Employer that is described above, as surety or co-principal debtor in solidum for the due performance, fulfilment and completion of the Contract by the Contractor that is described above, and we hereby undertake, on behalf of the Company to pay on demand at the above mentioned address

- any loss or damage which the Employer may sustain
- as well as any penalties or claims and legal costs to which the Employer may become entitled by reason of the non-fulfilment or breach of the terms of the Contract by the Contractor

always provided that the liability of the Company under this guarantee shall not exceed the guaranteed amount that is described above.

On behalf of the Company I/we do hereby renounce all benefits from the legal exceptions non numeratae pecuniae, non causa debiti excussionis et divisionis and all other exceptions which might or could be pleaded against the validity of this guarantee, the meaning whereof we declare ourselves to be fully acquainted with.

On behalf of the Company, I/we do hereby agree that this guarantee shall be irrevocable and shall remain in full force and effect during the term of the Contract, either until the date of issue of a Certificate of Completion for the whole or the final portion of the Works by the Engineer, or until any liability of the Contractor which has arisen before such date in terms of the Conditions of Contract has been satisfied, whichever is the later.

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

I/we do further agree and declare

- that all admissions and acknowledgements of indebtedness by the Contractor shall be binding on the Company,
- that the indebtedness of the Contractor to the Employer shall at all times be determined and proved by a written certificate of the Chief Executive Officer, or by any other person acting in such capacity,
- that such certificate shall be binding on the Company and shall be conclusive proof of the amount of the Company's indebtedness, and that such certificate annexed to this guarantee will be valid as a liquid document against the Company in a competent court in the Republic of South Africa,
- that the Employer shall, without reference and/or notice to us, have complete liberty of action to act in any manner authorised and/or contemplated by the terms of the Contract, and/or to agree to any modifications, variations or alterations to the Works, or to any extensions of the Due Completion Date for the Works under the Contract, and that the rights of the Employer under this guarantee shall in no way be prejudiced nor the liability of the Company be in any way reduced by reason of any steps or concessions which the Employer may take, make, give, concede or agree to under the Contract.
- that the Employer shall be entitled, without prejudice to any of its rights under this guarantee, to give time to and compound with, release from liability or to make any other arrangement with the Contractor, its assigns, its liquidators or its judicial managers, and that any such actions shall not exonerate the Company from any portion of its liability under this guarantee.
- this guarantee is neither negotiable nor transferable, purports to the payment of money only and should be returned to the Company upon payment, completion or cancellation whichever occurs earlier.

Name of Company: _____

The Company chooses as its domicilium citandi et executandi, and for the purpose of the service of any notices and legal processes the following address:

Address to be entered _____

THUS DONE AND SIGNED AT _____ on _____ 20_____.

On behalf of the Company _____

In his capacity as _____

On behalf of the Company _____

In his capacity as _____

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

In the presence of the following witnesses:

Witness No 1:

_____	_____
Name	Signature

Witness No 2:

_____	_____
Name	Signature

Section T1.3 GENERAL CONDITIONS OF CONTRACT

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- The General Conditions of Contract will form part of all bid documents and may not be amended.

- Special Conditions of Contract (SCC) relevant to a specific bid, should be compiled separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.

General Conditions of Contract

1. Definitions

1. The following terms shall be interpreted as indicated:

1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.

1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 "Day" means calendar day.

1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.

1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.

1.10 "Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable.Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 “GCC” means the General Conditions of Contract.

1.15 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 “Local content” means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 “Manufacture” means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 “Order” means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 “Project site,” where applicable, means the place indicated in bidding documents.

1.21 “Purchaser” means the organization purchasing the goods.

1.22 “Republic” means the Republic of South Africa.

1.23 “SCC” means the Special Conditions of Contract.

1.24 “Services” means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 "Written" or "in writing" means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information inspection

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
(b) a cashier's or certified cheque

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance 11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation 12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidential services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
(e) training of the purchaser's personnel, at the supplier's plant and/or on site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts 14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and
(b) in the event of termination of production of the spare parts:
(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfillment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon persuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without canceling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
(b) if the Supplier fails to perform any other obligation(s) under the contract; or
(c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer / Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:
(i) the name and address of the supplier and / or person restricted by the purchaser;
(ii) the date of commencement of the restriction
(iii) the period of restriction; and
(iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti- dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
(b) the purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

INDEX

VAAL CENTRAL WATER

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Annexure C: Health and Safety Specification by Employer

1. INTRODUCTION

1.1 Purpose and Scope

This document describes the requirements of compliance to which the PRINCIPAL CONTRACTOR / CONTRACTOR is to adhere in relation to the scope of works.

This document defines the minimum management requirement that is to be implemented by the PRINCIPAL CONTRACTOR / CONTRACTOR for the management of Health and Safety on the project.

The aim of this document is to present the safety aspects that need to be controlled and managed on the project.

2. REFERENCE DOCUMENTS

- Occupational Health and Safety Act, (Act No. 85 of 1993)
- Compensation for Occupational Injury and Diseases Act.
- Client Health and Safety Specification.
- Construction Regulations 2003.
- The Construction Kit. (CD)

3. DEFINITIONS

The following definitions will apply to the Safety Management Plan, acronyms given hereunder shall apply:

3.1 Construction / Building Work (as defined by the Occupational Health and Safety Act: Construction Regulations 2003):

Means any work in connection with
–

a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or an addition to a building or any similar structure;
b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

c) The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or

d) The moving of earth, clearing of land or making of an excavation or work on any similar type of work.

3.2 Hazard Identification and Risk Assessment and Risk Control (HRA)

Means a documented plan, which identifies hazards, assesses the risks and detailing the control measures and safe working procedures, which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

3.3 Site

Means the area in the possession of the PRINCIPAL CONTRACTOR / CONTRACTOR for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the PRINCIPAL CONTRACTOR / CONTRACTOR, and approved for such use by the Engineer and/or client.

3.4 The Act

Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 1993 (ACT NO. 85 of 1993) and Regulations promulgated there under. (OHSA)

3.5 Hazard

Means a source of or exposure to danger (source which may cause injury or damage to persons, or property)

3.6 Risk

Means the probability or likelihood that a hazard can result in injury or damage.

3.7 Principal Contractor / Contractor's – Responsible Person/s

Means any person appointed in writing by the PRINCIPAL CONTRACTOR / CONTRACTOR to supervise construction or building work. The appointment shall be as required by the OHSA which shall stipulate health and safety responsibilities, area of responsibility and the proposed duration of the project.

3.8 Hazardous Chemical Substance (HCS)

Means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture or substances for which an occupational exposure limit is prescribed, or an occupational exposure limit is not prescribed, but which creates a hazard to health.

3.9 Construction Plant (TEM)

Encompasses all types of plant including but not limiting to, cranes, piling frames, boring machines, excavators, dewatering equipment and road vehicles with or without lifting equipment.

3.10 Contractor

Means “subcontractor”.

3.11 Health and Safety Program

Encompasses the PRINCIPAL CONTRACTOR / CONTRACTOR safety planning spreadsheet.

3.12 Health and Safety Plan (HSP)

The content of this document which will be made available on site for inspection by an inspector,
Technical Officer, Agent, subcontractor, employee, registered employee organisation, health and safety representative, or member of the health and safety committee.

3.13 Health and Safety File

Describes the safety file holding all records on health and safety for the project, which shall be available at all, times for evaluation, and copy of which will be forwarded to the client upon completion of the project.

4. RESPONSIBILITIES

4.1 Notification of Intention to Commence Construction Work

It is essential for the PRINCIPAL CONTRACTOR / CONTRACTOR to notify the Provincial Director of the Department of Labour, immediately upon receipt of the Letter of Acceptance of project commencement in accordance with the following requirements:

- The demolition of a structure exceeding a height of 3 meters; or
- The use of explosives to perform construction work; or
- The dismantling of fixed plant at a height greater than 3 meters; or
- The work exceeds 30 days or will involve more than 300 person days of construction work; and
- Includes excavation work deeper than 1 meter; or
- Includes working at a height greater than 3 meters above ground or a landing.

A copy of the notification letter to the Provincial Director must be forwarded to the CLIENT for the CLIENTS records.

4.2 Assignment of PRINCIPAL CONTRACTOR / CONTRACTORS Responsible Persons to Supervise Health and Safety on Site

The PRINCIPAL CONTRACTOR / CONTRACTOR shall appoint in writing a Contracts Manager and a Construction Work Supervisor as a minimum prior to commencing work on site and copies of all the appointment letters of the responsible persons shall be forwarded to the CLIENT prior commencement of work on site.

4.3 Safety Officer Appointment

The appointment of a full-time safety officer is optional, however it is compulsory to provide the name and CV of your elected part-time safety officer to the CLIENT prior work commencing on site. The safety officers shall be tasked with monthly inspections of the site, the results of which shall be forwarded to the CLIENT or his appointed representative.

4.4 Risk Assessment Competent Person

The PRINCIPAL CONTRACTOR / CONTRACTOR shall appoint a competent person in writing at commencement of the project to control the risk assessment process on site.

4.5 Competency for PRINCIPAL CONTRACTOR / CONTRACTORS Responsible Persons

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all management personnel
(responsible for health and safety) shall undergo a half-day Health and Safety Management Course, which is to be arranged and conducted by the CLIENT prior to commencement of activities on site.

4.6 Health and Safety Plan

The PRINCIPAL CONTRACTOR / CONTRACTOR shall provide to the CLIENT, a Health and Safety Plan in accordance with this Specification. The Health and Safety Plan shall be submitted for approval to the CLIENT before work commences on site.

4.7 Health and Safety Representatives

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure at least one (1) Health and Safety Representative be nominated, elected and trained to carry out his / her functions in his / her area of responsibility. This shall also be required in areas where less than fifty (50) employees are engaged in activity. The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure employees elected shall be designated in writing for a specific area and period of time.

The designated persons shall be required to conduct monthly inspections within their area of responsibility, the records must be kept for CLIENT auditing purposes and that deviations recorded are reported to the responsible supervisor within the designated persons area so that appropriate action can be taken.

The designated person/s shall be permitted to participate in the Joint Health and Safety Committee Meetings.

5. OBJECTIVES AND TARGETS

The PRINCIPAL CONTRACTOR / CONTRACTOR shall include in the Health and Safety Plan the PRINCIPAL CONTRACTOR / CONTRACTORS objectives and targets for the project.

5.1 Planning and Procedures

The PRINCIPAL CONTRACTOR / CONTRACTOR shall define in the Health and Safety Plan, the method of planning to be used on the project and the procedures to be adhered to. The PRINCIPAL CONTRACTOR / CONTRACTOR shall be required to utilise the NOSA Construction Kit as as minimum on the Project.

6. IMPLEMENTATION OF THE OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that the CLIENT Health and Safety Specification is implemented on the project through the PRINCIPAL CONTRACTOR /

CONTRACTORS Health and Safety Plan which must be submitted to the CLIENT for approval prior work commencing on site.

7. APPLICATION OF THE HEALTH AND SAFETY SPECIFICATION

7.1 Compensation of Occupational Injuries and Diseases Act, Act No. 130 of 1993 (COIDA)

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure a letter of good standing will be provided to the CLIENT prior to work commencing on site for reference purposes as proof of good standing.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure all other PRINCIPAL CONTRACTOR / CONTRACTORS appointed also comply with the above requirements defined in the COIDA.

7.2 Occupational Health and Safety Policy

The PRINCIPAL CONTRACTOR / CONTRACTOR Health and Safety Policy is to be attached to the Health and Safety Plan for review by the CLIENT.

7.3 Hazard Identification Risk Assessment (HIRA)

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that Hazard Identification Risk Assessment forms the basis of all work to be conducted on site, and a Task Risk Assessment be submitted for approval to the CLIENT prior to work commencing on site. The CLIENT shall provide a copy of the Task Risk Assessment or the format provided on the NOSA Construction Kit CD.

All Risk Assessments conducted on site must be forwarded to the CLIENT for approval.

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that training forms part of the HIRA process and proof of training attendance is made available to the CLIENT upon request.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure a HIRA team be established comprising members as follows, but not limited to:

- Health and Safety Representative(s).
- Health and Safety Committee Member(s).
- Management Representative / PRINCIPAL CONTRACTOR / CONTRACTOR.
- Person with skill / knowledge of task to be performed.

Method Statements and Safe Work Procedures must form part of the HIRA Process and must be conducted in conjunction with the HIRA Process described above.

7.4 Health and Safety Committee

The PRINCIPAL CONTRACTOR / CONTRACTOR shall convene a health and safety committee meeting monthly. All members required to be in attendance shall be notified of such meeting by means of a formal agenda which must be made available to the CLIENT upon request.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure an attendance register and minutes are kept for auditing purposes by the CLIENT. A copy of all minutes must be forwarded to the CLIENT monthly.

7.5 Health and Safety Training

Training of personnel is a legal requirement and a necessity and is required of the PRINCIPAL CONTRACTOR / CONTRACTOR to provide to the CLIENT a training Matrix which must be

included in the Health and Safety Plan to be submitted prior work commencing on site.

Training should include the following but is not limited to:

7.5.1 Induction Training

Induction training must be attended by all PRINCIPAL CONTRACTOR / CONTRACTORS with the CLIENT which shall be separate to the PRINCIPAL CONTRACTOR / CONTRACTORS own induction training requirement. The PRINCIPAL CONTRACTOR / CONTRACTOR must keep records of all attendees to the induction and provide records of the same during the CLIENT site audits.

7.5.2 Awareness Training (Toolbox Talks)

Weekly awareness training must be conducted and records of these must be made available to the CLIENT upon request.

7.5.3 Competency

Training identified through the HIRA Process and conducted through this process shall be kept on file as proof of competency and training and must be made available to the CLIENT upon request. (This shall include operator accordance training and assessments)

7.5.4 First Aid and Health & Safety Representative Training

PRINCIPAL CONTRACTOR / CONTRACTORS shall provide proof of competency of all Health and Safety Representatives elected and designated, including first aiders to the CLIENT, which must be available on site for auditing purposes.

7.6 General Record Keeping

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that all the Health and Safety records, required by both the Occupational Health and Safety Act, 85 of 1993 and Regulations are kept for reference purposes and auditing by the CLIENT.

Further to the requirements set out above, the PRINCIPAL CONTRACTOR / CONTRACTOR must also maintain records that may be defined through the risk assessment process, for auditing purposes.

In accordance with the requirements set out in the Construction Regulations 2003 and the requirement set out in the CLIENT Specification the PRINCIPAL CONTRACTOR / CONTRACTOR must ensure a copy of all Health and Safety records generated during the course of construction, are handed over to the CLIENT upon completion of construction.

7.6.1 Statistics

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure injury and incident records (Near Hits, First Aid, Medical cases, Disabling Lost Time Incidents), training etc. referred to above are kept on site and submitted monthly to the CLIENT. All documents shall be made available to the CLIENT for inspection including the Department of Labour's Inspectors as required by the Occupational Health and Safety Act, 85 of 1993.

The statistics formula as listed below shall be adhered to during construction:

DIFR (Disabling Injury Frequency Rate) $\frac{\text{DI's x 1 00 0 00 0}}{\text{Man-hours}}$

DISR (Disabling Injury Severity Rate) $\frac{\text{Days Lost x 1 000}}{\text{Man-hours}}$

7.6.2 General Inspection, Monitoring and Reporting

The PRINCIPAL CONTRACTOR / CONTRACTOR shall comply with the requirements set out by the CLIENT. The PRINCIPAL CONTRACTOR / CONTRACTOR must provide to the CLIENT a safety management action plan upon which the dates of inspections and training and awareness will be entered, conducted and monitored.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall keep all records of inspections and investigations undertaken during the contract for the specified legal period as defined in the OHSA and Regulations.

7.6.3 Internal Audits

Internal audits shall be conducted a minimum once per month by the CLIENT or client's appointed Safety Manager / Officer.

The Results shall be tabled and discussed at the Joint Health and Safety Committee meetings.

The PRINCIPAL CONTRACTOR / CONTRACTOR must also conduct it's own internal audits, the results of which must be submitted to the CLIENT monthly.

7.7 Incentives

Incentive schemes are left to the discretion of the PRINCIPAL CONTRACTOR / CONTRACTOR.

7.8 Penalties

Non-compliance with the CLIENT safety specifications will result in work stoppages and possible expulsion from site until the problem has been remedied. Costs will be bourne by the PRINCIPAL CONTRACTOR / CONTRACTOR.

7.9 Emergency Procedures

The PRINCIPAL CONTRACTOR / CONTRACTOR must make available to the CLIENT a detailed Emergency Plan to tie into the evacuation plan already in place on the CLIENTS premises.

7.9.1 First Aid Box and Contents

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that all working areas are adequately provided with first aid attendants whether there are fifty (50) employees or less engaged on the contract. The First Aid attendant must be trained in accordance with the requirements set out in the OHSA with a recognised and accredited service provider as defined above.

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that the first aid box is adequately
at all times and is accessible to all.

The CLIENT shall inspect the contents of the first aid box and dressing record from time to time.

7.9.2 Accident and Incident Reporting and Investigation

Should an accident or incident occur, the PRINCIPAL CONTRACTOR / CONTRACTOR shall conduct an investigation into the incident. The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that a competent person be appointed in writing to conduct the said investigation. The procedure to be followed must be in accordance with the OHSA requirement on the Annexure 1 – Recording and Investigation of Incident form.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that the results of all investigations are communicated to the employees engaged through incident recall and prescribed meetings. The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that the investigations are kept for record purposes in accordance with the prescribed requirements set out in the OHSA.

Should there be an incident, the CLIENT must be notified within 24-hours, of the occurrence. The CLIENT reserves the right to participate in all investigations into accidents or incidents.

7.10 Hazards and Potentially Hazardous Situations

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all other PRINCIPAL CONTRACTOR / CONTRACTORS are warned of hazardous or potentially hazardous situations, which may prevent them from effectively performing their duties, which includes the placement of adequate warning signs.

7.11 Personal Protective Equipment and Clothing

The PRINCIPAL CONTRACTOR / CONTRACTOR shall comply with OHSA requirements to provide PPE.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall through the HIRA process identify the specific PPE needs per activity and then issue the PPE accordingly. (Reference to the OHSA General Safety Regulation 2 – Employer to provide Personal Protective Equipment) .

Should PPE be lost or stolen, then the employee will be issued with a new set of PPE by the PRINCIPAL CONTRACTOR / CONTRACTOR.

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure adequate training in the use of PPE is provided to all employees, and proof of training shall be kept at the office for auditing purposes.

Overalls and hardhats shall be identifiable. (Principal PRINCIPAL CONTRACTOR / CONTRACTOR different from the PRINCIPAL CONTRACTOR / CONTRACTOR's).

PPE must be provided to visitors as well.

7.12 Safety Signage

The PRINCIPAL CONTRACTOR / CONTRACTOR must assess the Health and Safety Signage requirements in conjunction with the HIRA's conducted and place the signage at strategic positions on the site works accordingly.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall also maintain the signage to ensure its effectiveness at all times and under all conditions. Signage, which cannot be repaired, must be replaced.

7.13 Permits

- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that access to site works is restricted to construction personnel.
- All attempts must be made to restrict spectator access.
- Access to the site shall be by the CLIENTS authorisation on the prescribed form. (Permits and ID cards shall be issued by the client)
- Special permits for hot work and isolation permits shall be applied for to the CLIENT representative prior to commencing with the activity.

7.14 Contractors and Suppliers

The PRINCIPAL CONTRACTOR shall enter into an Agreement with Mandatory in terms of Section 37(2) of the Occupational Health and Safety Act, 85 of 1993, with the CLIENT and all other CONTRACTOR's appointed by the PRINCIPAL CONTRACTOR .

The PRINCIPAL CONTRACTOR / CONTRACTOR shall also be required to appoint its CONTRACTOR's in ccordance with Construction Regulation 5(3)(b).

The PRINCIPAL CONTRACTOR must ensure all other CONTRACTORS are issued with the CLIENT Safety Specification where reasonably practicable. The PRINCIPAL CONTRACTOR shall assist and ensure CONTRACTORS engaged comply with all of these requirements and adhere to the requirements set out in the OHSA.

PRINCIPAL CONTRACTOR / CONTRACTORS will be stopped from working in the event of unsafe conditions and activities being observed.

8. HEALTH AND SAFETY IN PRACTICE

8.1 Excavations

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all activities involving excavations, shoring, dewatering or drainage, a safe working procedure is submitted to the project engineer for approval prior to work commencing. Excavation work exceeding the specified depth as stipulated in the OHSA regulations, must comply with the following requirements:

a) The excavations are inspected before the shift starts, after heavy rain (inclement weather) and after any major condition which may effect the excavations stability and the findings are to be recorded and kept;
b) All excavations regardless of the depth shall be adequately barricaded to prevent persons falling into the excavation;
c) The safe working procedure shall be communicated to all employees who may be effected by the work; and
d) The safe working procedures shall be enforced and maintained by the appointed excavation supervisor at all times.
e) For high-risk activities, all personnel working in the excavation shall be attached by means of a lifeline.
f) Material excavated shall be removed from the point of excavation.
g) Ensure stability of adjoining structures.

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that a competent person be appointed in writing to control all excavating activities during construction.

8.2 Demolition

The PRINCIPAL CONTRACTOR / CONTRACTOR must appoint a competent person in writing to supervise and control all demolition work on site.

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed and provided to the CLIENT on request.

During the demolition, the competent person shall check the structural integrity of the structure at regular intervals determined in the method statement. In order to avoid any premature collapses.

It is important for the PRINCIPAL CONTRACTOR / CONTRACTOR to ensure compliance against the requirements of the Construction Regulation 12, as the CLIENT shall conduct ad hoc inspections to test for compliance.

8.3 Explosives and Blasting

The PRINCIPAL CONTRACTOR shall ensure where blasting is required with the use of explosives, that compliance with the Explosives Regulations.

The PRINCIPAL CONTRACTOR must ensure that all work carried out in under the supervision of a competent person as defined in the Explosives Regulations which requires the competent person to have sufficient training and experience in, and knowledge of, the health and safety aspects of explosives deemed appropriate by the National Explosives Council or any other organization approved by the chief inspector of occupational health and safety.

The PRINCIPAL CONTRACTOR must ensure a detailed blasting plan, emergency plan and site layout plan is submitted for approval to the CLIENT.

8.4 Stacking of Materials and Housekeeping

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that all stacking will be supervised by a person competent and appointed in writing to supervise over the activities, and that clearly defined and allocated storage areas are provided for and identified, and that materials being stored within this area are stacked in accordance with sound stacking principles of sort-by-sort, access to be maintained, level surface, and the height will not exceed three times the base width.

Housekeeping must also be maintained at all times as this will be inspected and evaluated by the CLIENT during monthly audits.

8.5 Hazardous Chemical Substances

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure the necessary training and information regarding the use and storage of HCS is provided to all personnel, and that the use and storage of HCS is carried out as prescribed by the HCS Regulations.

Furthermore, the PRINCIPAL CONTRACTOR / CONTRACTOR must ensure that all chemicals brought to site have a Material Safety Data Sheet (MSDS) and the users are made aware of the Occupational hazards and precautions that need to be taken when using the chemical.

The First Aider must also be made aware of the MSDS and how to treat HCS incidents appropriately.

Access to all HCS records shall be afforded to the CLIENT at all times.

8.5.1 Fuel / Diesel

- Bulk storage areas must be demarcated, secured and sign posted with the relevant warning pictograms.
- Bulk storage areas must be adequately bunded to ensure containment of 110% of the stored product.
- Re-fuelling must be conducted in designated re-fuelling areas only.
- Spill-kits must be available at all times in these designated areas.
- The surface of the bunded areas and walls must be of impermeable material.
- The bunded area must be sloped towards a collection pit.

8.6 Asbestos

The PRINCIPAL CONTRACTOR / CONTRACTOR must ensure the provincial director be notified prior to commencement of working with asbestos on this Project, and proof of such notification must be forwarded to the CLIENT for record purposes.

The PRINCIPAL CONTRACTOR must also ensure that all personnel and CONTRACTORS comply with the requirements of the Asbestos Regulations and that where work is to be done with Asbestos, only an approved asbestos contractor be used.

The CLIENT will conduct ad hoc inspections to verify compliance in this regard.

8.7 Plant and Machinery

8.7.1 Construction Plant

- All plant must comply with the OHS Act requirements in relation to operation and maintenance thereof.
- Records of service and maintenance of the vehicles must be of a high standard at all times.
- All plant shall subject to design be fitted with back-up alarms and audible indicating devices.

  The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all construction plants moving parts are adequately protected.
- Pre-start inspections shall be conducted on all motorised equipment daily, deviations of such inspections shall be recorded.
- Construction plant identified for use shall be operated by a trained and authorised operator only.
- All construction plant shall be operated under the direct supervision of a person competent to identify potential hazards in the work he is conducting.
- Work involving the use of construction plant shall be conducted in accordance with an approved Risk Assessment.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure all operators are equipped with the necessary PPE namely; safety shoes, overall, safety glasses, and gloves.
- All Plant shall be fitted with an extinguisher where practicable.
- Washing shall be conducted in the designated washing areas.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure the all equipment moving to and from site is adequately secured, and that all PRINCIPAL CONTRACTOR / CONTRACTORS abide by this requirement.

The PRINCIPAL CONTRACTOR / CONTRACTOR must provide proof of medical and psychological fitness including training of all operators engaged in the construction activity.

8.7.2 Transport of Personnel

- Should it be necessary for the PRINCIPAL CONTRACTOR / CONTRACTOR to transport their personnel to site, only safe vehicular transport must be provided. This shall include proper seating, side restraints and cover.
- No personnel shall be permitted to travel on any plant or equipment on the site works.
- Road safety principles shall be adhered to on and off site.

8.7.3 Vessels under Pressure (VuP) or Gas Bottles

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure they comply at all times with the requirements of Vessels under Pressure Regulations, with specific reference to the following:

- Ensuring all Equipment owned and hired-in Vessels under pressure, comply with the 36-month pressure vessel inspection, and a certificate of testing is available on site for inspection by the CLIENT.
- Ensuring that all personnel who shall use this equipment are competent and trained.
- Ensuring the users of this equipment are issued with the required PPE.
- Ensuring the area is adequately identified as a noise area and warnings are posted.
- Ensuring daily pre-start inspections are carried out on all the equipment and the findings recorded.
- Ensuring the correct fire prevention and fighting equipment is available at all times.
- Noise levels where possible shall be kept within reasonable operating norms.
- Ensure proper use and storage of gas during construction which may include trolleys upon which bottles are moved and chains to prevent bottles falling over.

The inspection of these activities will be included in the CLIENT's monthly safety audits.

8.7.4 Fire Equipment

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all fire equipment to be used on site comply with the following:

Extinguishers shall be placed in positions to ensure fast and easy access is maintained at all times.

- Placement of all extinguishers shall be depicted with the required pictograms.
- Extinguishers shall be serviced once annually, and after discharge or visible signs of depressurisation.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure all employees are adequately trained in the safe use of the extinguishers and proof of training is kept on site for inspection by the CLIENT.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure a person is appointed to inspect the extinguishers on a monthly basis and the results of which are to be entered into a register designed for that purpose.

8.7.5 Hired Plant and Machinery

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure the following criteria is adhered to when considering hired plant and machinery:

- Hired plant must be checked for safety compliance prior to being accepted for use on site, should a deviation be identified, the CLIENT reserves the right to order the removal of such equipment from site.
- Should hired equipment be accompanied by an operator, The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that the operators competency be verified and the operator undergo an induction training session.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure the operators of hired plant attend weekly toolbox talks in conjunction with The PRINCIPAL CONTRACTOR / CONTRACTOR site personnel.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all operators are equipped with the required PPE before commencing work on site.

8.7.6 Scaffolding / Working at heights / Falsework / Formwork for Structures Fall Protection

Work involving scaffolding and work at heights shall comply with the requirements set out in the Construction regulations 2003 pertaining to these activities with reference to the SABS 085 code of practice.

Fall protection planning shall be done in conjunction with the risk assessment process and a Fall protection Plan shall be provided to the CLIENT for approval prior any work involving work at heights is conducted.

All scaffold shall be erected under the control of a person trained and appointed to conduct such scaffold erection.

Deviations found on any scaffolding, will result in the activity being stopped by the CLIENT until such time as compliance can be achieved.

8.7.7 Lifting Machinery and Tackle (Includes Tower Cranes)

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that the use of Lifting Machinery and Tackle is done in accordance with the requirements of the Regulations, which include but is not limited to the following:

- Lifting machinery and tackle to be used on site shall be marked with the Maximum Mass Load (MML), which is the safe limit in which the equipment may be used.
- Inspections on Lifting Machines and Lifting Tackle shall be inspected once per month on the register provided and the findings recorded.
- Daily pre-start checks shall also be conducted on all Lifting Machinery and Tackle.
- Records shall be kept of all lifting machinery and tackle inspections and Load Tests.
- Load tests shall be conducted a minimum of once per annum, and a certificate of compliance shall be kept on record.
- A valid logbook shall be maintained for all lifting machinery, which will comply with a minimum six-monthly service and maintenance.
- Lifting machinery shall be operated under supervision at all times with a trained banksmen who shall inspect all tackle before each lift.
- All lifting equipment operators shall be trained once every two years and a copy of such training shall be attached to the appointment, which is to be made on site.
- The Operators shall be tested for medical fitness.

8.7.8 Ladders and Ladder Work

The following requirements shall be complied with regarding Ladders and Ladder work:

- Ladders shall be clearly numbered, and inspected on the register provided.
- A competent person shall be identified and appointed as the ladder inspector.
- Where aluminium ladders cannot be used, then wooden ladders shall be straight grained, unpainted to allow for proper inspection of the grain for cracking.
- Ladders shall be secured at the top and chocked at the base to prevent slipping.
- Where chocking of the base is not possible, then the user shall ensure that the ladder is held in position by another employee when ascending the ladder.
- Ladders shall be inspected a minimum once per month by the person appointed as the ladder inspector.
- Proper storage shall be provided for all ladders when not in use.

8.7.9 General Machinery

In accordance with General Machinery Regulation 2(1), The PRINCIPAL CONTRACTOR / CONTRACTOR shall:

- Ensure a competent person be appointed as defined in the above clause from the Occupational Health and Safety Act, 85 of 1993 and Regulations, to service and maintain all machinery in use on site.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall appoint additional competent persons to assist the competent person mentioned above in accordance with General Machinery Regulation 2(7)(a), as and when required.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that records are maintained of all services conducted.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall provide to the CLIENT a copy of the above appointments prior to work commencing on site.

8.7.10 Lighting and Power

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure lighting circuits and power circuits are fitted with suitable earth leakage systems and installed by an approved authority.

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that:

- Earth leakage system will be tested monthly.
- Malfunctions shall be repaired immediately or replaced.
- Lighting shall be so positioned as not to interfere with construction activities.
- Lighting shall be provided to ensure adequate visibility under all conditions.
- Lighting and electrical installations shall be weather proof .

8.7.11 Portable Electrical Tools / Explosive Power Tools

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure the following procedure is adhered to regarding Portable Electrical Tools and Explosive Powered tools:

- Minimum compliance with legislation.
- Only competent persons shall be permitted to conduct routine and monthly inspections on the equipment.
- Persons competent to inspect the equipment must be appointed in writing.
- Persons must be trained to operate such equipment and must be appointed and shall be the only authorised person to operate the equipment.
  The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure operation of the equipment is in accordance with an approved Risk Assessment and Safe Working Procedure.
- All users shall undergo regular awareness training to ensure compliance.
- The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure the required PPE and clothing is provided and maintained.

8.7.12 Public Health and Safety

In the interests of public safety, The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that all persons who may be affected by the work being conducted on site are informed and kept aware of the dangers, which may arise from the work being conducted on site.

This awareness shall be in the form of posters and inductions for visitors to site and warning signs.

8.7.13 Night Work

Night work shall only be conducted upon approval of the CLIENT, with the same safety standard being applied for these activities as with day work activities.

8.7.14 Facilities for Safe Keeping / eating areas

The PRINCIPAL CONTRACTOR / CONTRACTOR shall ensure that adequate facility is provided for the personnel on site. The area shall be provide the following:

- Sufficient seating;
- Seating under cover;
- Protected change room;
- Toilets.
- Hand wash facility.
- Potable water.

No food preparation shall be permitted on site and designated eating areas will be made to allow adequate seating.

Waste bins must be provided with plastic liners and must be strategically placed and cleared regularly.

9. MANDATORY AGREEMENT

AGREEMENT WITH MANDATORY
OCCUPATIONAL HEALTH AND SAFETY ACT, (Act No 85 of 1993) **AGREEMENT WITH MANDATORY In terms of Section 37(1) and (2)** **WRITTEN AGREEMENT ENTERED INTO AND BETWEEN**
(Hereinafter referred to as the Company) AND
CONTRACTOR (Hereinafter referred to as The Contractor) Compensation Fund Number: _____ AGREEMENT WITH MANDATORY TO BE COMPLETED IN BLACK INK AND EACH PAGE AND CHANGE TO BE INITIALLED.

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

Definition of Mandatory

Includes an agent, a contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or user.

Occupational Health and Safety Act (No. 85 of 1993)

1. You are requested to, as far as you reasonably can, comply with the requirements of the OHS ACT and Regulations.

2. Your attention is drawn to "General Duties of Employers to their Employees" as required by Sect 8 of the Act

3. You are required to:

   3.1. Sign a written "Agreement with Mandatory" as required by Sect 37(1)(2) of the Act with us before you commence any work on my / our premises / site.

   3.2. Provide the client / principal contractor with a documented health and safety plan.

   3.3. Provide the client / principal contractor with written appointment of the person who is going to supervise the construction work as per Construction Regulation 6(1).

   Note: Electrician to provide copy of certificate of registration as per Elect. Install Reg. 9(3).

   3.4. Provide the client / principal contractor with written designation of your nominated Health and Safety Representative as per Sect 17(1).

   3.5. If you employ more than five (5) persons, you are required to provide your own First Aid Box. (General Safety Regulation 3 (2).)

   3.6. If you employ more than ten (10) persons, you are required to provide your own qualified First Aider as per General Safety Regulation 3(4).

   3.7. When working with hazardous chemical substances, comply with Hazardous Chemical Substances Regulation 3. Note: Asbestos and Lead regulations are separate.

   3.8. When using a Materials Hoist , comply with Construction Regulation 17.

   3.9. When using Lifting Machines and Lifting Tackle, comply with Driven Machinery Regulation 18.

   3.10. When using Explosive Powered Tools, comply with Construction Regulation 19.

   3.11. When using Scaffolding, Formwork and support work, comply with Construction Regulation 10 and 14.

   3.12. When Excavating or Demolishing, comply with Construction Regulation 11 and 12.

3.13. When Welding, Flame Cutting, Soldering, comply with General Safety Regulation 9.

3.14. When working in confined spaces, comply with General Safety Regulation 5.

4. You are responsible for providing your own legal safety documents and registers to comply with the Act's requirements. A copy of the OHS Act of 1993 should be available in the main contractors office.

5. personal protective equipment which will allow them to carry out their work in a safe manner, e.g. hard hats, safety belts, gloves, safe footwear, eye protection, ear protection, waterproof clothing etc.

6. Reporting of Incidents and Occupational Diseases shall be done as per General Admin. Regulation 6. (Also see Sect 24 of the Act.)

Compensation for Occupational Injuries and Diseases Act (No 130 of 1993)

You are required to provide the client proof of registration with the Compensation Commissioner/Federated Employer's Mutual within seven (7) days after signing this agreement. Failure to do so would result in the client notifying the agent of the Commissioner to investigate and make an assessment of your wage return and the applicable levy you have to pay, which will be liable for a deduction from your monthly progress payments and paid over to the Commissioner. (Copies of proof of payment will be provided to the contractor) See Section 89(1) of the COID Act.

AGREEMENT WITH MANDATORY In terms of Section 37 (1) and (2)

Section 37 (1)	Whenever an employee does or omits to do any act which it would be an offence in terms of this Act for the employer of such employee or a user to do or omit to do, then unless it is proved that – a) in doing or omitting to do that act the employee was acting without the connivance or permission of the employer or any such user; b) it was not under any condition or in any circumstance within the scope of the authority of the employee to do or omit to do an act, whether lawful or unlawful, of the character of the act or omission charged; and c) all reasonable steps were taken by the employer or any such user to prevent any act or omission of the kind in question, the employer or any such user himself shall be presumed to have done or omitted to do that act, and shall be liable to be convicted and sentenced in respect thereof; and the fact that he issued instructions forbidding any act or omission of the kind in question shall not, in itself, be accepted as sufficient proof that he took all reasonable steps to prevent the act or omission.
Section 37 (2)	The provisions of subsection (1) shall "mutatis mutandis" apply in the case of a mandatory of any employer or user, except if the parties have agreed in writing to the arrangements and procedures between them to ensure compliance by the mandatory with the provisions of the Act.

I,……(Responsible person) for, ……(Company)

appoint, …… (Contractor) at the following premises / site: ……..

……..

Period:
……

AUTHORISED SIGNATORY FOR THE COMPANY (PRINCIPAL CONTRACTOR)

Signature	Designation	Date

ACCEPTANCE SIGNATORY FOR THE CONTRACTOR

I, …….. hereby acknowledge receipt of and accept and understand the requirements of this agreement and shall ensure compliance with the OHS Act 85, of 1993.

Signature	Designation	Date

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

10. MEASUREMENT AND PAYMENT

10.1 Principles

It is a condition of this contract that Contractors who submit tenders for this contract, shall make provision in t
General items included for this work.

a) Safety personnel

The Construction Supervisor, the Construction Safety Officer, Health and Safety Representatives, Health and Safety Committee and Competent Persons referred to shall be members of the Contactor's personnel, and no additional payment will be made for the appointment of such safety personnel.

b) Records and registers

The keeping of health and safety-related records and registers as described is regarded as a normal duty of the Contractor for which no additional payment will be considered, and which is deemed to be included in the Contractor's tendered rates and prices.

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

PART C2

PRICING DATA

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

PART C2: PRICING DATA

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VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C2.1

PRICING INSTRUCTIONS

Pricing Assumptions mean the criteria as set out `below, read together with all Parts of this contract document, which it will be assumed in the contract, that the tenderer has taken into account when developing his prices.

1. This Bill of Quantities has to be read together with the Articles of the Agreement, the Conditions of Contract and Special Conditions of Contract, the Form of Tender, the General Specification, the Project Specification and the Drawings.

2. The method of measurement published by the South African Bureau of Standards in clause 8 of the Standardised Specifications for Civil Engineering Construction is applicable, subject to the variations and amendments contained in the section “Applicable SANS 1200 standardised specifications”.

3. General instruction and description of the Work or materials given in the Specification will not be repeated in the Bill of Quantities. It will only be referred to. Doorbell of reference between brackets, to particular Clause in the Conditions of Contract(C-22) or, Special Conditions of Contract (SC-11), General Specification (19.1.3), Project Specification (PS 11) or to a Drawing (Drawing 33650.01-141-01).

4. The clauses in a specification in which further information regarding the schedule item appears under "Reference clause" in the Schedule. The reference clauses indicated are not necessarily the only sources of information in respect of scheduled items. Further information and specifications may be found elsewhere in the contract documents. Standardised Specifications are identified by the letter or letters which follow SANS in the SANS 1200 series of specifications, eg. G for SANS 1200 G.

5. The quantities set out in the Bills of Quantities are the estimated quantities of the Contract Works, but the Contractor will be required to undertake whatever quantities may be directed by the Engineer from time to time. The Contract Price for the completed contract shall be computed from the actual quantities of work done, valued at the relevant unit rates and prices.

6. The prices and unit prices given in the Bill of Quantities, is all-embracing prices and it should cover the values of the different items completely and has to include all costs and expenses which may occur and for the building of the Work as described and costs and expenses that are required as well as all general liabilities, obligations and risks which forms a part of this contract. The prices should be given separate in the item(s) if special accountability, responsibilities and risks as in the above occurs.

7. A price or unit price has to be filled in against every item in the Bill of Quantities even if the amount isn’t shown. Items where no price or unit price has been filled in, will be regarded as covered by the other prices and unit prices in the Bill of Quantities. VAT must not be included in the tariffs.

8. Unit rates would be regarded as correctly if any difference occurs between unit prices and the total and the total will be corrected according to. The unit prices will be calculated arithmetical in case of omissions.

9. Payments will only be made for items occurring in the Bill of Quantities and if the Contractor thinks that provision hasn’t been made for some items, the item should be allowed under another item.

10. Except where rates only are required, insert all amounts to be included in the total tendered price in the "Amount" column and show the corresponding total tendered price.

11. The units of measurement described in the Bills of Quantities are metric units. Abbreviations which may be used in these Bills of Quantities are as follows:

mm	=	millimetre	h	=	hour
m	=	metre	kg	=	kilogram
km	=	kilometre	t	=	ton (1000 kg)
m2	=	square metre	No.	=	number
m^2.pass	=	square metre-pass	sum	=	lump sum
ha	=	hectare	MN	=	meganewton
m^3	=	cubic metre	MN.m	=	meganewton-metre
m^3.km	=	cubic metre-kilometre	P C sum	=	Prime Cost sum
l	=	litre	Prov sum	=	Provisional sum
kl	=	kilolitre	kW	=	kilowatt
Ml	=	megalitre	%	=	per cent
MPa	=	megapascal			

The Employer has the right whereas any measurements and/or payments were made before the final Payment Certificate to inspect it and if it is incorrect to correct it. The Employers has the right to remove and correct any work not complying with the specification before the submission of the last Payment Certificate.

VAAL CENTRAL WATER CONTRACT

NO. BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C2.2

SCHEDULE OF QUANTITIES

SCHEDULE 1: PRELIMINARY AND GENERAL FOR ALL THREE (3) PUMP STATIONS

SUMMARY		Page No.		Amount R	Amount c
1	PRELIMINARY AND GENERAL	C2.2-3			
	SUB-TOTAL	R			
VALUE ADDED TAX					
	ADD: VAT at the rate of 15%	R			
TOTAL		R			
CONFIRM TOTAL IN WORDS					

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
1.		**SECTION 1: PRELIMINARY AND GENERAL**					
1.1		**SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS**					
1.1.1		Contractual Requirements	Sum	1.0			
1.1.2		Establishment of facilities on the site: Facilities for Contractor					
a)		Offices and Storage Sheds	Sum	1.0			
b)		Workshops	Sum	1.0			
c)		Living Accommodation	Sum	1.0			
d)		Ablution and latrine facilities	Sum	1.0			
e)		Tools and equipment	Sum	1.0			
f)		Water supplies, electric power and communications	Sum	1.0			
g)		Dealing with water	Sum	1.0			
1.1.3		Other fixed-charge obligations	Sum	1.0			
1.1.4		Removal of site establishment	Sum	1.0			
1.1.5		Provision for accident insurance	Sum	1.0			
1.1.6		Compliance with the OHS Act	Sum	1.0			
1.1.7		Provision of Equipment for Traffic Control and Safety of Works	Sum	1.0			
1.1.8		Provide Accident Insurance	Sum	1.0			
1.1.9		Contractor to comply with Occupational Health and Safety Act	Sum	1.0			
1.1.10		Provision for accommodation including meals	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.2		**SCHEDULED AND TIME-RELATED ITEMS**					
1.2.1		Contractual Requirements (including insurances)	Sum	1.0			
1.2.2		Operation and maintenance of facilities on site for duration of construction, except where otherwise stated					
a)		Offices and storage sheds	Sum	1.0			
b)		Workshops	Sum	1.0			
c)		Living accommodation	Sum	1.0			
d)		Ablution and latrine facilities	Sum	1.0			
e)		Tool and equipment	Sum	1.0			
f)		Water supllies, electric power and equipment	Sum	1.0			
g)		Dealing with water	Sum	1.0			
1.2.3		Supervision for duration of construction	Sum	1.0			
1.2.4		Company and head office overhead costs	Sum	1.0			
1.2.5		Other time-related obligations					
a)		Other (Specify)	Sum	1.0			
1.3		**PROVISIONS FOR HEALTH & SAFETY AS PER THE CLIENT SPECIFICATIONS**					
1.3.1		Provision for fulfilling OH&S functions	Sum	1.0			
1.3.2		Provision for OH&S training, promotion and awareness	Sum	1.0			
1.3.3		Provision for occupational health (Medicals - pre and post employment; Physical and Psychological for work at elevated heights; Medical surveillance for hazardous work; Baseline & audiometric screening tests: HIV and AIDS Programme; etc.)	Sum	1.0			
1.3.4		Provision for protective equipment & protective clothing	Sum	1.0			
1.3.5		Provision for OH&S equipment	Sum	1.0			
1.3.6		Provision for ensuring public health and safety	Sum	1.0			
1.3.7		Provision for occupational health and safety signage, pictograms and notices	Sum	1.0			
Total Carried Forward To Summary							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

SCHEDULE 2: HENKRIESMOND RAW WATER BOOSTER PUMP STATION

SUMMARY		Page No.		Amount R	Amount c
1	MECHANICAL WORKS	C2.2-6			
2	DEMOLITION AND CONSTRUCTION WORKS	C2.2-11			
3	ELECTRICAL SERVICE CONNECTION	C2.2-12			
4	POWER DISTRIBUTION	C2.2-17			
5	ELECTRICAL BUILDING SERVICES	C2.2-23			
6	PERMANENT EQUIPMENT	C2.2-30			
7	HIGH MAST LIGHTING	C2.2-31			
8	ELECTRICAL CONTROL AND INSTRUMENTATION	C2.2-35			
9	CIVIL WORKS FOR PHASE 1	C2.2-49			
10	CIVIL WORKS FOR PHASE 2	C2.2-52			
11	CONSTRUCTION OF NEW MCC BUILDING	C2.2-53			
	SUB-TOTAL	R			
*** CONTINGENCIES**					
Allow the sum of 10% (ten percent) of the above Sub-total for Contingencies to be spent as the Engineer may direct and to be deducted in whole or in part if not required.			R		
	TOTAL INCLUDING CONTINGENCIES		R		
VALUE ADDED TAX					
	ADD: VAT at the rate of 15%		R		
TOTAL			R		
CONFIRM TOTAL IN WORDS					

CONTRACT PERIOD :……WEEKS

*** Amount allowed for the use of the Engineer only.**

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
1.		**SECTION 1: MECHANICAL WORKS**					
1.1		**PUMPS**					
1.1.1		Supply, installation, fixing, connecting, commission and testing of the following pump sets, complete with motors, baseplate, couplings,guards and gland service water connections where applicable					
.1.1		Horizontal design, multistage centrifugal pump of ring section design, baseplate mounted, rolling element bearings on drive and suction side, shaft seals at both ends, drive on suction side. Drive to be 3 phase, MV 3.3 kV 4 pole motor. Duty requirement of each complete pump set is 145 l/s at a total head of 233m, complete with commissioning plan and O&M manuals					
a)		Supply	No	3.0			
b)		Install	No	3.0			
1.2		**PIPEWORKS AND CONNECTIONS**					
1.2.1		Material supply, manufacture, sundries supply, deliver, install and commission the following **suction** pipework epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.1.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T1000/3					
a)		DN 600mm, 2500mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	7.0			
b)		DN 600mm, 900mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
c)		DN 600mm, 2050mm long, flanged all ends pipe section 10 Bar drilled to SANS 1123 : 2015 T1000/3	No	1.0			
d)		DN 600mm, 800mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	2.0			
e)		DN 600mm, 600mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
f)		DN 600mm, 2660mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
g)		DN 600mm, 3800mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
h)		DN 600mm, 2600mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
i)		DN 600mm, 2240mm long, flanged all ends pipe section 10 bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
j)		DN 400mm, 1800mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	3.0			
k)		DN 400mm, 500mm long, flanged all ends distance piece 10 Bar with (2x) ND 25mm nipples, drilled to SANS 1123 : 2015 T1000/3	No	3.0			
1.2.2		Material supply, manufacture, sundries supply, deliver, install and commision the following **discharge** pipework epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.2.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T2500/3					
a)		DN 600mm, 1300mm long, flanged all ends pipe section 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	2.0			
b)		DN 600mm, 1500mm long, flanged all ends pipe section, 25 Bar, with (1x) DN 150mm 90º tee connection & (2x) DN 25mm nipples, drilled to SANS 1123 : 2015	No	1.0			
c)		ND 600mm, 5000mm long, flanged all ends pipe section 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
d)		ND 600mm, 2000mm long, flanged all ends pipe section 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
e)		DN 400mm, 600mm long, flanged all ends pipe section 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	6.0			
f)		DN 400mm, 2340mm long flanged all ends pipe section 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
g)		DN 400mm, 1230mm long flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
h)		DN 400mm, 520mm long, flanged all ends distance piece 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
i)		DN 400mm, 800mm long, flanged all ends distance piece 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
j)		DN 400mm, 550mm long, flanged all ends distance piece 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	3.0			
1.2.3		Extra-over items above for the supplying and installation of specials complete with bolts, nuts, packing					
.3.1		Epoxy painted discharge pipework: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding					
a)		DN 600mm, 25 Bar, epoxy coated low carbon steel manifold special with (2x) DN 400mm flanged tee-connections as per drawing 31942.00S-700-01revT0	No	2.0			
.3.2		Epoxy painted steel bends: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding					
a)		DN 600mm 90º short segmented bend 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	2.0			
b)		DN 600 - 400mm 45º lateral bend 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	4.0			
c)		DN 400mm 90º short segmented bend 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	3.0			
d)		DN 400mm 45º short segmented bend 25 Bar, drilled to SANS 1123 : 2015 T2500/3	No	1.0			
.3.3		Reducers: Flanges as per SANS 1123 : 2015 T4000/3 Flanges					
a)		DN 400 - 250mm concentric reducer, flanged one end with pump mating flanged and drilled to manufactures specification, flange other end and drilled to SANS 1123 : 2015 T1000/3	No	3.0			
b)		DN 400 - 200mm concentric reducer, flanged one end with pump mating flange and drilled to manufactures specification 64 Bar, flanged other end and drilled to SANS 1123 : 2015 T2500/3	No	3.0			
.3.4		Equal Tee: Flanges as per SANS 1123 : 2015					
a)		DN 600mm equal tee 10 Bar, all ends flanged, drilled to SANS 1123 : 2015 T600/3	No	2.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.3.5		Bell Mouth: Flanges as per SANS 1123 : 2015 T1000/3					
a)		DN 600mm, 2200mm long pipe section 10 Bar, flanged one end, drilled to SANS 1123 : 2015 T1000/3, with other end bell mouth	No	1.0			
b)		h guug nv67r47777gugu nc heete my ge	No	1.0			
.3.6		Puddle Flange cast-in item: Flanges as per SANS 1123 : 2015 T1000/3					
a)		DN 600mm pipe section all ends flanged, 1200mm face to face, P/F 600mm installed from one side	No	1.0			
b)		DN 600mm pipe section all ends flanged, 820mm face to face, P/F 450mm installed from one side	No	1.0			
c)		DN 600mm pipe section all ends flanged, 970mm face to face, P/F 450mm installed from one side	No	1.0			
1.3		**VALVES**					
1.3.1		Supply, deliver, install and commission the following valves with nominal rating as indicated					
.1.1		Epoxy coated valves: Flanges as per SANS 1123 : 2015, with pressure rating as indicated					
a)		DN 600mm tripple - eccentric butterfly valve PN10, flanged, complete with handwheel operation (Premier Valves, AVK or similar approved)	No	4.0			
b)		DN 400mm tripple - eccentric butterfly valve PN10, flanged, complete with handwheel operation (Premier Valves, AVK or similar approved)	No	3.0			
c)		DN 100mm Metal seated wedge gate valve PN25, flanged, non-rising spindle complete with handwheel operation (Premier Valves, AVK or similar approved)	No	1.0			
d)		DN 400mm Metal seated wedge gate valve PN25, flanged, non-rising spindle complete with handwheel operation (Premier Valves, AVK or similar aprroved)	No	3.0			
e)		DN 400mm Butterfly / Wafer duel plate swing check valve PN25	No	3.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.4		**INSTRUMENTATION**					
1.4.1		Supply,deliver,install and commission of materials, equipment and components specified as follows:					
a)		DN 400mm Electromagnetic Raw Water Flowmeter (flanged)	No	3.0			
b)		DN 600mm Electromagnetic Raw Water Flowmeter (flanged)	No	1.0			
c)		Pressure Gauge 0 - 40 Bar DN 100mm glycerine filled complete with isolating valve	No	7.0			
d)		DN 25mm Pressure transducer with male M25 thread	No	7.0			
1.5		**HVAC & COOLING EQUIPMENT**					
1.5.1		Supply, deliver, install and commission of materials, equipment and components specified as follows:					
.1.1		Multistage evaporative cooler, cooling capacity of 35kW, complete with ducting,fittings & with commissioning plan and O&M manuals. (HUYS or similar approved)	Sum	1.0			
1.6		**CONDITION MONITORING SYSTEM**					
1.6.1		Supply enclosed unit per pump and motor					
.1.1		Type MSO-2E-D TWO TWAVE's Industrial Enclosure 16ch (including 2 off TWAVE T8-L Units, Initial Setup, Programming, Signal Converters, Power Supply, Glands, Modem & Aerials etc.)	No	3.0			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
2.		**SECTION 2: DEMOLITION AND CONSTRUCTION WORKS**					
2.1		**DEMOLITION WORK - PHASE 1**					
2.1.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Existing pump sets on west side of pump station building to be decommisioned	Sum	1.0			
.1.2		Installation of shut-off valve for the removal of suction line on west side of pump station building	Sum	1.0			
.1.3		Pump sets, pipework and instrumentation to be dismantled, removed and stored on site	Sum	1.0			
.1.4		Pump sets on the east side of pump station to be decommissed	Sum	1.0			
.1.5		Pump sets, valve, piping and existing equipment to be dismantled and removed	Sum	1.0			
2.2		**CONSTRUCTION WORKS - PHASE 1**					
2.2.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Temporary installation of pump set (3) in parallel with pump sets on east side of pump station, as per drawing 31942.00S-701-03revT0	Sum	1.0			
.1.2		Temporary connection of existing discharge manifolds in parallel, as per drawing 31942.00S-701-07revT0	Sum	1.0			
2.3		**DEMOLITION WORK - PHASE 2**					
2.3.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Pump sets on the east side of pump station to be decommissed	Sum	1.0			
.1.2		Pump sets, valve, piping and existing equipment to be dismantled and removed	Sum	1.0			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
3.		**SECTION 3: ELECTRICAL SERVICE CONNECTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE ELECTRICAL SERVICE CONNECTION STARTING AT THE TRANSFORMER AND ENDING AT THE MAIN DB.					
		**********					
3.1		**LOW VOLTAGE, CABLES:**					
3.1.1		The supply and installation of 600/1000 V XLPE insulated, PVC sheathed, stranded copper cores, armoured cables (SWA) in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from transformer to DB-1: 70 mm² x 4 Cu cable					
a)		Supply	m	35			
b)		Install	m	35			
3.2		**EARTH CONDUCTOR:**					
3.2.1		The supply and installation of stranded bare copper earth conductor in trenches, cables racks or tied to low voltage cable, including termination with glands or clamps and lugs, as specified.					
.1.1		Supply from transformer to DB-1: 35 mm² BCEC					
a)		Supply	m	35			
b)		Install	m	35			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.3		**EXCAVATIONS:**					
3.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 7 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	2			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	1		Rate Only	
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
3.3.2		Supply and installation of bedding and blanket material, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	1			
b)		Install	m³	1			
3.4		**DANGER TAPE:**					
3.4.1		Supply and installation of danger tape, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	7			
b)		Install	m	7			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.5		**PRECAST CONCRETE SLABS:**					
3.5.1		Supply and installation of precast concrete slabs, as specified on the drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
3.6		**CABLE MARKERS:**					
3.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	2			
b)		Install	Each	2			
3.7		**CABLE SLEEVES:**					
3.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 110 mm, flexible, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.8		**EARTH MAT:**					
3.8.1		Supply and installation of earth mat at generator, as specified on the drawings, complete.					
.1.1		4 x 5 m x 5 m grid blocks, 60 m x 95 mm² BCEC grid with 9 x 1.5 m copper plated earth rods at all the grid points, covered with E-mix (Lectrotech or equal and approved), 200 x 100 mm (W x D) for trenches and Ø 25 mm for rods, build shuttering to obtain the required dimensions, pour first half of mixture, install the BCEC, pour the second half of the mixture, allow to harden before backfilling, earth mat to be 500 mm below the natural ground level, all copper joints must be exothermic welds.					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
.1.2		Bond transformers and DB-1 to existing earth mat via 35 mm² BCEC from different grid sections, exothermic weld termination at the earth mat and bolted to the transformers and DB-1.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
3.9		**TESTING:**					
3.9.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.10		**TRANSFORMERS:**					
3.10.1		Refurbishment of 160 kVA, 3300/400 V, Dyn 11, power transformers, one transformer must be circulated while one of the transformers is being refurbished in order to maintain a redundant transformer for the supply, as specified, complete.					
.1.1		Install oil top-up and oil drainage nipple at transformer					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Replace existing transformer oil with PCB free oil					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		Sand blast and re-paint transformer's steel body avocado green					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.4		Replace transformer MV and LV bushings					
a)		Supply	Sum	2			
b)		Install	Sum	2			
3.10.2		Supply and installation of power transformers, as specified, complete.					
.2.1		Decommissioning of existing 160 kVA, 3300/400 V, power transformers					
a)		Decommissioning and deliver to material depot of Sedibeng.	Each	2		Rate Only	
.2.2		200 kVA, 3300/400 V, Dyn 11, PCB free oil, ONAN cooled, breather with orange silica gel, oil top-up and oil drainage nipple, painted avocado green, floor standing, standard tap changer, power transformer.					
a)		Supply	Each	2		Rate Only	
b)		Install	Each	2		Rate Only	
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
4.		**SECTION 4: POWER DISTRIBUTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE POWER DISTRIBUTION FROM THE MAIN DB TO ALL THE SUB-DB's AND POWER DISTRIBUTION BETWEEN THE SUB-DB's.					
		**********					
4.1		**LOW VOLTAGE, CABLES:**					
4.1.1		The supply and installation of 600/1000 V PVC insulated, PVC bedded, SWA, PVC sheathed, stranded copper cables in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from DB-1 to DB-2: 50 mm² x 4 core copper cable					
a)		Supply	m	45			
b)		Install	m	45			
.1.2		Supply from DB-2 to DB-3: 6 mm² x 2 core copper cable					
a)		Supply	m	60			
b)		Install	m	60			
4.2		**EARTH CONDUCTOR:**					
4.2.1		Supply and installation of stranded bare copper earth conductor, including clamps and terminations, complete.					
.1.1		Supply from DB-1 to DB-2: 25 mm² BCEC					
a)		Supply	m	45			
b)		Install	m	45			
.1.2		Supply from DB-1 to DB-3: 4 mm² BCEC					
a)		Supply	m	60			
b)		Install	m	60			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.3		**EXCAVATIONS:**					
4.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material (only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 62 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	17			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	19			
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
4.3.2		Supply and installation of bedding and blanket material, 250 mm thick in total, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	7			
b)		Install	m³	7			
4.4		**DANGER TAPE:**					
4.4.1		Supply and installation of yellow PVC danger tape, 300 mm wide, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	62			
b)		Install	m	62			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.5		**PRECAST CONCRETE SLABS:**					
4.5.1		Supply and installation of precast concrete slabs, 600 x 300 x 50 mm (l x w x h), as specified on the drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
4.6		**CABLE MARKERS:**					
4.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	4			
b)		Install	Each	4			
4.7		**CABLE SLEEVES:**					
4.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 50 mm, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
4.8		**TESTING:**					
4.8.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
4.9		**CABLE TRAYS:**					
4.9.1		Supply and installation of cable trays, medium duty perforated type, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		76 x 76 mm (W x H)					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.10		**DISTRIBUTION BOARDS:**					
4.10.1		The supply and installation of the low voltage distribution boards, with equipment, busbars and switchgear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		DB-1, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.2		DB-2, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.3		DB-3, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
4.11		**DEDICATED EARTH BOX:**					
4.11.1		The supply and installation of a dedicated earth box against the wall, as specified on the drawings, complete.					
.1.1		Dedicated earth box for DB-1, DB-2 and DB-3 separately, 80 x 1 mm copper bar with minimum 7 terminations, in an 100 x 100 mm enclosure with knock-outs, copper bar must be bonded via 10 mm² insulated earth conductor to the nearest DB's earth bar, surface mounted next to DB, with 2 x Ø 20 mm conduits from dedicated earth box to ceiling void if ceiling is present otherwise not necessary.					
a)		Supply	Each	3			
b)		Install	Each	3			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.12		**LABELLING:**					
4.12.1		Supply and installation of labelling for all switchgear in the new distribution boards according the circuit numbers on the drawings and standard information and warning labels, as specified on the drawings. The text must be as large as possible, depending on the available space. The labelling must be fixed permanently and neatly, as specified on the drawings.					
.1.1		Engraved, black text against white background					
a)		Identification of distribution boards	Sum	1			
b)		Supply details - supply from and cable details (i.e. SUPPLY FROM DB-1: 35 mm² x 4 Cu CABLE + 16 mm² BCEC)	Sum	1			
c)		Standard cascade warning signages	Sum	1			
d)		Dedicated earth box signages	Sum	1			
e)		Circuit numbers	Sum	1			
f)		Warning signages when the busbar rating is more than 100 A	Sum	1			
.1.2		Engraved, red text against white background					
a)		Identification of main circuit breakers or isolator switches in case of an emergency	Sum	1			
.1.3		Engraved, black text against yellow background					
a)		Danger signages	Sum	1			
.1.4		Heat shrinkable conductor/cable tags, black text against white background					
a)		Conductor/cable identifications	Sum	1			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.13		**TESTING AND COMMISSIONING:**					
4.13.1		Testing and commissioning of the complete electrical installation, to SABS 0142, as revised, including all necessary tests to issue the Certificate of Compliance (CoC), in terms of the Occupational Health and Safety Act, 1993 (act 85 of 1993).					
.1.1		Issue a valid Certificate of Compliance, with supporting tests certificates, drawings and special notes					
a)		DB-1, with sub-circuits, complete.	Sum	1			
b)		DB-2, with sub-circuits, complete.	Sum	1			
c)		DB-3, with sub-circuits, complete.	Sum	1			
4.14		**EARTHING AND BONDING:**					
4.14.1		Earthing of building according to the Wiring Code, SANS 10142-1 latest edition, complete.					
.1.1		Earthing of electrical installation. All conductive water pipes, roof sheeting, colums, conduits, cable trays and equipment with conductive enclosures, must be bonded with 10 mm x 1 mm thick solid or perforated copper tape or 10 mm² insulated earth conductor to the nearest earth bar of a distribution board, including terminations, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
5.		**SECTION 5: ELECTRICAL BUILDING SERVICES**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE ELECTRICAL BUILDING SERVICES. 3. RECESSED INSTALLATIONS MUST PREFERABLY BE WIRED VIA CONDUCTOR WITHIN CONDUIT AND SURFACE INSTALLATIONS MUST PREFERABLY BE WIRED VIA SURFEX CABLE.					
		**********					
5.1		**LIGHT POWER POINTS:**					
5.1.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, etc., as specified or shown on the drawings, but excluding the light switch, complete.					
.1.1		DB-M: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L2	Each	3			
.1.2		DB-S: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	1			
.1.3		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	16			
b)		Circuit L2	Each	3			
.1.4		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	7			
b)		Circuit L2	Each	2			
.1.5		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	8			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.2		**LUMINAIRES:**					
5.2.1		Supply and installation of luminaires, with lamps and control gear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		Type B					
a)		Supply	Each	5			
b)		Install	Each	5			
.1.2		Type F/L					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.3		Type H-F					
a)		Supply	Each	4			
b)		Install	Each	4			
.1.4		Type IK					
a)		Supply	Each	5			
b)		Install	Each	5			
.1.5		Type L/B					
a)		Supply	Each	5			
b)		Install	Each	5			
.1.6		Type L/C					
a)		Supply	Each	18			
b)		Install	Each	18			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.3		**SENSORS:**					
5.3.1		Supply and installation of photocell and fire siren as specified on drawings, complete.					
.1.1		Photocell					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Fire Siren					
a)		Supply	Each	1			
b)		Install	Each	1			
5.4		**CONTROL SWITCHES POWER POINTS:**					
5.4.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the switches, complete.					
.1.1		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit ES1	Each	1			
5.5		**SWITCHES:**					
5.5.1		Supply and installation of switches, as specified on the drawings, with cover plates, screws, connections, etc., but excluding the conduit, wall boxes and wiring, complete.					
.1.1		White single lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	8			
b)		Install	Each	8			
.1.2		White two lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	2			
b)		Install	Each	2			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.3		Yellow rotary switch, one way, 50 x 50 mm, die cast aluminium grey enclosure, 16 A, water tight, IP 67, light switch, surface mounted.					
a)		Supply	Each	3		Rate Only	
b)		Install	Each	3		Rate Only	
.1.4		Fireman switch, red alluminium enclosure, weather proof, IP 65, 20 A, 2 pole, surfce mounted.					
a)		Supply	Each	1			
b)		Install	Each	1			
5.6		**SOCKET OUTLET POWER POINTS:**					
5.6.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the socket outlet, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	3			
b)		Circuit P2	Each	4			
c)		Circuit IS1	Each	1			
d)		Circuit IS2	Each	1			
e)		Circuit H1	Each	1			
.1.3		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.7		**SOCKET OUTLETS:**					
5.7.1		Supply and installation of socket outlets for normal power, with cover plates, screws, clips, connections, etc., as specified on the drawings, but excluding wall boxes, conduit and wiring, complete.					
.1.1		Double, 119 x 83 mm, surface box, switch SA socket outlet, 16 A, with metal, orange cover plate, surface mounted.					
a)		Supply	Each	15			
b)		Install	Each	15			
.1.2		Orange metal clad industrial switch socket outlet, 63 A, 400 V, 5-pin, weather proof, IP 55, including metal clad plug top, surface mounted.					
a)		Supply	Each	3			
b)		Install	Each	3			
5.8		**ISOLATOR POWER POINTS:**					
5.8.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the isolator switch, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit EC1	Each	1			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit IS3	Each	1			
b)		Circuit IS4	Each	1			
c)		Circuit EC1	Each	2			
.1.3		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit AC1	Each	1			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.9		**ISOLATOR SWITCHES:**					
5.9.1		Supply and installation of isolator switches, complete with cover plates, screws, clips, connections, etc., but excluding conduit, wall boxes and wiring, complete.					
.1.1		Single phase, 165 x 82mm, 63 A, double pole, weather proof, IP 55, isolator switch, surface mounted.					
a)		Supply	Each	6			
b)		Install	Each	6			
5.10		**PERMANENTLY FIXED APPLIANCES/EQUIPMENT:**					
5.10.1		Supply and installation of power connection cords between isolators and permanently fixed appliances/equipment, equipment must be within 1.5 m of isolator switch, recessed isolators must supply the equipment via conduit with wiring to and surface isolators must supply equipment via surfex conductors , as specified by the OEM's and the wiring code, complete.					
.1.1		Air Conditioning, 1 Ø					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.2		Evaporative Cooler, 1 Ø					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.3		Hoist, 3 Ø					
a)		Supply	Each	1			
b)		Install	Each	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.11		**WIRE WAYS:**					
5.11.1		Supply and installation of wire ways, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		Galvanised steel trunking with covers, 125 x 80 mm (W x H)					
a)		Supply	m	60			
b)		Install	m	60			
.1.2		Galvanised steel trunking with covers, 50 x 50 mm (W x H)					
a)		Supply	m	54			
b)		Install	m	54			
5.12		**LABELLING:**					
5.12.1		Supply and installation of labelling on all types of socket outlets, isolators and light switches, including photocells, text must be at least 5 mm in height and the labelling must be fixed permanently and neatly, the information presented must be first the circuit number/distribution board fed from (i.e. "S1/DB-A"), as specified on the drawings, complete.					
.1.1		Engraved, black text against white back ground					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.2		Printed with self adhesive back-side, black text against white back ground					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
6.		**SECTION 6: PERMANENT EQUIPMENT**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE PERMANENT EQUIPMENT TO BE INSTALLED WITHIN THE BUILDING.					
		**********					
6.1		**AIR-CONDITIONERS:**					
6.1.1		Supply and installation of inverter type air-conditioning systems: split type, outdoor condensing unit and mid-wall indoor air handle unit, complete with fans, compressors, refrigerant circuits, anti-vibration wall bracket mounting, seamless high pressure refrigeration grade copper between condenser and air handle unit, complete with fittings, refrigerant formed joints, tees, elbows and fixings, electrical connection between outdoor and indoor unit, condensate pipes and pumps (where gravitational routes are not possible), evacuate refrigerant lines and fill with R410A gas, as specified on the drawings, complete.					
.1.1		AC, 9 000 BTU/h, 2.64 kWr					
a)		Supply	Each	1			
b)		Install	Each	1			
6.2		**TESTING AND COMMISSIONING:**					
6.2.1		Testing and commissioning of the different systems/equipment, according to regulations, complete.					
.1.1		Air-Conditioners	Sum	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
7.		**SECTION 7: HIGH MAST LIGHTING**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE HIGH MAST LIGHTING AT THE WATER TREATMENT WORKS.					
		**********					
7.1		**LOW VOLTAGE, CABLES:**					
7.1.1		The supply and installation of 600/1000 V PVC insulated, PVC sheathed, stranded copper cores, armoured cables (SWA) in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from DB-2 to HM1: 4 mm² x 4 core copper cable					
a)		Supply	m	45			
b)		Install	m	45			
7.2		**EARTH CONDUCTOR:**					
7.2.1		The supply and installation of stranded bare copper earth conductor in trenches, cable racks or tied to low voltage cable including termination with glands or clamps and lugs, as specified.					
.1.1		Supply from DB-2 to HM1: 6 mm² BCEC					
a)		Supply	m	45			
b)		Install	m	45			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.3		**EXCAVATIONS:**					
7.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material (only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 12 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	4			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	1			
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
7.3.2		Supply and installation of bedding and blanket material, 250 mm thick in total, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	2			
b)		Install	m³	2			
7.4		**DANGER TAPE:**					
7.4.1		Supply and installation of yellow PVC danger tape, 300 mm wide, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	12			
b)		Install	m	12			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.5		**CABLE MARKERS:**					
7.5.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	2			
b)		Install	Each	2			
7.6		**EARTH MAT:**					
7.6.1		Supply and installation of earth mat at high mast, as specified on the drawings, complete.					
.1.1		4 x 5 m x 5 m grid blocks, 60 m x 95 mm² BCEC grid with 9 x 1.5 m copper plated earth rods at all the grid points, covered with E-mix (Lectrotech or equal and approved), 200 x 100 mm (W x D) for trenches and Ø 25 mm for rods, build shuttering to obtain the required dimensions, pour first half of mixture, install the BCEC, pour the second half of the mixture, allow to harden before backfilling, earth mat to be 500 mm below the natural ground level, all copper joints must be exothermic welds.					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.2		Bond high mast to earth mat via 2 x 95 mm² BCEC from different grid sections, exothermic weld termination at the earth mat and bolted to the earth bar of the high mast.					
a)		Supply	Each	1			
b)		Install	Each	1			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.7		**HIGH MAST LIGHTING:**					
7.7.1		Supply and installation of high masts, including foundations, luminaires, pre-wiring, switchgear and sensors, as specified, complete.					
.1.1		Galvanised steel high mast, scissor hoist type, 30 m high					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.2		Foundation for 30 m scissor hoist masts, as specified by the supplier of the high masts					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.3		279 W LED luminaire, 9 per mast. Beka or equal and approved.					
a)		Supply	Each	9			
b)		Install	Each	9			
.1.4		Pre-wired 600/1000 V XLPE insulated, PVC sheathed, stranded copper cores, armoured cabled (SWA), 4 mm² x 4 Cu + 6 mm² BCEC, connect three luminaires per phase, the supply of the cable at the bottom of the mast must be via an industrial female socket and male plug top rated 20 A					
a)		Supply	m	40			
b)		Install	m	40			
.1.5		Distribution board with switchgear located in the base of the mast, 16 A, 3 Ø, 6 kA main circuit breaker with class II, 40 kA surge arrestors with indication, 20 A, 3 Ø, 6 kA, NO contactor switched by photocell, located at the bottom of the mast, the photocell must be wired with a 1.5 mm² conductor protected by a 5 A, 1 Ø, 3 kA circuit breaker, including a by-pass circuit breaker, 5 A, 1 Ø, 3 kA, to switch the contactor manually.					
a)		Supply	Each	1			
b)		Install	Each	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
8.		**SECTION 8: ELECTRICAL CONTROL AND INSTRUMENTATION**					
8.1		**MV SWITCHGEAR**					
		Supply, Deliver to Site, Offload and Install Schneider Premset switchgear containing the following in the new MV Room					
8.1.1		Schneider PREMSET Main Incomer Switchgear as per attached specification and drawings with protection rated to suit 3.3 KV 2.5 MVA Supply Transformer	No	2.0			
8.1.2		Schneider PREMSET Buscoupler rated to suit Incoming Supplies	No	1.0			
8.1.3		Schneider PREMSET Switchgear as per attached specification for supply to 500 KW 3.3 KW WEG MVW01C Variable Speed Drives	No	3.0			
8.1.4		Schneider PREMSET Switchgear as per attached specification for supply to 160 KVA 3.3 KV/400V Local Supply Transformer	No	2.0			
8.1.5		Schneider PREMSET Switchgear as per attached specification for supply to River Abstraction 250 KVA 3.3 KV/400V Transformer	No	1.0			
8.1.6		Battery Tripping Unit rated at 110Vdc 10A for the above switchgear	No	1.0			
8.1.7		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	No	1.0			
8.1.8		Allow cost for levelling of the MV Room floor or provision of a frame to fit MV Switchear to specification	No	1.0			
8.2		**MV MOTOR CONTROL GEAR**					
		Supply, Deliver to Site, Offload and Install as follows in the new MV Room					
8.2.1		WEG MVW01C Variable Speed Drives Complete as follows: 3.3 KV 500 KW	Sum	1.0			
8.2.2		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	Sum	1.0			
8.2.3		Cost for extra Ventilation Duction if required (proof of requirement to be provided as described in the tender documentation)	Sum	1.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.3		**EARTHING AND LIGHTNING PROTECTION SYSTEM**					
		Supply and Install the following:					
8.3.1		Earthing and Lighning Protecton System for the new MV room, designed by Earthing and Lightning Protection Specialist and as per the attached specifications.	Sum	1.0			
8.3.2		VSD Room LV DB Board in the new MV Room	No	1.0			
8.3.3		Testing of the above Installation and provision of a test certificate.	No	1.0			
8.4		**LV DISTRIBUTION BOARDS**					
		Supply, Deliver to Site, Offload and Install the following:					
8.4.1		Main LV DB Board in existing MV Room	No	1.0			
8.4.2		VSD Room LV DB Board in the new MV Room	No	1.0			
8.5		**PLC AND FIELD JUNCTION BOXES**					
		Supply, Deliver to Site, Offload and Install the following:					
8.5.1		PLC System in Control Section of VSD Room LV DB Board	No	1.0			
8.5.2		Pump Field Junction Box FJB1	No	3.0			
8.5.3		Field Junction Box FJB-HM1	No	1.0			
8.5.4		Field Junction Box FJB-HM2	No	1.0			
8.5.5		Pratley Kliklox Junction Boxes with 7 terminals installed	No	9.0			
8.5.6		Pratley Enviro RectangularJunction Boxes with 8 terminals installed	No	1.0			
8.5.7		Remote HMI, SIMATIC HMI TP900 Comfort (6AV2124-0JC01-0AX0) 10", installed in enclosure in the pumphouse. To be connected to PLC via Ethernet Cable	No	1.0			
8.5.8		Allow Cost for Factory Acceptance Test of the above as well as the Main LV DB Board and VSD Room LV DB Board at the suppliers premises for 3 x persons.	No	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.6		**INSTRUMENTATION**					
		Supply, Deliver to Site, Offload and Install the following:					
8.6.1		Endress & Hauser FMU40 Ultrasonic Level Sensor (complete with mounting brackets) for measuring Main Pond and Small Pond Levels	No	2.0			
8.6.2		Endress & Hauser FMU40 Ultrasonic Level Sensor (complete with mounting brackets) Suction Reservor Level	No	1.0			
8.6.3		Endress & Hauser FMU90 installed in Field Junction Box FJB-HM1 for measuring Inlet Channel Flow	No	1.0			
8.6.4		Endress & Hauser FDU90 sensor, complete with mounting bracket, installed on Inlet Flow Channel	No	1.0			
8.6.5		Inductive Proximity Sensors mounted to detect Flow Splitter setting on Inlet Channel FLow Splitter	No	2.0			
8.6.6		Vibration Transducer for Motor (Monitran 20 mm/s)	No	3.0			
8.6.7		Pump Vibration Transducers (Monitran 20 mm/s)	No	6.0			
8.6.8		Motor Bearing Temperature Sensors (PT100 0-150 Deg C)	No	3.0			
8.6.9		Pump Bearing Temperature Sensors (PT100 0-150 Deg C)	No	6.0			
8.6.10		IFM SA5000 Solid-state Flow Switch, complete with E40107 adapter and EVC005 cable, installed on inlet side of pump	No	3.0			
8.6.11		Delivery Pressure Transducer, IFM PN709x series with EVC005 cable, installed on delivery side of pump	No	3.0			
8.6.12		Flowmeter to measure pump delivery, installed on delivery side of each pump: Endress & Hauser Ultrasonic Clamp-on type, appropriate to pump delivery pipe size.	No	3.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.7		**DOMESTIC INSTALLATION**					
		Supply and Install the following (in the new MV Room and in the existing MV Room where required)					
8.7.1		Surface Mount Single Lever Light Switches	No	4.0			
8.7.2		Surface Mount 15A Plug Outlets (Double)	No	10.0			
8.7.3		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings	No	10.0			
8.7.4		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings with 1 Hr EMU kit	No	4.0			
8.7.5		20 mm Galvanized Conduit,surface mount, complete with drawboxes and fittings	m	70.0			
8.7.6		Supply and Install 35000 BTU Air-conditioners for new MV Room	No	3.0			
8.7.7		All wiring, etc required to complete the installation	Sum	1.0			
8.7.8		Allow Cost to rehabilitate Pump Station Domestic Installation, Area Lights and Welding Plugs	Sum	1.0			
8.8		**CABLE AND CABLE INSTALLATION**					
		Supply, Install and Test the following:					
8.8.1		Disconnect existing Incomer 1 cables (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (240 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.2		Disconnect existing Incomer 1 cable (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (BCEW 120 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.3		Disconnect existing Incomer 2 cables (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (240 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.4		Disconnect existing Incomer 2 cable (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (BCEW 120 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.5		240 mm sq x 3 SWA XLPE 1.9/3.3 KV Cable to lengthen the above if required	m	30.0			
8.8.6		BCEW 120 mm sq Cable to lengthen the above if required	m	30.0			
8.8.7		240 mm sq x 3 core SWA XLPE 3.8/6.6KV Cable from 2.5 MVA Transformers to Premset Incoming Circuit Breakers	m	120.0			
8.8.8		10 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from 160 KVA Local Services Transformers to Premset Feeder Breakers	m	60.0			
8.8.9		6 mm sq BCEW with the above	m	60.0			
8.8.10		35 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from Premset Feeder Breakers to WEG MVW01C Variable Speed Drives	m	45.0			
8.8.11		25 mm sq BCEW from Premset feeder breakers to WEG MVW01C Variable Speed Drives	m	45.0			
8.8.12		35 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	150.0			
8.8.13		25 mm sq BCEW Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	150.0			
8.8.14		Disconnect Cables from Existing Main LV DB Board, remove board to Client's Store and replace with the new Main LV DB Board. Reconnect cables unless indicated as cables to be replaced. Reconnection of Cables measured elsewhere	Sum	1.0			
8.8.15		120 mm sq x 4 SWA PVC Cable from Local Services Transformers to Main LV DB: Relocate as required and reconnect to new Main LV DB Board (Join and Lengthen if required)	m	120.0			
8.8.16		70 mm sq BCEW from Local Services Transformers to Main LV DB : Relocate as required and reconnect to new Main LV DB Board (Join and Lengthen if required)	m	120.0			
8.8.17		120 mm sq x 4 SWA PVC Cable	m	1.0		Rate Only	
8.8.18		70 mm sq BCEW	m	1.0		Rate Only	
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.19		25 mm sq x 4 SWA PVC Cable from Main LV DB to VSD Room DB	m	25.0			
8.8.20		16 mm sq BCEW from Main LV DB to VSD Room DB	m	25.0			
8.8.21		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 1 (Auxilliary Supply)	m	12.0			
8.8.22		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 2 (Auxilliary Supply)	m	12.0			
8.8.23		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 3 (Auxilliary Supply)	m	12.0			
8.8.24		2.5 mm sq x 4 SWA PVC CAble from VSD Room DB to existing Flowmeter	m	45.0			
8.8.25		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Battery Tripping Unit	m	10.0			
8.8.26		2.5 mm sq x 4 SWA PVC Cable from Premset MV Board to Battery Tripping Unit	m	5.0			
8.8.27		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 1 Field Junction Box FJB1 (AC Supply)	m	60.0			
8.8.28		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	60.0			
8.8.29		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	60.0			
8.8.30		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 1 Field Junction Box FJB1 (DC Supply)	m	60.0			
8.8.31		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 2 Field Junction Box FJB1 (DC Supply)	m	60.0			
8.8.32		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 3 Field Junction Box FJB1 (DC Supply)	m	60.0			
8.8.33		2.5 mm sq x 4 SWA PVC Cable from Control Section to Remote HMI	m	50.0			
8.8.34		2.5 mm sq x 4 SWA PVC Cable from Control Section to Field Junction Box FJB-HM2	m	175.0			
8.8.35		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Existing Flowmeter	m	45.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.36		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Emergency Stop Interlock)	m	12.0			
8.8.37		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Emergency Stop Interlock)	m	12.0			
8.8.38		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Emergency Stop Interlock)	m	12.0			
8.8.39		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Enabling Circuit)	m	12.0			
8.8.40		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Enabling Circuit)	m	12.0			
8.8.41		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Enabling Circuit)	m	12.0			
8.8.42		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 1 Premset Feeder	m	12.0			
8.8.43		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 2 Premset Feeder	m	12.0			
8.8.44		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 3 Premset Feeder	m	12.0			
8.8.45		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 1 to Pump 1 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
8.8.46		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 2 to Pump 2 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
8.8.47		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 3 to Pump 3 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
8.8.48		1 mm sq x 2 pr IOS Dekabon Armoured Cable from Field Junction Box FJB-HM2 to Small Pond Level Sensor	m	20.0			
8.8.49		1 mm sq x 2 pr IOS Dekabon Armoured Cable from Field Junction Box FJB-HM2 to Main Pond Level Sensor	m	30.0			
8.8.50		1 mm sq x 2 pr IOS Dekabon Armoured Cable from Control Section to Suction Reservoir Level Sensor	m	90.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.51		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Field Junction Box FJB-HM1 to Field Junction Box FJB-HM2	m	90.0			
8.8.52		1 mm sq x 4 pr IOS Dekabon Armoured Cable from Field Junction Box FJB-HM1 to Pratley Enviro Box mounted at Flow Splitter	m	10.0			
		Pump Set 1 Instrumentation and Control					
8.8.53		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.54		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.55		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.56		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.57		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.58		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.59		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.60		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.61		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.62		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
8.8.63		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
8.8.64		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.65		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.66		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.67		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 2 Instrumentation and Control					
8.8.68		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.69		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.70		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.71		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.72		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.73		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.74		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.75		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.76		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.77		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
8.8.78		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.79		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
8.8.80		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.81		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.82		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 3 Instrumentation and Control					
8.8.83		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.84		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.85		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.86		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.87		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.88		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.89		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.90		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.91		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.92		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.93		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
8.8.94		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
8.8.95		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.96		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.97		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
8.8.98		1 mm sq x 2 Pr Dekabon Armoured Cable from Control Section of VSD Room DB to Delivery Pipeline Pressure Transducer	m	40.0			
		General					
8.8.99		Disconnect, Reroute and Lengthen (if required) 3.3 KV Cable to River Abstraction Works from exsiting 3.3 KV Switchgear to new Premset Feeder (35 mm sq x 4 SWA XLPE plus 25 mm sq BCEW)	Sum	1.0			
8.8.100		Remove all redundant equipment, panels and cables and deliver to site storage area.	Sum	1.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.9		**CABLE TERMINATIONS AND JOINTS**					
		Supply and Install for the following cables (Terminations unless otherwise indicated):					
8.9.1		3.3 KV 240 mm sq x 3 SWA XLPE	No	4.0			
8.9.2		3.3 KV 240 mm sq x 3 SWA XLPE JOINTS	No	2.0		Rate Only	
8.9.3		3.3 KV 35 mm sq x 3 SWA XLPE	No	14.0			
8.9.4		3.3 KV 10 mm sq x 3 SWA XLPE	No	4.0			
8.9.5		3.3 KV 10 mm sq x 3 SWA XLPE Joints	No	1.0		Rate Only	
8.9.6		120 mm sq x 4 SWA PVC	No	2.0			
8.9.7		120 mm sq x 4 SWA PVC Joints	No	1.0		Rate Only	
8.9.8		35 mm sq x 4 SWA PVC	No	2.0			
8.9.9		35 mm sq x 4 SWA PVC Joints	No	1.0		Rate Only	
8.9.10		25 mm sq x 4 SWA PVC	No	2.0			
8.9.11		16 mm sq x 4 SWA PVC	No	2.0			
8.9.12		6 mm sq x 4 SWA PVC	No	2.0			
8.9.13		2.5 mm sq x 4 SWA PVC	No	28.0			
8.9.14		1.5 mm sq x 4 SWA PVC	No	6.0			
8.9.15		1 mm sq x 1 PR Dekabon Armoured	No	14.0			
8.9.16		1 mm sq x 2 PR IOS Dekabon Armoured	No	26.0			
8.9.17		1 mm sq x 4 PR IOS Dekabon Armoured	No	8.0			
8.9.18		1.5 mm sq x 4 PR IOS Dekabon Armoured	No	26.0			
8.9.19		1.5 mm sq x 8 PR IOS Dekabon Armoured	No	8.0			
8.9.20		Compression Glands No 1	No	12.0			
8.9.21		Bare Copper Earth Wire 6 mm sq	No	6.0			
8.9.22		Bare Copper Earth Wire 10 mm sq	No	2.0			
8.9.23		Bare Copper Earth Wire 16 mm sq	No	2.0			
8.9.24		Bare Copper Earth Wire 25 mm sq	No	14.0			
8.9.25		Bare Copper Earth Wire 70 mm sq	No	4.0			
8.9.26		Bare Copper Earth Wire 120 mm sq	No	4.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.10		**CABLE RACK AND LADDER**					
		This Section covers the total supply and installation of cable rack and ladder for this Pump Station. Prices should include all fixing material, splices and fixing brackets required.					
		O-LINE OL-Series Cable Ladder					
8.10.1		OL76 600 MM	m	36.0			
8.10.2		OL76 600 MM Internal Bends	No	4.0			
8.10.3		OL76 600 MM External Bends	No	4.0			
8.10.4		OL76 600 MM Flat Bends	No	4.0			
8.10.5		OL76 600 MM T-Pieces	No	1.0			
8.10.6		Reducer 600 mm to 400 mm	No	3.0			
8.10.7		OL76 400 MM	m	15.0			
8.10.8		OL76 400 MM Internal Bends	No	6.0			
8.10.9		OL76 400 MM External Bends	No	3.0			
8.10.10		OL76 400 MM Flatl Bends	No	3.0			
8.10.11		OL76 400 MM T-Pieces	No	4.0			
8.10.12		Reducer 400 mm to 200 mm	No	6.0			
8.10.13		OL55 200 MM	m	21.0			
8.10.14		OL55 200 MM Internal Bends	No	4.0			
8.10.15		OL55 200 MM External Bends	No	4.0			
8.10.16		OL55 200 MM Flat Bends	No	2.0			
8.10.17		OL55 200 MM T-Pieces	No	5.0			
		O-LINE GRIDSPAN Wire Mesh Cable Trays					
8.10.18		GS50 100 mm Gridspan	m	150.0			
8.10.19		GS50 100 mm Internal Bends	No	6.0			
8.10.20		GS50 100 mm External Bends	No	6.0			
8.10.21		GS50 100 mm Flat Bends	No	4.0			
8.10.22		GS50 50 mm Gridspan	m	120.0			
8.10.23		GS50 50 mm Internal Bends	No	12.0			
8.10.24		GS50 50 mm External Bends	No	12.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.10.25		GS50 50 mm Flat Bends	No	8.0			
8.10.26		GS50 Internal Bends	No	12.0			
8.10.27		OL2000 Trunking	m	66.0			
		Miscellaneous Items					
		Supply and Install as and where required					
8.10.28		25 mm Galvanized Conduit Complete with all attachments and saddles	m	60.0			
8.10.29		Cantilever Bracket OL254 650 mm	No	12.0			
8.10.30		Cantilever Bracket OL254 450 mm	No	36.0			
8.10.31		25 x 25 Angle Iron, cut to suit and cold-galvanized	m	12.0			
8.10.32		Allow for connecting of cable racks with the earthing system	Sum	1.0			
8.11		**OTHER ITEMS**					
8.11.1		Allow for servicing of local services transformers, including oil tests and oil filtration	Sum	1.0			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
9.		**SECTION 9: CIVIL WORKS FOR PHASE 1**					
9.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
9.1.1		Demolish existing pump plinths	m³	1.6			
9.1.2		Demolish existing pedestals	m³	3.1			
9.1.3		Demolish existing thrust blocks	m³	1.2			
9.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
9.2.1	**SANS 1200 D**	**Excavation**					
		Supply all labour, plant and equipment for the excavation and backfilling in all materials and levelling of excess materials:					
a)		For pipe trench structure	m³	55.0			
b)		For sump and butterfly valve chamber	m³	130.0			
		Extra over item .2.1 for excavation in:					
c)		Intermediate material	m³	35.0			
d)		Hard rock material	m³	35.0			
9.2.2	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.1			
b)		Pipe pedestals	m³	4.8			
c)		Base plate plinths	m³	0.3			
d)		Pipe trench structure foundation slab	m³	7.0			
e)		Sump and butterfly valve chamber foundation slab	m³	4.0			
f)		Sump and butterfly valve chamber walls	m³	18.0			
g)		Sump and butterfly valve chamber top slab	m³	1.5			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
9.2.3	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pipe trench structure	kg	500.0			
b)		10mm diameter for sump and butterfly valve chamber	kg	1,685.0			
c)		10mm diameter for pump plinths	kg	85.0			
d)		10mm diameter for pipe pedestals	kg	365.0			
e)		10mm diameter for base plate plinths	kg	25.0			
9.2.4	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	2.5			
b)		Sides of pipe pedestals	m²	31.0			
c)		Sides of base plate plinths	m²	2.2			
d)		Sides of pipe trench structure foundation slab	m²	7.0			
e)		Sides of sump and butterfly valve chamber foundation slab	m²	3.5			
f)		Sides of sump and butterfly valve chamber walls	m²	140.0			
g)		Sides of sump and butterfly valve chamber top slab	m²	2.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
2)		Horisontal to:					
a)		Underside of sump and butterfly valve chamber top slab	m²	6.5			
9.2.5		**Brickwork**					
		Supply all relevant material, labour, machinery and equipment for the erecting of walls with brickforce every third coarse:					
a)		230mm brickwork for pipe trench structure walls	m²	50.0			
9.2.6	**SABS1200 HA**	**Structural Steel**					
	8.3.1	Supply, fabrication and installation of steelwork with protective painting according to specialist specifications for the following:					
a)		Mentis rectagrid (or similar approved) RS 40 O.E.S with 25x4.5 bearer bars complete with 50x50x50 angle iron support with M12 grade 8.8 galvanised bolts with Hilti HY 200 epoxy @ 300c/c for **pipe trench structure**	m²	35.0			
b)		Mentis rectagrid (or similar approved) RS 40 O.E.S with 25x4.5 bearer bars complete with 50x50x50 angle iron support with M12 grade 8.8 galvanised bolts with Hilti HY 200 epoxy @ 300c/c for **sump and butterfly valve chamber**	m²	9.0			
c)		Supply and installation of pipe gantry	No	1.0			
d)		Overhead crane gantries	No	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
10.		**SECTION 10: CIVIL WORKS FOR PHASE 2**					
10.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
10.1.1		Demolish existing pump plinths	m³	1.6			
10.1.2		Demolish existing pedestals	m³	2.9			
10.1.3		Demolish existing thrust blocks	m³	1.2			
10.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
10.2.1	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.1			
b)		Pipe pedestals	m³	2.0			
c)		Repair of damages to existing concrete	m³	10.0			
10.2.2	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pump plinths	kg	85.0			
b)		10mm diameter for pipe pedestals	kg	150.0			
10.2.3	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	2.7			
b)		Sides of pipe pedestals	m²	12.1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
11.		**SECTION 11: CONSTRUCTION OF NEW MCC BUILDING**					
11.1		**SITE CLEARANCE**					
11.1.1		Clear site of all rubbish, vegetation, bushes and roots	m²	100.0			
11.2		**EXCAVATION**					
11.2.1		**Trenches for Foundation**					
a)		Excavation for foundation and preparation of trenches (building)	m³	64.0			
11.2.2		**Filling of Foundation**					
a)		Supply filling material, compact in 150mm layers to 93% modified AASHTO	m³	15.0			
11.2.3		**Treatment of Filling**					
a)		Soil poisoning for building with a ten year guarantee	m²	100.0			
11.3		**CONCRETE AND MASONRY**					
11.3.1		**Concrete**					
		Supply all relevant material, labour, machinery and equipment for mixing, placing & curing and testing of concrete					
a)	31942.00-201-01	Foundation: 25 MPa (building)	m³	16.0			
b)	31942.00-201-01	Floor: 25 MPa (building)	m³	9.5			
c)		Steel float finish to top of concrete floor	m²	90.0			
d)	31942.00-201-01	One layer of 250mm micron "Gunplas USB green" water proof sheeting sealed at laps with " Gunplas Pressure Sentive Tape"	m²	90.0			
e)	31942.00-201-01	Ring beam	m³	6.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.3.2	31942.00-201-01	**Brickwork**					
		Supply all relevant material, labour, machinery and equipment for the erecting of walls with brickforce every third coarse					
a)		270mm Cavity Foundation wall	m²	165.0			
b)		270mm Cavity Superstructure brickwork	m²	18.0			
c)		230mm Foundation solid brickwork	m²	54.0			
11.3.3		**Lintols**					
		Supply all relevant material, labour, machinery and equipment to built in of following lintols					
a)		1.80m	No	2.0			
b)		2.7m	No	2.0			
11.3.4		**Plastering**					
.4.1		Externally					
a)		12mm Thick cement plaster 1:4 mortar wood floaded for foundation (building)	m²	15.0			
b)		12mm Thick cement plaster 1:4 mortar wood floaded for superstructure (building)	m²	160.0			
.4.2		Internally					
.1		12mm Thick cement plaster 1:4 mortar steel floaded for superstructure	m²	217.0			
11.4		**FORMWORK**					
		Supply all material, labour, plant and equipment for the following smooth formwork					
11.4.1		Vertical to:					
a)		Side of Ring Beam	m²	40.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.5	31942.00-201-03	**REMOVABLE STEEL GRIDS**					
		Supply all material, labour and equipment for placement of the steel mesh reinforced mat in floor with overlap as per suppliers manual					
11.5.1		**High Tensile Steel**					
a)		35x35x5mm ANGEL	m	68.0			
b)		10mm diameter (CAST INTO SURFACE BED)	m	32.0			
c)		RS40(30X3.0) RECTAGRID	m²	39.0			
11.6	8.3	**STEEL REINFORCEMENT**					
	31942.00-201-01	Supply, cut, bending as well as the supply of all spacing applications for the following reinforcement as per drawings					
11.6.1	8.3.1	**High Tensile Steel Bars**					
a)		12mm diameter (foundation)	kg	1,140.0			
b)		12mm diameter (ring beam)	kg	1,140.0			
11.7		**REINFORCEMENT STEEL MESH**					
		Supply all material, labour and equipment for placement of the steel mesh reinforced mat in floor with overlap as per suppliers manual					
11.7.1	8.3.2	**High Tensile Welded Mesh**					
a)		ref. no. 193(50mm from TOC)	m²	96.8			
11.8	31942.00-201-01	**JOINTS**					
		Supply all labour, materials and equipment to construct the following joints as per drawing					
11.8.1		Saw cut joint with 10mmx10mm DOW corning 813C sealant and 15mm Dura chord as per suppliers spec	m	5.0			
11.8.2		Construction joint with 1mm galv. Hoop iron tie bent built in wall at every 4th course	m	40.0			
11.8.3		End joint with 10mmx10mm DOW corning 813C sealant, 15mm Dura chord (backing chord) and 10mm jointex as per suppliers spec	m	38.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.9		**GENERAL ACCESSORIES AND EQUIPMENT**					
11.9.1		**Doors**					
		Supply all relevant material, labour, machinery and equipment to install doorframes and doors complete					
a)		Single steel door frame with sill	No	1.0			
b)		Standard double steel door frame with sill	No	1.0			
		Suplly all relevant material, labour, machinery and equipment to fitted doors complete with locks					
c)		Single steel door with union 3 lever mortice lock	No	1.0			
d)		Double steel door with union 4 lever mortice lock	No	1.0			
11.9.2		**Paintwork**					
		Supply all relevant material, labour, machinery and equipment for external & internal paintwork with one under coat and two finishing coats of quility agrical PVA paint (Dulux)					
a)		External paint	m²	185.0			
b)		Internal paint	m²	217.0			
c)		Ceiling and cornies	m²	90.0			
d)		Apply coats approved red oxide to external & internal doors including two final coats	m²	12.0			
11.9.3		**Fire Extinguisher**					
		Supply all relevant material, labour, machinery and equipment to fit fire extinguisher					
a)		Dry power type 4.4kg	No	2.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.10	31942.00-2022-01	**CARPENTRY AND JOINERY**					
		NOTE: Tenderers are advised to study the "Model Preambles for Trades 2008" before pricing any and/or all Trades of these Bills of Quantities.					
		Unless otherwise described, the full descriptions in the preceeding or following Bills are to apply equally to any and/or short descriptions used in this Bill					
		SUPPLEMENTARY PREAMBLES:					
		TIMBER:					
		All softwood to be South African Pine Unless otherwise described, all hardwood shall be meranti					
		Fixing					
		"Items described as ""plugged"" shall be deemed to include for screwing to fibre, plasticor metal plugs at not exceeding 600mm centres or shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete. Descriptions are to be deemed to include for nails, screws, plugs, adhesives, holes, sinkings, peletting, etc"					
11.10.1		**Fascia Boards**					
a)		"225 x 15mm thick pressed fibre cement fascia board to roof rafters as per suppliers manual."	m	22.0			
11.10.2		**Barge Boards**					
		"225 x 15mm thick pressed fibre cement barge board to roof rafters as per suppliers manual."	m	22.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.10.3		**Roof Structure etc:**					
a)		"0,005mm IBR ROOFSHEETING FIXED ON 50x76mm PURLINS FIXED1050mm C/C WITH HURRICANE CLIPS ON TRUSSES MADE OF 152x38mm SA PINE TIE BEAMS AND 38x114mm SA PINE RAFTERS AND 38x114mm STRUTS.38x114 TO BE USE AS BRAZING MEMBERS AND 38x7mm AS RUNNERS.ANGLE OF INCLINATION IS 5 DEG.TRUSSES SPACED AT 1050 C/C FIXED ON 76x38mm(min) WALL PLATE."	m²	110.0			
11.10.4		**Nailed up Ceilings**					
a)		"Install 6.4mm Rhino ceiling boards including 38 x 38mm sawn softwood branderingat 400mm centres and 38 x 38mm cross brandering at 400mm centres "	m²	87.0			
b)		75mm Polystryrene Coved cornices	m	40.0			
11.11		**PLUMBING AND DRAINAGE**					
11.11.1		**Rainwater Disposal**					
a)		100mm wide x 125mm high eaves gutters with beaded front edge	m	9.0			
b)		Extra over eaves gutter for stopped end	No	2.0			
c)		Extra over eaves gutter for outlet for 100mm diameter pipe	No	2.0			
d)		100mm Diameter rainwater pipes	m	10.0			
e)		Extra over rainwater pipe for shoe	No	2.0			
Total Carried Forward To Summary							

SCHEDULE 3: HENKRIES WATER TREATMENT WORKS PUMP STATION

	SUMMARY	Page No.		Amount R	Amount c
1	MECHANICAL WORKS	C2.2-60			
2	DEMOLITION AND CONSTRUCTION WORKS	C2.2-66			
3	ELECTRICAL SERVICE CONNECTION	C2.2-67			
4	POWER DISTRIBUTION	C2.2-71			
5	ELECTRICAL BUILDING SERVICES	C2.2-80			
6	PERMANENT EQUIPMENT	C2.2-92			
7	HIGH MAST LIGHTING	C2.2-94			
8	ELECTRICAL CONTROL AND INSTRUMENTATION	C2.2-98			
9	CIVIL WORKS FOR PHASE 1	C2.2-112			
10	CIVIL WORKS FOR PHASE 2	C2.2-113			
11	CONSTRUCTION OF NEW MCC BUILDING	C2.2-115			
	SUB-TOTAL	R			
*****	**CONTINGENCIES**				
	Allow the sum of 10% (ten percent) of the above Sub-total for Contingencies to be spent as the Engineer may direct and to be deducted in whole or in part if not required.		R		
	TOTAL INCLUDING CONTINGENCIES		R		
	VALUE ADDED TAX				
	ADD: VAT at the rate of 15%		R		
	TOTAL		R		
	CONFIRM TOTAL IN WORDS				

CONTRACT PERIOD :……WEEKS

*** Amount allowed for the use of the Engineer only.**

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
1.		**SECTION 1: MECHANICAL WORKS**					
1.1		**PUMPS**					
1.1.1		Supply, installation, fixing, connection, commission and testing of the following pump sets, complete with motors, baseplates, couplings, pully & belt sets, gauards and gland services water connections where applicable					
.1.1		Horizontal design, multistage centrifugal pump of ring section design, baseplate mounted, rolling element bearings on drive and suction side, shaft seals at both ends, drive on suction side. Drive to be 3 phase, MV 3.3 kV 4 pole motor. Duty requirement of each complete pump set is 135 l/s at a total head of 338m, and NPSH of 4m, complete with commissioning plan and O&M manuals					
a)		Supply	No	3.0			
b)		Install	No	3.0			
1.2		**PIPEWORKS AND CONNECTIONS**					
1.2.1		Material supply, manufacture, sundries supply, deliver, install and commission the following **suction pipework** in epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.1.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T1000/3					
a)		DN 500mm, 2500mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	4.0			
b)		DN 500mm, 2700mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
c)		DN 500mm, 1700mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
d)		DN 350mm, 1700mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	3.0			
e)		DN 350mm, 750mm long with (2x) DN 25mm nipples, flanged all ends distance piece 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
f)		DN 350mm, 1300mm long, flanged all ends pipe section 10 Bar with (2x) DN 25mm nipples, drilled to SANS 1123 : 2015 T1000/3	No	2.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.2.2		Material supply, manufacture, sundries supply, deliver, install and commision the following **discharge pipework** in epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.2.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T4000/3					
a)		DN 600mm low carbon steel discharged manifold, with (4x) DN 350mm flanged 45º off-takes and with (2x) DN 25mm nipples , 40 Bar, drilled to SANS 1123 : 2015 T4000/3, as per drawing: 31942.00S-700-03revT0	No	1.0			
b)		DN 350mm, 1700mm long, flanged all ends pipe section with (2X) ND 25mm nipples, 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	2.0			
c)		DN 350mm, 730mm long, flanged all ends pipe section with (2X) ND 25mm nipples, 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	1.0			
1.2.3		Material supply, manufacture, sandries supply, deliver, install and commissioning the following pipework in epoxy coated low carbon steel complete with specified gaskets, bolts, nuts and washers as per drawings					
.3.1		Epoxy painted suction pipework: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding					
a)		DN 500mm, 10 Bar, epoxy painted low carbon steel manifold with DN 500mm flanged 90º tee-connection and DN 350mm flanged 45º off - take for suction branch pipe connection as per drawing: 31942.00-700-02revT0	No	1.0			
b)		DN 500mm, 10 Bar, epoxy painted low carbon steel manifold with DN 500mm flanged 90º tee-connection as per drawing: 31942.00-700-02revT0	No	1.0			
c)		DN 500mm, 10 Bar, flanged all ends, epoxy painted low carbon steel manifold with (2x) DN 300mm 90º tee-connections, drilled to SANS 1123 : 2015 T1000/3, as per drawing 31942.00S-700-02revT0	No	1.0			
.3.2		Reducers: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding & DIN 2533					
a)		DN 350 - 200mm concentric reducer flanged one end with pump mating flange and drilling as per pump specification, flanged other end and drilled to SANS 1123 : 2015 T4000/3	No	3.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
b)		DN 350 - 250mm concentric reducer flanged one end with pump mating flange and drilling as per pump specification, flanged other end and drilled to SANS 1123 : 2015 T1000/3	No	3.0			
.3.3		Epoxy painted steel bends: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for welding					
a)		DN 600mm, 90º Short Segmented Bend, 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	2.0			
b)		DN 500 - 350mm, 45º lateral bend, flanged all ends,10 bar, drilled to SANS 1123 : 2015 T1000/3	No	3.0			
.3.4		Bell Mouth: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding					
a)		DN 500mm, 540mm long pipe section, flanged one end and drilled to SANS 1123 : 2015 Table 1000/3, with other end bellmouth	No	2.0			
1.3		**VALVES**					
1.3.1		Supply, deliver, install and commission the following valves with nominal pressure rating as indicated					
.1.1		Epoxy coated valves: Flanges as per SANS 1123 : 2015, with pressure ratings as specified					
a)		DN 500mm Triple - eccentric butterfly valve PN10 flanged, complete with hand operation (Premier Valves, AVK or similar approved)	No	4.0			
b)		DN 350mm Triple - eccentric butterfly valve PN10 flanged, complete with hand operation (Premier Valves, AVK or similar approved)	No	3.0			
c)		DN 350mm, Metal seated wedge gate valve PN40, flanged, non-rising spindle complete with hand operation (Premier Valves, AVK or similar approved)	No	3.0			
d)		DN 400mm Nozzle type check valve PN40	No	3.0			
e)		DN 350mm, Viking Johnson dismantling valve PN10	No	3.0			
f)		DN 350mm, Viking Johnson dismantling valve PN40	No	3.0			
g)		DN 500mm, Viking Johnson dismantling valve PN10	No	2.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.4		**INSTRUMENTATION**					
1.4.1		Supply, deliver, install and commission of materials, equipment and components specified as follows:					
a)		DN 350mm Electromagnetic Raw Water Flowmeter PN10 (flanged)	No	3.0			
b)		DN 600mm Electromagnetic Raw Water Flowmeter, PN40 (flanged)	No	1.0			
c)		Pressure Gauge 0 - 40 Bar DN 100mm glycerine filled complete with isolating valve	No	7.0			
d)		DN 25mm Pressure transducer with male M25 thread	No	7.0			
1.5		**BACKWASH SYSTEM**					
1.5.1		Supply, installation, fixing, connecting, site based mofigations to suit, commission and testing of the following backwash system, complete with pump, motors, baseplates, couplings, guards, instrumentation					
.1.1		Horizontal volute casing pump, single stage, baseplate mounted,axial suction and radial discharge					
a)		Supply	No	2.0			
b)		Install	No	2.0			
1.6		**PIPEWORK AND CONNECTIONS FOR BACKWASH SYSTEM**					
1.6.1		Material supply, manufacture, sundries supply, deliver, install and commission the following **backwash pipework** in epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.1.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 Table 3					
a)		DN 300mm, 700mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	2.0			
b)		DN 300mm, 1600mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
c)		DN 300mm, 1300mm long flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
d)		DN 300mm, 3500mm long, flanged all ends pipe section 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
1.6.2		Extra-over items above for the supplying and installation of specials complete with bolts, nuts, packing					
.2.1		Epoxy painted steel bends: Flanges as per SANS 1123 : 2015 Table 3					
a)		DN 300mm 90º short segmeted bend 10 Bar, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
b)		DN 300mm, 1700mm long, flanged all ends pipe section 10 Bar, with DN 200mm T-connections 90º, drilled to SANS 1123 : 2015 T1000/3	No	1.0			
.2.2		Reducers: Flanges as per SANS 1123 : 2015 T1000/3					
a)		DN 200 - 100mm concentric reducer, flanged one end with pump mating flanged and drilled to manufactures specification, flanged other end and drilled to SANS 1123 : 2015 T1000/3	No	2.0			
1.7		**VALVES FOR BACKWASH SYSTEM**					
1.7.1		Supply, deliver, install and commission the following valve with nominal pressure rating as indicated					
a)		DN 300mm Tripple - eccentric butterfly valve PN10, flanged, complete with handwheel operation (Premier Valves, AVK or similar approved)	No	4.0			
b)		DN 300mm, Swing check valve, 10 Bar	No	2.0			
1.8		**INSTRUMENTATION FOR BACKWASH SYSTEM**					
1.8.1		Supply, deliver, install and commission of materials, equipment and components specified as follows:					
a)		Pressure Gauge 0 - 40 Bar DN 100mm glycerine filled complete with isolating valve	No	1.0			
1.9		**HVAC & COOLING EQUIPMENT**					
1.9.1		Supply, deliver, install and commission of materials, equipment and components specified as follows:					
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.1		Multistage evaporative cooler, cooling capacity of 35kW, complete with ducting,fittings & with commissioning plan and O&M manuals. (HUYS or similar approved)	Sum	1.0			
1.10		**STRUCTURAL STEEL & GENERAL MATERIALS**					
1.10.1		Supply, fabrication (including welding and cleaning), corrosion protection & coating, installation, fixing (including non shrink grout), and connection of the folloeing structural steel elements and associated materials for pipe supports, bearer sets and general steel structures as required					
.1.1		Supply, deliver and install steel stand forms, including pipe strap as required	Sum	1.0			
1.11		**CONDITION MONITORING SYSTEM**					
1.11.1		Supply enclosed unit per pump and motor					
.1.1		Type MSO-2E-D TWO TWAVE's Industrial Enclosure 16ch (including 2 off TWAVE T8-L Units, Initial Setup, Programming, Signal Converters, Power Supply, Glands, Modem & Aerials etc.)	No	3.0			
1.11.2		Supply training for configuration certification					
.2.1		Certified VA IV turbo machinery specialist competency training	Days	3.0			
1.11.3		Additional Optional Vibration Analysis Training (BINDT V Level 1)					
.3.1		Certified Vibration Training Level 1 (5 people based in JHB)	Days	5.0			
1.12		**WELDING OF 1KM STEEL RISING MAIN PIPELINE**					
1.12.1		Supply all labour, material and equipment for the following:					
.1.1		Welding of 1km rising main pipeline section	PC Sum	1.0	2,500,000.00	2,500,000	00
.1.2		Contractor's mark-up on above item	%	2,500,000.0			
.1.3		Provision for pipework at all pipe connections	PC Sum	1.0	250,000.00	250,000	00
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
2.		**SECTION 2: DEMOLITION AND CONSTRUCTION WORKS**					
2.1		**DEMOLITION WORK - PHASE 1**					
2.1.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Existing pump sets on east side of pump station building to be decommisioned	Sum	1.0			
.1.2		Existing pump sets, pipework and instrumentation on the east side of pump station to be dismantled, removed and stored on site	Sum	1.0			
2.2		**DEMOLITION WORK - PHASE 2**					
2.2.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Decommissing of pumps on the west side of pump station	Sum	1.0			
.1.2		Existing pump sets to be dismantled, removed and stored on site	Sum	1.0			
.1.3		Existing pipework, valves and instrumentation to be dismantled and removed	Sum	1.0			
2.3		**CONSTRUCTION WORK - PHASE 2**					
2.3.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Backwash pump sets moved and reassembled with new pipe at new position	Sum	1.0			
.1.2		Backwash blowers moved and reassembled with pipework at new positions	Sum	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
3.		**SECTION 3: ELECTRICAL SERVICE CONNECTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE ELECTRICAL SERVICE CONNECTION STARTING AT THE TRANSFORMER AND ENDING AT THE MAIN DB.					
		**********					
3.1		**LOW VOLTAGE, CABLES:**					
3.1.1		The supply and installation of 600/1000 V XLPE insulated, PVC sheathed, stranded copper cores, armoured cables (SWA) in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from transformer to DB-WTW: 2 x (95 mm² x 4 core copper cable)					
a)		Supply	m	35			
b)		Install	m	35			
3.2		**EARTH CONDUCTOR:**					
3.2.1		The supply and installation of stranded bare copper earth conductor in trenches, cables racks or tied to low voltage cable, including termination with glands or clamps and lugs, as specified.					
.1.1		Supply from transformer to WTW-DB: 95 mm² BCEC					
a)		Supply	m	17			
b)		Install	m	17			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.3		**EXCAVATIONS:**					
3.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 7 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	2			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	1		Rate Only	
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
3.3.2		Supply and installation of bedding and blanket material, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	1			
b)		Install	m³	1			
3.4		**DANGER TAPE:**					
3.4.1		Supply and installation of danger tape, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	7			
b)		Install	m	7			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.5		**PRECAST CONCRETE SLABS:**					
3.5.1		Supply and installation of precast concrete slabs, as specified on the drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
3.6		**CABLE MARKERS:**					
3.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	2			
b)		Install	Each	2			
3.7		**CABLE SLEEVES:**					
3.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 110 mm, flexible, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
3.8		**EARTH MAT:**					
3.8.1		Supply and installation of earth mat at generator, as specified on the drawings, complete.					
.1.1		4 x 5 m x 5 m grid blocks, 60 m x 95 mm² BCEC grid with 9 x 1.5 m copper plated earth rods at all the grid points, covered with E-mix (Lectrotech or equal and approved), 200 x 100 mm (W x D) for trenches and Ø 25 mm for rods, build shuttering to obtain the required dimensions, pour first half of mixture, install the BCEC, pour the second half of the mixture, allow to harden before backfilling, earth mat to be 500 mm below the natural ground level, all copper joints must be exothermic welds.					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.2		Bond transformers and DB-WTW to existing earth mat via 120 mm² BCEC from different grid sections, exothermic weld termination at the earth mat and bolted to the transformers and DB-WTW.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
3.9		**TESTING:**					
3.9.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
3.10		**TRANSFORMERS:**					
3.10.1		Supply and installation of transformers, as specified, complete.					
.1.1		315 kVA, 3300/400 V, Dyn 11, PCB free oil, ONAN cooled, breather with orange silica gel, oil top-up and oil drainage nipple, painted avocado green, floor standing, standard tap changer, power transformer.					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Transformer plinth, 30 MPA, with cable entries, dimensions as specified by the supplier of the transformer					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		Decommissioning of existing 160 kVA, 3300/400 V, power transformers, including their plinths					
a)		Decommissioning	Each	2			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
4.		**SECTION 4: POWER DISTRIBUTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE POWER DISTRIBUTION FROM THE MAIN DB TO ALL THE SUB-DB's AND POWER DISTRIBUTION BETWEEN THE SUB-DB's.					
		**********					
4.1		**LOW VOLTAGE, CABLES:**					
4.1.1		The supply and installation of 600/1000 V PVC insulated, PVC bedded, SWA, PVC sheathed, stranded copper cables in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from DB-WTW to DB-1: 35 mm² x 4 core copper cable					
a)		Supply	m	200			
b)		Install	m	200			
.1.2		Supply from DB-1 to DB-1-1: 10 mm² x 4 core copper cable					
a)		Supply	m	55			
b)		Install	m	55			
.1.3		Supply from DB-WTW to DB-2: 35 mm² x 4 core copper cable					
a)		Supply	m	100			
b)		Install	m	100			
.1.4		Supply from DB-WTW to DB-3: 16 mm² x 4 core copper cable					
a)		Supply	m	60			
b)		Install	m	60			
.1.5		Supply from DB-WTW to DB-4: 35mm² x 4 core copper cable					
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		Supply	m	30			
b)		Install	m	30			
.1.6		Supply from DB-WTW to DB-5: 10 mm² x 2 core copper cable					
a)		Supply	m	50			
b)		Install	m	50			
.1.7		Supply from DB-WTW to DB-6: 50 mm² x 4 core copper cable					
a)		Supply	m	35			
b)		Install	m	35			
.1.8		Supply from DB-WTW to DB-8: 35 mm² x 4 core copper cable					
a)		Supply	m	65			
b)		Install	m	65			
.1.9		Supply from DB-WTW to DB-9: 35 mm² x 4 core copper cable					
a)		Supply	m	70			
b)		Install	m	70			
4.2		**EARTH CONDUCTOR:**					
4.2.1		Supply and installation of stranded bare copper earth conductor, including clamps and terminations, complete.					
.1.1		Supply from DB-WTW to DB-1: 16 mm² BCEC					
a)		Supply	m	200			
b)		Install	m	200			
.1.2		Supply from DB-1 to DB-1-1: 6 mm² BCEC					
a)		Supply	m	55			
b)		Install	m	55			
.1.3		Supply from DB-WTW to DB-2: 16 mm² BCEC					
a)		Supply	m	100			
b)		Install	m	100			
.1.4		Supply from DB-WTW to DB-3: 10 mm² BCEC					
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		Supply	m	60			
b)		Install	m	60			
.1.5		Supply from DB-WTW to DB-4: 16 mm² BCEC					
a)		Supply	m	30			
b)		Install	m	30			
.1.6		Supply from DB-WTW to DB-5: 6 mm² BCEC					
a)		Supply	m	50			
b)		Install	m	50			
.1.7		Supply from DB-WTW to DB-6: 25 mm² BCEC					
a)		Supply	m	35			
b)		Install	m	35			
.1.8		Supply from DB-WTW to DB-8: 16 mm² BCEC					
a)		Supply	m	65			
b)		Install	m	65			
.1.9		Supply from DB-WTW to DB-9: 16 mm² BCEC					
a)		Supply	m	70			
b)		Install	m	70			
4.3		**EXCAVATIONS:**					
4.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material (only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 558 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	151			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	45			
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		Install	m³	1		Rate Only	
4.3.2		Supply and installation of bedding and blanket material, 250 mm thick in total, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	63			
b)		Install	m³	63			
4.4		**DANGER TAPE:**					
4.4.1		Supply and installation of yellow PVC danger tape, 300 mm wide, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	558			
b)		Install	m	558			
4.5		**PRECAST CONCRETE SLABS:**					
4.5.1		Supply and installation of precast concrete slabs, 600 x 300 x 50 mm (l x w x h), as specified on the drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
4.6		**CABLE MARKERS:**					
4.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	18			
b)		Install	Each	18			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.7		**CABLE SLEEVES:**					
4.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 50 mm, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
4.8		**TESTING:**					
4.8.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
4.9		**CABLE TRAYS:**					
4.9.1		Supply and installation of cable trays, medium duty perforated type, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		76 x 76 mm (W x H)					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
4.10		**DISTRIBUTION BOARDS:**					
4.10.1		The supply and installation of the low voltage distribution boards, with equipment, busbars and switchgear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		DB-WTW, complete.					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.2		DB-1, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.3		DB-1-1, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.4		DB-2, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.5		DB-3, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.6		DB-4, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.7		DB-5, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.8		DB-6, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.9		DB-8, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.10		DB-9, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.11		**DEDICATED EARTH BOX:**					
4.11.1		The supply and installation of a dedicated earth box against the wall, as specified on the drawings, complete.					
.1.1		Dedicated earth box for DB-1, DB-1-1, DB-2, DB-3, DB-4, DB-5, DB-6, DB-8 and DB-9, 80 x 1 mm copper bar with minimum 7 terminations, in an 100 x 100 mm enclosure with knock-outs, copper bar must be bonded via 10 mm² insulated earth conductor to the nearest DB's earth bar, recessed mounted next to DB-A, with 2 x Ø 20 mm conduits from dedicated earth box to ceiling void if ceiling is present otherwise not necessary.					
a)		Supply	Each	9			
b)		Install	Each	9			
4.12		**LABELLING:**					
4.12.1		Supply and installation of labelling for all switchgear in the new distribution boards according the circuit numbers on the drawings and standard information and warning labels, as specified on the drawings. The text must be as large as possible, depending on the available space. The labelling must be fixed permanently and neatly, as specified on the drawings.					
.1.1		Engraved, black text against white background					
a)		Identification of distribution boards	Sum	1			
b)		Supply details - supply from and cable details (i.e. SUPPLY FROM WTW-DB: 2 (120 mm² x 4 Cu CABLE) + 120 mm² BCEC	Sum	1			
c)		Standard cascade warning signages	Sum	1			
d)		Dedicated earth box signages	Sum	1			
e)		Circuit numbers	Sum	1			
f)		Warning signages when the busbar rating is more than 100 A	Sum	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.2		Engraved, red text against white background					
a)		Identification of main circuit breakers or isolator switches in case of an emergency	Sum	1			
.1.3		Engraved, black text against yellow background					
a)		Danger signages	Sum	1			
.1.4		Heat shrinkable conductor/cable tags, black text against white background					
a)		Conductor/cable identifications	Sum	1			
4.13		**TESTING AND COMMISSIONING:**					
4.13.1		Testing and commissioning of the complete electrical installation, to SABS 0142, as revised, including all necessary tests to issue the Certificate of Compliance (CoC), in terms of the Occupational Health and Safety Act, 1993 (act 85 of 1993).					
.1.1		Issue a valid Certificate of Compliance, with supporting tests certificates, drawings and special notes					
a)		DB-WTW, with sub-circuits, complete.	Sum	1			
b)		DB-1, with sub-circuits, complete.	Sum	1			
c)		DB-1-1, with sub-circuits, complete.	Sum	1			
d)		DB-2, with sub-circuits, complete.	Sum	1			
e)		DB-3, with sub-circuits, complete.	Sum	1			
f)		DB-4, with sub-circuits, complete.	Sum	1			
g)		DB-5, with sub-circuits, complete.	Sum	1			
h)		DB-6, with sub-circuits, complete.	Sum	1			
i)		DB-8, with sub-circuits, complete.	Sum	1			
j)		DB-9, with sub-circuits, complete.	Sum	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.14		**EARTHING AND BONDING:**					
4.14.1		Earthing of building according to the Wiring Code, SANS 10142-1 latest edition, complete.					
.1.1		Earthing of electrical installation. All conductive water pipes, conduits, cable trays and equipment with conductive enclosures, must be bonded with 10 mm x 1 mm thick solid or perforated copper tape or 10 mm² insulated earth conductor to the nearest earth bar of a distribution board, including terminations, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
5.		**SECTION 5: ELECTRICAL BUILDING SERVICES**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE ELECTRICAL BUILDING SERVICES. 3. RECESSED INSTALLATIONS MUST PREFERABLY BE WIRED VIA CONDUCTOR WITHIN CONDUIT AND SURFACE INSTALLATIONS MUST PREFERABLY BE WIRED VIA SURFEX CABLE.					
		**********					
5.1		**LIGHT POWER POINTS:**					
5.1.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, etc., as specified or shown on the drawings, but excluding the light switch, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	14			
b)		Circuit L2	Each	12			
c)		Circuit L3	Each	3			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	20			
b)		Circuit L2	Each	10			
c)		Circuit L3	Each	15			
.1.3		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	11		Rate Only	
.1.4		DB-4: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	6			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
b)		Circuit L2	Each	11			
.1.5		DB-5: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	4		Rate Only	
.1.6		DB-6: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	14			
b)		Circuit L2	Each	20			
.1.7		DB-8: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	14			
b)		Circuit L2	Each	16			
c)		Circuit L3	Each	17			
.1.8		DB-9: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	20			
b)		Circuit L2	Each	4			
c)		Circuit L3	Each	24			
d)		Circuit L4	Each	24			
e)		Circuit L5	Each	12			
f)		Circuit L6	Each	2			
5.2		**LUMINAIRES:**					
5.2.1		Supply and installation of luminaires, with lamps and control gear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		Type B					
a)		Supply	Each	16			
b)		Install	Each	16			
.1.2		Type F/L					
a)		Supply	Each	4			
b)		Install	Each	4			
.1.3		Type H-F					
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		Supply	Each	6			
b)		Install	Each	6			
.1.4		Type L/B					
a)		Supply	Each	40			
b)		Install	Each	40			
.1.5		Type L/C					
a)		Supply	Each	139			
b)		Install	Each	139			
.1.6		Type L/C/V					
a)		Supply	Each	68			
b)		Install	Each	68			
5.3		**SENSORS:**					
5.3.1		Supply and installation of photocell and fire siren as specified on drawings, complete.					
.1.1		Photocell					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.2		Fire Siren					
a)		Supply	Each	1			
b)		Install	Each	1			
5.4		**CONTROL SWITCHES POWER POINTS:**					
5.4.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the switches, complete.					
.1.1		DB-8: power points according to the layout and distribution board drawings, complete.					
a)		Circuit ES1	Each	1			
.1.2		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit SS1	Each	2			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.3		DB-5: power points according to the layout and distribution board drawings, complete.					
a)		Circuit SS1	Each	1			
5.5		**SWITCHES:**					
5.5.1		Supply and installation of switches, as specified on the drawings, with cover plates, screws, connections, etc., but excluding the conduit, wall boxes and wiring, complete.					
.1.1		White single lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	22			
b)		Install	Each	22			
.1.2		White single lever, two way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	11			
b)		Install	Each	11			
.1.3		White single lever, three way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	6			
b)		Install	Each	6			
.1.4		White two lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	4			
b)		Install	Each	4			
.1.5		Yellow rotary switch, one way, 50 x 50 mm, die cast aluminium grey enclosure, 16 A, water tight, IP 67, light switch, surface mounted.					
a)		Supply	Each	5			
b)		Install	Each	5			
.1.6		Yellow rotary switch, two way, 50 x 50 mm, die cast aluminium grey enclosure, 16 A, water tight, IP 67, light switch, surface mounted.					
a)		Supply	Each	2			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
b)		Install	Each	2			
.1.7		White single lever, one way, 100 x 50 mm, vertically, metal, white cover plate, 16 A, light switch, recessed mounted.					
a)		Supply	Each	8		Rate Only	
b)		Install	Each	8		Rate Only	
.1.8		White two lever, one way, 100 x 50 mm, vertically, metal, white cover plate, 16 A, light switch, recessed mounted.					
a)		Supply	Each	2		Rate Only	
b)		Install	Each	2		Rate Only	
.1.9		White two lever, one way, 119 x 83 mm surface box, metal, orange cover plate, 16 A, weather proof, IP 44, light switch, surface mounted.					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.10		White two lever, two way, 119 x 83 mm surface box, metal, orange cover plate, 16 A, weather proof, IP 44, light switch, surface mounted.					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.11		Fireman switch, red alluminium enclosure, weather proof, IP 65, 20 A, 2 pole, surfce mounted.					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.12		Ø 22 mm green and red push button with integrated illumination indication, normally open for green push button and normally close for red push button, one way, metal push buttons, metal or industrial polycarbonate enclosure, 1 Ø, 230 V, 10 A, weather proof (IP 44) stop/start switch, surface mounted. Schneider, Harmony or equal and approved.					
a)		Supply	Each	3			
b)		Install	Each	3			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.6		**SOCKET OUTLET POWER POINTS:**					
5.6.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the socket outlet, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
b)		Circuit P2	Each	3			
c)		Circuit P3	Each	5			
.1.2		DB-1-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit IS1	Each	1			
b)		Circuit IS2	Each	1			
c)		Circuit IS3	Each	1			
.1.3		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	3			
b)		Circuit P2	Each	4			
c)		Circuit P3	Each	5			
d)		Circuit P4	Each	3			
e)		Circuit IS1	Each	1			
f)		Circuit IS2	Each	1			
g)		Circuit IS3	Each	1			
.1.4		DB-3: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
b)		Circuit IS1	Each	1			
.1.5		DB-4: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
b)		Circuit P2	Each	5			
c)		Circuit IS1	Each	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
d)		Circuit IS2	Each	1			
.1.6		DB-5: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	1			
.1.7		DB-6: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	4			
b)		Circuit P2	Each	4			
c)		Circuit IS1	Each	1			
d)		Circuit IS2	Each	1			
e)		Circuit IS3	Each	1			
f)		Circuit H1	Each	1			
.1.8		DB-8: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	3			
b)		Circuit P2	Each	5			
c)		Circuit P3	Each	5			
d)		Circuit P4	Each	3			
e)		Circuit P5	Each	4			
f)		Circuit P6	Each	5			
g)		Circuit IS3	Each	1			
.1.9		DB-9: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	5			
b)		Circuit P2	Each	3			
c)		Circuit P3	Each	7			
d)		Circuit P4	Each	4			
e)		Circuit P5	Each	3			
f)		Circuit P6	Each	2			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.7		**SOCKET OUTLETS:**					
5.7.1		Supply and installation of socket outlets for normal power, with cover plates, screws, clips, connections, etc., as specified on the drawings, but excluding wall boxes, conduit and wiring, complete.					
.1.1		Double, 100 x 100 mm, switch SA socket outlet, 16 A, with metal, white cover plate, recessed mounted.					
a)		Supply	Each	11			
b)		Install	Each	11			
.1.2		Double, 119 x 83 mm, surface box, switch SA socket outlet, 16 A, with metal, orange cover plate, surface mounted.					
a)		Supply	Each	55			
b)		Install	Each	55			
.1.3		Double, 119 x 83 mm, surface box, switch SA socket outlet, 16 A, weather proof, IP 44, with metal, orange cover plate, surface mounted.					
a)		Supply	Each	25			
b)		Install	Each	25			
.1.4		Double, 100 x 100 mm, surface box, switch SA socket outlet, 16 A, with metal, white cover plate, pedestal mounted.					
a)		Supply	Each	7			
b)		Install	Each	7			
.1.5		Orange metal clad industrial switch socket outlet, 63 A, 400 V, 5-pin, weather proof, IP 55, including metal clad plug top, surface mounted.					
a)		Supply	Each	14			
b)		Install	Each	14			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.8		**ISOLATOR POWER POINTS:**					
5.8.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the isolator switch, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit IS1	Each	1			
b)		Circuit IS2	Each	1			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit AC1	Each	1			
b)		Circuit AC2	Each	1			
.1.3		DB-4: power points according to the layout and distribution board drawings, complete.					
a)		Circuit EC1	Each	1			
.1.4		DB-5: power points according to the layout and distribution board drawings, complete.					
a)		Circuit IS1	Each	1			
b)		Circuit EX1	Each	1			
.1.5		DB-6: power points according to the layout and distribution board drawings, complete.					
a)		Circuit EC1	Each	3			
.1.6		DB-8: power points according to the layout and distribution board drawings, complete.					
a)		Circuit IS1	Each	1			
b)		Circuit IS2	Each	1			
c)		Circuit G1	Each	1			
d)		Circuit AC1	Each	1			
e)		Circuit AC2	Each	1			
.1.7		DB-9: power points according to the layout and distribution board drawings, complete.					
a)		Circuit G1	Each	1			
b)		Circuit AC1	Each	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
c)		Circuit AC2	Each	1			
d)		Circuit AC3	Each	1			
e)		Circuit AC4	Each	1			
f)		Circuit AC5	Each	1			
5.9		**ISOLATOR SWITCHES:**					
5.9.1		Supply and installation of isolator switches, complete with cover plates, screws, clips, connections, etc., but excluding conduit, wall boxes and wiring, complete.					
.1.1		Single phase, 165 x 82mm, 63 A, double pole, weather proof, IP 55, isolator switch, surface mounted.					
a)		Supply	Each	21			
b)		Install	Each	21			
5.10		**PERMANENTLY FIXED APPLIANCES/EQUIPMENT:**					
5.10.1		Supply and installation of power connection cords between isolators and permanently fixed appliances/equipment, equipment must be within 1.5 m of isolator switch, recessed isolators must supply the equipment via conduit with wiring to and surface isolators must supply equipment via surfex conductors , as specified by the OEM's and the wiring code, complete.					
.1.1		Extractor fan, 1 Ø					
a)		Supply	Each	1			
b)		Install	Each	1			
.1.2		Air Conditioning, 1 Ø					
a)		Supply	Each	9			
b)		Install	Each	9			
.1.3		Geyser, 1 Ø					
a)		Supply	Each	2			
b)		Install	Each	2			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.4		Evaporative Cooler, 1 Ø					
a)		Supply	Each	4			
b)		Install	Each	4			
.1.5		Hoist, 3 Ø					
a)		Supply	Each	1			
b)		Install	Each	1			
5.11		**WIRE WAYS:**					
5.11.1		Supply and installation of wire ways, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		Galvanised steel trunking with covers, 50 x 50 mm (W x H)					
a)		Supply	m	210			
b)		Install	m	210			
.1.2		Galvanised steel trunking with covers, 75 x 75 mm (W x H)					
a)		Supply	m	42			
b)		Install	m	42			
.1.3		Galvanised steel trunking with covers, 100 x 50 mm (W x H)					
a)		Supply	m	42			
b)		Install	m	42			
.1.4		Galvanised steel trunking with covers, 125 x 100 mm (W x H)					
a)		Supply	m	84			
b)		Install	m	84			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.12		**LABELLING:**					
5.12.1		Supply and installation of labelling on all types of socket outlets, isolators and light switches, including photocells, text must be at least 5 mm in height and the labelling must be fixed permanently and neatly, the information presented must be first the circuit number/distribution board fed from (i.e. "S1/DB-A"), as specified on the drawings, complete.					
.1.1		Engraved, black text against white back ground					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.2		Printed with self adhesive back-side, black text against white back ground					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
6.		**SECTION 6: PERMANENT EQUIPMENT**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE PERMANENT EQUIPMENT TO BE INSTALLED WITHIN THE BUILDING.					
		**********					
6.1		**AIR-CONDITIONERS:**					
6.1.1		Supply and installation of inverter type air-conditioning systems: split type, outdoor condensing unit and mid-wall indoor air handle unit, complete with fans, compressors, refrigerant circuits, anti-vibration wall bracket mounting, seamless high pressure refrigeration grade copper between condenser and air handle unit, complete with fittings, refrigerant formed joints, tees, elbows and fixings, electrical connection between outdoor and indoor unit, condensate pipes and pumps (where gravitational routes are not possible), evacuate refrigerant lines and fill with R410A gas, as specified on the drawings, complete.					
.1.1		AC, 9 000 BTU/h, 2.64 kWr					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		AC, 12 000 BTU/h, 3.51 kWr					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		AC, 18 000 BTU/h, 5.28 kWr					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.4		AC, 24 000 BTU/h, 7.02 kWr					
a)		Supply	Each	1			
b)		Install	Each	1			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.5		AC, 36 000 BTU/h, 10.55 kWr					
a)		Supply	Each	1			
b)		Install	Each	1			
6.2		**EXTRACTOR:**					
6.2.1		Supply and installation of extractor fans, wall square plate fan, the square plates and impellors must be galvanised steel sheet with an epoxy polyester paint finish, shaded pole induction motor, single phase supply, sleeve bearings, maximum ambient temperature 40 ºC, suitable for continuous operation, internal thermal protection, as specified on the drawings, complete.					
.1.1		HXM350, Ø 361 mm impellor, 1800 m³/h, 65 W. AMS or equal and approved.					
a)		Supply	Each	1			
b)		Install	Each	1			
6.3		**INSTANT HOT WATER CYLINDER:**					
6.3.1		Supply and installation of instant hot water cylinders, as specified on the drawings, complete.					
.1.1		Automatically switch on at 1.5 l/min flow, temperature control setting between 40 ºC and 60 ºC, 4 bar nominal operation, overheating safety cut-off switch, 6 kW, IP 24, install below kitchen zinc.					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
6.4		**TESTING AND COMMISSIONING:**					
6.4.1		Testing and commissioning of the different systems/equipment, according to regulations, complete.					
.1.1		Air-Conditioners	Sum	1			
.1.2		Extractor fans	Sum	1			
.1.3		Instant hot water cylinders	Sum	1		Rate Only	
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
7.		**SECTION 7: HIGH MAST LIGHTING**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE HIGH MAST LIGHTING AT THE WATER TREATMENT WORKS.					
		**********					
7.1		**LOW VOLTAGE, CABLES:**					
7.1.1		The supply and installation of 600/1000 V PVC insulated, PVC sheathed, stranded copper cores, armoured cables (SWA) in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from DB-1 to HM1: 4 mm² x 4 core copper cable					
a)		Supply	m	60			
b)		Install	m	60			
.1.2		Supply from DB-4 to HM2: 4 mm² x 4 core copper cable					
a)		Supply	m	20			
b)		Install	m	20			
7.2		**EARTH CONDUCTOR:**					
7.2.1		The supply and installation of stranded bare copper earth conductor in trenches, cable racks or tied to low voltage cable including termination with glands or clamps and lugs, as specified.					
.1.1		Supply from DB-1 to HM1: 6 mm² BCEC					
a)		Supply	m	60			
b)		Install	m	60			
.1.2		Supply from DB-4 to HM2: 6 mm² BCEC					
a)		Supply	m	20			
b)		Install	m	20			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.3		**EXCAVATIONS:**					
7.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material (only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 62 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	17			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	5			
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
7.3.2		Supply and installation of bedding and blanket material, 250 mm thick in total, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	7			
b)		Install	m³	7			
7.4		**DANGER TAPE:**					
7.4.1		Supply and installation of yellow PVC danger tape, 300 mm wide, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	62			
b)		Install	m	62			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.5		**CABLE MARKERS:**					
7.5.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	5			
b)		Install	Each	5			
7.6		**EARTH MAT:**					
7.6.1		Supply and installation of earth mat at high mast, as specified on the drawings, complete.					
.1.1		4 x 5 m x 5 m grid blocks, 60 m x 95 mm² BCEC grid with 9 x 1.5 m copper plated earth rods at all the grid points, covered with E-mix (Lectrotech or equal and approved), 200 x 100 mm (W x D) for trenches and Ø 25 mm for rods, build shuttering to obtain the required dimensions, pour first half of mixture, install the BCEC, pour the second half of the mixture, allow to harden before backfilling, earth mat to be 500 mm below the natural ground level, all copper joints must be exothermic welds.					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Bond high mast to earth mat via 2 x 95 mm² BCEC from different grid sections, exothermic weld termination at the earth mat and bolted to the earth bar of the high mast.					
a)		Supply	Each	2			
b)		Install	Each	2			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.7		**HIGH MAST LIGHTING:**					
7.7.1		Supply and installation of high masts, including foundations, luminaires, pre-wiring, switchgear and sensors, as specified, complete.					
.1.1		Galvanised steel high mast, scissor hoist type, 30 m high					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Foundation for 30 m scissor hoist masts, as specified by the supplier of the high masts					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		279 W LED luminaire, 9 per mast. Beka or equal and approved.					
a)		Supply	Each	18			
b)		Install	Each	18			
.1.4		Pre-wired 600/1000 V XLPE insulated, PVC sheathed, stranded copper cores, armoured cabled (SWA), 4 mm² x 4 Cu + 6 mm² BCEC, connect three luminaires per phase, the supply of the cable at the bottom of the mast must be via an industrial female socket and male plug top rated 20 A					
a)		Supply	m	80			
b)		Install	m	80			
.1.5		Distribution board with switchgear located in the base of the mast, 16 A, 3 Ø, 6 kA main circuit breaker with class II, 40 kA surge arrestors with indication, 20 A, 3 Ø, 6 kA, NO contactor switched by photocell, located at the bottom of the mast, the photocell must be wired with a 1.5 mm² conductor protected by a 5 A, 1 Ø, 3 kA circuit breaker, including a by-pass circuit breaker, 5 A, 1 Ø, 3 kA, to switch the contactor manually.					
a)		Supply	Each	2			
b)		Install	Each	2			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
8.		**SECTION 8: ELECTRICAL CONTROL AND INSTRUMENTATION**					
8.1		**MV SWITCHGEAR**					
		Supply, Deliver to Site, Offload and Install Schneider Premset switchgear containing the following in the new MV Room					
8.1.1		Schneider PREMSET Switchgear as per attached specification and drawings with protection rated to suit 3.3 KV 3.5 MVA Supply Transformer	No	2.0			
8.1.2		Schneider PREMSET Buscoupler rated to suit Incoming Supplies	No	1.0			
8.1.3		Schneider PREMSET Switchgear as per attached specification for supply to 750 KW 3.3 KW WEG MVW01C Variable Speed Drives	No	3.0			
8.1.4		Schneider PREMSET Switchgear as per attached specification for supply to 400 KVA 3.3 KV/400V Local Supply Transformer	No	2.0			
8.1.5		Schneider PREMSET Switchgear as per attached specification for supply to Repeater/Housing 250 KVA 3.3 KV/400V Transformer	No	1.0			
8.1.6		Battery Tripping Unit rated at 110Vdc 10A for the above switchgear	No	1.0			
8.1.7		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	Sum	1.0			
8.1.8		Allow cost for levelling of the MV Room floor or provision of a frame to fit MV Switchear to specification	Sum	1.0			
8.2		**MV MOTOR CONTROL GEAR**					
		Supply, Deliver to Site, Offload and Install as follows in the new MV Room					
8.2.1		WEG MVW01C Variable Speed Drives Complete as follows: 3.3 KV 800 KW	No	3.0			
8.2.2		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	Sum	1.0			
8.2.3		Cost for extra Ventilation Duction if required (proof of requirement to be provided as described in the tender documentation)	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.3		**EARTHING AND LIGHTNING PROTECTION SYSTEM**					
		Supply and Install the following:					
8.3.1		Earthing and Lighning Protecton System for the new MV room, designed by Earthing and Lightning Protection Specialist and as per the attached specifications.	Sum	1.0			
8.3.2		VSD Room LV DB Board in the new MV Room	Sum	1.0			
8.3.3		Testing of the above Installation and provision of a test certificate.	No	1.0			
8.4		**LV DISTRIBUTION BOARDS**					
		Supply, Deliver to Site, Offload and Install the following:					
8.4.1		Main LV DB Board in existing LV Room	No	1.0			
8.4.2		VSD Room LV DB Board in the new MV Room	No	1.0			
8.5		**PLC AND FIELD JUNCTION BOXES**					
		Supply, Deliver to Site, Offload and Install the following:					
8.5.1		PLC System in Control Section of VSD Room LV DB Board	No	1.0			
8.5.2		Pump Field Junction Box FJB1	No	3.0			
8.5.3		Pratley Kliklox Junction Boxes with 7 terminals installed	No	9.0			
8.5.4		Pratley Enviro RectangularJunction Boxes with 8 terminals installed	No	1.0			
8.5.5		Remote HMI, SIMATIC HMI TP900 Comfort (6AV2124-0JC01-0AX0) 10", installed in enclosure in the existing MV Room. To be connected to PLC via Ethernet Cable	No	1.0			
8.5.6		Allow Cost for Factory Acceptance Test of the above as well as the Main LV DB Board and VSD Room LV DB Board at the suppliers premises for 3 x persons.	No	1.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.6		**INSTRUMENTATION**					
		Supply, Deliver to Site, Offload and Install the following:					
8.6.1		Endress & Hauser FMU40 Ultrasonic Level Sensor (complete with mounting brackets) for Raw Water Sump Level	No	1.0			
8.6.2		Endress & Hauser FMU90 installed in Field Junction Box in Treatment Works for measuring Clearwater Sump Level	No	1.0			
8.6.3		Endress & Hauser FDU91 sensor, complete with mounting bracket, installed at Clearwater Sump	No	1.0			
8.6.4		Vibration Transducer for Motor (Monitran 20 mm/s)	No	3.0			
8.6.5		Pump Vibration Transducers (Monitran 20 mm/s)	No	6.0			
8.6.6		Motor Bearing Temperature Sensors (PT100 0-150 Deg C)	No	3.0			
8.6.7		Pump Bearing Temperature Sensors (PT100 0-150 Deg C)	No	6.0			
8.6.8		IFM SA5000 Solid-state Flow Switch, complete with E40107 adapter and EVC005 cable, installed on inlet side of pump	No	3.0			
8.6.9		Delivery Pressure Transducer, IFM PN709x series with EVC005 cable, installed on delivery side of pump	No	3.0			
8.6.10		Flowmeter to measure pump delivery, installed on delivery side of each pump: Endress & Hauser Ultrasonic Clamp-on type, appropriate to pump delivery pipe size.	No	3.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.7		**DOMESTIC INSTALLATION**					
		Supply and Install the following (in the new MV Room and in the existing MV Room where required)					
8.7.1		Surface Mount Single Lever Light Switches	No	4.0			
8.7.2		Surface Mount 15A Plug Outlets (Double)	No	10.0			
8.7.3		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings	No	10.0			
8.7.4		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings with 1 Hr EMU kit	No	4.0			
8.7.5		20 mm Galvanized Conduit,surface mount, complete with drawboxes and fittings	m	70.0			
8.7.6		Supply and Install 35000 BTU Air-conditioners for new MV Room	No	3.0			
8.7.7		All wiring, etc required to complete the installation	Sum	1.0			
8.7.8		Allow Cost to rehabilitate Pump Station Domestic Installation, Area Lights and Welding Plugs	Sum	1.0			
8.8		**CABLE AND CABLE INSTALLATION**					
		Supply, Install and Test the following where applicable:					
8.8.1		Disconnect existing Incomer 1 cables (22 KV/3.3 KV 3.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (dual 185 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.2		Disconnect existing Incomer 1 cable (22 KV/3.3 KV 3.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (BCEW 185 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.3		Disconnect existing Incomer 2 cables (22 KV/3.3 KV 3.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (dual 185 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.4		Disconnect existing Incomer 2 cable (22 KV/3.3 KV 3.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (BCEW 185 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
8.8.5		185 mm sq x 3 SWA XLPE 1.9/3.3 KV Cable to lengthen the above if required	m	320.0			
8.8.6		BCEW 185 mm sq x Cable to lengthen the above if required	m	160.0			
8.8.7		Disconnect existing cables from Local Services Transformers (3.3 KV/400V 400 KVA) from existing MV Switcgear and Transformer and remove	Sum	1.0			
8.8.8		16 mm sq x 3 SWA XLPE 1.9/3.3 KV cable from Local Services Transformers to Local Transformer Feeders on Premset MV Switchgear in new MV Switchgear Room.	m	60.0			
8.8.9		BCEW 10 mm sq cable from Local Services Transformers to Local Transformer Feeders on Premset MV Switchgear in new MV Switchgear Room.	m	60.0			
8.8.10		Disconnect existing cable from Repeater/Housing Transformer feeder on existing MV Panel, relocate to new Premset Switchgear in new MV Room. (10 mm sq x 3 SWA XLPE 1.9/3.3 KV Cable). Lengthen if required (cable, joint and termination measured elsewhere).	Sum	1.0			
8.8.11		10 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable for the above	m	40.0			
8.8.12		6 mm sq BCEW with the above	m	40.0			
8.8.13		70 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from Premset Feeder Breakers to WEG MVW01C Variable Speed Drives	m	45.0			
8.8.14		50 mm sq BCEW from Premset feeder breakers to WEG MVW01C Variable Speed Drives	m	45.0			
8.8.15		70 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	270.0			
8.8.16		50 mm sq BCEW Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	270.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.17		Disconnect Cables from Existing Main LV DB Board, remove board to Client's Store and replace with the new Main LV DB Board. Reconnection of Cables measured elsewhere	Sum	1.0			
8.8.18		Dual 95 mm sq x 4 SWA PVC Cable from Local Services Transformers to Main LV DB: Relocate as required and reconnect to new Main LV DB Board (Join and Lengthen if required)	Sum	1.0			
8.8.19		95 mm sq BCEW from Local Services Transformers to Main LV DB: Relocate as required and reconnect to new Main LV DB Board (Join and Lengthen if required)	Sum	1.0			
8.8.20		95 mm sq x 4 SWA PVC Cable	m	1.0		Rate Only	
8.8.21		95 mm sq BCEW	m	1.0		Rate Only	
8.8.22		25 mm sq x 4 SWA PVC Cable from Main LV DB to VSD Room DB	m	120.0			
8.8.23		16 mm sq BCEW from Main LV DB to VSD Room DB	m	120.0			
8.8.24		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 1 (Auxilliary Supply)	m	12.0			
8.8.25		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 2 (Auxilliary Supply)	m	12.0			
8.8.26		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 3 (Auxilliary Supply)	m	12.0			
8.8.27		2.5 mm sq x 4 SWA PVC CAble from VSD Room DB to existing Flowmeter	m	45.0			
8.8.28		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Battery Tripping Unit	m	10.0			
8.8.29		2.5 mm sq x 4 SWA PVC Cable from Premset MV Board to Battery Tripping Unit	m	5.0			
8.8.30		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 1 Field Junction Box FJB1 (AC Supply)	m	90.0			
8.8.31		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	90.0			
8.8.32		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	90.0			
8.8.33		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 1 Field Junction Box FJB1 (DC Supply)	m	90.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.34		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 2 Field Junction Box FJB1 (DC Supply)	m	90.0			
8.8.35		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 3 Field Junction Box FJB1 (DC Supply)	m	90.0			
8.8.36		2.5 mm sq x 4 SWA PVC Cable from Control Section to Remote HMI	m	120.0			
8.8.37		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Existing Flowmeter	m	120.0			
8.8.38		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Emergency Stop Interlock)	m	12.0			
8.8.39		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Emergency Stop Interlock)	m	12.0			
8.8.40		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Emergency Stop Interlock)	m	12.0			
8.8.41		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Enabling Circuit)	m	12.0			
8.8.42		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Enabling Circuit)	m	12.0			
8.8.43		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Enabling Circuit)	m	12.0			
8.8.44		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 1 Premset Feeder	m	12.0			
8.8.45		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 2 Premset Feeder	m	12.0			
8.8.46		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 3 Premset Feeder	m	12.0			
8.8.47		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 1 to Pump 1 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
8.8.48		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 2 to Pump 2 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
8.8.49		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 3 to Pump 3 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.50		1.5 mm sq x 2 pr IOS Dekabon Armoured Cable from Control section to Raw Water Sump Endress & Hauser FMU40 Level Instrument	m	220.0			
8.8.51		1.5 mm sq x 2 pr IOS Dekabon Armoured Cable from Control Section to Clear Water Sump Endress & Hauser FMU90 Level Instrument	m	30.0			
		Pump Set 1 Instrumentation and Control					
8.8.52		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.53		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.54		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.55		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.56		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.57		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.58		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.59		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.60		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.61		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
8.8.62		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
8.8.63		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.64		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.65		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.66		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 2 Instrumentation and Control					
8.8.67		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.68		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.69		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.70		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.71		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.72		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.73		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.74		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.75		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.76		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
8.8.77		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.78		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
8.8.79		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.80		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.81		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 3 Instrumentation and Control					
8.8.82		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
8.8.83		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
8.8.84		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
8.8.85		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
8.8.86		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
8.8.87		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
8.8.88		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
8.8.89		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
8.8.90		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
8.8.91		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.8.92		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
8.8.93		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
8.8.94		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
8.8.95		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
8.8.96		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
8.8.97		1 mm sq x 2 Pr Dekabon Armoured Cable from Control Section of VSD Room DB to Delivery Pipeline Pressure Transducer	m	40.0			
		General					
8.8.98		Remove all redundant equipment, panels and cables and deliver to site storage area.	Sum	1.0			
9.9		**CABLE TERMINATIONS AND JOINTS**					
		Supply and Install for the following cables (Terminations unless otherwise indicated):					
8.9.1		3.3 KV 185 mm sq x 3 SWA XLPE	No	4.0			
8.9.2		3.3 KV 185 mm sq x 3 SWA XLPE JOINTS	No	2.0		Rate Only	
8.9.3		3.3 KV 70 mm sq x 3 SWA XLPE	No	12.0			
8.9.4		3.3 KV 16 mm sq x 3 SWA XLPE	No	4.0			
8.9.5		3.3 KV 10 mm sq x 3 SWA XLPE	No	4.0			
8.9.6		3.3 KV 10 mm sq x 3 SWA XLPE Joints	No	1.0		Rate Only	
8.9.7		95 mm sq x 4 SWA PVC	No	8.0			
8.9.8		95 mm sq x 4 SWA PVC Joints	No	1.0		Rate Only	
8.9.9		50 mm sq x 4 SWA PVC	No	8.0			
8.9.10		25 mm sq x 4 SWA PVC	No	4.0			
8.9.11		16 mm sq x 4 SWA PVC	No	2.0			
8.9.12		10 mm sq x 4 SWA PVC	No	20.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.9.13		6 mm sq x 4 SWA PVC	No	2.0			
8.9.14		2.5 mm sq x 4 SWA PVC	No	26.0			
8.9.15		1.5 mm sq x 4 SWA PVC	No	8.0			
8.9.16		1 mm sq x 1 PR Dekabon Armoured	No	18.0			
8.9.17		1 mm sq x 2 PR IOS Dekabon Armoured	No	26.0			
8.9.18		1 mm sq x 4 PR IOS Dekabon Armoured	No	10.0			
8.9.19		1.5 mm sq x 2 PR IOS Dekabon Armoured	No	4.0			
8.9.20		1.5 mm sq x 4 PR IOS Dekabon Armoured	No	30.0			
8.9.21		1.5 mm sq x 8 PR IOS Dekabon Armoured	No	6.0			
8.9.22		Compression Glands No 1	No	12.0			
8.9.23		Bare Copper Earth Wire 4 mm sq	No	2.0			
8.9.24		Bare Copper Earth Wire 6 mm sq	No	22.0			
8.9.25		Bare Copper Earth Wire 10 mm sq	No	4.0			
8.9.26		Bare Copper Earth Wire 16 mm sq	No	4.0			
8.9.27		Bare Copper Earth Wire 25 mm sq	No	8.0			
8.9.28		Bare Copper Earth Wire 70 mm sq	No	6.0			
8.9.29		Bare Copper Earth Wire 185 mm sq	No	4.0			
8.10		**CABLE RACK AND LADDER**					
		This Section covers the total supply and installation of cable rack and ladder for this Pump Station. Prices should include all fixing material, splices and fixing brackets required.					
		O-LINE OL-Series CAble Ladder					
8.10.1		OL76 1000 MM	m	36.0			
8.10.2		OL76 1000 MM Internal Bends	No	6.0			
8.10.3		OL761000 MM External Bends	No	6.0			
8.10.4		OL76 1000 MM Flat Bends	No	6.0			
8.10.5		OL76 1000 MM T-Pieces	No	2.0			
8.10.6		Reducer 1000 mm to 600 mm	No	3.0			
8.10.7		OL76 600 MM	m	75.0			
8.10.8		OL76 600 MM Internal Bends	No	12.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.10.9		OL76 600 MM External Bends	No	8.0			
8.10.10		OL76 600 MM Flat Bends	No	8.0			
8.10.11		OL76 600 MM T-Pieces	No	4.0			
8.10.12		Reducer 600 mm to 400 mm	No	3.0			
8.10.13		OL76 400 MM	m	45.0			
8.10.14		OL76 400 MM Internal Bends	No	8.0			
8.10.15		OL76 400 MM External Bends	No	4.0			
8.10.16		OL76 400 MM Flat Bends	No	6.0			
8.10.17		OL76 400 MM T-Pieces	No	4.0			
8.10.18		Reducer 400 mm to 200 mm	No	6.0			
8.10.19		OL55 200 MM	m	21.0			
8.10.20		OL55 200 MM Internal Bends	No	4.0			
8.10.21		OL55 200 MM External Bends	No	4.0			
8.10.22		OL55 200 MM Flat Bends	No	2.0			
8.10.23		OL55 200 MM T-Pieces	No	5.0			
		O-LINE GRIDSPAN Wire Mesh Cable Trays					
8.10.24		GS50 100 mm Gridspan	m	150.0			
8.10.25		GS50 100 mm Internal Bends	No	6.0			
8.10.26		GS50 100 mm External Bends	No	6.0			
8.10.27		GS50 100 mm Flat Bends	No	4.0			
8.10.28		GS50 50 mm Gridspan	m	120.0			
8.10.29		GS50 50 mm Internal Bends	No	12.0			
8.10.30		GS50 50 mm External Bends	No	12.0			
8.10.31		GS50 50 mm Flat Bends	No	8.0			
8.10.32		GS50 Internal Bends	No	12.0			
8.10.33		OL2000 Trunking	m	150.0			
		Miscellaneous Items					
		Supply and Install as and where required					
8.10.34		25 mm Galvanized Conduit Complete with all attachments and saddles	m	60.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.10.35		Cantilever Bracket OL254 800 mm	No	8.0			
8.10.36		Cantilever Bracket OL254 650 mm	No	12.0			
8.10.37		Cantilever Bracket OL254 450 mm	No	12.0			
8.10.38		25 x 25 Angle Iron, cut to suit and cold-galvanized	m	12.0			
8.10.39		Allow for connecting of cable racks with the earthing system	Sum	1.0			
8.11		**OTHER ITEMS**					
8.11.1		Allow for servicing of local services transformers, including oil tests and oil filtration	Sum	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
9.		**SECTION 9: CIVIL WORKS FOR PHASE 1**					
9.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
9.1.1		Demolish existing pump plinths	m³	1.6			
9.1.2		Demolish existing pedestals	m³	0.3			
9.1.3		Break out hole in wall for new pipework under supervision of mechanical contractor	m²	2.0			
9.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
9.2.1	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.6			
b)		Pipe pedestals	m³	2.0			
c)		Concrete filling	m³	7.0			
9.2.2	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pump plinths	kg	120.0			
b)		10mm diameter for pipe pedestals	kg	150.0			
9.2.3	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	3.1			
b)		Sides of pipe pedestals	m²	13.7			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
10.		**SECTION 10: CIVIL WORKS FOR PHASE 2**					
10.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
10.1.1		Demolish existing pump plinths	m³	2.5			
10.1.2		Demolish existing pedestals	m³	0.3			
10.1.3		Demolish existing backwash pump plinths	m³	2.1			
10.1.4		Break out hole in wall for new pipework under supervision of mechanical contractor	m²	2.0			
10.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
10.2.1	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.6			
b)		Pipe pedestals	m³	3.6			
c)		Backwash pump plinths	m³	1.9			
d)		Repair of damages to existing concrete	m³	10.0			
e)		Grouting and building in of manifolds	m³	10.0			
f)		Concrete thrust blocks, chambers, etc.	PC Sum	1.0	150,000.00	150,000	00
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
10.2.2	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pump plinths	kg	120.0			
b)		10mm diameter for pipe pedestals	kg	270.0			
c)		10mm diameter for backwash pump plinths	kg	145.0			
10.2.3	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	3.1			
b)		Sides of pipe pedestals	m²	24.1			
c)		Sides of backwash pump plinths	m²	6.4			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
11.		**SECTION 11: CONSTRUCTION OF NEW MCC BUILDING**					
11.1		**SITE CLEARANCE**					
11.1.1		Clear site of all rubbish, vegetation, bushes and roots	m²	100.0			
11.2		**EXCAVATION**					
11.2.1		**Trenches for Foundation**					
a)		Excavation for foundation and preparation of trenches (building)	m³	64.0			
11.2.2		**Filling of Foundation**					
a)		Supply filling material, compact in 150mm layers to 93% modified AASHTO	m³	15.0			
11.2.3		**Treatment of Filling**					
a)		Soil poisoning for building with a ten year guarantee	m²	100.0			
11.3		**CONCRETE AND MASONRY**					
11.3.1		**Concrete**					
		Supply all relevant material, labour, machinery and equipment for mixing, placing & curing and testing of concrete					
a)	31942.00-201-01	Foundation: 25 MPa (building)	m³	16.0			
b)	31942.00-201-01	Floor: 25 MPa (building)	m³	9.5			
c)		Steel float finish to top of concrete floor	m²	90.0			
d)	31942.00-201-01	One layer of 250mm micron "Gunplas USB green" water proof sheeting sealed at laps with " Gunplas Pressure Sentive Tape"	m²	90.0			
e)	31942.00-201-01	Ring beam	m³	6.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.3.2	31942.00-201-01	**Brickwork**					
		Supply all relevant material, labour, machinery and equipment for the erecting of walls with brickforce every third coarse					
a)		270mm Cavity Foundation wall	m²	165.0			
b)		270mm Cavity Superstructure brickwork	m²	18.0			
c)		230mm Foundation solid brickwork	m²	54.0			
11.3.3		**Lintols**					
		Supply all relevant material, labour, machinery and equipment to built in of following lintols					
a)		1.80m	No	2.0			
b)		2.7m	No	2.0			
11.3.4		**Plastering**					
.4.1		Externally					
a)		12mm Thick cement plaster 1:4 mortar wood floaded for foundation (building)	m²	15.0			
b)		12mm Thick cement plaster 1:4 mortar wood floaded for superstructure (building)	m²	160.0			
.4.2		Internally					
.1		12mm Thick cement plaster 1:4 mortar steel floaded for superstructure	m²	217.0			
11.4		**FORMWORK**					
		Supply all material, labour, plant and equipment for the following smooth formwork					
11.4.1		Vertical to:					
a)		Side of Ring Beam	m²	40.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.5	31942.00-201-03	**REMOVABLE STEEL GRIDS**					
		Supply all material, labour and equipment for placement of the steel mesh reinforced mat in floor with overlap as per suppliers manual					
11.5.1		**High Tensile Steel**					
a)		35x35x5mm ANGEL	m	68.0			
b)		10mm diameter (CAST INTO SURFACE BED)	m	32.0			
c)		RS40(30X3.0) RECTAGRID	m²	39.0			
11.6	8.3	**STEEL REINFORCEMENT**					
	31942.00-201-01	Supply, cut, bending as well as the supply of all spacing applications for the following reinforcement as per drawings					
11.6.1	8.3.1	**High Tensile Steel Bars**					
a)		12mm diameter (foundation)	kg	1,140.0			
b)		12mm diameter (ring beam)	kg	1,140.0			
11.7		**REINFORCEMENT STEEL MESH**					
		Supply all material, labour and equipment for placement of the steel mesh reinforced mat in floor with overlap as per suppliers manual					
11.7.1	8.3.2	**High Tensile Welded Mesh**					
a)		ref. no. 193(50mm from TOC)	m²	96.8			
11.8	31942.00-201-01	**JOINTS**					
		Supply all labour, materials and equipment to construct the following joints as per drawing					
11.8.1		Saw cut joint with 10mmx10mm DOW corning 813C sealant and 15mm Dura chord as per suppliers spec	m	5.0			
11.8.2		Construction joint with 1mm galv. Hoop iron tie bent built in wall at every 4th course	m	40.0			
11.8.3		End joint with 10mmx10mm DOW corning 813C sealant, 15mm Dura chord (backing chord) and 10mm jointex as per suppliers spec	m	38.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.9		**GENERAL ACCESSORIES AND EQUIPMENT**					
11.9.1		**Doors**					
		Supply all relevant material, labour, machinery and equipment to install doorframes and doors complete					
a)		Single steel door frame with sill	No	1.0			
b)		Standard double steel door frame with sill	No	1.0			
		Suplly all relevant material, labour, machinery and equipment to fitted doors complete with locks					
c)		Single steel door with union 3 lever mortice lock	No	1.0			
d)		Double steel door with union 4 lever mortice lock	No	1.0			
11.9.2		**Paintwork**					
		Supply all relevant material, labour, machinery and equipment for external & internal paintwork with one under coat and two finishing coats of quility agrical PVA paint (Dulux)					
a)		External paint	m²	185.0			
b)		Internal paint	m²	217.0			
c)		Ceiling and cornies	m²	90.0			
d)		Apply coats approved red oxide to external & internal doors including two final coats	m²	12.0			
11.9.3		**Fire Extinguisher**					
		Supply all relevant material, labour, machinery and equipment to fit fire extinguisher					
a)		Dry power type 4.4kg	No	2.0			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.10	31942.00-2022-01	**CARPENTRY AND JOINERY**					
		NOTE: Tenderers are advised to study the "Model Preambles for Trades 2008" before pricing any and/or all Trades of these Bills of Quantities.					
		Unless otherwise described, the full descriptions in the preceeding or following Bills are to apply equally to any and/or short descriptions used in this Bill					
		SUPPLEMENTARY PREAMBLES:					
		TIMBER:					
		All softwood to be South African Pine Unless otherwise described, all hardwood shall be meranti					
		Fixing					
		"Items described as ""plugged"" shall be deemed to include for screwing to fibre, plasticor metal plugs at not exceeding 600mm centres or shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete. Descriptions are to be deemed to include for nails, screws, plugs, adhesives, holes, sinkings, peletting, etc"					
11.10.1		**Fascia Boards**					
a)		"225 x 15mm thick pressed fibre cement fascia board to roof rafters as per suppliers manual."	m	22.0			
11.10.2		**Barge Boards**					
		"225 x 15mm thick pressed fibre cement barge board to roof rafters as per suppliers manual."	m	22.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
11.10.3		**Roof Structure etc:**					
a)		"0,005mm IBR ROOFSHEETING FIXED ON 50x76mm PURLINS FIXED1050mm C/C WITH HURRICANE CLIPS ON TRUSSES MADE OF 152x38mm SA PINE TIE BEAMS AND 38x114mm SA PINE RAFTERS AND 38x114mm STRUTS.38x114 TO BE USE AS BRAZING MEMBERS AND 38x7mm AS RUNNERS.ANGLE OF INCLINATION IS 5 DEG.TRUSSES SPACED AT 1050 C/C FIXED ON 76x38mm(min) WALL PLATE."	m²	110.0			
11.10.4		**Nailed up Ceilings**					
a)		"Install 6.4mm Rhino ceiling boards including 38 x 38mm sawn softwood branderingat 400mm centres and 38 x 38mm cross brandering at 400mm centres "	m²	87.0			
b)		75mm Polystryrene Coved cornices	m	40.0			
11.11		**PLUMBING AND DRAINAGE**					
11.11.1		**Rainwater Disposal**					
a)		100mm wide x 125mm high eaves gutters with beaded front edge	m	9.0			
b)		Extra over eaves gutter for stopped end	No	2.0			
c)		Extra over eaves gutter for outlet for 100mm diameter pipe	No	2.0			
d)		100mm Diameter rainwater pipes	m	10.0			
e)		Extra over rainwater pipe for shoe	No	2.0			
Total Carried Forward To Summary							

SCHEDULE 4: DORINGWATER BOOSTER PUMP STATION

	SUMMARY	Page No.		Amount R	Amount c
1	MECHANICAL WORKS	C2.2-122			
2	DEMOLITION AND CONSTRUCTION WORKS	C2.2-126			
3	ELECTRICAL SERVICE CONNECTION	C2.2-127			
4	POWER DISTRIBUTION	C2.2-132			
5	ELECTRICAL BUILDING SERVICES	C2.2-138			
6	PERMANENT EQUIPMENT	C2.2-145			
7	ELECTRICAL CONTROL AND INSTRUMENTATION	C2.2-146			
8	CIVIL WORKS FOR PHASE 1	C2.2-159			
9	CIVIL WORKS FOR PHASE 2	C2.2-161			
	SUB-TOTAL	R			
*****	**CONTINGENCIES**				
	Allow the sum of 10% (ten percent) of the above Sub-total for Contingencies to be spent as the Engineer may direct and to be deducted in whole or in part if not required.		R		
	TOTAL INCLUDING CONTINGENCIES		R		
	VALUE ADDED TAX				
	ADD: VAT at the rate of 15%		R		
	TOTAL		R		

CONFIRM TOTAL IN WORDS	

CONTRACT PERIOD :……WEEKS

*** Amount allowed for the use of the Engineer only.**

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
1.		**SECTION 1: MECHANICAL WORKS**					
1.1		**PUMPS**					
1.1.1		Supply, installation, fixing, connection, commission and testing of the following pump sets, complete with motors, baseplates, couplings, pully & belt sets, gauards and gland servives water connections where applicable					
.1.1		Horizontal design, multistage centrifugal pump of ring section design, baseplate mounted, rolling element bearings on drive and suction side, shaft seals at both ends, drive on suction side. Drive to be 3 phase, MV 3.3 kV 4 pole motor. Duty requirement of each complete pump set is 135 l/s at a total head of 380m, complete with commissioning plan and O&M manuals					
a)		Supply	No	3.0			
b)		Install	No	3.0			
1.2		**PIPEWORK AND CONNECTIONS**					
1.2.1		Material supply, manufacture, sundries supply, deliver, install and commission the following suction pipework epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.1.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T1600/3					
a)		DN 600mm, 3000mm long, flanged all ends pipe section 16 Bar, drilled to SANS 1123 : 2015 T1600/3	No	2.0			
b)		DN 600mm, 3500mm long, flanged all ends pipe section 16 Bar, drilled to SANS 1123 : 2015 T1600/3	No	1.0			
c)		DN 400mm, 700mm long, flanged all ends pipe section 16 Bar with (2x) DN 25mm nipples, drilled to SANS 1123 : 2015 T1600/3	No	3.0			
d)		DN 400mm, 2000mm long, flanged all ends pipe section 16 Bar, drilled to SANS 1123 : 2015 T1600/3	No	3.0			
1.2.2		Material supply, manufacture, sundries supply, deliver, install and commision the following **discharge pipework** epoxy coated low carbon steel, complete with specified gaskets and bolts, nuts and washers as per drawings					
.2.1		Steel pipes painted green to BS 14-C-53, and flanges as per SANS 1123 : 2015 T4000/3					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		DN 400mm, 1200mm long, flanged all ends pipe section 40 Bar with (2x) DN 25mm nipples, drilled to SANS 1123 : 2015 T4000/3	No	3.0			
b)		DN 400mm, 500mm long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	3.0			
c)		DN 600mm, 1600mm long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	1.0			
d)		DN 600mm, 2600mm long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	1.0			
e)		DN 600mm, 3000mm long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	2.0			
f)		DN 600mm, 3500mm long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	1.0			
g)		DN 600mm, 10000mm Long, flanged all ends pipe section 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	1.0			
1.2.3		Material supply, manufacture, sandries supply, deliver, install and commissioning the following pipework in epoxy coated low carbon steel complete with specified gaskets, bolts, nuts and washers as per drawings					
.3.1		Epoxy painted steel bends: Flanges as per SANS 1123 : 2015, Table 3: Steel Flanges for Welding					
a)		DN 600 - 400mm 45º lateral bend 16 Bar, drilled to SANS 1123 : 2015 T1600/3	No	4.0			
b)		DN 600 - 400mm 45º lateral bend 40 Bar, drilled to SANS 1123 : 2015 T4000/3	No	4.0			
c)		DN 600mm 90º medium segmented bend 16 bar, drilled to SANS 1123 : 2015 T1600/3	No	1.0			
.3.2		Un-Equal Tee: Flanges as per SANS 1123 : 2015, Table 3: Steel flanges for welding					
a)		DN 600 - 300mm equal tee 16 Bar, all ends flanged, drilled to SANS 1123 : 2015 T1600/3	No	1.0			
.3.3		Reducers: Flanges as per SANS 1123 : 2015, Table 3: Steel flanges for welding					
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
a)		DN 400 - 250mm concentric reducer, flanged one end with pump mating flange and drilled to manufactures specification, flanged other end and drilled to SANS 1123 : 2015 T1600/3	No	3.0			
b)		DN 400 - 200mm concentric reducer, flanged one end with pump mating flange and drilled to manufactures specification 64 Bar, flanged other end and drilled to SANS 1123 : 2015 T4000/3	No	3.0			
c)		DN 300 - 150mm concentric reducer flanged all ends 16 Bar, drilled to SANS 1123 : 2015 T1600/3	No	1.0			
1.3		**VALVES**					
1.3.1		Supply, deliver, install and commission the following valves with nominal pressure rating as indicated					
.1.1		Epoxy coated valves: Flanges as per SANS 1123 : 2015, with pressure ratings as specified					
a)		DN 150mm, RSV gate valve PN 16, flanged, non-rising spindle complete with hand operation (Premier Valves, AVK or similar approved)	No	1.0			
b)		DN 400mm triple - eccentric butterfly valve PN16, flanged, complete with handwheel operation (Premier Valves, AVK or similar approved)	No	3.0			
c)		DN 400mm Nozzle type check valve PN40	No	3.0			
d)		DN 400mm, Metal seated wedge gate isolation valve PN40, flanged, non-rising spindle complete with handwheel operation (Premier Valves, AVK or similar approved)	No	3.0			
e)		DN 150mm 16 Bar, Air Valve	No	1.0			
f)		DN 400mm, Viking Johnson Dismantling Valve PN16	No	3.0			
g)		DN 400mm, Viking Johnson Dismantling Valve PN40	No	3.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
1.4		**INSTRUMENTATION**					
1.4.1		Supply, deliver, install and commission of materials, equipment and components specified as follows:					
a)		DN 400mm Electromagnetic Raw Water Flowmeter (flanged), PN 16	No	3.0			
b)		DN 600mm Electromagnetic Raw Water Flowmeter (flanged), PN 40	No	1.0			
c)		Pressure Gauge 0 - 40 Bar DN 100mm glycerine filled complete with isolating valve	No	6.0			
d)		DN 25mm Pressure transducer with male M25 thread	No	6.0			
1.5		**HVAC & COOLING SYSTEM**					
1.5.1		**Supply, deliver, install and commission of materials, equipment and components specified as follows:**					
.1.1		Multistage evaporative cooler, cooling capacity of 47kW, complete with ducting,fittings & with commissioning plan and O&M manuals. (HUYS or similar approved)	Sum	1.0			
1.6		**STRUCTURAL STEEL & GENERAL MATERIALS:**					
1.6.1		Supply, fabrication (including welding and cleaning), corrosion protection & coating, installation, fixing (including non shrink grout), and connection of the following structural steel elements and associated materials for pipe supports, bearer sets and general steel structures as required					
.1.1		Supply, deliver and install steel stand forms, including pipe strap, as per drawing 31942.00S-158-04revT1	No	15.0			
1.7		**CONDITION MONITORING SYSTEM**					
1.7.1		Supply enclosed unit per pump and motor					
.1.1		Type MSO-2E-D TWO TWAVE's Industrial Enclosure 16ch (including 2 off TWAVE T8-L Units, Initial Setup, Programming, Signal Converters, Power Supply, Glands, Modem & Aerials etc.)	No	3.0			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
2.		**SECTION 2: DEMOLITION AND CONSTRUCTION WORKS**					
2.1		**DEMOLITION WORK - PHASE 1**					
2.1.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Pump set 3 decommisioned	Sum	1.0			
.1.2		Pump set, pipework and instrumentation dismantled and removed	Sum	1.0			
2.2		**DEMOLITION WORK - PHASE 2**					
2.2.1		Supply all equipment and labour for works as set out per phase of construction					
.1.1		Pump set 1 & 2 to be decommisioned	Sum	1.0			
.1.2		Pump set, pipework and instrumentation dismantled and removed	Sum	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
3.		**SECTION 3: ELECTRICAL SERVICE CONNECTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE ELECTRICAL SERVICE CONNECTION STARTING AT THE TRANSFORMER AND ENDING AT THE MAIN DB.					
		**********					
3.1		**LOW VOLTAGE, CABLES:**					
3.1.1		The supply and installation of 600/1000 V XLPE insulated, PVC sheathed, stranded copper cores, armoured cables (SWA) in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from transformer to DB-1: 95 x 4 Cu cable					
a)		Supply	m	30			
b)		Install	m	30			
3.2		**EARTH CONDUCTOR:**					
3.2.1		The supply and installation of stranded bare copper earth conductor in trenches, cables racks or tied to low voltage cable, including termination with glands or clamps and lugs, as specified.					
.1.1		Supply from transformer to DB-1: 70 mm² BCEC					
a)		Supply	m	30			
b)		Install	m	30			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.3		**EXCAVATIONS:**					
3.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material only applicable if excavated material is not suitable, complete.					
.1.1		In soft soil - approximate 10 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	3			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	1		Rate Only	
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
3.3.2		Supply and installation of bedding and blanket material, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	1			
b)		Install	m³	1			
3.4		**DANGER TAPE:**					
3.4.1		Supply and installation of danger tape, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	10			
b)		Install	m	10			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.5		**PRECAST CONCRETE SLABS:**					
3.5.1		Supply and installation of precast concrete slabs, as specified on the drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
3.6		**CABLE MARKERS:**					
3.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	2			
b)		Install	Each	2			
3.7		**CABLE SLEEVES:**					
3.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 110 mm, flexible, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.8		**EARTH MAT:**					
3.8.1		Supply and installation of earth mat at generator, as specified on the drawings, complete.					
.1.1		4 x 5 m x 5 m grid blocks, 60 m x 95 mm² BCEC grid with 9 x 1.5 m copper plated earth rods at all the grid points, covered with E-mix (Lectrotech or equal and approved), 200 x 100 mm (W x D) for trenches and Ø 25 mm for rods, build shuttering to obtain the required dimensions, pour first half of mixture, install the BCEC, pour the second half of the mixture, allow to harden before backfilling, earth mat to be 500 mm below the natural ground level, all copper joints must be exothermic welds.					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
.1.2		Bond Transformers and DB-1 to existing earth mat via 70mm² BCEC from different grid sections, exothermic weld termination at the earth mat and bolted to the transformer and DB-1					
a)		Supply	Sum	1			
b)		Install	Sum	1			
3.9		**TESTING:**					
3.9.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
3.10		**TRANSFORMERS:**					
3.10.1		Refurbishment of 160 kVA, 3300/400 V, Dyn 11, power transformers, one transformer must be circulated while one of the transformers is being refurbished in order to maintain a redundant transformer for the supply, as specified, complete.					
.1.1		Install oil top-up and oil drainage nipple at transformer					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Replace existing transformer oil with PCB free oil					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		Sand blast and re-paint transformer's steel body avocado green					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.4		Replace transformer MV and LV bushings					
a)		Supply	Sum	2			
b)		Install	Sum	2			
3.10.2		Supply and installation of power transformers, as specified, complete.					
.2.1		Decommissioning of existing 160 kVA, 3300/400 V, power transformers					
a)		Decommissioning and deliver to material depot of Sedibeng.	Each	2		Rate Only	
.2.2		200 kVA, 3300/400 V, Dyn 11, PCB free oil, ONAN cooled, breather with orange silica gel, oil top-up and oil drainage nipple, painted avocado green, floor standing, standard tap changer, power transformer.					
a)		Supply	Each	2		Rate Only	
b)		Install	Each	2		Rate Only	
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
4.		**SECTION 4: POWER DISTRIBUTION**					
		**********					
		NOTE: 1. NO CABLE OR BARE COPPER EARTH CONDUCTOR JOINTS WILL BE PERMITTED. ONLY NEW CABLES MUST BE SUPPLIED AND INSTALLED. 2. THIS SCOPE WILL BE FOR THE POWER DISTRIBUTION FROM THE MAIN DB TO ALL THE SUB-DB's AND POWER DISTRIBUTION BETWEEN THE SUB-DB's.					
		**********					
4.1		**LOW VOLTAGE, CABLES:**					
4.1.1		The supply and installation of 600/1000 V PVC insulated, PVC bedded, SWA, PVC sheathed, stranded copper cables in trenches, sleeves, conduits, cable racks or surface mounted via saddle brackets against wall, including making off ends onto overhead line, switchgear or busbars, with all the necessary cable end material, glands and cable clamps, as specified on the drawings, complete.					
.1.1		Supply from DB-1 to DB-2: 10 mm² x 2 core copper cable					
a)		Supply	m	60			
b)		Install	m	60			
4.2		**EARTH CONDUCTOR:**					
4.2.1		Supply and installation of stranded bare copper earth conductor, including clamps and terminations, complete.					
.1.1		Supply from DB-1 to DB-2: 4 mm² BCEC					
a)		Supply	m	60			
b)		Install	m	60			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.3		**EXCAVATIONS:**					
4.3.1		Excavation of trenches, 450 mm wide and 600 mm deep, including backfilling and compacting, as specified on drawings, but excluding the supply and installation of imported bedding and blanket material (only applicable if excavated material is not suitable), complete.					
.1.1		In soft soil - approximate 42 m (can be excavated without the use of power driven tools or explosives)					
a)		Install	m³	11			
.1.2		Extra over soft soil excavation for soft rock (can only be excavated by means of power driven tools, but excluding explosives)					
a)		Install	m³	3			
.1.3		Extra over soft soil excavation for hard rock (can only be excavated by means of explosives)					
a)		Install	m³	1		Rate Only	
4.3.2		Supply and installation of bedding and blanket material, 250 mm thick in total, only applicable if excavated material is not suitable to be used as bedding and padding material, complete.					
.2.1		100 bedding and 150 mm padding, 250 mm thick in total					
a)		Supply	m³	5			
b)		Install	m³	5			
4.4		**DANGER TAPE:**					
4.4.1		Supply and installation of yellow PVC danger tape, 300 mm wide, as specified on the drawings, complete.					
.1.1		Yellow PVC danger tape, 300 mm wide					
a)		Supply	m	42			
b)		Install	m	42			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.5		**PRECAST CONCRETE SLABS:**					
4.5.1		Supply and installation of precast concrete slabs, 600 x 300 x 50 mm (l x w x h), as specified on the drawings, complete.					
.1.1		250 x 250 x 300 mm (L x W x D), concrete marker with engraved name tag, displaying the cable feeding direction, distribution voltage and cable size					
a)		Supply	Each	1		Rate Only	
b)		Install	Each	1		Rate Only	
4.6		**CABLE MARKERS:**					
4.6.1		The supply and installation of cable markers as specified on drawings, complete.					
.1.1		600 x 300 x 50 mm (L x W x H)					
a)		Supply	Each	2			
b)		Install	Each	2			
4.7		**CABLE SLEEVES:**					
4.7.1		Supply and installation of PVC cable sleeves, as specified on the drawings, complete.					
.1.1		Ø 50 mm, in cable trench					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
4.8		**TESTING:**					
4.8.1		Testing and commissioning of low voltage reticulation networks, as per specification and drawings, complete.					
.1.1		Pressure test according manufacturer's specifications.	Sum	1		Rate Only	
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.9		**CABLE TRAYS:**					
4.9.1		Supply and installation of cable trays, medium duty perforated type, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		76 x 76 mm (W x H)					
a)		Supply	m	6		Rate Only	
b)		Install	m	6		Rate Only	
4.10		**DISTRIBUTION BOARDS:**					
4.10.1		The supply and installation of the low voltage distribution boards, with equipment, busbars and switchgear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		DB-1, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.2		DB-2, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
4.11		**DEDICATED EARTH BOX:**					
4.11.1		The supply and installation of a dedicated earth box against the wall, as specified on the drawings, complete.					
.1.1		Dedicated earth box for DB-1 and DB-2 separately, 80 x 1 mm copper bar with minimum 7 terminations, in an 100 x 100 mm enclosure with knock-outs, copper bar must be bonded via 10 mm² insulated earth conductor to the nearest DB's earth bar, recessed mounted next to DB, with 2 x Ø 20 mm conduits from dedicated earth box to ceiling void if ceiling is present otherwise not necessary.					
a)		Supply	Each	2			
b)		Install	Each	2			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.12		**LABELLING:**					
4.12.1		Supply and installation of labelling for all switchgear in the new distribution boards according the circuit numbers on the drawings and standard information and warning labels, as specified on the drawings. The text must be as large as possible, depending on the available space. The labelling must be fixed permanently and neatly, as specified on the drawings.					
.1.1		Engraved, black text against white background					
a)		Identification of distribution boards	Sum	1			
b)		Supply details - supply from and cable details (i.e. SUPPLY FROM DB-M: 70 mm² x 4 Cu CABLE) + 35 mm² BCEC	Sum	1			
c)		Standard cascade warning signages	Sum	1			
d)		Dedicated earth box signages	Sum	1			
e)		Circuit numbers	Sum	1			
f)		Warning signages when the busbar rating is more than 100 A	Sum	1			
.1.2		Engraved, red text against white background					
a)		Identification of main circuit breakers or isolator switches in case of an emergency	Sum	1			
.1.3		Engraved, black text against yellow background					
a)		Danger signages	Sum	1			
.1.4		Heat shrinkable conductor/cable tags, black text against white background					
a)		Conductor/cable identifications	Sum	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
4.13		**TESTING AND COMMISSIONING:**					
4.13.1		Testing and commissioning of the complete electrical installation, to SABS 0142, as revised, including all necessary tests to issue the Certificate of Compliance (CoC), in terms of the Occupational Health and Safety Act, 1993 (act 85 of 1993).					
.1.1		Issue a valid Certificate of Compliance, with supporting tests certificates, drawings and special notes.					
a)		DB-1, with sub-circuits, complete.	Sum	1			
b)		DB-2, with sub-circuits, complete.	Sum	1			
4.14		**EARTHING AND BONDING:**					
4.14.1		Earthing of building according to the Wiring Code, SANS 10142-1 latest edition, complete.					
.1.1		Earthing of electrical installation. All conductive water pipes, conduits, cable trays and equipment with conductive enclosures, must be bonded with 10 mm x 1 mm thick solid or perforated copper tape or 10 mm² insulated earth conductor to the nearest earth bar of a distribution board, including terminations, complete.					
a)		Supply	Sum	1			
b)		Install	Sum	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
5.		**SECTION 5: ELECTRICAL BUILDING SERVICES**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE ELECTRICAL BUILDING SERVICES. 3. RECESSED INSTALLATIONS MUST PREFERABLY BE WIRED VIA CONDUCTOR WITHIN CONDUIT AND SURFACE INSTALLATIONS MUST PREFERABLY BE WIRED VIA SURFEX CABLE.					
		**********					
5.1		**LIGHT POWER POINTS:**					
5.1.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, etc., as specified or shown on the drawings, but excluding the light switch, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	4			
b)		Circuit L2	Each	14			
c)		Circuit L3	Each	4			
d)		Circuit L4	Each	6			
e)		Circuit L5	Each	9			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit L1	Each	3			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.2		**LUMINAIRES:**					
5.2.1		Supply and installation of luminaires, with lamps and control gear, as specified on the drawings and to be approved by the Engineer before ordering, complete.					
.1.1		Type B					
a)		Supply	Each	4			
b)		Install	Each	4			
.1.2		Type F/L					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.3		Type H-F					
a)		Supply	Each	8			
b)		Install	Each	8			
.1.4		Type IK					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.5		Type L/B					
a)		Supply	Each	5			
b)		Install	Each	5			
.1.6		Type L/C					
a)		Supply	Each	19			
b)		Install	Each	19			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.3		**SENSORS:**					
5.3.1		Supply and installation of photocell and fire siren as specified on drawings, complete.					
.1.1		Photocell					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.2		Fire Siren					
a)		Supply	Each	1			
b)		Install	Each	1			
5.4		**CONTROL SWITCHES POWER POINTS:**					
5.4.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the switches, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit ES1	Each	3			
5.5		**SWITCHES:**					
5.5.1		Supply and installation of switches, as specified on the drawings, with cover plates, screws, connections, etc., but excluding the conduit, wall boxes and wiring, complete.					
.1.1		White single lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	6			
b)		Install	Each	6			
.1.2		White single lever, three way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	3			
b)		Install	Each	3			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.3		White two lever, one way, 75 x 75 mm surface box, metal, orange coverplate, 16 A, light switch, surface mounted.					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.4		Yellow rotary switch, one way, 50 x 50 mm, die cast aluminium grey enclosure, 16 A, water tight, IP 67, light switch, surface mounted.					
a)		Supply	Each	6		Rate Only	
b)		Install	Each	6		Rate Only	
.1.5		Fireman switch, red alluminium enclosure, weather proof, IP 65, 20 A, 2 pole, surfce mounted.					
a)		Supply	Each	3			
b)		Install	Each	3			
5.6		**SOCKET OUTLET POWER POINTS:**					
5.6.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the socket outlet, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	3			
b)		Circuit P2	Each	4			
c)		Circuit P3	Each	5			
d)		Circuit P4	Each	3			
e)		Circuit IS1	Each	1			
f)		Circuit IS2	Each	1			
g)		Circuit IS3	Each	1			
h)		Circuit IS4	Each	1			
i)		Circuit IS5	Each	1			
j)		Circuit H1	Each	1			
Total Carried Forward							

Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit P1	Each	2			
5.7		**SOCKET OUTLETS:**					
5.7.1		Supply and installation of socket outlets for normal power, with cover plates, screws, clips, connections, etc., as specified on the drawings, but excluding wall boxes, conduit and wiring, complete.					
.1.1		Double, 119 x 83 mm, surface box, switch SA socket outlet, 16 A, with metal, orange cover plate, surface mounted.					
a)		Supply	Each	10			
b)		Install	Each	10			
.1.2		Double, 119 x 83 mm, surface box, switch SA socket outlet, 16 A, weather proof, IP 44, with metal, orange cover plate, surface mounted.					
a)		Supply	Each	7			
b)		Install	Each	7			
.1.3		Orange metal clad industrial switch socket outlet, 63 A, 400 V, 5-pin, weather proof, IP 55, including metal clad plug top, surface mounted.					
a)		Supply	Each	6			
b)		Install	Each	6			
5.8		**ISOLATOR POWER POINTS:**					
5.8.1		Supply and installation of conduit, outlet boxes, draw boxes, expansion joint boxes, junction boxes, conductors/cables, connections, etc., as shown on the drawings, but excluding the isolator switch, complete.					
.1.1		DB-1: power points according to the layout and distribution board drawings, complete.					
a)		Circuit AC1	Each	1			
b)		Circuit EC1	Each	3			
.1.2		DB-2: power points according to the layout and distribution board drawings, complete.					
a)		Circuit AC1	Each	1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.9		**ISOLATOR SWITCHES:**					
5.9.1		Supply and installation of isolator switches, complete with cover plates, screws, clips, connections, etc., but excluding conduit, wall boxes and wiring, complete.					
.1.1		Single phase, 165 x 82mm, 63 A, double pole, weather proof, IP 55, isolator switch, surface mounted.					
a)		Supply	Each	5			
b)		Install	Each	5			
5.10		**PERMANENTLY FIXED APPLIANCES/EQUIPMENT:**					
5.10.1		Supply and installation of power connection cords between isolators and permanently fixed appliances/equipment, equipment must be within 1.5 m of isolator switch, recessed isolators must supply the equipment via conduit with wiring to and surface isolators must supply equipment via surfex conductors , as specified by the OEM's and the wiring code, complete.					
.1.1		Air Conditioning, 1 Ø					
a)		Supply	Each	2			
b)		Install	Each	2			
.1.2		Evaporative Cooler, 1 Ø					
a)		Supply	Each	3			
b)		Install	Each	3			
.1.3		Hoist, 3 Ø					
a)		Supply	Each	1			
b)		Install	Each	1			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
5.11		**WIRE WAYS:**					
5.11.1		Supply and installation of wire ways, with all the necessary accessories, as specified on the drawings, complete.					
.1.1		Galvanised steel trunking with covers, 50 x 50 mm (W x D)					
a)		Supply	m	36			
b)		Install	m	36			
.1.2		Galvanised steel trunking with covers, 125 x 100 mm (W x D)					
a)		Supply	m	40			
b)		Install	m	40			
5.12		**LABELLING:**					
5.12.1		Supply and installation of labelling on all types of socket outlets, isolators and light switches, including photocells, text must be at least 5 mm in height and the labelling must be fixed permanently and neatly, the information presented must be first the circuit number/distribution board fed from (i.e. "S1/DB-A"), as specified on the drawings, complete.					
.1.1		Engraved, black text against white back ground					
a)		Supply	Sum	1			
b)		Install	Sum	1			
.1.2		Printed with self adhesive back-side, black text against white back ground					
a)		Supply	Sum	1		Rate Only	
b)		Install	Sum	1		Rate Only	
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
6.		**SECTION 6: PERMANENT EQUIPMENT**					
		**********					
		NOTE: 1. ALL CONDUIT AND CONDUIT ACCESSORIES MUST BE OF THE GALVANISED STEEL TYPE, ALL OUTLET BOXES, DRAW BOXES, JUNCTION BOXES MUST BE OF THE GALVANISED STEEL TYPE AND BOXES CAST INTO CONCRETE SLABS, MUST BE OF THE MALLEABLE CAST METAL TYPE. 2. THIS SCOPE WILL BE FOR ALL THE PERMANENT EQUIPMENT TO BE INSTALLED WITHIN THE BUILDING.					
		**********					
6.1		**AIR-CONDITIONERS:**					
6.1.1		Supply and installation of inverter type air-conditioning systems: split type, outdoor condensing unit and mid-wall indoor air handle unit, complete with fans, compressors, refrigerant circuits, anti-vibration wall bracket mounting, seamless high pressure refrigeration grade copper between condenser and air handle unit, complete with fittings, refrigerant formed joints, tees, elbows and fixings, electrical connection between outdoor and indoor unit, condensate pipes and pumps (where gravitational routes are not possible), evacuate refrigerant lines and fill with R410A gas, as specified on the drawings, complete.					
.1.1		AC, 9 000 BTU/h, 2.64 kWr					
a)		Supply	Each	2			
b)		Install	Each	2			
6.2		**TESTING AND COMMISSIONING:**					
6.2.1		Testing and commissioning of the different systems/equipment, according to regulations, complete.					
.1.1		Air-Conditioners	Sum	1			
Total Carried Forward To Summary							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
7.		**SECTION 7: ELECTRICAL CONTROL AND INSTRUMENTATION**					
7.1		**MV SWITCHGEAR**					
		Supply, Deliver to Site, Offload and Install Schneider Premset switchgear containing the following in the new MV Room					
7.1.1		Schneider PREMSET Switchgear as per attached specification and drawings with protection rated to suit 3.3 KV 2.5 MVA Supply Transformer	No	2.0			
7.1.2		Schneider PREMSET Buscoupler rated to suit Incoming Supplies	No	1.0			
7.1.3		Schneider PREMSET Switchgear as per attached specification for supply to 750 KW 3.3 KW WEG MVW01C Variable Speed Drives	No	3.0			
7.1.4		Schneider PREMSET Switchgear as per attached specification for supply to 160 KVA 3.3 KV/400V Local Supply Transformer	No	2.0			
7.1.5		Battery Tripping Unit rated at 110Vdc 10A for the above switchgear	No	1.0			
7.1.6		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	Sum	1.0			
7.1.7		Allow cost for levelling of the MV Room floor or provision of a frame to fit MV Switchear to specification	Sum	1.0			
7.2		**MV MOTOR CONTROL GEAR**					
		Supply, Deliver to Site, Offload and Install as follows in the new MV Room					
7.2.1		WEG MVW01C Variable Speed Drives Complete as follows: 3.3 KV 800 KW	No	3.0			
7.2.2		Allow Cost for Factory Acceptance Test of the above at the suppliers premises for 3 x persons.	Sum	1.0			
7.2.3		Cost for extra Ventilation Duction if required (proof of requirement to be provided as described in the tender documentation)	Sum	1.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.3		**EARTHING AND LIGHTNING PROTECTION SYSTEM**					
		Supply and Install the following:					
7.3.1		Earthing and Lighning Protecton System for the new MV room, designed by Earthing and Lightning Protection Specialist and as per the attached specifications.	Sum	1.0			
7.3.2		VSD Room LV DB Board in the new MV Room	Sum	1.0			
7.3.3		Testing of the above Installation and provision of a test certificate.	No	1.0			
7.4		**LV DISTRIBUTION BOARDS**					
		Supply, Deliver to Site, Offload and Install the following:					
7.4.1		Main LV DB Board in existing Switchgear Room	No	1.0			
7.4.2		VSD Room LV DB Board in the exisitng Switchgear Room	No	1.0			
7.5		**PLC AND FIELD JUNCTION BOXES**					
		Supply, Deliver to Site, Offload and Install the following:					
7.5.1		PLC System in Control Section of VSD Room LV DB Board	No	1.0			
7.5.2		Pump Field Junction Box FJB1	No	3.0			
7.5.3		Pratley Kliklox Junction Boxes with 7 terminals installed	No	9.0			
7.5.4		Pratley Enviro RectangularJunction Boxes with 8 terminals installed	No	1.0			
7.5.5		Remote HMI, SIMATIC HMI TP900 Comfort (6AV2124-0JC01-0AX0) 10", installed in enclosure in the existing Operators Room. To be connected to PLC via Ethernet Cable	No	1.0			
7.5.6		Allow Cost for Factory Acceptance Test of the above as well as the Main LV DB Board and VSD Room LV DB Board at the suppliers premises for 3 x persons.	No	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.6		**INSTRUMENTATION**					
		Supply, Deliver to Site, Offload and Install the following:					
7.6.1		Endress & Hauser FMU40 Ultrasonic Level Sensor (complete with mounting brackets) for Raw Water Sump Level	No	1.0			
7.6.2		Vibration Transducer for Motor (Monitran 20 mm/s)	No	3.0			
7.6.3		Pump Vibration Transducers (Monitran 20 mm/s)	No	6.0			
7.6.4		Motor Bearing Temperature Sensors (PT100 0-150 Deg C)	No	3.0			
7.6.5		Pump Bearing Temperature Sensors (PT100 0-150 Deg C)	No	6.0			
7.6.6		IFM SA5000 Solid-state Flow Switch, complete with E40107 adapter and EVC005 cable, installed on inlet side of pump	No	3.0			
7.6.7		Delivery Pressure Transducer, IFM PN709x series with EVC005 cable, installed on delivery side of pump	No	3.0			
7.6.8		Flowmeter to measure pump delivery, installed on delivery side of each pump: Endress & Hauser Ultrasonic Clamp-on type, appropriate to pump delivery pipe size.	No	3.0			
7.7		**DOMESTIC INSTALLATION**					
		Supply and Install the following (in the new MV Room and in the existing MV Room where required)					
7.7.1		Surface Mount Single Lever Light Switches	No	4.0			
7.7.2		Surface Mount 15A Plug Outlets (Double)	No	6.0			
7.7.3		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings	No	8.0			
7.7.4		Dual 5 ft Beka Vapourline VLN 2*58W FLFluorescent Fittings with 1 Hr EMU kit	No	4.0			
7.7.5		20 mm Galvanized Conduit,surface mount, complete with drawboxes and fittings	m	70.0			
7.7.6		Supply and Install 35000 BTU Air-conditioners for new MV Room	No	3.0			
7.7.7		All wiring, etc required to complete the installation	Sum	1.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.7.8		Allow Cost to rehabilitate Pump Station Domestic Installation, Area Lights and Welding Plugs	Sum	1.0			
7.8		**CABLE AND CABLE INSTALLATION**					
		Supply, Install and Test the following where applicable:					
7.8.1		Disconnect existing Incomer 1 cables (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (240 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
7.8.2		Disconnect existing Incomer 1 cable (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 1 on the new Premset MV Switchgear in the new MV Room (BCEW 120 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
7.8.3		Disconnect existing Incomer 2 cables (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (240 mm sq x 3 SWA XLPE Cables). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
7.8.4		Disconnect existing Incomer 2 cable (22 KV/3.3 KV 2.5 MVA Transfomer) from existing MV Board Incomer, relocate and connect to Incomer 2 on the new Premset MV Switchgear in the new MV Room (BCEW 120 mm sq Cabls). Lengthen if required (Cable, Joint and Termination measured elsewhere)	Sum	1.0			
7.8.5		240 mm sq x 3 SWA XLPE 1.9/3.3 KV Cable to lengthen the above if required	m	40.0			
7.8.6		BCEW 120 mm sq x Cable to lengthen the above if required	m	40.0			
7.8.7		Disconnect existing cables from Local Services Transformers (3.3 KV/400V 160 KVA) from existing MV Switcgear Feeders and remove to Client's store (10 mm sq x 3 SWA XLPE)	Sum	1.0			
7.8.8		Disconnect existing cables from Local Services Transformers (3.3 KV/400V 160 KVA) from existing MV Switcgear Feeders and remove to Client's store (BCEW 6 mm sq)	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.9		10 mm sq x 3 SWA XLPE 1.9/3.3 KV Cable from Local Services Transformer to appropriate feeders on New Premset MV Switchgear	m	70.0			
7.8.10		BCEW 6 mm sq Cable from Local Services Transformer to appropriate feeders on New Premset MV Switchgear	m	70.0			
7.8.11		70 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from Premset Feeder Breakers to WEG MVW01C Variable Speed Drives	m	45.0			
7.8.12		50 mm sq BCEW from Premset feeder breakers to WEG MVW01C Variable Speed Drives	m	45.0			
7.8.13		70 mm sq x 3 core SWA XLPE 1.9/3.3 KV Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	180.0			
7.8.14		50 mm sq BCEW Cable from WEG MVW01C Variable Speed Drives to Pump Motors	m	180.0			
7.8.15		Disconnect Cables from Existing Main LV DB Board, remove board to Client's Store and replace with the new Main LV DB Board. Reconnection/Replacement of Cables measured elsewhere	Sum	1.0			
7.8.16		Remove 120 mm sq x 4 SWA PVC Cable from Local Services Transformers to Main LV DB and deliver to Client Store	Sum	1.0			
7.8.17		Remove 70 mm sq BCEW from Local Services Transformers to Main LV DB and deliver to Client Store	Sum	1.0			
7.8.18		120 mm sq x 4 SWA PVC Cable from Local Services Transformers to new Main LV DB Board	m	60.0			
7.8.19		70mm sq BCEW Cable from Local Services Transfroemrs to new Main LV DB Board	m	60.0			
7.8.20		Reconnect 16 mm sq x 4 SWA PVC Cable from Main LV DB Board to Pumphouse DB (Termination measured elsewhere)	Sum	1.0			
7.8.21		Reconnect BCEW 10 mm sq Cable from Main LV DB Board to Pumphouse DB (Termination measured elsewhere)	Sum	1.0			
7.8.22		Reconnect 6 mm sq x 4 SWA PVC Cable from Main LV DB Board to Gatehouse DB (Termination measured elsewhere)	Sum	1.0			
7.8.23		Reconnect BCEW 4 mm sq Cable from Main LV DB Board to Gatehouse DB (Termination measured elsewhere)	Sum	1.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.24		25 mm sq x 4 SWA PVC Cable from Main LV DB to VSD Room DB	m	10.0			
7.8.25		16 mm sq BCEW from Main LV DB to VSD Room DB	m	10.0			
7.8.26		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 1 (Auxilliary Supply)	m	12.0			
7.8.27		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 2 (Auxilliary Supply)	m	12.0			
7.8.28		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Variabe Speed Drive 3 (Auxilliary Supply)	m	12.0			
7.8.29		2.5 mm sq x 4 SWA PVC CAble from VSD Room DB to existing Flowmeter	m	45.0			
7.8.30		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Battery Tripping Unit	m	10.0			
7.8.31		2.5 mm sq x 4 SWA PVC Cable from Premset MV Board to Battery Tripping Unit	m	5.0			
7.8.32		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 1 Field Junction Box FJB1 (AC Supply)	m	70.0			
7.8.33		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	70.0			
7.8.34		2.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Pump 2 Field Junction Box FJB1 (AC Supply)	m	70.0			
7.8.35		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 1 Field Junction Box FJB1 (DC Supply)	m	70.0			
7.8.36		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 2 Field Junction Box FJB1 (DC Supply)	m	70.0			
7.8.37		2.5 mm sq x 4 SWA PVC Cable from Control Section to Pump 3 Field Junction Box FJB1 (DC Supply)	m	70.0			
7.8.38		2.5 mm sq x 4 SWA PVC Cable from Control Section to Remote HMI	m	90.0			
7.8.39		1.5 mm sq x 4 SWA PVC Cable from VSD Room DB to Existing Flowmeter	m	80.0			
7.8.40		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Emergency Stop Interlock)	m	12.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.41		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Emergency Stop Interlock)	m	12.0			
7.8.42		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Emergency Stop Interlock)	m	12.0			
7.8.43		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 1 (Enabling Circuit)	m	12.0			
7.8.44		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 2 (Enabling Circuit)	m	12.0			
7.8.45		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Control Section to Variable Speed 3 (Enabling Circuit)	m	12.0			
7.8.46		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 1 Premset Feeder	m	12.0			
7.8.47		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 2 Premset Feeder	m	12.0			
7.8.48		1.5 mm sq x 8 pr IOS Dekabon Armoured Cable from Control Section to VSD 3 Premset Feeder	m	12.0			
7.8.49		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 1 to Pump 1 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
7.8.50		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 2 to Pump 2 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
7.8.51		1.5 mm sq x 4 pr IOS Dekabon Armoured Cable from Variable Speed 3 to Pump 3 Feld Junction Box FJB1 (Emergency Stop Interlock)	m	60.0			
7.8.52		1.5 mm sq x 2 pr IOS Dekabon Armoured Cable from Control Section to Clear Water Sump Endress & Hauser FMU40 Level Instrument	m	30.0			
		Pump Set 1 Instrumentation and Control					
7.8.53		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
7.8.54		1.5 mm sq x 4 SWA PVC cable from Pump 1 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
7.8.55		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.56		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
7.8.57		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
7.8.58		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
7.8.59		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
7.8.60		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
7.8.61		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
7.8.62		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
7.8.63		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
7.8.64		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
7.8.65		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
7.8.66		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
7.8.67		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 1 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 2 Instrumentation and Control					
7.8.68		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
7.8.69		1.5 mm sq x 4 SWA PVC cable from Pump 2 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.70		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
7.8.71		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
7.8.72		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
7.8.73		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
7.8.74		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
7.8.75		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
7.8.76		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
7.8.77		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
7.8.78		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
7.8.79		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
7.8.80		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
7.8.81		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
7.8.82		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 2 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
		Pump Set 3 Instrumentation and Control					
7.8.83		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Supply)	m	6.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.84		1.5 mm sq x 4 SWA PVC cable from Pump 3 Field Junction Box FJB1 to Delivery Actuator (Supply)	m	8.0			
7.8.85		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Inlet Actuator (Control and Feedback)	m	6.0			
7.8.86		1.5 mm sq x 4 Pr IOS Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Outlet Actuator (Control and Feedback)	m	8.0			
7.8.87		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Vibration Transducer	m	8.0			
7.8.88		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Vibration Transducer	m	10.0			
7.8.89		1 mm sq x 1 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Vibration Transducer	m	10.0			
7.8.90		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Non Drive-End Bearing Temperature Sensor	m	8.0			
7.8.91		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor Drive-End Bearing Temperature Sensor	m	8.0			
7.8.92		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Non Drive-End Bearing Temperature Sensor	m	10.0			
7.8.93		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Pump Drive-End Bearing Temperature Sensor	m	10.0			
7.8.94		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Motor 1 (Winding Temperatures)	m	8.0			
7.8.95		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to No-Flow Switch	m	10.0			
7.8.96		1 mm sq x 2 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Pressure Transducer	m	10.0			
7.8.97		1 mm sq x 4 Pr Dekabon Armoured Cable from Pump 3 Field Junction Box FJB1 to Delivery Flow Meter	m	15.0			
Total Carried Forward							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.8.98		1 mm sq x 2 Pr Dekabon Armoured Cable from Control Section of VSD Room DB to Delivery Pipeline Pressure Transducer	m	40.0			
		General					
7.8.99		Remove all redundant equipment, panels and cables and deliver to site storage area.	Sum	1.0			
7.9		**CABLE TERMINATIONS AND JOINTS**					
		Supply and Install for the following cables (Terminations unless otherwise indicated):					
7.9.1		3.3 KV 240 mm sq x 3 SWA XLPE	No	2.0			
7.9.2		3.3 KV 120 mm sq x 3 SWA XLPE JOINTS	No	2.0		Rate Only	
7.9.3		3.3 KV 70 mm sq x 3 SWA XLPE	No	12.0			
7.9.4		3.3 KV 10 mm sq x 3 SWA XLPE	No	2.0			
7.9.5		3.3 KV 10 mm sq x 3 SWA XLPE Joints	No	1.0		Rate Only	
7.9.6		120 mm sq x 4 SWA PVC	No	2.0			
7.9.7		120 mm sq x 4 SWA PVC Joints	No	1.0		Rate Only	
7.9.8		25 mm sq x 4 SWA PVC	No	2.0			
7.9.9		16 mm sq x 4 SWA PVC	No	2.0			
7.9.10		6 mm sq x 4 SWA PVC	No	2.0			
7.9.11		2.5 mm sq x 4 SWA PVC	No	26.0			
7.9.12		1.5 mm sq x 4 SWA PVC	No	8.0			
7.9.13		1 mm sq x 1 PR Dekabon Armoured	No	18.0			
7.9.14		1 mm sq x 2 PR IOS Dekabon Armoured	No	26.0			
7.9.15		1 mm sq x 4 PR IOS Dekabon Armoured	No	10.0			
7.9.16		1.5 mm sq x 2 PR IOS Dekabon Armoured	No	4.0			
7.9.17		1.5 mm sq x 4 PR IOS Dekabon Armoured	No	30.0			
7.9.18		1.5 mm sq x 8 PR IOS Dekabon Armoured	No	6.0			
7.9.19		Compression Glands No 1	No	12.0			
7.9.20		Bare Copper Earth Wire 4 mm sq	No	2.0			
7.9.21		Bare Copper Earth Wire 6 mm sq	No	2.0			
7.9.22		Bare Copper Earth Wire 10 mm sq	No	2.0			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.9.23		Bare Copper Earth Wire 16 mm sq	No	2.0			
7.9.24		Bare Copper Earth Wire 70 mm sq	No	6.0			
7.9.25		Bare Copper Earth Wire 120 mm sq	No	2.0			
7.10		**CABLE RACK AND LADDER**					
		This Section covers the total supply and installation of cable rack and ladder for this Pump Station. Prices should include all fixing material, splices and fixing brackets required.					
		O-LINE OL-Series CAble Ladder					
7.10.1		OL76 1000 MM	m	21.0			
7.10.2		OL76 1000 MM Internal Bends	No	2.0			
7.10.3		OL761000 MM External Bends	No	2.0			
7.10.4		OL76 1000 MM Flat Bends	No	2.0			
7.10.5		OL76 1000 MM T-Pieces	No	2.0			
7.10.6		Reducer 1000 mm to 600 mm	No	3.0			
7.10.7		OL76 600 MM	m	15.0			
7.10.8		OL76 600 MM Internal Bends	No	2.0			
7.10.9		OL76 600 MM External Bends	No	2.0			
7.10.10		OL76 600 MM Flat Bends	No	2.0			
7.10.11		OL76 600 MM T-Pieces	No	2.0			
7.10.12		Reducer 600 mm to 400 mm	No	3.0			
7.10.13		OL76 400 MM	m	15.0			
7.10.14		OL76 400 MM Internal Bends	No	3.0			
7.10.15		OL76 400 MM External Bends	No	3.0			
7.10.16		OL76 400 MM Flat Bends	No	3.0			
7.10.17		Reducer 400 mm to 200 mm	No	3.0			
7.10.18		OL55 200 MM	m	18.0			
7.10.19		OL55 200 MM Internal Bends	No	3.0			
7.10.20		OL55 200 MM External Bends	No	3.0			
7.10.21		OL55 200 MM Flat Bends	No	3.0			
		O-LINE GRIDSPAN Wire Mesh Cable Trays					
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
7.10.22		GS50 100 mm Gridspan	m	60.0			
7.10.23		GS50 100 mm Internal Bends	No	6.0			
7.10.24		GS50 100 mm External Bends	No	6.0			
7.10.25		GS50 100 mm Flat Bends	m	4.0			
7.10.26		GS50 50 mm Gridspan	No	60.0			
7.10.27		GS50 50 mm Internal Bends	No	8.0			
7.10.28		GS50 50 mm External Bends	No	8.0			
7.10.29		GS50 50 mm Flat Bends	No	6.0			
7.10.30		GS50 Internal Bends	No	12.0			
7.10.31		OL2000 Trunking	m	69.0			
		Miscellaneous Items					
		Supply and Install as and where required					
7.10.32		25 mm Galvanized Conduit Complete with all attachments and saddles	m	60.0			
7.10.33		Cantilever Bracket OL254 800 mm	No	8.0			
7.10.34		Cantilever Bracket OL254 650 mm	No	12.0			
7.10.35		Cantilever Bracket OL254 450 mm	No	36.0			
7.10.36		25 x 25 Angle Iron, cut to suit and cold-galvanized	m	12.0			
7.10.37		Allow for connecting of cable racks with the earthing system	Sum	1.0			
7.11		**OTHER ITEMS**					
7.11.1		Allow for servicing of local services transformers, including oil tests and oil filtration	Sum	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
8.		**SECTION 8: CIVIL WORKS FOR PHASE 1**					
8.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
8.1.1		Demolish existing pump plinths	m³	13.4			
8.1.2		Demolish existing pedestals	m³	0.3			
8.1.3		Break out hole in wall for new pipework under supervision of the mechanical contractor	m²	2.0			
8.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
8.2.1	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.7			
b)		Pipe pedestals	m³	1.2			
c)		Concrete filling	m³	13.1			
Total Carried Forward							

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
Brought Forward							
8.2.2	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pump plinths	kg	130.0			
b)		10mm diameter for pipe pedestals	kg	90.0			
8.2.3	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	3.3			
b)		Sides of pipe pedestals	m²	7.0			
8.2.4		Repair of damages to existing concrete	m³	10.0			
8.2.5		Filling of trench on the inside of pump house	m³	10.0			
8.2.6		Grouting and building in of manifolds	m³	10.0			
8.2.7		Connection of discharge manifold to raising main to Eenriet reservoir	Sum	1.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
						R	c
9.		**SECTION 9: CIVIL WORKS FOR PHASE 2**					
9.1		**DEMOLITION WORK**					
		Supply all material, labour, machinery and equipment required for demolition and disposal of rubble					
9.1.1		Demolish existing pump plinths	m³	8.9			
9.1.2		Demolish existing pedestals	m³	0.4			
9.2		**CONSTRUCTION WORK**					
		Supply all material, labour, machinery and equipment required for construction works					
9.2.1	**SANS 1200 G**	**Concrete**					
	8.4	Supply, mix, placing, aiding and testing of the following:					
1)	8.4.3	Strength Concrete					
		Class 30 MPa/ 19mm:					
a)		Pump plinths	m³	1.7			
b)		Pipe pedestals	m³	1.2			
c)		Concrete filling	m³	8.4			
d)		Repair of damages to existing concrete	m³	10.0			
e)		Filling of trenches	m³	10.0			
9.2.2	8.3	**Steel Reinforcement**					
		Supply, cut, bending, binding as well as the supply of all spacing appliances for the following reinforcement as per drawings:					
1)	8.3.1	High Tensile Steel Bars					
a)		10mm diameter for pump plinths	kg	130.0			
b)		10mm diameter for pipe pedestals	kg	90.0			
9.2.3	8.2	**Formwork**					
	8.2.2	Supply all material, labour, plant and equipment for the following smooth formwork:					
1)		Vertical to:					
a)		Sides of pump plinths	m²	3.3			
b)		Sides of pipe pedestals	m²	7.0			
Total Carried Forward To Summary							

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C2.3

SUMMARY OF SCHEDULES

SUMMARY OF SCHEDULES

Schedule 1 – Preliminary and General for all three (3) Pump Stations
1. Tender Sum (Incl. VAT): R…….....

Schedule 2 – Henkriesmond Raw Water Booster Pump Station
1. Tender Sum (Incl. VAT): R…….....
2. Construction Period: …… **(weeks)**

Schedule 3 – Henkries Water Treatment Works Pump Station
1. Tender Sum (Incl. VAT): R…….....
2. Construction Period: …… **(weeks)**

Schedule 4 – Doringwater Booster Pump Station
1. Tender Sum (Incl. VAT): R…….....
2. Construction Period: …… **(weeks)**

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

SECTION C2.4

BANKING DETAILS

VAAL CENTRAL WATER

CONTRACT NO.

BW316/UPSHRMP/22

UPGRADING OF PUMP STATIONS ON THE HENKRIES RISING MAIN PIPELINE

FINANCIAL REFERENCES

(a). BANK RATING

1. It is requisite that a bank rating be obtained, bearing an original stamp by the relevant bank.

2. Failure to complete the bank rating Form overleaf may invalidate the tender rating should be based on highest contract value tendered for and the corresponding timeframe.

(b) FINANCIAL STATEMENTS

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

(c) DETAILS OF COMPANY'S BANK

I/We hereby authorize the Employer/Engineer to approach all or any of the following banks for a reference:

DESCRIPTION OF BANK DETAIL	BANK DETAIL APPLICABLE TO COMPANY HEAD OFFICE	BANK DETAIL APPLICABLE TO THE SITE OF THE WORKS
Name of bank		
Branch name		
Branch code		
Street Address		
Name of manager		
Telephone number	( )	( )
Account number		
Bank Rating		

…… ……..
SIGNATURE OF TENDERER: DATE:

DECLARATION BY BANK MANAGER

This is to certify that the Tenderer has sufficient good standing with this bank that he will, in my opinion, be financially able to complete a contract to the value as entered, by the Tenderer, in Form C1.1 over the specified duration, or such other duration as the Tenderer may offer. In addition we confirm that, for the amount of the enquiry, the Tenderer is rated Code

……. ……..
SIGNATURE OF BANK MANAGER: DATE:

Place bank stamp here

Contractor	Witness 1	Witness 2	Employer	Witness 1	Witness 2